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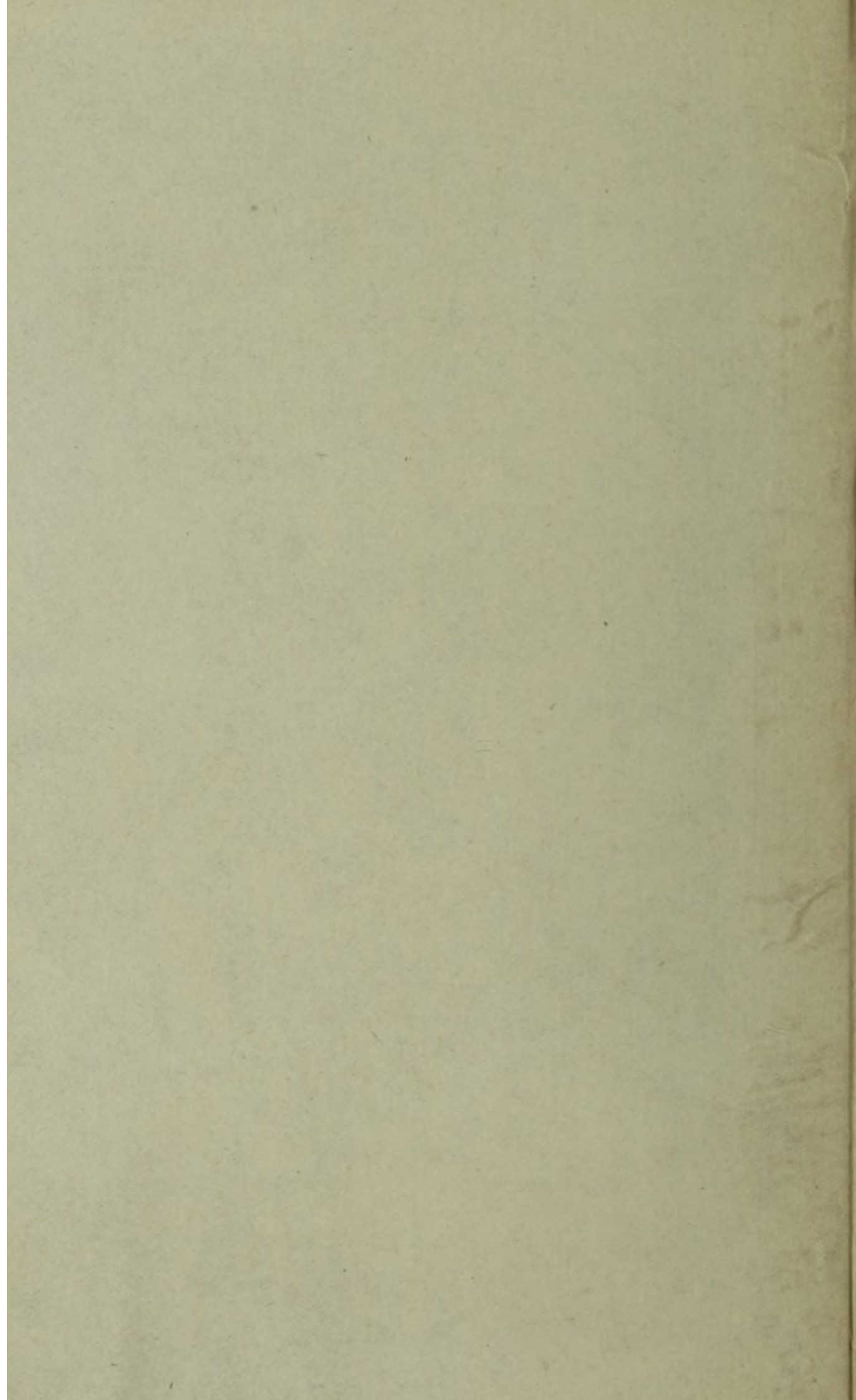
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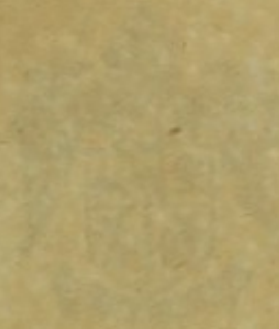


REPORT
ON THE
SANITARY CONDITION
OF THE
County Borough
OF
Birkenhead,
FOR THE YEAR 1897,
BY
R. SYDNEY MARSDEN,
D. Sc., M.B., Mast. Surg., D.P.H., F.R.S. & F.R.P.S., Edin., F. Inst. Chem., &c.
MEDICAL OFFICER OF HEALTH,
MEDICAL OFFICER TO THE SCHOOL BOARD,
AND
PRESIDENT OF THE MEDICAL SOCIETY, BIRKENHEAD.

BIRKENHEAD :
WILSON & JONES, PRINTERS AND STATIONERS, 70 ARGYLE STREET.

1898.





REPORT

SANITARY CONDITION

County Borough

Birkenhead

FOR THE YEAR 1907

H. CUNNEY MARGDEN

Sanitary Officer, County Borough of Birkenhead

Printed by the County Council

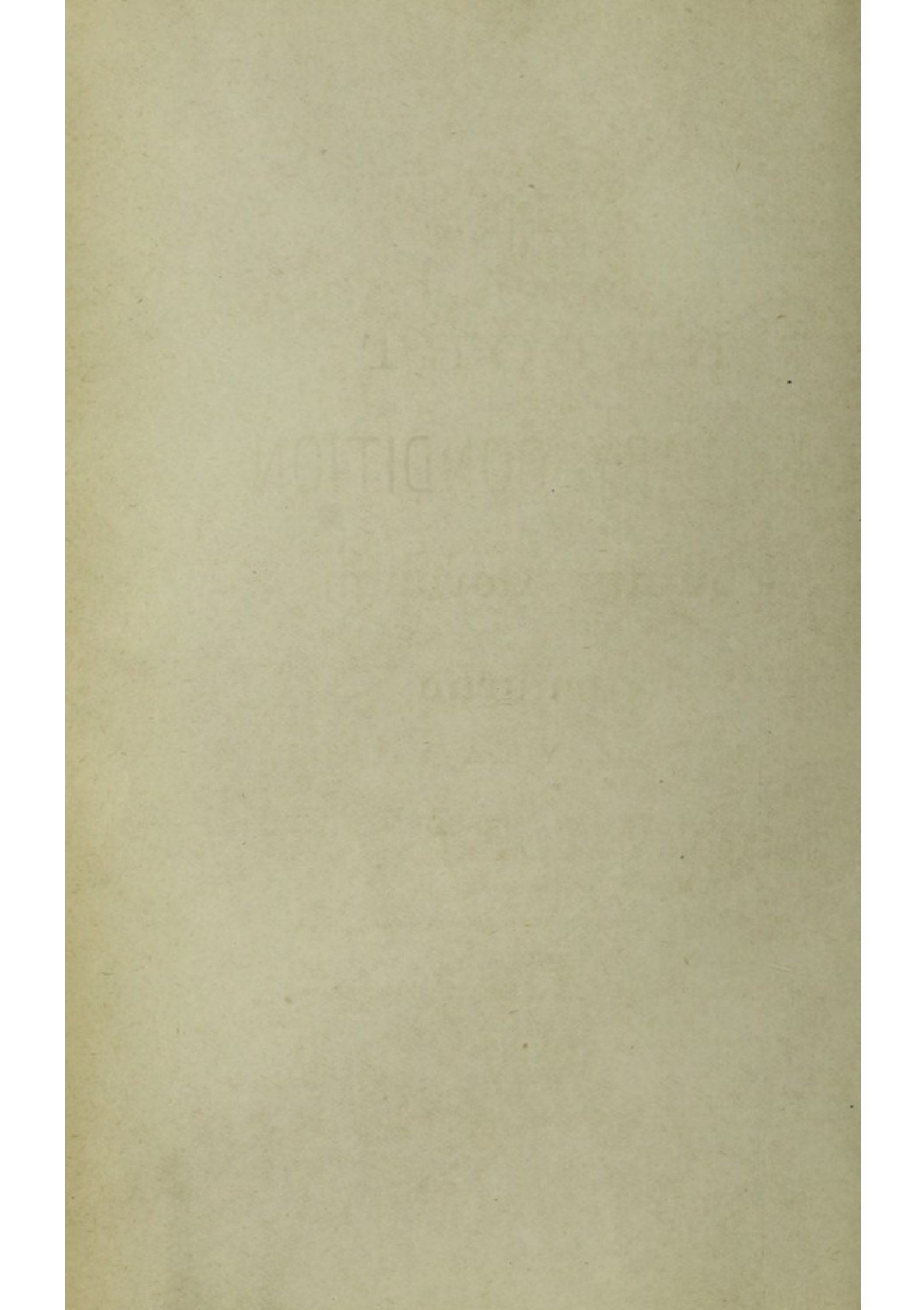
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1907

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THE COUNTY COUNCIL, BIRKENHEAD





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1898.

HEALTH COMMITTEE
OF THE
BIRKENHEAD TOWN COUNCIL,
1897-98.

- †*MR. ALDERMAN WILLIAM GETLEY, J.P., CHAIRMAN.
†*MR. COUNCILLOR H. LAIRD PEARSON, M.R.C.S.,
DEPUTY-CHAIRMAN.
†*MR. ALDERMAN THOMAS SHAW.
†MR. ALDERMAN JOSEPH PERRIN.
†*MR. ALDERMAN JAMES WOODCOCK.
MR. ALDERMAN THOMAS CHARLES CLARKE.
*MR. ALDERMAN CHARLES THOMAS GOSTENHOFER, J.P.
*MR. ALDERMAN EDWARD PAYSON SMITH.
*MR. COUNCILLOR JOHN EDWARDS.
*MR. COUNCILLOR BENEDICT JONES, J.P.
MR. COUNCILLOR GODFREY ALLAN SOLLY.
MR. COUNCILLOR EDWARD WILLIAMS, J.P.
AND
HIS WORSHIP THE MAYOR.
(Edward George Mason, Esq., J.P.)

Day of Meeting every alternate Tuesday at 4-30 p.m.

*Members of the Health Sub-Committee.

†Members of the Hospital Sub-Committee.

OFFICIALS
OF THE
PUBLIC HEALTH DEPARTMENT,
1897.

.....

Medical Officer of Health.

R. SYDNEY MARSDEN, D.Sc., M.B., MAST. SURG., DIP. PUB. HLTH.,
F.R.S. AND F.R.P.S., EDIN., F. INST. CHEM., &C.

Borough Analyst.

J. CARTER BELL, ASSOC. ROY. SCH. MINES., F. INST. CHEM
F.C.S., &C.

Chief Inspector and Inspector under the Food and Drugs Act.

*WILLIAM DAWSON, ASSOC. SAN. INST.

Chief Clerk.

EDWARD H. CARTER

Junior Clerks.

WILLIAM RILEY. JOSEPH BENNETT.

Inspector of Meat, Fish and Slaughter Houses.

ROBERT WAGSTAFFE.

District Sanitary Inspectors.

*WILLIAM FITZGERALD.

*JOHN LEE.

*H. T. TAYLOR.

Inspector of Workshops and Bakehouses.

HENRY MOUNTFIELD.

Inspector of Back Passages and Ashpits.

ALBERT YOUNG.

**Inspector of Common Lodging Houses and
Houses let in Lodgings.**

WILLIAM SCOTT.

Disinfecting Inspector.

ISAAC TAYLOR.

Keeper of Disinfecting House.

JOHN NOBES.

Disinfecting Labourers.

ROBERT NIELD.

JOHN JACKMAN.

Those marked thus * have passed the examination of the Sanitary Institute.

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*To the Mayor, Aldermen, and Council of the
County Borough of Birkenhead.*

GENTLEMEN,

In submitting to you my Sixth Annual Report to the Health Committee on the Sanitary condition of Birkenhead, namely that for the year 1897,* I am happy in being able to record a mitigation in the death-toll of the year, as compared with that of other years; and I take this opportunity of expressing my belief that the continuous work which the Health Department has been doing, has had a distinctly beneficial effect upon the health and surroundings, and therefore upon the comfort of the inhabitants.

During the year just closed the Health Committee have carefully considered the detailed accounts which I have laid before them of some 8,400 nuisances, together with recommendations for their abatement, which have in every case been subsequently carried out; I need not therefore further refer to them here.

* Being the 20th Annual Report issued since the Incorporation of the Borough, and 34th Annual Report of the whole series.

It again gives me great pleasure to record my indebtedness to my fellow officials in the Public Health Department (especially to Mr. William Dawson, the Chief Inspector), for the valuable and willing help they have given me at all times in carrying out the duties of my office, and to Mr. W. Riley for the assistance he has given in preparing this report.

In conclusion I can only offer once more my thanks to the Chairman and Members of the Health Committee for their uniform courtesy and kindness to myself, and to express a hope that the six years of my official work may not have been without some benefit to the Incorporated District.

I have the honour to be,

Gentlemen.

Your obedient servant,

R. SYDNEY MARSDEN,

Medical Officer of Health.

PUBLIC HEALTH DEPARTMENT,

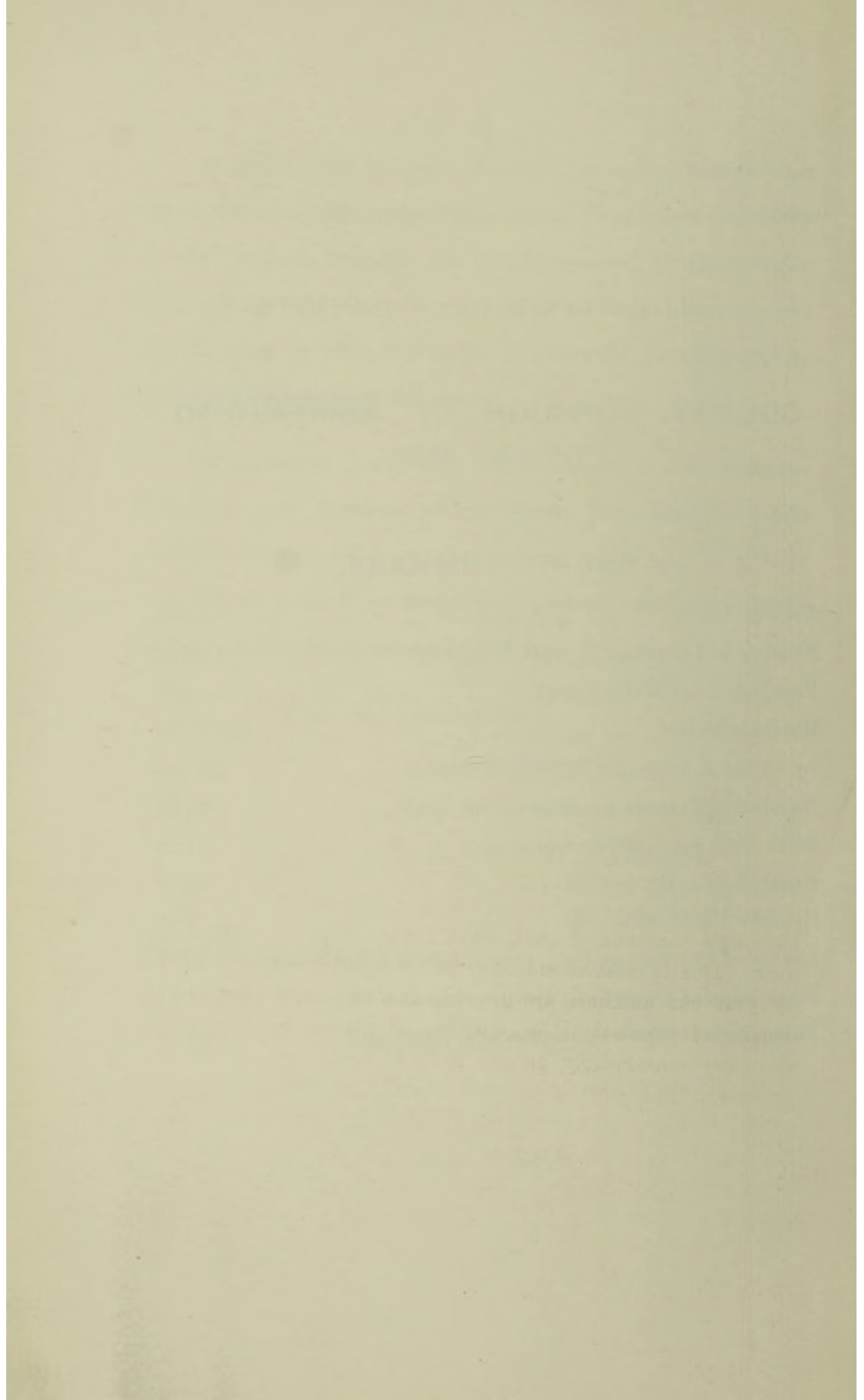
TOWN HALL, BIRKENHEAD,

10th May, 1898.

COUNTY BOROUGH OF BIRKENHEAD
DURING 1897.

SHORT SUMMARY.

Area in Acres	...	.	...	...	...	...	3,850
Number of Inhabited Houses, Dec. 31st	...	...	...	...	...	...	19,656
Population (at Midsummer)	...	...	...	...	...	...	111,001
Rateable Value	...	..	..	...	...	...	£504,754
1d. in the £ yields for Sanitary Purposes	...	...	...	...	...	...	£2,103
Number of Persons per Acre	...	...	...	...	...	...	28·83
Birth Rate per 1,000 living	...	..	...	...	...	...	31·68
Death Rate do. do.	...	...	...	...	...	...	18·39
Zymotic Death Rate do.	...	..	...	...	...	...	2·63
Deaths of Children under 1 year of age to 1,000 Births	...	...	...	...	...	...	163·7
Percentage of Uncertified Deaths	...	...	...	...	...	...	1·12
Percentage of Children successfully Vaccinated	.	...	...	...	...	...	86·32



THE SANITARY CONDITION
OF THE
COUNTY BOROUGH OF BIRKENHEAD
DURING 1897.

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

The records of the year 1897, which are herewith submitted, show a steady improvement in the health of the Borough. At no period since the year 1881 has the annual rate of mortality in the town, taken as a whole, been so low as in the year just closed, with the single exception of 1894, when it was almost the same as this year. This is most satisfactory, for we must remember that year by year our numbers are growing at a very rapid rate, and the density of population, *i.e.*, number of persons per acre, is consequently considerably greater than in former years, and this increase in the density of our population is one of the chief factors which militate against the maintenance of the people's health. It is only by the most careful watching of the sanitary surroundings of the houses of the people in the poorer districts that we are able to compensate to some extent the dangers which necessarily accrue with the ever increasing density.

It is just twenty years since the incorporation of the Borough, the population at that time being 77,260, and the density of the population, averaged over the whole incorporated area, 20·06 per acre. The population at the middle of the year 1897 was 111,001, giving a density of 28·83 per acre over the whole Borough. But great as this increase is in the General Statement, it really does not convey an accurate idea of the true state of things, because it is chiefly in certain parts of the town that the greatest increase has taken place, and the suburban and semi-rural districts of Oxtan, Claughton and Bebington, have not increased in anything like the proportion that the Townships of Birkenhead and Tranmere have done. It is therefore in these two latter districts that the pressure of crowding is most felt. Thus in 1878 the density of population in the township of Birkenhead was 39·33, whilst it is now 50·62 per acre, and in the township of Tranmere it is now 31·83 per acre as against 17·64 in 1878.

The following table shows the comparative figures for the different townships for 1878 and 1897.

	Estimated Population.		Number of Persons per acre.		Death-rate per 1000 per annum.	
	1878	1897	1878	1897	1878	1897
Birkenhead Township	50336	64792	39·33	50·62	22·3	19·6
Tranmere „	18906	34104	17·64	31·83	17·7	15·3
Claughton „	2854	3902	6·50	8·89	8·7	7·9
Oxtan „	3056	4923	3·75	6·04	10·7	6·5
Bebington „	2108	3280	8·56	13·31	12·8	7·9
Whole Borough	77260	111001	20·06	28·83	21·4	18·3

Had the death-rate in Birkenhead during the nineteen years, 1878-96, been at the same rate as that for 1897, some 2,840 persons would have been living on the 31st December, 1897, who had died during that period of time.

In the succeeding pages of this Report will be found details of the various agencies in operation during the year for the

improvement of the health conditions of the people, with which we are combating, as far as possible, the terrible and unnecessary waste of human life which is constantly going on in our midst.

THE WORK OF THE PUBLIC HEALTH DEPARTMENT DURING 1897.

Ordinary Sanitary Operations. The ordinary sanitary operations of the Department have received unremitting attention. House-to-house inspections of the cottage property in the Borough have been regularly made. Gulleys 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.

Summary of Nuisances, &c.—The summary of nuisances investigated and dealt with during 1897, is as follows:—

Number of nuisances reported	...	...	...	1897 4982
Number abated without formal notice	...	...	...	308
Number of formal notices given	...	...	...	4674
Number abated after formal notice and without proceedings	...	...	...	4666
Number of cases in which proceedings were taken for ordinary nuisances...	...	...	...	8
Number abated after proceedings...	...	...	...	8
Number of cases in which summonses were issued for non-payment of disinfecting expenses. Amounts and costs received in each case	...	...	...	1
Number of cases in which proceedings were taken for keeping a Common Lodging House in an improper manner, in accordance with Bye-Law 8	..	...	...	0
Disinfecting Notices	...	...	...	1352
Under Infectious Diseases (Prevention) Act	...	...	...	1208
Houses Let in Lodgings	...	...	...	112
Common Lodging Houses	...	...	...	0
Cleansing of filthy houses	...	...	...	6

A brief statement of the other measures taken in 1897, for correcting or getting rid of whatever appeared to be prejudicial to health is subjoined.

	1897
Sanitary defects reported by the Inspectors and referred for the action of the Borough Surveyor	258
Houses or parts of houses specially disinfected by sulphu- rous acid or other disinfectants	1444
Notice to whitewash and efficiently cleanse milkhouses, cowsheds and dairies, given and complied with	300
Offensive privies ordered for conversion into water-closets	185
Parcels of infected bedding and clothes disinfected at the Disinfecting House	523
Parcels of infected or discarded bedding and clothes destroyed	589
Carcases of dogs and cats, &c., removed from pools or waste land and buried	98
Deposits of putrid fish and other objectionable refuse removed	9
Total.....	<u>3406</u>

In addition to the above,

491 excavations were made for the purpose of testing the condition of house drains.

259 smoke tests were applied to drains of premises reconstructed under the supervision of this Department.

45 water tests were applied to drains.

282 smoke tests were applied to the drains of new buildings, in conjunction with the Borough Surveyor's Department.

36 library books were taken and destroyed from houses where infective diseases had been notified to exist.

It will be seen from the above that the work of the Department tends gradually to increase, in part due to the new Acts of Parliament which have come into force since 1st January, 1892, and also on account of the more thorough manner in which examinations are now made. All this tends to the advantage of the public, both as regards health and comfort, and every effort is made to keep down public or private nuisances dangerous to health.

District Inspections.—The following is a statement of the work done by the District Inspectors of Nuisances and the Disinfecting Inspector during 1897.

					Number of Visits and revisits made to insanitary property.
District A—Inspector Fitzgerald	...	...	...	...	6065
„ B— „ Lee	...	...	...	...	3500
„ C— „ H. T. Taylor	...	...	...	...	3756
Disinfecting Inspector Isaac Taylor	...	...	...	...	7880
					—
	Total	...	...	...	21201
					—

Smoke Nuisances.—Fourteen observations were taken of the smoke emitted from the factory and other chimneys of the Borough during the year 1897.

In one case the Health Committee felt called upon to prosecute the offender against the Acts, and in this case a penalty and costs were imposed by the magistrates.

The reduction of the smoke nuisance is one which is very carefully watched by the Inspectors, and much benefit has resulted in the past by their vigilance in this matter.

Inspection of Common Lodging Houses and Houses let in Lodgings.

The following is a statement of the work performed during the year by the Inspector of Common Lodging Houses and Houses let in Lodgings, viz:—

REGISTERED COMMON LODGING HOUSES.

					1897
Day Inspections	...	...	...	...	934
Night Inspections	...	...	...	...	118

There have been *no* additions to the register during the year, and at present the total number of registered lodging houses is 10.

There were three night visits paid to an unregistered house suspected of taking in nightly lodgers.

REGISTERED HOUSES LET IN LODGINGS.

Day Inspections	...	...	...	...	4175
Night Inspections	...	...	...	...	20

Thirty-eight additional houses were put on the register after being properly measured up, and duly certified as fit for the purpose. The total number of houses let in lodgings on the register at the end of 1897 was 529.

Four prosecutions had to be taken during the year for overcrowding—a fine of ten shillings and costs being imposed in two cases.

Overcrowding and Cellar-occupation.—Though the repression of overcrowding and cellar-occupation presents exceptional difficulties, much has been accomplished in the past year. Five cellar dwellings were reported by the Inspector, and in every case suppressed.

FACTORY AND WORKSHOP ACTS, 1878 to 1891.

In connection with the carrying out of the provisions of these Acts, the following is a statement of the work done by the Inspector during the year, viz:—

1320 visits have been made to workshops.

350 visits have been made to bakehouses.

50 workshops, including 2 bakehouses, have been placed on the Register during the year, making a total of 575 up to the end of 1897, of which 74 are bakehouses and 32 are confectioners' shops.

32 workshops have been closed.

9 workshops have been transferred to more suitable premises.

400 nuisances in connection with workshops have been reported and abated.

75 notices have been served for the abatement of nuisance arising out of defective drainage, and twenty for inefficient ventilation.

93 notices to cleanse and limewash the workshops have been served and complied with.

61 occupiers of workshops have limewashed their premises under inspection, but without waiting for the formal notice.

3 cases of overcrowding have been reported and stopped.

27 new workshops and removals have been notified to H.M. Inspector of Factories as referred to in section 3, sub-section 3, of the Act.

Lists of out-workers have been carefully kept, and notices in the form prescribed by the Secretary of State, as given in my report for 1892 (pp. 57 and 58), have been served when necessary.

Bakehouses.—The duties involved in carrying out the provisions of the Acts relating to the sanitary condition of bakehouses, have been put under a special Inspector, who also looks after the workshops in the Borough.

350 visits have been made to bakehouses during the year, and very special attention has been paid to the keeping of the bakehouses in a clean and healthy state, free from all effluvia from drains, privies, and other nuisances. Many sanitary

defects have been discovered and remedied. Great attention has also been paid to see that a proper water supply is provided for each bakehouse, and that efficient ventilation can be secured; whilst regular limewashing has been required and enforced in every case.

There has been a very great improvement secured by this systematic inspection.

“Shop Hours’ Act, 1892.”

In carrying out the provisions of this Act, the Inspector has paid 500 visits to different shops, and the occupiers’ names and addresses have been placed upon a Register specially kept for the purpose, together with the date of his visits. Printed notices in the following form have been served in every case.

THE SHOP HOURS’ ACT, 1892.

Notice is hereby given, pursuant to section 4, of the above-mentioned Act, that no young person (that is, a person under the age of **18 years**) may lawfully be employed in this shop for a longer period than **74 hours**, including meal times in any one week.

The Hours of Barmaids.

The Shop Hours’ Act gives power to the Sanitary Authorities to restrict the hours of barmaids also to 74 hours per week. In some hotels, as I have remarked in former years, these girls are required to follow their occupation for upwards of 100 hours a week, which is altogether too long. I would again call attention to the fact that I consider it desirable that the benefits of the Act should be extended to these girls, and recommend the matter to the serious consideration of the Authority.

Bakehouse Act, 1896.

Under the provisions of this Act, 25 under-ground bakehouses have been scheduled as not being in use on the 1st of January, 1896, and if any of them should again be brought into use, proceedings will be taken for their immediate closure.

Laundries.

90 visits were made during the year to the 18 laundries at present on the Register.

Ashpits, &c.—In connection with this subject I may say that the question as to the number of privies and compound middens in the Borough has been carefully gone into, and it was estimated that at Midsummer, 1893, the approximate number still in existence within the Borough was about 2721.

The Health Committee has been dealing with these middens year by year as opportunities have arisen, and during the past year 185 have been converted into water closets and dry ashpits, properly covered in and ventilated, and provided with efficient doors and fastenings.

Since the above number of 2,721 compound middens was estimated, there have been 1815 conversions ordered; thus leaving a balance of 906 remaining to be dealt with at the end of the year.

Public Urinals.—From time to time I have called the attention of the Committee to the insufficient accommodation in the form of public urinals which is provided in the borough; and which leads to the objectionable use of many passages and other places for such purposes, creating thereby a serious nuisance and a number of insanitary spots which ought not to exist if the subject was properly grappled with.

I am glad to say that some slight effort has been made to provide these conveniences, but considerably more will have to be done in this direction before the town is at all adequately provided for.

Water Supply.

It is important for the health and well-being of the community that a proper and full supply of water should be obtainable. I have, therefore, thought it desirable to ascertain

the amount of water supplied to the population for different purposes, and have obtained the information with regard to Birkenhead for the period extending over the last thirteen years.

It will be seen by referring to the following table that at the present time the average supply per head per day is no less than seventeen gallons, a very satisfactory amount.

The quality of the water supplied is also excellent, and is obtained from the new red sandstone at three different pumping stations from an average depth of 207 feet.

I am indebted to the Water Engineer (Mr. W. A. Richardson, C.E.) for the following table of extracts from his Annual Reports, showing at a glance the amount of water delivered in the townships of Birkenhead, Claughton, and Tranmere, for various purposes, for the year ending 25th March, 1885, to March 25th, 1897.

	Sewer Flushing	Street Watering	Trade per Meter	Work- shops	Water for domestic use	Calculated population for Birken- head, Claughton and Tranmere townships	Average rate per head per day of popula- tion for domestic purposes	Average rate per head per day of popula- tion for domestic use, allowing 5% for slip of pump
YEAR	Gallons	Gallons	Gallons	Gallons	Gallons		Gallons	Gallons
1885	1746180	6990300	149940500	250000	650078826	84478	21.08	*19.61
1886	1822240	6295900	135378100	250000	573425110	85877	18.29	*17.01
1887	1832410	5134900	147510000	250000	563700726	87276	17.69	*16.46
1888	1936520	8987820	161113600	250000	527263758	88675	16.24	*15.11
1889	1409160	4254400	147525700	250000	547706280	90074	16.65	15.82
1890	2251100	5757700	161820400	250000	567655019	91473	17.00	17.85
1891	1900430	5130700	170173800	100000	617870234	92872	18.22	+17.31
1892	2007840	5018900	191164230	100000	616302947	94271	17.86	16.97
1893	2061070	6944300	196346950	100000	657043827	96145	18.72	17.79
1894	2245820	11120200	195420200	200000	690494922	97822	19.33	18.37
1895	2308470	8454160	204828800	500500	728536688	99522	20.05	19.05
1896	4614300	11146600	218323200	2500500	690390427	100776	17.33	16.47
1897	8059180	9052210	230771100	500500	681727998	102798	18.16	17.26

*Allowing 7% for slip of pump.

+In consequence of 6 weeks continued frost there was an extra delivery of 32,308,000 gallons. If this is deducted from the total for domestic supply the rate per head per day would be 17.27 gallons, or allowing 5% for slip of pump, 16.41 gallons.

The following analysis of the different waters supplied to the Borough may be of some interest.

UNIVERSITY COLLEGE,
LIVERPOOL.

I have analysed the sample of water received from J. W. M. Richardson on the 18th day of October, 1897, with the following results, expressed in parts per 100,000.

Mark and denomination of the sample.	Spring Hill.	Flaybrick Hill.	Borough Road.	Prenton.
Total solid matter in solution	26·8	28·8	27·4	30.
Organic Carbon	Minute traces only in all cases.			
Organic Nitrogen				
Ammonia	·003	·004	·002	·003
Ammonia from Organic matter by distillation with alkaline permanganate.	·006	·004	·001	·002
Nitrogen as Nitrates	·337	·411	·411	·389
Combined Chlorine	4·2	7·8	3·9	3·75
Hardness	13·3 ° [or 16·7]	11·7 ° [or 20·5]	15 ° [or 16·3]	16·7 ° [or 20]
Oxygen absorbed in 15 minutes	·001	·000	·000	·001
„ „ in 3 hours	·004	·004	·004	·001

As witness my hand, this 23rd day of October, 1897.

J. CAMPBELL BROWN, D.Sc.

The samples are all good for domestic use. As far as bacteriology is concerned, the Spring Hill Well is most perfect and the Borough Road the next, but none are bad.

In my opinion Flaybrick Hill will be the first to become doubtful.

25TH OCTOBER, 1897.

P.S.—There is much magnesian hardness in these waters. When that is the case, it is a doubtful question how the hardness should be stated.

The higher figure represents the true equivalent of the magnesium salts and other salts in terms of calcium carbonate. But there is a false limit lower down, which shows when the soap will give a lather before all the hardening salts have been decomposed. I give both figures. The lower compares with what you have.

9 HACKINS HEY,
LIVERPOOL, OCTOBER 23RD, 1897.

Dear Sir,

We have carefully examined the four samples of Water sent to us on the 18th inst., marked as under, and have now to report as follows:—

All the samples were bright and clear, without taste, colour, or odour. The following are the results of our analysis:—

IN 100,000 PARTS OF WATER.

	Oct. 18. Sample of Water as pumped from Spring Hill Water Works	Oct. 18. Sample of Water as pumped from Flaybrick Hill Water Works.	Oct. 18. Sample of Water as pumped from Borough Road Water Works.	Oct. 18. Sample of Water as pumped from Prenton Water Works
Total solids dried at 212° F	28·00	28·80	25·60	30·00
consisting of—				
Carbonate of Lime	9·20	8·40	10·40	14·80
Carbonate of Magnesia	0·84	0·67	2·18	1·84
Carbonate of Soda	Nil	Nil	Nil	Nil
Sulphate of Lime	Nil	Nil	Nil	Nil
Sulphate of Magnesia	2·47	1·23	2·78	1·85
Sulphate of Soda	Nil	Nil	Nil	Nil
Nitrate of Magnesia	2·22	1·32	1·43	1·32
Chloride of Calcium	Nil	Nil	Nil	Nil
Chloride of Magnesium	1·13	2·56	1·26	1·07
Chloride of Sodium	5·39	9·48	4·53	4·77
Iron	Trace	Trace	Trace	Trace
Water of Hydration, &c.	6·75	5·14	3·02	4·35
Free Ammonia	0·001	Trace	Trace	Trace
Albuminoid Ammonia	0·002	0·001	0·001	0·001
Nitrogen in Nitrates and Nitrites	0·42	0·25	0·27	0·25
Lead and Copper	Nil	Nil	Nil	Nil
Temporary Hardness	5·04°	4·34°	7·00°	9·80°
Permanent Hardness	5·39°	5·32°	5·32°	4·69°
Total Hardness	1·043°	9·66°	12·32°	14·49°

These results indicate, in our opinion, that all these samples are satisfactory for drinking and domestic purposes.

We are,

Yours very truly,

A. NORMAN TATE & CO.

W. A. RICHARDSON, Esq., C.E.,
WATER ENGINEER,
MUNICIPAL OFFICES,
BIRKENHEAD.

A sample of the "Spring Hill" Water was sent to "The Clinical Research Association," 1 Southwark Street, London Bridge, S.E., on the 30th November, 1897, and a report thereon received from them giving a full analysis of the sample, and the following further remarks, viz:—

"This is a soft water of great organic purity. It is an admirable supply for drinking purposes and general domestic use."

"Of the 8° of total hardness somewhat less than two-thirds are due to lime salts, and rather more than one-third to magnesia salts. On boiling only very slight precipitation occurs, the permanent hardness consisting mainly of sulphates of lime and magnesia, the former being in excess of the latter."

It will be seen from the above different analyses that the water supply in Birkenhead is of exceptional purity, and altogether most satisfactory from the public health point of view.

Seizure and Destruction of Unwholesome Meat, Fish, and Vegetables.

The Meat and Food Inspector, Mr. Robert Wagstaffe, has furnished the following particulars of Meat, &c., unfit for human food, seized and destroyed during 1897.

The total number of seizures made was 1618, being 411 more than the number of seizures last year. The weight of the meat taken amounted to 402,652 lbs., being 124,662 lbs. more than was seized last year, and above the average of the last few years. This amount was made up as follows:—

	lbs.
81 $\frac{3}{4}$ carcasses of beef	weighing 34,458
Portions of beef.....	„ 8,053
2182 calves	„ 88,004
Carried over	<u>130,515</u>
	lbs.
Brought over.....	weighing 130,515
Portions of veal.....	„ —
111 sheep and lambs	„ 7,429
Portions of sheep and lambs	„ 126
21 pigs	„ 2,442
Portions of pigs.....	„ 415
Hams and bacon	„ —
2 goats.....	„ 88
Offal (<i>i.e.</i> , liver, lung, tongues, hearts, spleens or melts, kidneys, tails, midriffs, feet, &c.	„ <u>261,637</u>
Total of meat taken in 1897.....	<u>402,652</u>

In addition to the above, there were also seized 244 lbs. of bad fish, 35 rabbits, 1 duck, 12 cabbages, 120 lbs. of apples, and 28 lbs. of onions.

As in all recent years, a considerable proportion of the meat seized was on premises in connection with the Foreign Animals Wharf, Woodside.

An analysis of this return shows that out of the total amount of meat, &c., taken during the year, the relative proportions from different places is as follows:—

WOODSIDE AND WALLASEY LAIRAGES.

				lbs.
Amount taken	{	Meat	... ..	132,288
		Offal	... ..	258,688
Total...		... ..	...	390,976
Amount to which the Inspector's attention was called by the butchers				13,107
Balance seized				377,869

TOWN ABATTOIRS AND SHOPS.

			lbs.
Total Amount taken at the Abattoirs...			8,975
„ taken from Shops		...	173
			9,148
Amount voluntarily surrendered	...	..	3,833
Balance seized	...	...	5,315

There were 1,403 seizures made at Woodside and Wallasey Lairages and Stage, and 215 seizures at the Abattoirs and Shops. Out of this total of 1,618 seizures, the Inspector was asked to examine the meat in 42 cases, and on no less than 19 occasions out of these 42 the same butcher asked for the examination to be made, or sent the meat for destruction; so that with the exception of this one individual (which will account for more than half the amount voluntarily surrendered at the Abattoirs), the Inspector was only asked to examine the meat on 23 other occasions during the year; or putting the matter into weights, it will be seen that 16,940 lbs. were voluntarily given up out of a total of 402,652 lbs., or about 4·2 per cent of the whole amount.

The whole of the bad meat seized is dealt with at the Old Potteries, Seacombe, without creating noticeable effluvia; in accordance with an arrangement entered into in February, 1887.

Six applications were made to a Justice for an order to destroy diseased or unsound food (under the Public Health Act, 1875, clause 117) and granted in every case. Six persons were summoned before the magistrates for exposing for sale food unfit for human consumption, and convictions obtained in five cases, and one summons was withdrawn on payment of costs (15/-).

Tuberculosis.—During the year 30 carcasses of beasts, weighing 22,062 lbs., 18 carcasses of pigs, weighing 2,012 lbs., and 1 calf weighing 130 lbs., portions of mutton and pork, 321 lbs., and 5,766 lbs. of offal were seized and destroyed through being affected with tuberculosis; the total amount weighing 30,291 lbs.

The following tables having reference to the subject of tuberculosis may also be interesting:—

Tranmere Abattoirs.

Year.	Number of Cattle Slaughtered.	Number affected with Tuberculosis.	Number of Cows affected.
1892	809	33	30
1893	404	8	8
1894	443	10	9
1895	757	15	12
1896	685	5	5
1897	557	11	9

Tranmere Abattoirs.

Year.	Estimated Number of Cattle slaughtered from Cheshire and Wales.	Number affected with Tuberculosis.
1892	409	33
1893	300	8
1894	243	10
1895	357	15
1896	285	5
1897	333	11

At the Abattoirs there were 4,174 pigs killed, 57 of which were affected with tuberculosis; 27 of these coming from Cheshire, and 30 out of Wales. In the case of sheep but very few are affected; thus in 1895 there were 11,311 sheep killed, not one of which was affected with tuberculosis; whilst in 1896 only 8 were affected out of a total of 11,120, and in 1897 there were 10,500

sheep and lambs killed, not one of which was affected with tuberculosis; there were also 626 calves slaughtered, 3 of which were affected with tuberculosis, all of these coming from Cheshire.

Woodside and Wallasey Lairages.

Year.	Number of Cattle Inspected by us.	Number affected with Tuberculosis.	Number of Carcases taken for Tuberculosis.	Number of cases where only the offal or other parts were taken.
1894	202,047	4	2	2
1-95	178,798	11	7	4
1896	223,014	53	12	41
1897	241,717	113	26	87

of these 113 animals affected with tuberculosis, 12 were from the United States, 18 were from Canada, 83 were from South America.

“Proceedings taken under the Sale of Food and Drugs Acts, 1875 and 1879, and Margarine Act, 1887.”

The Chief Inspector of Nuisances (Mr. William Dawson) gives the following summary of proceedings taken under these Acts during 1897 :—

The total number of samples taken during the year was 111, viz. :—Butter 39, Cheese 3, Coffee 5, Lard 13, Milk 40, Mustard 6, Pepper 3, Spiritus Ætheris Nitrose 1, and Spiritus Chloroformi 1.

Out of the above 5 samples of Butter, 3 of Coffee, and 6 of Milk were reported adulterated by the Public Analyst, and proceedings were taken in respect of 4 samples of Butter, 3 of Coffee and 3 of Milk, the results of which are as follows, viz :—

Quarter Ending.	No.	Article asked for.	Amount of Adulteration.	Penalty Imposed in addition to Costs.
1897.				£ s. d.
March 31	61	Milk	20 per cent. of water	0 8 0
June 31	79	Milk	Robbed of 35° of cream	Dismissed on
“ 30	82	Milk	Robbed of 24° of cream	Payment of Costs.
December 31	109	Coffee	60 per cent. of Chicory	0 1 0
“ 31	114	Butter	Margarine	0 3 0
“ 31	118	Butter	Margarine	0 3 0
“ 31	119	Butter	Margarine	0 3 0
“ 31	128	Butter	Margarine	0 12 0
“ 31	134	Coffee	25 per cent. of Chicory	0 10 0
“ 31	135	Coffee	10 per cent. of Chicory	0 1 0

As I have repeatedly said, the penalties in these cases are totally inadequate to the offences, and seem to me to make our inspection of the food supply little better than a farce—a most unsatisfactory state of things.

The Milkhouses.—The regulation of dairies, cowsheds, and milk-shops, and the supervision of milk-sellers, has had systematic attention for a number of years. Special care is taken that the ventilation, lighting, cleansing, draining, and water supply of premises used for the milk-trade are thoroughly efficient. Towards the close of the year 1888, new regulations for the more efficient control of the trade were drafted, and these were approved and made by the Town Council, acting as the Local authority for the Borough, on January 2nd, 1889. A copy of these regulations was appended to the Report for 1888, and printed copies are supplied free to dairymen, milkshop keepers, &c. The register of milk-sellers is revised week by week. The total number of milk-shops is 155, in addition there are 25 cowsheds, and 45 farmers resident outside the Borough, registered to purvey milk inside the Borough.

Twice every year notice is sent to all the milk-sellers requiring that the walls and ceilings of every room in the occupation of Registered Milk Sellers, used for storage or sale of milk, shall be lime-washed twice every year, that is to say, in March and September; but if the walls are painted, then they must be washed and thoroughly cleansed twice every year, in March and September.

Meteorological Results.

By way of introduction to the remarks it is proposed to make on the noteworthy features of the meteorology of the year, the following tabular statement is submitted of the mean temperature and atmospheric pressure, and the amount of rainfall in each month of 1897. It has kindly been prepared by W. E. Plummer, Esq., M.A., F.R.A.S., Director of the Observatory, Bidston Hill, Birkenhead, who also furnishes particulars weekly of the daily observations taken under his directions, from which Table IV. in

the appendix is compiled, and also the information on which the remarks with reference to meteorological conditions and epidemics are based.

1897				Mean Tempera- ture	Mean Barometer	Rainfall 1 ft. above ground
				o	Inches	Inches
January	..	..	..	35.2	29.913	1.230
February	..	..	..	42.5	30.028	2.072
March	..	..	..	43.9	29.566	2.348
April	..	..	..	45.1	29.833	2.256
May	..	..	..	50.7	29.963	1.050
June	..	..	..	58.5	29.999	2.674
July	..	..	..	61.4	29.998	0.688
August	..	..	..	61.5	29.750	3.583
September	..	..	..	54.0	29.958	4.189
October	..	..	..	51.2	30.132	1.713
November	..	..	..	46.8	30.152	3.701
December	..	..	..	41.8	29.823	3.076

The meteorological results show as follows :—

Barometer.—The mean barometer of 1897 (29.920 inches) was lower than in recent years. The monthly mean was high in February, June, July, October and November. It was low in March, April, August and December. The highest reading during the year was on the 20th, 21st and 22nd November, when 30.69 inches was reached. The lowest barometer touched was 28.57 on March 3rd.

Temperature.—The mean Temperature in 1897 was 49.47 degrees F., about the mean yearly temperature in the locality. The severest weather was experienced in the first quarter and last month of the year. There was freezing, more or less, on eighteen days in January, three days in February, one day in March and one in April, and on four days in December. The lowest temperature reached at any time during 1897 was 25.7 degrees F. on January 22nd. The highest temperature reached was 84.4 degrees F. on the 4th of August.

Rainfall.—The rainfall in 1897 (28.517 inches) was a little higher than last year, and slightly above the average. The number of hours at which rain fell during the year was 779 as

compared with 617 last year, which is above the yearly average. The heaviest fall on any single day was on November 30th (1·847 inches.)

Wind.—The wind force in 1897 was at a rate of 16·5 miles an hour, somewhat higher than last year, but about the local average. The most rapid motion of air during any single hour of the year was on November 28th—on this day the rate of wind per hour was from 20 miles to 70 miles. The rate for the whole twenty-four hours of the day was 998 miles, giving a mean hourly motion of air of 41·6 miles. There were eighteen hours in the year in which there was no wind—these calm hours occurred on January 12th and 18th, February 6th, 7th, 10th and 16th, May 25th, June 5th, July 10th and 11th, September 12th and November 23rd: 43·2 per cent. of the winds were westerly, including due south, a percentage below the average.

Humidity of the Air.—The mean difference between the wet and dry bulb of the thermometer in 1897 was 46·15 less than in the last year and the average.

Cloud.—The proportion of cloud to clear sky is estimated twice daily. In 1897 the proportion was 66·3 per cent. This percentage is less than the mean proportion.

The connection between Meteorological Conditions and Epidemics.—In endeavouring to trace any connection between Meteorological Conditions and Epidemics, it is obvious that there are only two circumstances likely to have any effect. First, temperature, and secondly, rainfall or humidity; and with regard to the first, since the temperature curve will always have a maximum in the summer, and a minimum in the winter, it seems more important to consider the *variations of temperature from the normal condition* than the absolute temperature itself. Exceptional circumstances cannot be explained by ordinary phenomena, and the weekly variations of both temperature and rainfall from the regular amounts have therefore been tabulated. These variations are set down in the following table.

Weekly Return of Cases of Scarlet Fever and Measles notified
during 1897, and the weekly variations of Temperature
and Rainfall.

No. of week since Jan. 1st, 1897	Excess of rain in inches.	Excess of temp. in degrees F.	Number of cases of scarlatina reported.	No. of cases of measles reported
	in.	°		
1	-0.30	-1.4	20	1
2	-0.30	-3.6	21	3
3	-0.49	-4.9	19	3
4	-0.16	-6.0	18	4
5	+1.25	-5.0	24	3
6	-0.22	-0.8	9	5
7	-0.24	+1.4	13	2
8	-0.28	+6.9	11	3
9	+0.25	-0.2	7	7
10	-0.10	-1.7	4	3
11	+0.16	+1.1	1	7
12	-0.28	+8.4	12	9
13	+0.30	-1.2	6	9
14	0.00	-5.0	4	16
15	+0.44	-0.2	8	18
16	+0.49	-2.2	5	12
17	-0.26	+0.3	4	36
18	-0.13	-2.0	7	35
19	-0.32	-3.7	9	28
20	-0.40	+1.8	4	41
21	+0.05	+1.7	15	39
22	+0.35	+0.3	15	91
23	-0.24	-0.2	3	21
24	+0.45	+0.7	7	72
25	-0.08	+0.1	3	45
26	-0.16	+0.3	3	76
27	-0.41	-3.7	3	41
28	-0.75	+1.1	7	62
29	-0.69	+1.9	4	40
30	-0.45	+1.9	4	32
31	-0.49	+8.1	8	27
32	+0.31	-0.9	5	21
33	+0.50	-0.9	14	21
34	-0.11	-1.7	9	7
35	+1.25	-1.8	5	0
36	+0.39	-6.0	17	7
37	-0.44	-1.5	21	11
38	-0.65	-2.0	14	11
39	-0.30	+1.0	21	9
40	-0.35	-0.4	12	12
41	+0.14	-1.2	17	8
42	0.78	+5.6	19	5
43	-0.87	+1.5	14	3
44	-0.85	+1.9	18	10
45	-0.50	+3.8	24	5
46	-0.05	+4.9	8	18
47	-0.28	+3.6	24	29
48	-0.27	+1.9	21	35
49	+1.47	+1.3	16	43
50	-0.07	+4.4	23	22
51	-0.58	-0.5	19	25
52	-0.21	+2.6	28	33

Relative Mortality of different portions of the year.—The year's meteorology naturally introduces the next subject to be considered, viz :—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, 310 were entered to the first quarter, 296 to the second, 392 to the third, and 303 to the fourth; of the sum of the deaths in Tranmere and Oxton, 138 appear in the first quarter, 107 in the second, 151 in the third, and 160 in the fourth. In Bebington the numbers of deaths registered in the four quarters were respectively 7, 7, 3, 9; and in the Union Hospital and Workhouse the numbers 40, 42, 40, and 37. Expressed in death rates per thousand living, the mortality of the whole Borough in 1897, was 17·8 in the first quarter, 16·2 in the second quarter, 21·1 in the third quarter, and 18·3 in the fourth quarter.

Open Sewer-Ventilators in the Road.

During the year 1897 the number of complaints received regarding nuisances arising from the effluvia from the “sewer-ventilators,” which form a direct communication between the public sewers and the streets, has again been very large.

Year after year I have expressed the opinion that the number of these openings is far beyond our requirements, and that in the narrower streets they furnish a distinct danger, and should be abolished altogether. Since writing my last report, I have learned nothing to alter the opinions which I then stated, but am more convinced than ever that they are a nuisance. I would suggest that the whole of these sewer-ventilating grids be entirely closed, and all interceptors between house drains and the sewers removed, every ventilating shaft attached to the house drains would then act as a ventilator for relieving the gaseous pressure (if any) in the sewers, whilst it would afford absolute immunity from the danger of forcing the house traps.

I am told, by way of objection to this plan, that it is necessary to have these street openings for the purpose of keeping the sewers ventilated, so that the sewer scavengers can go into the sewers with safety.

I would reply to this, that there are towns (Bristol for example) in which there are no such openings—and, further, if it is necessary to clear the sewer of gases before the scavengers enter them, this could be accomplished by having manholes with tight-fitting lids at the necessary intervals, which could be opened, as occasion required, for the purpose of ventilating the length of sewer which had to be examined or cleaned. As a matter of public health, however, I consider these openings most objectionable, and a distinct danger.

The Refuse Destructors.—In all large towns the disposal of street sweepings, midden refuse and other non-manurial rubbish, becomes an increasingly difficult task as the population grows in density. This difficulty had been felt in Birkenhead for some time, and as far back as 1892 the Health Committee determined to grapple with it by erecting furnaces for its destruction.

There are now two Refuse Destructors, one in New Chester Road and one in Livingstone Street.

The refuse from the ashpits and shop garbage of all kinds is here taken to be destroyed, and the supply being constant, the fires are practically never allowed to go out. Each destructor consists of twelve cells, each cell burning a little over six tons a day, and thus giving an average for each destructor of about 75 tons per day of twenty-four hours.

The residue left after the burning should be, roughly speaking, about one-third of the whole bulk treated. Part of this residue is mixed with lime, &c., and converted into mortar, which finds a ready sale at 6/6 per ton, and the demand is equal to all we can produce with our present plant of two pans. The remainder of the residue not so used has to be carted away, but having been heated red hot and thus rendered innocuous, it is suitable for filling up pits and other purposes, for which the dry ashpit refuse would be totally unfitted.

The Disinfecting House.—Good service continues to be rendered by the Disinfecting House in Prince Edward Street. Mattresses, palliasses, beds, pillows, bolsters, woollen clothing, and fabrics from infected rooms are brought here and disinfected by super-heated steam. The bedding and clothing are fetched and delivered by the Corporation officers in light covered vans provided for the purpose. Occasionally, when the bedding is exceptionally foul, it is destroyed at the disinfecting house furnace, and replaced or allowed for at the cost of the Authority. There is a man specially appointed to take charge of the apparatus; and a disinfecting inspector to supervise the disinfection of premises, the removal and delivery of bedding, &c.

PREVALENCE OF ZYMOTIC SICKNESS DURING 1897.

Notification of Cases of Dangerous Infectious Diseases.—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, gives facilities for supplementing the statement of the mortality from 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,	Fevers	{	Typhus,
Measles,			Typhoid,
German Measles,			Continued,
Scarlatina,			Relapsing,
Diphtheria,			Puerperal Septicæmia,
Membranous Croup,			Cholera.

The cases notified appear in the following return, showing that 2028 cases were notified during the year, being 1050 less in number than during 1896. Of the whole number 1979 were notified by duly qualified medical practitioners; 41 were notified by school attendance officers, such notifications being subsequently verified by the occupiers; and 8 cases were notified by the occupier only. This may be assumed to represent proximately the extent of the failure of compulsory notification.

The following Table gives the number of Notifications of Dangerous Infectious Diseases in each month of the year—

1897	Smallpox	Measles	German Measles	Scarlatina	Diphtheria	Typhus Fever	Typhoid Fever	Puerperal Fever.	Fever	Cholera	Croup	Total
January....	..	11	..	89	9	..	7	1	5	..	..	122
February	18	..	47	3	..	6	..	..	..	..	74
March	28	1	29	6	1	4	..	..	..	..	69
April	87	2	22	5	..	4	..	..	..	..	120
May	170	1	35	8	..	8	..	1	..	..	223
June	278	1	32	5	..	6	..	..	..	..	322
July	188	..	21	3	..	13	..	..	..	..	225
August	75	..	37	5	..	21	..	..	..	..	138
September..	..	37	..	75	3	1	23	3	..	..	..	142
October	30	..	71	8	..	18	1	..	..	..	128
November..	..	89	..	78	11	..	21	3	..	..	..	202
December	130	..	94	14	..	21	3	..	..	1	263
	..	1141	5	630	80	2	152	11	6	..	1	2028

and the next Table the number of cases of the different diseases notified in each year since 1882 when compulsory notification came into force.

The statement is as follows :—

Year	Smallpox	Measles	German Measles	Scarlatina	Diphtheria	Typhus Fever	Typhoid Fever	Fever	Croup	Cholera	Total
1882	..	615	..	152	9	99	86	25	..	1	987
1883	3	548	..	169	19	42	76	17	..	..	874
1884	131	941	..	277	13	17	74	9	..	1	1463
1885	24	1001	..	556	21	1	38	2	..	..	1643
1886	6	595	10	617	24	18	58	4	..	..	1332
1887	..	1334	12	914	21	8	142	4	..	..	2435
1888	..	819	4	438	36	13	234	2	..	..	1546
1889	..	1057	13	262	30	..	191	1	..	..	1554
1890	..	1620	17	247	35	64	182	1	..	..	2166
1891	..	524	38	180	28	38	197	2	..	..	1007
1892	12	1542	5	218	25	10	150	4	..	..	1966
1893	15	540	11	421	77	4	221	9	..	..	1298
1894	12	1818	16	379	133	7	194	6	..	..	2565
1895	3	258	32	430	142	3	192	12	9	..	1081
1896	..	2166	35	606	115	..	149	6	1	..	3078
1897	..	1141	5	630	80	2	152	17	1	0	2028
	206	16519	198	6496	808	326	2336	121	11	2	27023

Small-pox.—No case of small-pox occurred in the Borough during 1897.

Chicken-pox.—There was no death registered from this disease during the year.

Measles.—There were 1141 cases of measles reported during 1897, which is a much smaller number than occurred last year. There were a few cases notified in each month throughout the year, but the epidemic was at its height during May, June and July. 54 deaths were registered during the year.

German Measles.—There were five cases of German measles reported during the year, but no deaths from this disease.

Scarlatina.—Was prevalent during the whole year, 630 cases being notified during the twelve months, or some 24 more cases than occurred in 1896. The greatest number reported was during the first and last two months of the year. The disease was not confined to any one quarter of the town, but pretty evenly distributed over the whole Borough. The number of deaths, 21, was low in proportion to the number of cases reported.

Diphtheria.—Eighty cases of diphtheria were reported during the year, being thirty-five less than in 1896, and considerably less than in 1895. Of these no less than 24 died, a mortality of 17·3 per cent., or just 12 per cent. lower than last year, and of these 24 who died 19 were under 5 years of age at the time of death.

Croup.—There were six deaths attributed to croup, five of these being in children under five years of age.

Fevers.—The number of cases of fever notified in 1897 was 171, of these 152 were ascribed to Typhoid Fever, and 11 to Puerperal Septicæmia.

Typhus Fever.—There were 2 cases notified to the Sanitary Authority during the year, death occurring in both cases.

Typhoid Fever.—As previously stated there were 152 cases of Typhoid Fever noted during 1897, this disease being practically never absent from the town. The number of cases this year being however less than the average. The number of deaths 25, being the same as last year.

Simple Continued Fever.—No deaths were registered from this cause.

Puerperal Septicæmia.—Eleven cases were notified during 1897, and eight deaths occurred from this disease.

Diarrhœa.—The year has been marked by a considerable increase in the number of deaths from Summer Diarrhœa, 102 deaths being attributed to this cause, as compared with 71 of last year. Of the deaths 92 were of children under two years of age.

Influenza.—This is not one of the diseases notifiable under the Local Act, and consequently we have no direct means of knowing to what extent it prevailed in the district. There were, however, three deaths directly attributed to this cause.

Whooping Cough.—This also is not one of the notifiable diseases, and consequently we have here also no record of the number of cases occurring. There were, however, no less than 30 deaths registered under this head, being 24 less than last year, when it was also very prevalent.

Erysipelas.—This is also not notifiable. There were, however, six deaths attributed to it.

Cholera.—No case of cholera was known to the Sanitary Authority as having occurred in the district during 1897.

THE INFECTIOUS DISEASES HOSPITAL, Flaybrick Hill.

At the beginning of the present year a change in the management of the Hospital was initiated, and a special "Hospital Sub-Committee" appointed to visit and report fully to the Health Committee everything which it considers necessary regarding the administration of the Institution.

Formerly the Medical Officer of Health had sole charge of the buildings and of the staff, and everything had to be reported by him directly to the Health Committee, and although this system had worked in an eminently satisfactory manner, still it was thought desirable that a Committee should be appointed for the above purpose. This has proved very beneficial, and the wisdom of such a step will be obvious to everyone.

The following are the members of the Hospital Sub-Committee for 1897.

MR. ALDEMURAN WILLIAM GETLEY, *Chairman*.
 " " THOMAS SHAW.
 " " JAMES WOODCOCK.
 " COUNCILLOR H. L. PEARSON, M.R.C.S.
 " " EDWARD DENMAN.

Matron of the Hospital—MISS EMILY YEOMANS.

The Nursing Staff consists of five charge and ten assistant nurses.

The total number of patients treated in Hospital during the year was 285, an increase of 19 on the number treated last year. Out of this number 29 died, giving a death rate of 10·1 per cent., and when we consider the serious nature of the diseases, and the exhausted (almost dying) condition in which many of the cases are received, it is satisfactory to find that the death rate is comparatively low.

The Hospital contains 56 beds and 10 cots, but during a large part of the year these proved quite unequal to the wants of the town, and patients had to be repeatedly refused admission. Last year I asked that another ward might be provided, and this was granted by the Committee, and it was expected that the new pavilion would be ready for use by the end of July, but the year had closed without its becoming available. The floor space allowed for each bed is 156 superficial feet, and the air space per bed 2028 cubic feet.

The following table gives a summary of the cases treated in the Hospital during the year 1897.

DISEASES		M.	F.	Re-covered		Died	
				M.	F.	M.	F.
Scarlatina	{ remaining	..	13	13	13	..	..
	{ admitted	..	92	101	89	3	7
Typhoid Fever	{ remaining	..	1	..	1	..	..
	{ admitted	..	27	26	21	6	8
Diphtheria	" ..	..	2	6	2	4	..
Measles	" ..	..	2	..	1	1	..
Typhus Fever	" ..	..	1	..	..	1	..
Meningitis	" ..	..	1	..	..	1	..
Total	..	..	139	146	127	12	17

The case of Meningitis was sent in as Typhoid.

The Fever Hospital.

The old Fever Hospital in Livingstone Street, with its 23 beds, is still kept for use in case of emergency, or the sudden outbreak of serious cases which cannot be admitted into the New Hospital. This seems a wise precaution, as of course it is fitted up with all the necessary apparatus of a hospital.

AREA AND POPULATION OF THE BOROUGH.

Area.—The Borough has an Area of 3850 acres, or a little more than six square miles.

Population.—The population of the Borough of Birkenhead on the 30th of June, 1897, was according to the estimate of the Registrar-General 111,249, an addition to the estimated population on the 30th of June, 1896, of 1906 persons.

Before accepting this estimate as correct, and taking it as the basis of our calculations for the different birth and death rates, &c. in our vital statistics for the year, we must look closer into the matter and see whether this estimate corresponds with the estimate arrived at by other means from information obtainable within the Borough. If we do this we shall find that the Registrar-General's estimate for 1897 is too large by about 250.

The following are the statistics on which I make this statement :—

In 1891, at the time the census was taken, there were in Birkenhead 17,495 inhabited houses, with an average of 5·7 individuals per house, giving a population of 99,857. Since that time, however, there had been 1034 new houses built and 96 houses demolished, up to Midsummer, 1897, or taking the one from the other an addition of 938 houses to the total number in the Borough. To get at the actual number of inhabited houses at Midsummer, 1897, wants a little further calculation, thus :—

Number of inhabited houses at time of census	=	17,495
Number of uninhabited do. do.	=	1,545
Number of houses built since census less those demolished	=	938
<hr/>		
Total number of houses in the Borough, 30th June, 1897	=	19,978
Number of uninhabited houses, 30th June, 1897.....	=	504
<hr/>		
Total number of inhabited houses do.	=	19,474
<hr/>		

Allowing the same number of persons per house as was found to exist at the time of the census return, viz., 5·7, and multiplying this by the number of inhabited houses, we shall arrive at a more accurate estimate of the population than by the method adopted by the Registrar-General. In this way $5\cdot7 \times 19,474 = 111,001$ a difference of 250 on these two estimates.

In calculating the rates, &c., contained in the following tables, I have therefore taken this revised estimate as my basis.

Population and Area in Acres.—Density of Population.—The next table shows the population of the several townships forming the Borough as given in the census of 1891, and the estimated population at Midsummer, 1897, the area in acres, and the number of persons per acre, as follows :

TOWNSHIPS	Popula- tion at Census 1891	Population at Midsummer 1897	Area in Acres	Persons per Acre
Birkenhead	58287	64792	1279½	50·62
Claughton	3510	3902	438½	8·89
Tranmere	30680	34104	1071½	31·83
Oxton	4429	4923	814	6·04
Higher Bebington (part of)	2951	3280	246½	13·31
<hr/>				
Birkenhead Borough	99,857	111,001	3850	28·83

Uninhabited Property in the Borough.—I am indebted to the Chief Constable (Major Barker) for the particulars contained in the following table, showing the amount of uninhabited property in the Town during the year :

Return of Uninhabited Property in the Borough, 1896-97.

	District.	Private Houses	Shops	Cottages	Dock Cottages	Total
For the Half-year ending 31st December, 1896.	Birkenhead	45	28	153	..	226
	Claughton and Oxtou..	42	5	23	73	143
	Tranmere & Bebington	85	9	38	..	132
	Total for Borough..	172	42	214	73	501
For the Half-year ending 30th June, 1897.	Birkenhead	43	57	140	..	240
	Claughton and Oxtou..	53	1	24	69	147
	Tranmere & Bebington	105	13	70	..	188
	Total for Borough..	201	71	234	69	575
For the Half-year ending 31st December, 1897.	Birkenhead	44	62	152	..	258
	Claughton and Oxtou..	42	2	30	74	148
	Tranmere & Bebington	95	9	63	..	167
	Total for Borough..	181	73	245	74	573

It will be seen from the above that the number of uninhabited premises on the 31st December, 1897, was 72 more than that for the half-year ending 31st December, 1896, but the fact that 349 new houses were built during the year must be taken into account. The number of uninhabited and unoccupied houses on the 30th June, 1897, was 575.

The total number of inhabited houses on the 31st December, 1897, was 19,648.

The number of new houses built during the last seven years is 1212, as shown in the following table, for which I am indebted to the Borough Surveyor.

The total number of houses of all descriptions in the Borough on the 31st December, 1897, is approximately, 20,080; and the approximate estimate of warehouses, schoolrooms, &c., in the Borough is 1,268, as estimated by the Police Authorities.

Number of New Houses erected in the Borough, 1891-97.

January 1st to	December 31st,	1891	87
"	"	1892.....	99
"	"	1893	108
"	"	1894.....	139
"	"	1895.....	175
"	"	1896.....	255
"	"	1897.....	349

Total... ..1212

The number of houses demolished during the same period was 96.

VITAL AND MORTAL STATISTICS FOR THE YEAR.

Births and Deaths in Birkenhead.—During the year 1897, the returns of the local registrars recorded 3,517 births and 2,042 deaths in the Borough of Birkenhead. The natural increase in the population in 1897 was therefore 1,475. Of the births 1,713 were males and 1,804 were females; of the deaths 1,037 were males, and 1,005 were females.

The excess of births over deaths during the last six years is shown in the following table :—

	1892	1893	1894	1895	1896	1897
Births	3341	3431	3246	3304	3477	3517
Deaths	1967	2132	1915	2116	2116	2042
Excess of Births over Deaths	1374	1299	1331	1188	1361	1475

Further particulars as to the births and deaths in the Borough in 1897, that is to say, the number registered in each quarter of the year, and the number referred to each township, are given in the tables subjoined. The births and deaths in the premises belonging to the Union are entered separately.

BIRTHS	1st Qr.		2nd Qr.		3rd Qr.		4th Qr.		1897.		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Birkenhead	286	294	280	251	292	325	247	280	1106	1150	2256
Claughton	6	14	8	12	5	12	12	6	31	44	75
Tranmere	130	131	136	131	118	145	124	138	508	545	1053
Oxton	4	7	10	12	12	5	6	6	32	30	62
Bebington	5	2	2	6	5	4	5	2	17	14	31
Union Hospital	7	7	3	2	6	8	3	4	19	21	40
Birkenhead Borough ..	438	455	439	414	438	499	398	436	1713	1804	3517

DEATHS	1st Qr.		2nd Qr.		3rd Qr.		4th Qr.		1897		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Birkenhead	147	157	173	114	181	202	154	142	655	615	1270
Claughton	4	2	3	6	3	6	3	4	13	18	31
Tranmere	53	71	49	51	77	72	65	86	244	280	542
Oxton	7	7	3	4	1	1	7	2	18	14	32
Bebington	3	4	6	1	2	1	4	5	15	11	26
Union Hospital	25	15	25	17	21	19	21	16	92	67	159
Birkenhead Borough ..	239	256	259	193	285	301	254	255	1037	1005	2042

Birth-rates & Death-rates in Birkenhead.—The annual rates, per 1000 living, of births and deaths, for the whole incorporated area and the townships within it, appear in the next table.

1896	Annual Rate per 1000 Living	
	Births.	Deaths
Birkenhead	34·8	19·6
Claughton	19·2	7·9
Tranmere	30·8	15·3
Oxton	12·5	6·5
Bebington	9·4	7·9
Birkenhead Borough, including B. and D. in Union premises)	31·68	18·39

The birth-rate for 1897 is 0·3 per 1000 lower than last year, and 0·8 per 1000 lower than the average birth-rate during the ten years preceding. The death-rate is 1·1 per 1,000 lower than that recorded last year, and 1·5 per 1,000 lower than the average death-rate for the preceding ten years.

The death-rate of Birkenhead township being 4·3 per 1,000 living higher than the death-rate in Tranmere, and 11·7 per 1,000 higher than that of Claughton, is in part accounted for by the much greater density of population in Birkenhead. The death-rates of Oxton and Bebington being low is in part due to these being practically rural districts, to the easy circumstances of most of the inhabitants, and the large proportion of domestic servants and unmarried adults therein.

The next Table shews the population of Birkenhead as corrected from the complete census return, the density and the number of births, deaths, and zymotic deaths in past years since the incorporation of the Borough, and also the birth and death-rates deducible from these figures ; together with the figures for this year.

Year	Estimated Population at Midsummer	Persons per acre.	BIRTHS.		DEATHS.		ZYMOTIC DEATHS.	
			Number of Births	Birth rate per 1000 per annum	Number of Deaths	Death rate per 1000 per annum	Number of Deaths	Death rate per 1000 per annum
1878	77260	20.06	2932	37.94	1656	21.43	383	4.95
1879	79642	20.68	3112	39.07	1631	20.47	307	3.85
1880	82023	21.30	3048	37.16	1624	19.79	331	4.03
1881	84404	21.92	3059	36.24	1462	17.32	231	2.73
1882	85993	22.33	3156	36.70	1742	20.25	319	3.70
1883	87582	22.74	3145	35.90	1770	20.20	226	2.58
1884	89171	23.16	3459	38.79	1769	19.83	273	3.06
1885	90760	23.57	3224	35.52	1816	20.00	311	3.42
1886	92349	23.98	3218	34.84	1808	19.57	274	2.96
1887	93938	24.39	3161	33.64	2053	21.85	385	4.09
1888	95527	24.81	3082	32.26	1788	18.71	225	2.35
1889	97116	25.22	3207	33.02	1830	18.84	315	3.24
1890	98705	25.63	3302	33.45	2084	21.11	329	3.33
1891	100294	26.00	3286	32.76	2100	20.93	262	2.61
1892	102038	26.50	3341	32.74	1967	19.27	309	3.02
1893	103817	26.96	3431	33.04	2132	20.53	388	3.73
1894	105627	27.43	3246	30.73	1915	18.12	340	3.21
1895	107468	27.61	3304	30.74	2116	19.68	304	2.82
1896	108818	28.26	3475	31.93	2116	19.44	362	3.32
1897	111001	28.83	3517	31.68	2042	18.39	293	2.63

The proportion of deaths of Infants under one year to the births registered.—The proportion in Birkenhead Borough in 1897 was equal to 163.7 per 1,000, which is somewhat lower than the average (167.5) for nine years—1889-97—and much lower than that recorded last year, when it was 181. In the 33 great cities and boroughs in England and Wales, amongst which Birkenhead is classed, the proportion of deaths under one year to births registered, in 1897 was 177. It varied greatly in the different towns, ranging from 135 in Croydon to 262 in Preston.

Birth-rates and Death-rates in the 33 great towns in England.—In order that the birth-rates and death-rates of the Borough of Birkenhead in 1897 may be compared with the corresponding rates of the most populous cities and boroughs in England, the following table has been compiled from the Registrar-General's Quarterly Returns of Births, Deaths and causes of Death in London and the other great towns, 1897. The table gives the estimated population of the 33 large towns and the estimated number of persons per acre in each at Midsummer, 1897. The birth-rates and death-rates are for the 52 weeks ending 31st December, 1897.

33 Great Towns—Population, Persons to Acre, Births, Deaths, &c., for the Year 1897.

(As estimated by the Registrar General.)

CITIES AND BOROUGH.	Estimated Population at Midsummer 1897	Births.	Deaths.	Annual Rate per 1000 Living			Deaths from							Deaths of Children under one year of age to 1000 Births.	
				Births.	Deaths.	Principal Zymotic Diseases.	Deaths from								
							Principal Zymotic Diseases.	Small-Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.		Diarrhoea.
33 Towns	10992524	336740	209412	30.7	19.1	2.87	31479	18	6049	1967	3417	4453	1958	13617	177
32 Provincial Towns ..	6329355	230122	128469	31.2	19.7	3.06	19954	2	4120	1187	1156	2611	1365	9513	189
London ..	4463169	133618	80943	30.0	18.2	2.58	11525	16	1929	780	2261	1842	593	4104	159
West Ham ..	273682	8779	4273	32.2	15.7	2.62	714	..	140	30	101	99	48	296	172
Croydon ..	121171	3015	1579	25.0	13.1	1.43	173	..	17	12	8	31	9	96	135
Brighton ..	121401	2986	1823	24.7	15.1	1.64	198	..	17	12	12	25	22	110	144
Portsmouth ..	182585	4897	2951	26.9	16.2	2.53	462	..	35	11	28	64	43	281	168
Plymouth ..	97658	2773	1855	28.5	19.0	2.17	213	..	49	5	13	53	8	85	185
Bristol ..	232242	6430	3984	27.8	17.2	1.83	425	1	57	18	35	116	47	151	149
Cardiff ..	170063	5279	2534	31.1	14.9	2.19	372	..	75	17	90	34	21	135	151
Swansea ..	100309	2939	1583	29.4	15.8	1.36	136	..	45	10	11	42	7	21	140
Wolverhampton ..	87287	3054	1919	35.1	22.5	4.22	367	..	46	21	54	38	24	184	217
Birmingham ..	505772	16803	10889	33.3	21.6	3.88	1958	..	398	93	147	221	92	1007	214
Norwich ..	110154	3354	2062	30.5	18.8	2.21	243	..	3	11	10	47	32	140	194
Leicester ..	203599	6206	3586	30.6	17.7	3.13	637	..	14	71	73	82	39	358	205
Nottingham ..	232931	6717	4363	28.9	18.8	2.81	652	..	48	36	21	113	49	385	206
Derby ..	103291	2792	1651	27.1	16.0	1.91	197	..	17	10	9	22	26	113	168
BIRKENHEAD ..	111249	3507	2026	31.6	18.3	2.45	272	..	55	23	26	32	27	109	164
Liverpool ..	633078	22289	15384	35.3	24.4	3.83	2412	..	340	206	126	351	168	1221	200
Bolton ..	121433	3942	2660	32.5	22.0	4.02	486	..	215	23	6	41	25	176	186
Manchester ..	534299	17708	12306	33.2	23.1	3.81	2032	..	629	124	47	300	100	832	195
Salford ..	213190	7454	5083	35.1	23.9	5.50	1168	..	473	61	32	112	66	426	219
Oldham ..	145845	3793	2789	26.1	19.2	2.61	378	..	97	20	11	77	20	153	183
Bury ..	106132	3151	2065	29.8	19.5	3.98	420	..	141	5	60	63	19	132	220
Blackburn ..	131330	3625	2554	27.7	19.5	3.45	453	..	146	7	8	82	38	172	206
Preston ..	115103	3639	2796	31.9	24.4	5.64	648	..	318	5	4	30	35	256	262
Huddersfield ..	101454	2366	1659	23.4	16.4	1.50	150	..	27	32	20	21	15	35	131
Halifax ..	95747	2150	1574	22.5	16.5	1.39	134	..	48	21	9	9	16	31	140
Bradford ..	231260	5679	4024	24.6	17.5	2.22	510	..	81	9	15	43	31	331	179
Leeds ..	409472	12911	8118	31.6	19.9	2.80	1140	..	163	94	67	96	80	640	190
Sheffield ..	351848	12071	7438	34.4	21.2	3.49	1222	..	195	90	44	142	110	641	198
Hull ..	225045	7485	4166	33.3	18.6	3.25	731	1	24	61	32	56	56	501	181
Sunderland ..	142107	4905	2792	34.6	19.7	2.56	363	..	63	11	4	77	38	170	165
Gateshead ..	101070	3612	1842	35.8	18.3	2.33	234	..	50	17	8	31	20	108	172
Newcastle-on-Tyne ..	217555	6791	4141	31.3	19.1	2.09	452	..	74	21	25	61	34	217	178

Out of the whole number of cities and boroughs in this list nineteen had lower birth-rates and thirteen lower death-rates than Birkenhead. The birth-rate of the gross population of the great cities and boroughs was 0·9 per 1,000 living lower, and the death-rate 0·8 per 1,000 living higher than the corresponding rates in Birkenhead. The population of Birkenhead it will be noted is greater than nine on the list of great towns, and the density of population (persons per acre) is greater than in nineteen towns in the list.

The birth-rate of the 33 towns in 1897 (30·7) is lower than the mean rate of the ten preceding years, 1885-96, and same as last year. (30·7). The death-rate of the 33 towns in 1897 (19·1), is 0·2 per 1,000 higher than last year (18·9), but below the average rate in the preceding ten years (21·5).

Tabular Statements.—In the appendix to this report are tabular statements of the year's mortality within the Borough, classified according to the 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 of the town showing the boundaries of the wards, &c.

Table I. shows the deaths registered in the whole Borough during 1897, 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, 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, those turned sixty and under eighty, and those of eighty and upwards. Reference to this table will show that, of the gross local mortality for 1897, the deaths of infants under one year of age accounted for 576, those over one year but under five years of age 290, children and young persons for 116, adults 634, old people over sixty years of age 426. In the townships of Birkenhead and Claughton, 413 deaths occurred among infants, 216 in children over one and under five, 81 among children and young persons, 376 among adults, and 215 among old persons. In Tranmere and Oxtan the number of deaths of infants under one year was 155, of those under five and over one year was 71, of children and young persons 23, of adults 164, and of old people 143.

In Bebington Ward there was 1 death of infants under one year, 2 over one and under five years, 6 of children and young persons, 11 of adults, and 6 of old people.

The relative proportion of deaths, in 1897, among the 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 incorporated area, is readily shown in tabular form, thus :—

PERCENTAGE OF DEATHS AT CERTAIN AGES TO TOTAL DEATHS.	Under 1 Year	Age between			60 years and upwards
		1—5	5—20	20—60	
Birkenhead and Claughton	20·2	10·5	3·9	18·4	10·5
Tranmere and Oxtan	7·5	3·4	1·1	8·0	7·0
Bebington	0·04	0·09	0·2	0·5	0·2
Union Hospital and Workhouse	0·3	0·04	0·2	4·0	3·0
Birkenhead Borough	28·2	14·2	5·1	31·0	20·7

In this respect the local mortality compares favourably with the mortality in most great cities and boroughs. The local mortality for 1897 also compares favourably with the local mortality during the decade 1881-96. The percentages taken out for Bebington have little significance, the number of deaths being so small.

Table II. is the weekly register of deaths in the Borough of Birkenhead for 1897. 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. Table III. is a summary of the weekly register of deaths. Table IV. is a Weekly Condensed Register of Meteorological results. Table V. is a Lunar Monthly Table of deaths from all causes and Zymotic Diseases, with the rates per 1,000 per annum. Table VI. a street register of deaths. And Table VII. a register giving the description of those who died.

The Classification of Death Causes.—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 until within the last few years, which experience has shown to be well suited 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 it is necessary 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," "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 function 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 processes. Class V. groups together all deaths which are the evident and direct result of physical or chemical forces.

Of the 2,042 deaths registered in the Borough during 1897, 1,999 were ascribed to specified causes; that is to say 293 to zymotic diseases, 335 to constitutional diseases, 1,027 to local diseases, 287 to developmental diseases, and 57 to violence. The proportion of deaths from zymotic diseases to the whole number of deaths was thus 14·3 per cent. The proportions which 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 or pneumonia (which are closely allied to zymotic diseases) makes the proportion of deaths from zymotic diseases compare more favourably.

An accurate estimate of the relative mortality 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 1897 are the corresponding corrected death-rates for 1892 to 1896 and the mean of the corresponding corrected death-rates in the ten years 1881-90.

CLASSES	Annual Death-rate per 1000 Living						
	1881-90 Average	1892	1893	1894	1895	1896	1897
Zymotic Diseases	3·11	3·05	3·73	3·21	2·85	3·32	2·63
Constitutional Diseases	2·75	2·25	2·38	2·86	2·93	2·65	3·01
Local Diseases	9·63	9·53	10·01	8·40	10·23	9·51	9·25
Developmental Diseases	3·16	3·40	3·50	2·84	2·68	3·08	2·58
Violent Deaths.....	0·82	0·07	0·63	0·50	0·68	0·56	0·51

This table shows that the death-rate as regards zymotic diseases in 1897 was below the average of the last ten years by 0.50 per 1000. The constitutional death-rate was slightly above the mean. The death-rate as regards developmental diseases was much lower than the mean rate. The proportion of deaths due to violence was below the mean.

Deaths from Zymotic Diseases.—The deaths from zymotic diseases include 139 by what have been termed the chief zymotics (certain diseases belonging to the miasmatic order), viz: measles 54, scarlatina 21, diphtheria 24, membranous croup 6, fevers 27, and puerperal septicæmia 7. The remaining 154 were entered to what have been called minor zymotics (diseases less prevalent, less fatal, or less obviously zymotic in character), viz: quinsy 2, whooping cough 30, erysipelas 6, carbuncle 1, influenza 3, dysentery 1, diarrhœa 102, ague 1, syphilis 7, and stricture of urethra 1. The mortality from the chief zymotics in 1897 was equal to a death-rate of 1.25 per 1,000 living.

Relative Fatality of Chief Zymotic Diseases.

The following table shows at a glance the relative fatality of the chief zymotic disease for each year since the incorporation of the Borough.

Year	Deaths from Zymotic Diseases.								Death rate per 1000 living.							
	Smallpox	Measles	Scarlatina	Diphtheria	Whooping Cough	Typhus Fever	Typhoid Fever	Diarrhœa	Smallpox	Measles	Scarlatina	Diphtheria	Whooping Cough	Typhus Fever	Typhoid Fever	Diarrhœa
1878	..	72	28	14	90	18	20	74	0.00	0.93	0.36	0.18	1.16	0.23	0.25	0.95
1879	..	23	125	19	14	15	10	33	0.00	0.28	1.56	0.23	0.17	0.18	0.12	0.41
1880	..	15	74	11	69	13	8	77	0.00	0.18	0.90	0.13	0.84	0.15	0.09	0.93
1881	..	49	20	5	45	12	11	37	0.00	0.58	0.23	0.05	0.53	0.14	0.13	0.43
1882	..	34	17	3	89	27	16	63	0.00	0.39	0.19	0.03	1.03	0.31	0.18	0.73
1883	..	40	23	2	31	10	13	45	0.00	0.45	0.26	0.02	0.35	0.11	0.14	0.51
1884	11	40	27	8	9	4	17	82	0.12	0.44	0.30	0.08	0.10	0.04	0.19	0.91
1885	2	78	29	14	66	1	12	28	0.02	0.85	0.31	0.15	0.72	0.01	0.13	0.30
1886	2	22	40	15	18	4	11	91	0.02	0.23	0.43	0.16	0.19	0.04	0.11	0.98
1887	..	81	89	10	31	3	21	74	0.00	0.86	0.94	0.10	0.33	0.03	0.22	0.78
1888	..	15	34	7	23	6	31	37	0.00	0.15	0.35	0.07	0.24	0.06	0.32	0.38
1889	..	61	13	8	93	..	34	56	0.00	0.62	0.13	0.08	0.95	0.00	0.35	0.57
1890	..	89	15	11	38	13	30	70	0.00	0.90	0.15	0.11	0.38	0.13	0.30	0.70
1891	..	34	5	11	30	15	31	35	0.00	0.33	0.04	0.10	0.29	0.14	0.30	0.34
1892	1	63	8	6	59	2	22	57	0.009	0.61	0.07	0.05	0.57	0.01	0.21	0.55
1893	1	15	12	16	68	1	26	171	0.009	0.14	0.11	0.15	0.65	0.009	0.25	1.64
1894	1	94	10	38	66	..	18	57	0.009	0.88	0.09	0.35	0.62	0.00	0.17	0.53
1895	..	3	15	42	43	1	40	87	0.00	0.02	0.13	0.39	0.40	0.00	0.37	0.80
1896	..	113	31	20	54	..	25	71	0.00	1.03	0.28	0.18	0.49	0.00	0.22	0.65
1897	..	54	21	24	30	2	25	102	0.00	0.48	0.18	0.21	0.27	0.01	0.22	0.91

This table shows that in 1897, the mortality from measles and scarlet fever was higher than the usual, the mortality from typhoid about the average, and from the other zymotics less than the average number.

Constitutional, Local, and Developmental Diseases and Death Rates.—Having given the death-rates in Birkenhead in respect of the five classes into which death-causes have been divided, and the principal and other zymotics, a table is now submitted showing the death-rates in the Borough as respects the orders under which the death-causes belonging to Classes II., III., and IV. have been grouped. Parallel with the columns containing the rates of 1897, are the corresponding death-rates for 1891 to 1896, and the mean of the corresponding corrected death-rates in the ten years of 1881-90.

CONSTITUTIONAL, LOCAL, AND DEVELOPMENTAL DISEASES.	Annual Death-rate per 1000 Living							
	1881-90 Average	1891	1892	1893	1894	1895	1896	1897
Diathetic Diseases	0·63	0·58	0·58	0·59	0·86	0·93	1·01	1·04
Tubercular Diseases.. .. .	2·11	2·49	1·66	1·79	2·57	1·99	1·54	1·87
Diseases of Nervous System ..	2·81	3·00	2·66	2·64	2·31	2·77	2·21	2·19
" Organs of Circulation ..	1·21	1·29	1·07	1·35	1·22	1·33	1·46	1·29
" Respiratory Organs ..	3·91	5·32	4·07	3·90	3·31	4·17	3·78	3·82
" Digestive Organs ..	1·08	1·00	1·13	1·44	0·98	1·32	1·40	1·31
" Urinary Organs ..	0·41	0·27	0·37	0·44	0·42	0·57	0·54	0·52
" Organs of Generation ..	0·01	0·01	0·15	0·10	0·00	0·04	0·01	0·00
" Organs of Locomotion ..	0·05	0·08	0·00	0·01	0·00	0·02	0·01	0·01
" Integumentary System ..	0·08	0·06	0·03	0·09	0·09	0·03	0·06	0·07
Developmental Diseases of Children	0·80	0·73	1·03	1·06	0·62	0·60	0·71	0·68
" " Adults	0·15	0·18	0·00	0·10	0·05	0·05	0·05	0·05
" " Old People	0·84	1·07	1·20	1·26	1·21	1·03	1·00	0·86
Diseases of Nutrition	1·36	1·18	1·16	1·06	0·95	1·39	1·31	0·98

The four 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 116 deaths, of which 69 were due to cancer, 15 to rheumatism, 6 to anæmia, 6 to mortification, 3 to dropsy, 15 were described to tumour, and 2 to cancerum oris. All but 13 out of the 116 were deaths of adults. Tubercular diseases account

for 208 deaths; of which 172 were due to phthisis pulmonalis, 17 to hydrocephalus, 17 to tabes mesenterica, and 2 to hæmoptysis. Sixty-one of the deaths in this order were children and young persons, and 147 of adults. The diathetic disease death-rate of 1897 is above the local mean rate; and the tubercular disease death-rate of 1897 is above that for last year, but a little below the 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 referred to this class. The deaths from diseases of the brain and nervous system in 1897 were 244; the deaths from diseases of the heart and blood vessels were 144; the deaths from diseases of the respiratory organs were 425; and the deaths from diseases of the digestive organs were 146. The deaths entered to diseases under the remaining four orders were 68. Of the 1027 deaths from local diseases, 381 were of infants under five years of age, and 51 were of children and young persons over five years and under twenty. It will be seen that the death-rate as regards diseases of the respiratory organs in 1897 was higher than last year, and below that of the mean rate. The death-rate as regards diseases of the nervous system and diseases of the organs of circulation in 1897 were also about the mean rates. The death-rates in respect of diseases of the digestive and urinary organs in 1897 were also about the mean rates.

Of the deaths caused in Class IV., 76 were ascribed to so-called developmental diseases of children, *i.e.* premature birth, malformations, and teething; 96 to old age; and 109 to diseases of nutrition that is, atrophy, debility and marasmus. The death-rates for 1897 in this class do not compare unfavourably with the corresponding local mean rates. The number of deaths ascribed to old age is considerably less than the average, and the number ascribed to the diseases of nutrition are considerably less than the mean. There is some reason to believe that the number of deaths due to childbirth is understated year by year; many deaths in childbed being certified to secondary causes, "peritonitis," "convulsions," &c.

Inquests.—The number of inquests held during 1897 was 149, thus 7·2 per cent. of the sum of the deaths in the borough formed the subject of official inquiries. Of these inquests 101 were in the township of Birkenhead, 41 were in Tranmere, 2 in Claughton, and 1 was held in the Workhouse; 87 were on the bodies of males, and 62 on the bodies of females. In 1896 the number of inquests held was 153, in 1895—165, and in 1894—146. Out of the 149 inquests held, in 62 cases, or no less than 41·6 per cent., it does not appear that the actual *cause* of death was ascertained at all. Thus it is stated as follows :—

Convulsions	...	...	...	...	...	12
Found dead in bed	...	...	...	...	...	9
Found dead	...	...	...	...	...	1
Nature of disease unascertained	...	...	...	...	...	27
Natural causes	...	...	...	...	...	4
Found drowned	...	...	...	...	...	8
Found killed	...	...	...	...	...	1

As I have previously remarked, one fails to see what benefit is obtained from inquests which arrive at such indefinite conclusions.

Deaths not Certified.—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 are entered in the register on the doubtful testimony of deceased persons' relatives, or friends, or fellow lodgers. 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 1897, out of the 2,042 deaths registered, 23 (7 males and 16 females) were marked "not certified,"—that is 1·1 per cent. Nine of these uncertified deaths took place in the township of Birkenhead, and fourteen in Tranmere. Fourteen of these deaths were of infants under 1 year of age. *I would again remark that it is a great defect of our present law that such deaths should be allowed to*

be registered without an official enquiry into their cause. The causes of the 23 deaths were entered in accordance with the statements of persons giving information to the registrars as follows:—

Premature birth	...	...	..	5
Convulsions	.	...	..	4
Bronchitis	...	...	...	3
Diarrhœa	...	...	...	2
Tabes mesenterica	...	...	...	1
Consumption	...	...	.	1
Brain disease	...	...	...	1
Heart disease	...	...	...	1
Paralysis	...	...	...	1
Dropsy	...	...	...	1
Nephritis	...	...	...	1
Teething	...	...	...	1
Debility	...	...	...	1

The proportion of uncertified deaths to the sum of the deaths was, as already stated, 1·1 per cent. as compared with 0·94 per cent. in 1896, 0·99 per cent. in 1895, and with 0·52 per cent. in 1894.

Deaths classified according to localities.—Tables I., II., III., IV., and V., in the appendix, having been fully discussed, are followed by Table VI., in which the deaths registered during 1897 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 Oxtan; 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.) the names of townships are not placed 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 Oxtan appear as Oxtan, Egerton, Clifton, and Mersey Wards; and the portion of Bebington incorporated appears as Bebington Ward. As it was felt that particulars of the number of deaths

from all causes, zymotic diseases, causes not certified, and inquests held in each ward, would prove interesting, and as the Street Register does not afford this information, the table here submitted has been drawn up.

1897			Deaths from All Causes		Deaths from Zymotic Diseases		Deaths from Causes Uncertified		No. of Inquests held.	
			M.	F.	M.	F.	M.	F.	M.	F.
Cleveland	Ward	..	212	183	39	30	..	4	26	10
Claughton	"	..	13	18	2	2	..	..	2	..
Grange	"	..	281	256	41	41	1	3	14	10
Argyle	"	..	162	176	23	24	1	..	19	21
Oxton	"	..	18	14	..	1	..	..	..	..
Egerton	"	..	71	76	11	11	2	3	7	7
Clifton	"	..	125	137	23	26	2	4	9	7
Mersey	"	..	48	67	5	8	1	2	5	6
Bebington	"	..	15	11	..	2	..	..	3	1
Birkenhead Borough including deaths in Union premises			1037	1005	146	147	7	16	86	62

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 1897, as in past years, the sickness and mortality was most prevalent in the smaller streets and alleys inhabited by the very poor.

The following table shows the relative mortality of the wards during 1897.

1897				Population at Census 1891.	Estimated Population at Midsummer 1897	General Death-rate per 1000 Living	Zymotic Death-rate per 1000 Living
Cleveland	Ward	..	..	17345	19281	20.4	3.57
Claughton	"	..	..	3510	3902	7.9	1.02
Grange	"	..	..	25353	28182	19.05	2.90
Argyle	"	..	..	15589	17329	19.5	2.71
Oxton	"	..	..	4429	4923	6.5	0.20
Egerton	"	..	..	9987	11102	13.2	1.98
Clifton	"	..	..	15091	16775	15.6	2.92
Mersey	"	..	..	5602	6227	18.4	2.08
Bebington	"	..	..	2951	3280	7.9	0.60
Birkenhead Borough including deaths in Union premises ..				99857	111001	18.39	2.63

The deaths in the Borough Hospital, instead of being entered as occurring in Cleveland Ward, have been referred to the Wards from which the patients who died were received. Similarly, the deaths in the Wirral Children's Hospital and Lying-in-Hospital have not been entered to Grange Ward and Argyle Ward respectively, but as occurring in the Wards from which the patients who died were received. It will be seen that the Ward showing the highest zymotic death-rate in 1897 was Cleveland Ward. The highest death-rate was also in Cleveland Ward, and that all the three wards in the township of Birkenhead show a high death-rate compared with the wards in the remainder of the Borough, except Mersey Ward, which has a similar class of population.

Deaths in the Union Hospital and Workhouse.—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. From it is prepared the summary here submitted of the localities from, and years in which patients dying in the Union during 1897, were received.

LOCALITIES FROM WHICH PATIENTS DYING IN UNION WERE RECEIVED.	Year when Admitted to Union.										TOTAL.
	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	
Cleveland Ward.. ..	1	2	7	19							31
Cloughton „ ..		1									1
Grange „ ..	1	1	2	11	23						40
Argyle „ ..	1	1	1	2	5	33					46
Birkenhead-Ward not specified			1	2	1	7					11
Oxton Ward						1					1
Egerton Ward				1	1	1					3
Clifton „ ..				1	1	8					10
Mersey „ ..						2					2
Tranmere-Ward not specified	1			1	1	5					8
Albert Industrial Schools ..						1					1
Born in Workhouse					1	3					4
Union Schools						1					1
Total Deaths	1	1	2	2	3	2	7	9	28	104	159

General and Zymotic Death-rate month by month throughout the year.—Table V. in the appendix, shows the general and zymotic mortality, month by month, throughout the year. The general death-rate was highest in the month ending August 12th, 26·5, and lowest in the month ending October 7th, 15·1. The zymotic death-rate ranged from 7·49 in August to 1·17 in February and March respectively.

Description of those who died during 1897.—The last of the tables appended, Table VII., 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 community; *i.e.*, the local 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 1897, in the ranks of fellow-workers in the Borough. The number of bread-winners removed by death from the local community, in 1897, is computed thus:—The first two columns of Table VII. are cast and added together, and from this is subtracted the sum of those described as annuitants, pensioners, ladies, gentlemen, retired tradesmen, &c., or whose occupation is “unknown.” It does not, of course, follow that everyone described as belonging to any 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 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 figures in the age table.

Illegitimacy.—Statistics relating to illegitimacy are important, not merely on account of the bearing which such a subject has upon the social life of the community, but also with a view ultimately of showing to some extent the influence which illegitimacy exerts upon the “chances of life” of infants, as it is well known that the death-rate of illegitimate children is considerably greater than that of those born in wedlock. I have thought it desirable therefore to continue these statistics in this report, as the subject is one of some interest.

The following table gives the total number of legitimate and illegitimate births, with the rates per thousand of births and per 1,000 living, and statistics relative to the deaths of such children under one year of age.

Illegitimate Birth and Death Rates, 1897.

Registrar's Sub-District	Estimated Population 1897.	BIRTHS		ILLEGITIMATE BIRTHS		Total deaths of children under one year of age	Deaths of illegitimate children under one year of age	Proportion of deaths of illegitimates to total deaths under one year of age.
		Legitimate	Illegitimate	to 1000 living	to 1000 births			
Birkenhead ..	64792	2185	71	1·09	32·4	413	31	13·3
Tranmere, Oxtou and Claughton ..	42929	1166	64	1·49	54·8	155	11	14·0
Bebington ..	3280	30	1	0·30	33·3	1	0	0·0
Total	111001	3381	136	1·22	40·2	569	42	13·5

It will be seen from the above that for every 1,000 *legitimate* births registered during the year, 155·8 deaths of *legitimate* children under one year of age took place, whilst for every 1,000 *illegitimate* births registered during the same period no less than 308·8 deaths of *illegitimate* children under one year of age took place. In other words, 30·8 per cent. of the illegitimate children born, died within the first year of life. These numbers are lower by 8·4 per cent. than those for last year, but are very far from satisfactory.

Vaccination.—Mr. John Carter, Clerk to the Board of Guardians of the Birkenhead Poor Law Union, has kindly supplied me with the following *latest completed* information relative to vaccination in the District, viz :—

Returns as to the vaccination of children born during the year from 1st July, 1896, to 30th June, 1897.

Births	Successfully Vaccinated	Insus-ceptible	Had Small-pox	Died Unvac-cinated	Postponed by Medical Certificate	Removed to Districts the Vaccination Officers of which were duly notified	Removed to places unknown or which cannot be reached	In Abeyance
3517	3036	9	nil	366	40	11	46	9

The percentage of children successfully vaccinated out of the total number of births was therefore 86·32, as compared with 86·17 last year—a very good record.

The number of deaths of unvaccinated children, viz.—366, gives a percentage of 10·40 as compared with 10·60 last year.

Pauperism.—The latest information obtainable is for the year Michaelmas, 1896, to Michaelmas, 1897. The cost of relief during this period was as follows, viz:—

	£	s.	d.
In maintenance in year ended Michaelmas, 1897, was	8858	16	9
Out-door relief (including non-resident and boarded-out paupers).....	7840	0	3
Total.....	£16698	17	0

The lowest number of In-door poor in any week during 1897 was 756, and the highest number 902.

The lowest number of Out-door poor in any week during 1897, was 1512, and the highest number 1620.

Marriages.—The number of marriages in the whole of the Superintendent Registrar's District of Birkenhead during the year 1897 was 1044, giving an annual rate per 1000 living of 9·40 as compared with 10·00 last year. There were 45 marriages less during 1897 than in the previous year, a decrease of 4·3 per cent.

Sketch Map of the Borough.—The sketch map of the Borough, which has been added, shows the boundaries of the wards and the positions of the houses in which deaths from zymotic diseases have occurred. The fatal cases of zymotic diseases received into the Borough Hospital, Children's Hospital, and Workhouse Hospital, have, as far as possible, been referred to the localities from which they were drawn.

HOUSING OF THE WORKING CLASSES ACT, 1890.

Under the provisions of this Act on the 13th of May, 1895, I made a representation to the Health Committee as to the very insanitary and dilapidated condition of certain houses in Tunnel Road, Egerton Street, Meacock Street, Mersey Place, Walter's Court, and Meacock's Court; and it will be remembered that the Health Committee after considering it, resolved to recommend the Council to adopt an improvement scheme, which should clear away the whole of this insanitary property. After a local enquiry had been held on the last day of the year 1895, the Local Government Board early in 1896 issued a Provisional Order for confirming the improvement scheme, and subsequently it was confirmed in all its stages by Act of Parliament. Under these circumstances all that remained to be done was to come to terms with the owners of the various portions of the property, and then clear the existing buildings away. One would have thought, after allowing for the great legal difficulties in the way of acquiring the property, that twelve months would have been ample time for the accomplishment of this work; but although I am now writing three years after my first representation was made, not a brick or a stone has been touched, nor does there seem any likelihood of so desirable a step being taken for some months more to come. At this rate of progress there is not likely to be much improvement effected in the dark spots of the town for a very considerable number of years,

I am, Gentlemen,

Your obedient servant,

R. SYDNEY MARSDEN,

MEDICAL OFFICER OF HEALTH.

PUBLIC HEALTH DEPARTMENT,

TOWN HALL,

10th MAY, 1898.

P.S.—In the month of September, 1897, I attended the Congress of the Sanitary Institute at Leeds, and read the following Short Paper on—

“Some Sanitary Aspects of Advertisement,”

I said:—In the remarks which I propose to make on the subject giving the title to this paper, I fear I shall be considered by many to be entirely wandering from the class of subjects which ought to be dealt with in a Sanitary Congress.

I may however say at the outset that I conceive our duty to be a larger one than the mere consideration of what is involved in systems of drainage and water-supply, or a perpetual warfare against infectious disease, infantile mortality and the like, and that anything that acts deleteriously on the mental well-being of the community is a matter as distinctly calling for the attention of the Medical Officer of Health as if it had reference to the physical bodily health which is generally regarded as his sole province.

We want to take into our consideration a larger number of the great social problems which if left untouched, will militate against our best efforts at sanitary reform, and we have to do or should have to do, with everything that tends in any way to bring about unhealthiness either of mind or body; something is clearly amiss if regard for the health of the brain is not to be looked upon as requiring preventive treatment equally with any other ailment of the body.

Such then is the field of enquiry the gate of which I propose to enter, and I would ask your consideration for a few moments to the subject of a certain class of obnoxious advertisement with which alas! we are now all of us only too familiar, and which to my mind calls for drastic treatment and suppression at the hands of the Municipal and Sanitary Authorities of the districts in which

these forms of advertisement are perpetrated, on the ground that they are directly detrimental to the moral health and well-being of Society.

I allude to that class of pictorial illustration of the worst forms of vice, violence, murder and torture, which are at present resorted to so largely by our theatrical companies for the purpose of appealing by excitement to the lowest component part of our natures, and evidently from its extensive use appeals strongly and effectively to a large section of the populace whose ill-developed natures are further deteriorated by the desire produced in them to see performed the blood-curdling acts so graphically depicted. To any well-conditioned mind these advertisements must be most disgusting, painful and objectionable; but my experience leads me to believe that they are a source of temptation and evil to certain ignorant and emotional classes of our people beyond what would easily or at first sight be believed. I here exhibit to you the sort of thing to which I refer. All these are the actual placards of well known and popular plays of the day, which are regularly distributed broadcast over our large towns for the purpose of "drawing" a house; and in these the class of artists who devise them seem to vie with each other to invent, for the benefit of the public and the lower orders of society, a suggestiveness for crime, which it would be difficult to imagine could well be excelled.

The general unhealthy influences of dirt, impure air, foul drinking water, over-crowding, and the rest are admitted by all to increase the virulence of epidemic diseases and the weakly conditions of the body. Are then the still more unhealthy influences to which I have referred as acting on the mind to be disregarded and allowed to work their own sweet will and effect on a class of people, who, from their ill-developed and weakly constituted brain power require the protection from it of which at present they are entirely devoid?

I feel pretty certain that if we could trace cases to their first cause, many of the dreadful acts which now stain our criminal

annals, would be found to have primarily originated in the suggestions to action given by the degrading advertisements.

The history of medicine is full of examples of the influence of emotional conditions in causing and curing disease.

Dr. Clouston has laid down the principle the "brain cortex and especially the *mental* cortex, has such a position in the economy that it has to be reckoned with more or less as a factor for good or evil in all diseases of every organ; in all operations and in all injuries." "Life and mind are the two factors of that organic unity that constitute a real animal organism."

"The mental cortex of man is the apex of the evolutionary pyramid, whose base is composed of the swarming myriads of bacilli and other mono-cellular germs which we now see to be almost all-pervading in nature." "We talk and laugh and weep, we blush and shiver, we hunger and sweat, we digest, etc., etc., all through the brain cortex. Not one of these physiological acts but can be instantly arrested by a mental act. Every one of them may through morbid cortical action become excessive or diseased."

"The evidence that the brain cortex regulates absorption, secretion, vascular tone, and the anabolic and katabolic processes in the cells of the tissues, may now be regarded as complete. Sores in many melancholic persons will not heal. The gland and the lung tissue in idiots and demented are unable to resist the attacks of the tubercle bacilli; so that two-thirds of our idiots and one-third of our worst demented die of tuberculous affections."

The nervous and mental element in disease is a universal and constant one although it prevails in different cases to a different extent. It therefore calls for our constant watchfulness. This is a fact that I am most anxious to impress upon you, for it is of far more consequence that our profession should remember the common than the uncommon in dealing with some of the problems of preventive medicine.

How important it is then that we should keep the minds of the people free from unhealthy brain stimulants will I think be evident to all, and I would again contend that it is a fitting subject for our consideration here.

The control of preventable influences, such as these objectionable forms of advertisement, must be put under the sanitary authorities, who shall have power to prohibit their being placarded about their districts if they consider it necessary. And I think every properly balanced mind must regard such direct incentives to crime as distinctly unfit for publication on the walls of our great cities.

No phase of the subject of preventive medicine, it seems to me, is more important to the well-being of the individual amongst the lower orders of Society, and therefore of the community at large, and I think our laws ought to provide us with a means whereby any individual might be prevented from endangering the health of his fellow men either through ignorance, thoughtlessness, cupidity, or from any other cause whatsoever, and from degrading our towns by these dangerous methods.

But the evil still goes on, and at present we have no means of preventing it, whilst in the meantime the public disregard it; but the evils caused thereby are material, and are in many ways undermining the morality and strength of the people.

We are inclined to ask with Dr. Acland, "Does the moral state of our people keep pace with their greater physical advantages? Are we not in danger of forgetting in the midst of our boasted material and intellectual progress, that it is as certainly true now as ever it was, that the largest part of the misery among men depends, at least, on moral as much as on material causes?" These and many other such questions rise in the minds of Medical Officers of Health, when they are met by many of the greatest problems of public health and Sanitary Science.

This Paper called forth a very large amount of discussion in the public press, almost all the leading papers having articles or notes upon it; some strongly agreeing with me, whilst others were as strongly opposed, and some few (chiefly belonging to the "Sporting" class) were satirical and abusive. But what astonished me most, was the amount of prejudice and misconception displayed in certain quarters, and even Sir Henry Irving, in a speech at Cardiff, went out of his way to comment on the Paper, and to prove by his remarks that he had either not read, or had totally failed to appreciate its meaning. What he said about the uplifting tendency of the dramas of Shakespeare is admitted—but Shakespeare is one thing, and a flaring picture on the hoardings of a man dragging a woman by the hair, or battering her skull with a sledge-hammer, is quite another. We might cleanse our hoardings and yet not destroy our Shakesperian dramas.

Because one objects to these ghastly picturings in the streets, it does not necessarily follow that he would object to the actions on the stage.

"Our chief complaint against these hideous productions, says the *Photographic News*, is, that they are offensive to the sight. The posters might be purged of all horror and offensiveness by having a photographic basis, the actual scenes on the boards being nothing like so terrible as they are represented on the hoardings."

Again, the *North Eastern Gazette* says—"When Sir Henry Irving supposes that the man who objects to these ghastly picturings in the streets would equally object to see Desdemona murdered on the stage, he is, we venture to think, mistaken. A person might indeed object to see a representation of Desdemona's suffocation if he saw nothing else. But he has seen and heard the development of the character and incident of the whole grand, gloomy story of which the death of poor Desdemona is the catastrophe.

The murder by itself would be meaningless, frightful, and demoralising. But the entire drama, of which it is a necessary part, gives off the stimulating, cleansing power, of which Aristotle speaks. In the case of the enormous picture upon the hoarding, the passer-by does not see it as part of a whole ; he sees nothing else. And considering that these artistic displays generally depict scenes of brutality and violence, and that, too, in the most glaring manner, they certainly cannot be "a power that makes for anything good. Surroundings count for something in life, even in the region of morals."

Ruskin has said that no one could look upon bad art without getting the devil put into him. This, no doubt, is extreme, but the things we habitually see cannot help but exert some measure of influence both on mind and character. We may not be conscious of anything of the kind, but none the less, do dark, dingy streets, with many ugly walls, depress the energies, and tend in the direction of a lower tone of life in every respect.

The style of advertising allowed on blank walls and hoardings, unfortunately, in many cases, does not correct but intensifies the coarsening effect of surroundings, which, are bad enough in themselves." We are not fastidious ; we know that an aesthetic ideal is impossible, that in actual life convenience is the prime consideration ; but the line should be drawn somewhere, and at all events we might recognise that what is hideous cannot very well be holy, and in their present form these forms of advertisement must be corrupting. Something more will have to be done, and some control exerted. This is undoubtedly the general opinion amongst the better thinking classes.

R.S.M.

APPENDIX.

TABLE I.—Deaths Registered in the County Borough of Birkenhead during the year ending December 31st, 1897, classified according to age.

TABLE II.—Weekly Register of Deaths in the County Borough of Birkenhead for the year ending December 31st, 1897.

TABLE III.—Weekly Condensed Register of Deaths for 1897.

TABLE IV.—Weekly Condensed Register of Meteorological Results for 1897.

TABLE V.—Lunar Monthly Table of Deaths from all causes and Zymotic Diseases in 1897, with the rate per 1000 per annum.

TABLE VI.—Street Register of Deaths—1897.

- A. Cleveland, Claughton, Grange, and Argyle Wards.
- B. Oxtou, Egerton, Clifton, and Mersey Wards.
- C. Bebington Ward.

SUPPLEMENT TO TABLE VI.—Return of Deaths in Birkenhead Union Hospital and Workhouse, registered in 1897.

TABLE VII.—“ Description ” of those who died during 1897.

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 1897.

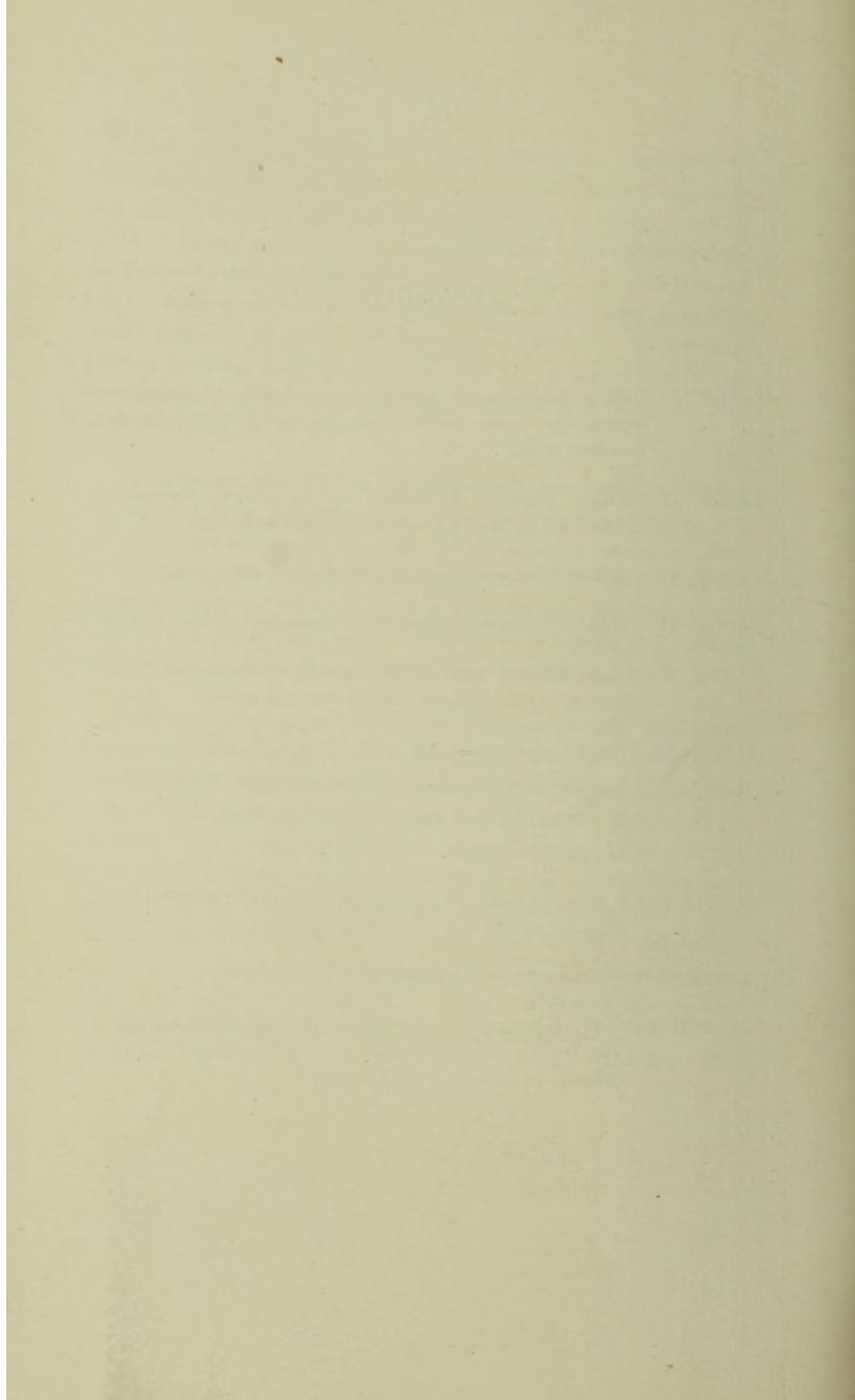


TABLE 1.—Deaths Registered in the Borough of Birkenhead during the Year ending December 31st, 1897.

TABLE I. - Dams in Progress

Name of Dam	Location	Height, ft.	Length, ft.	Area, sq. ft.	Capacity, cu. ft.	Year completed	Remarks
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.

TABLE II. *Weekly Register of Deaths in the County Borough of Birkenhead for the Year ending December 31st, 1897.*

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

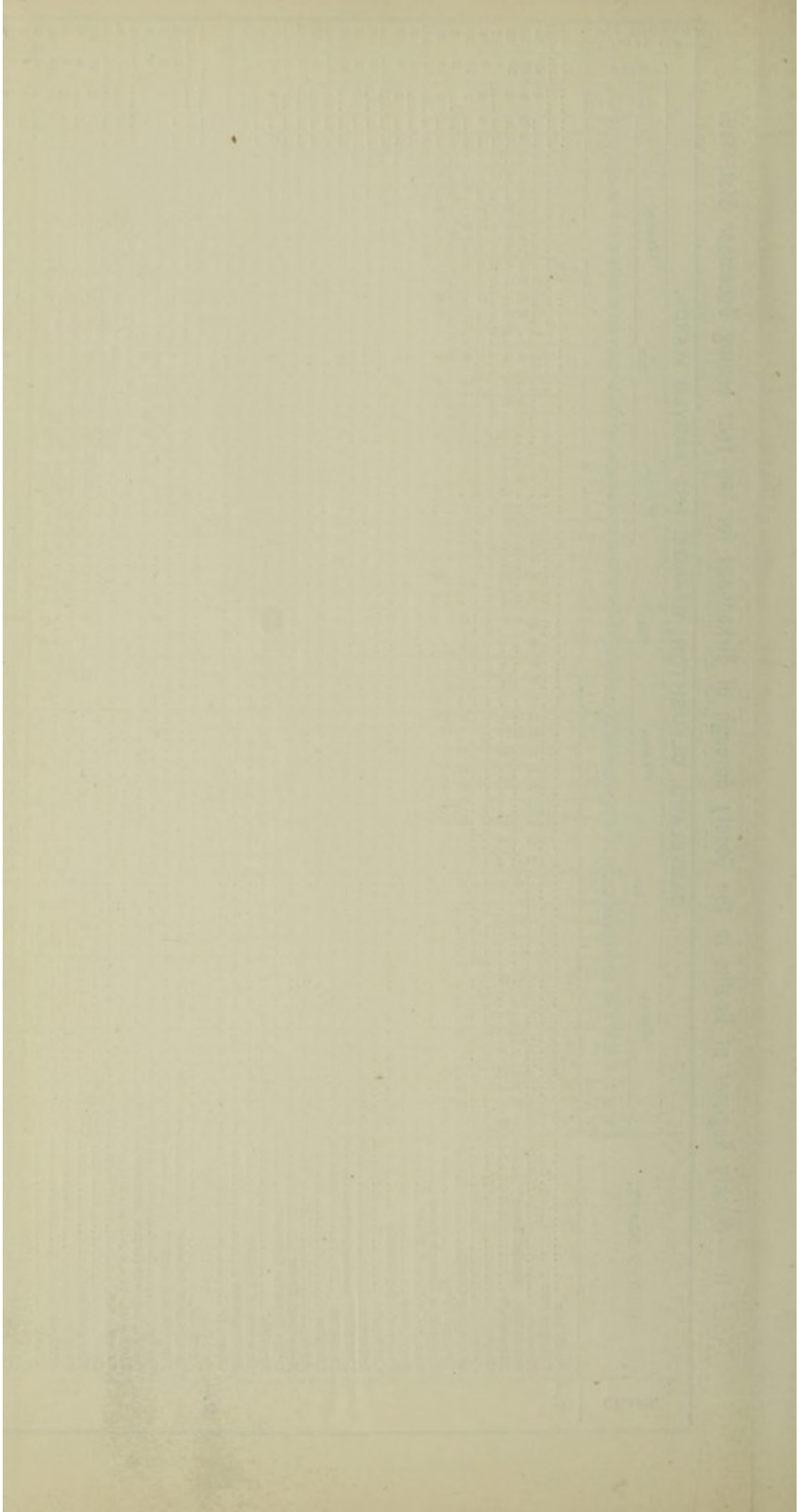


TABLE II.—Weekly Register of Deaths in the County Borough of Birkenhead for the Year ending December 31st, 1897.

[illegible]

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

TABLE II. *Weekly Register of Deaths in the County Borough of Birkenhead for the Year ending December 31st, 1897.*

[illegible]

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

THE UNIVERSITY OF CHICAGO LIBRARY

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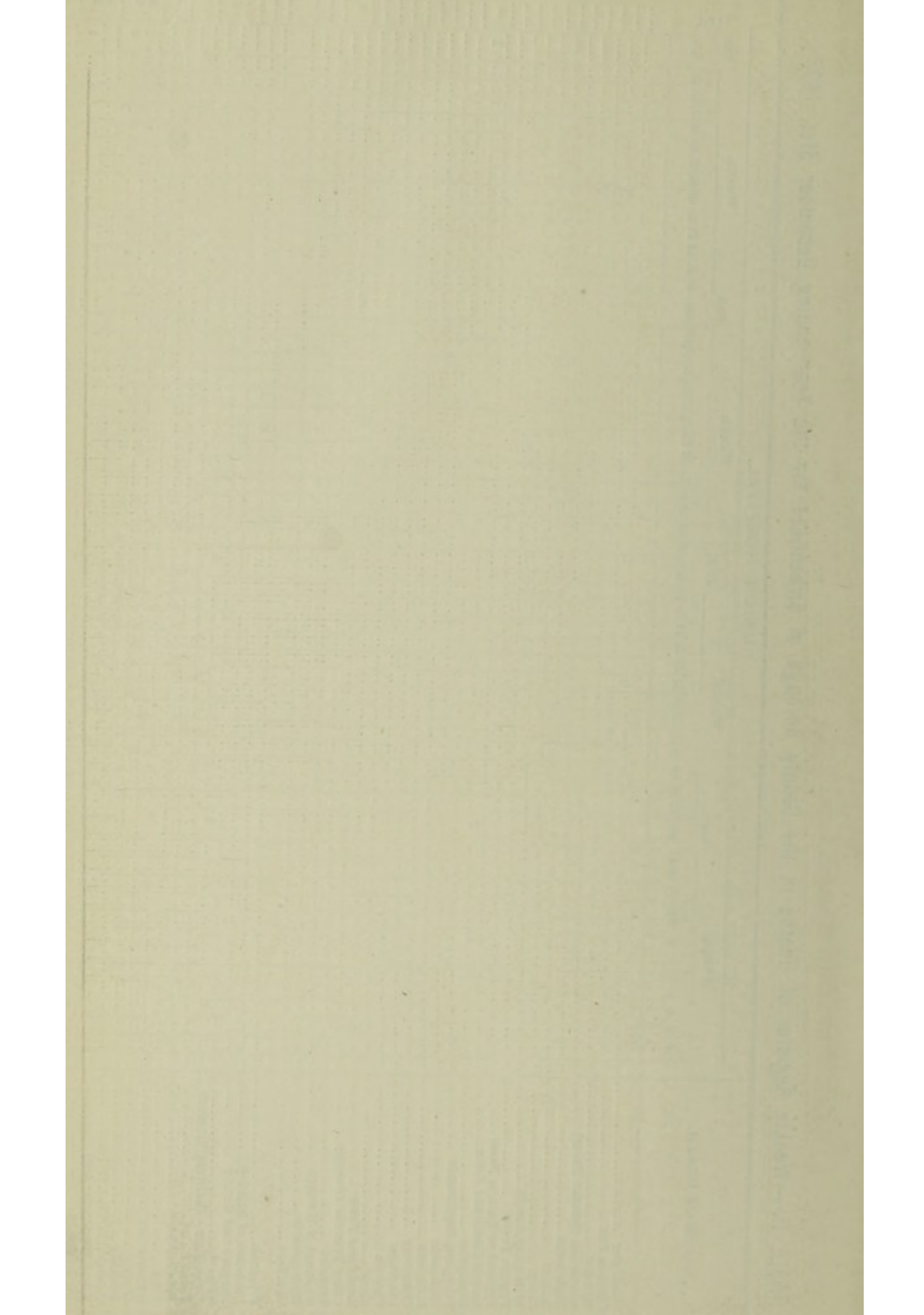
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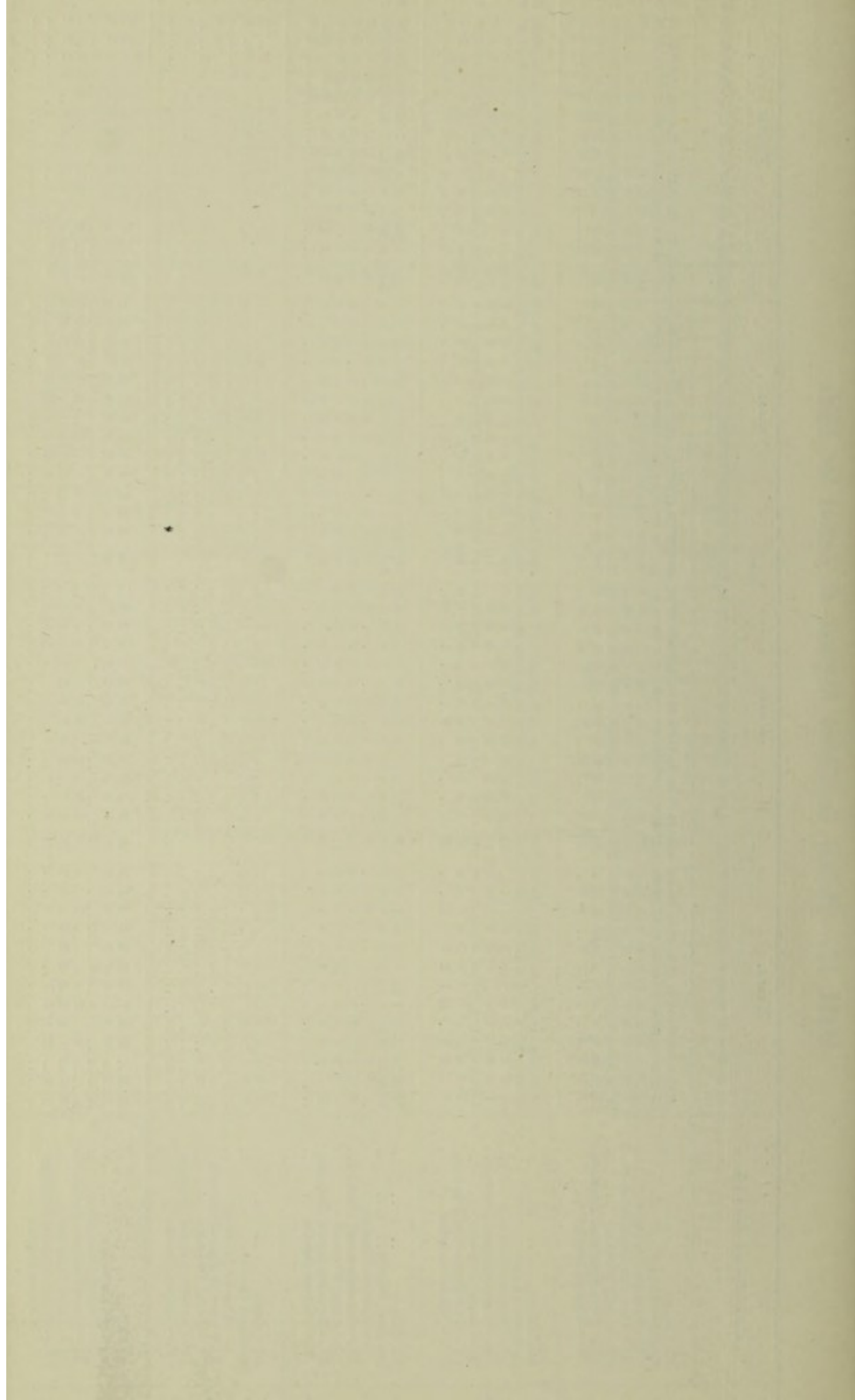
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TABLE II. *Washburn Register of Deaths in the County Borough of Birkenhead for the Year ending December 31st, 1897.*

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





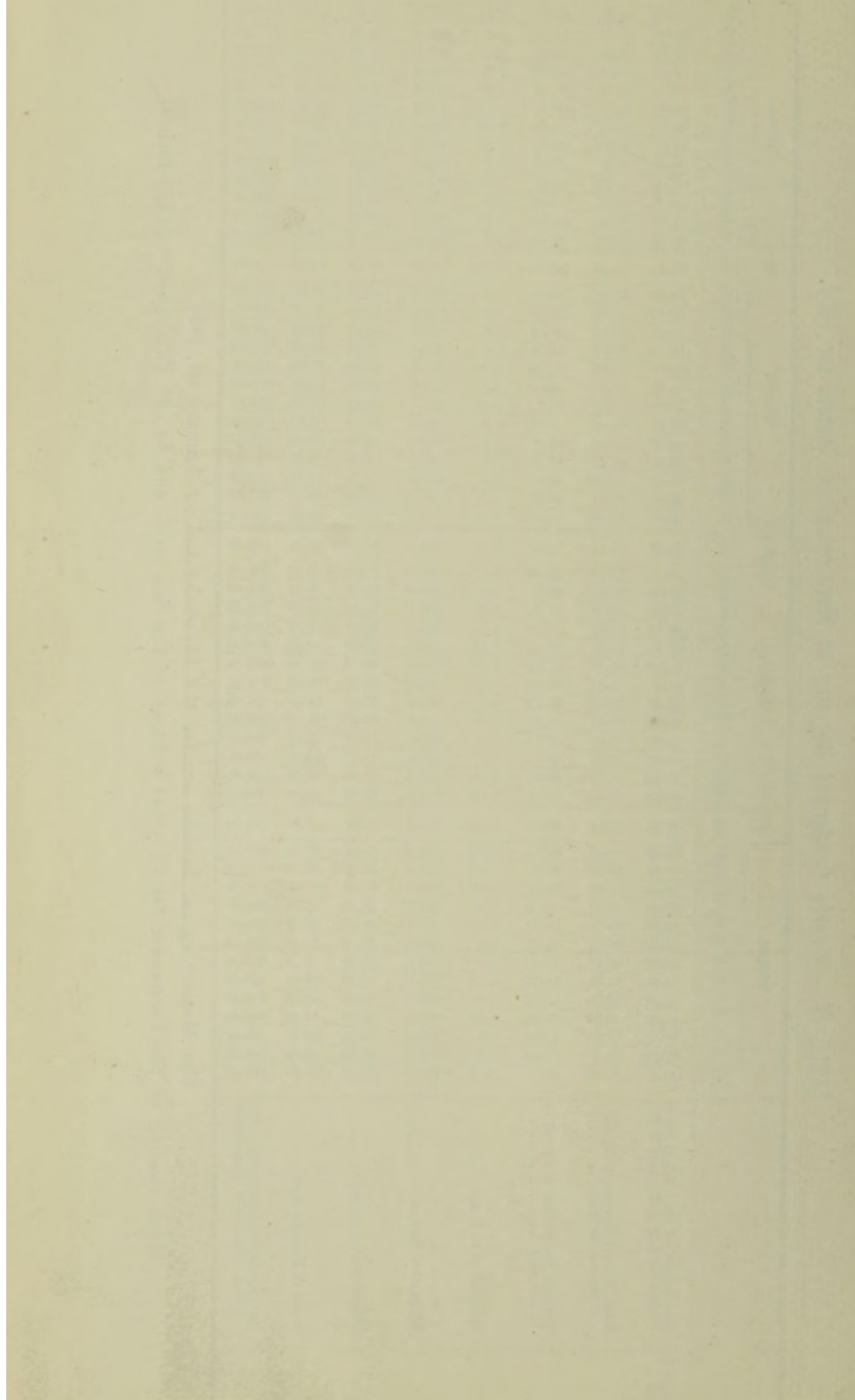


TABLE V.
LUNAR MONTHLY TABLE OF DEATHS from all Causes and Zymotic
 Diseases, with the Rates per 1,000 inhabitants per annum.

1897					No. of Deaths from All Causes.	Annual Rate per 1,000 Living.	No. of Deaths from Zymotic Diseases.	Annual Rate per 1,000 Living.
1st	Month ending	January 28th	..	..	165	19.3	17	1.99
2nd	"	February 25th	..	..	160	18.7	10	1.17
3rd	"	March 25th	..	..	140	16.3	10	1.17
4th	"	April 22nd	..	..	148	17.3	11	1.28
5th	"	May 20th	..	..	134	15.6	17	1.99
6th	"	June 17th	..	..	132	15.4	20	2.34
7th	"	July 15th	..	..	142	16.6	29	3.39
8th	"	August 12th	..	..	227	26.5	64	7.49
9th	"	September 9th	..	..	188	22.01	53	6.20
10th	"	October 7th	..	..	129	15.1	11	1.28
11th	"	November 4th	..	..	156	18.2	16	1.87
12th	"	December 2nd	..	..	149	17.4	12	1.40
13th	"	(plus 2 days extra) ending Dec. 31st	..	..	172	19.4	23	2.60
Total					2042	18.39	293	2.63

TABLE VI.
STREET REGISTER OF DEATHS.

A.—CLEVELAND, CLAUGHTON, GRANGE AND ARGYLE WARDS.

STREETS.	Total from all Causes.	From Zymotic Diseases only.	STREETS.	Total from all Causes.	From Zymotic Diseases only.
Abbey street	1	0	Campbell terrace ..	1	0
Abbot street	5	1	Canning street ..	1	0
Ackworth place ..	1	1	Cardigan street ..	3	1
Adelphi street ..	4	1	Carnforth street ..	10	1
Albion street ..	7	1	Carpenter's row ..	2	1
Alexandra road ..	1	0	Castle Buildings ..	3	2
Alfred road ..	2	0	Cathcart street ..	4	0
Argyle street ..	4	0	Cavendish road ..	1	0
Arthur street ..	4	0	Cavendish street ..	6	2
Ashville road ..	1	0	Chapel place ..	2	1
Aspinall street ..	1	0	Chapel street ..	4	0
Athol street ..	1	1	Charlesville ..	1	0
Austin street ..	3	1	Chester place ..	2	0
Back Havelock street ..	2	0	Chester street ..	6	0
Back Price street ..	3	0	Christ Church road ..	3	1
Back St. Anne street ..	9	2	Church street ..	3	0
Balls road ..	2	0	Clarendon street ..	5	1
Balls road east ..	3	1	Claughton road ..	28	2
Banning street ..	4	1	Clayton street ..	1	0
Barton street ..	1	0	Cleveland avenue ..	4	0
Beaufort road ..	3	0	Cleveland street ..	16	5
Beckwith street ..	39	4	Clifton crescent ..	4	0
Belmont ..	1	0	Club row ..	3	2
Bentinck place ..	6	2	Clwyd street ..	8	2
Bentinck street ..	18	1	Coburg street ..	1	0
Bentinck terrace ..	1	0	Cole street ..	1	1
Berner street ..	1	0	Collingwood street ..	3	1
Berry street ..	3	1	Conway place ..	1	0
Bertha street ..	3	0	Conway street ..	12	0
Blackpool street ..	1	0	Corfu street ..	2	0
Borough Hospital ..	10	0	Corporation road ..	3	0
Borough road ..	21	3	Cottage street ..	4	0
Brassey street ..	1	0	Coventry street ..	1	0
Bray street ..	4	1	Craven street ..	5	1
Briardale road ..	2	1	Crown street ..	2	0
Bridge end terrace ..	3	0	Cumberland place ..	3	1
Bridge street ..	6	0	Dacre street ..	9	2
Bright street ..	7	2	Derby street ..	3	2
Brimstage street ..	1	0	Devonshire place ..	1	0
Brook place ..	2	0	Devonshire road ..	1	0
Brook square ..	4	1	Dover street ..	6	1
Brook street ..	49	11	Duke street ..	5	0
Brunswick avenue ..	3	0	Duncan street ..	1	0
Burton street ..	1	1	Eastham street ..	3	2
Byrom street ..	1	0	East Float ..	2	0
Cambridge place ..	6	0	Eaton road ..	3	0
Camden street ..	8	1	Edgar street ..	6	0

TABLE VI.—*Continued.*

STREETS.	Total from all Causes.	From Zymotic Diseases only	STREETS.	Total from all Causes.	From Zymotic Diseases only
Egerton street ..	5	0	Infectious diseases		
Eldon place ..	2	0	hospital ..	1	0
Eldon street ..	6	1	Ivy bank ..	4	2
Elgin street ..	5	1	Ivy street ..	7	1
Elizabeth place ..	3	0	Jackson street ..	8	1
Elizabeth street ..	4	0	James street ..	3	0
Elm street ..	1	0	Keightley street ..	3	1
Euston grove ..	2	0	Kent place ..	4	0
Exmouth street ..	8	1	King's mount ..	3	0
Field street ..	5	1	Kimmel street ..	4	0
Flamank street ..	5	1	Knox street ..	1	0
Flint street ..	4	0	Laird street ..	8	0
Florence street ..	3	1	Laxey terrace ..	1	0
Fore street ..	4	0	Leicester street ..	7	1
Fox street ..	5	0	Leicester terrace ..	2	1
Frederick street ..	7	0	Leinster street ..	1	0
Garfield place ..	2	0	Leta street ..	7	1
Garnet street ..	1	0	Lingdale road ..	3	0
George street ..	7	1	Livingstone street ..	11	2
Gilbrook.. ..	6	2	Lord street ..	7	2
Gladstone street ..	6	0	Lower Ivy street ..	1	0
Glover street ..	5	0	Lowther street ..	6	2
Godfrey's terrace ..	1	0	Manor hill ..	1	0
Gomer street ..	3	3	Marion grove ..	1	1
Grace street ..	3	1	Marion street ..	8	1
Grace terrace ..	1	0	Market street ..	14	5
Grange place ..	1	0	Marlborough grove ..	1	0
Grange road ..	9	1	Marshall street ..	1	0
Grange road west ..	3	0	Meacock street ..	1	0
Grange street ..	2	0	Meadow street ..	6	3
Greenfield street ..	3	0	Menai street ..	4	0
Halcyon road ..	2	0	Mersey place ..	2	0
Halkin street ..	2	0	Midland street ..	3	0
Hamilton lane ..	2	0	Miller's place ..	3	0
Hamilton square ..	1	0	Miriam place ..	1	0
Hamilton street ..	3	0	Moon street ..	7	0
Hamilton view ..	2	1	Moreton street ..	2	0
Hampton street ..	1	0	Mornington street ..	3	0
Harriet street ..	2	0	Morpeth buildings ..	3	0
Havelock street..	2	0	Mortimer street ..	2	0
Haymarket ..	1	0	Mount grove ..	5	0
Henry street ..	8	3	Munster street ..	1	1
Herbert place ..	1	0	Myrtle court ..	1	1
Hilton street ..	3	1	Myrtle place ..	1	0
Hind street ..	1	0	Napier street ..	1	0
Hinson street ..	1	1	Nelson street ..	7	0
Hope street ..	5	0	Neptune street ..	2	1
Horatio street ..	2	0	Neston street ..	2	1
Howard street ..	6	1	Oak bank ..	1	0
Huskisson street ..	4	2	Oakfield view ..	2	0

TABLE VI.—Continued.

STREETS.	Total from all Causes.	From Zymotic Diseases only.	STREETS.	Total from all Causes.	From Zymotic Diseases only.
Oak street ..	4	1	Sidney street ..	1	0
Old Bidston road ..	12	2	Simpson street ..	2	1
Old Priory ..	1	0	Somerville street ..	5	0
Oliver place ..	4	0	Stafford street ..	5	1
Oliver street ..	18	3	Stanley buildings ..	1	0
Orderley avenue ..	1	0	Stanley court ..	2	0
Orderley place ..	2	0	Stanley road ..	1	0
Oxton road ..	12	1	S.S. Almirante Simpson	1	0
Palm hill ..	2	0	Stoke street ..	3	1
Parkfield avenue ..	15	1	Sun street ..	4	0
Park road east ..	1	0	Taylor's buildings ..	6	0
Park road south ..	3	0	Taylor street ..	1	0
Park road west ..	2	0	Thomas street ..	19	4
Park street ..	13	3	Tranmere vale terrace ..	7	1
Paterson street ..	10	1	Turner street ..	1	0
Payson street ..	16	2	Upper Beckwith street ..	7	1
Penrith street ..	5	0	Upton road ..	1	0
Pensby street ..	6	4	Vernon place ..	1	0
Pleasant street ..	4	2	Vincent street ..	1	1
Plymouth place ..	1	0	Vine street ..	7	1
Pool street ..	1	0	Vittoria street ..	4	0
Price street ..	31	4	Vulcan street ..	4	0
Princes street ..	4	0	Wallasey dock ..	2	0
Princes ter., Balls rd. ..	1	0	Walter's court ..	1	0
Princes ter., Grange rd. ..	1	0	Walton street ..	1	0
Priory court ..	8	0	Warwick street ..	6	3
Prospect place ..	1	0	Waterloo place ..	4	0
Quarry bank place ..	3	1	Watson street ..	8	2
Queen s buildings ..	43	10	Wellesley street ..	2	1
Queensbury street ..	2	1	Wesley street ..	1	0
Radnor place ..	1	0	Westbourne road ..	4	0
Reedville ..	2	0	West Float ..	3	0
Rhyl street ..	1	0	Westminster road ..	1	0
Richmond cottages ..	2	0	Whetstone lane ..	1	0
Richmond terrace ..	2	0	White street ..	6	1
Ridley street ..	4	0	Wilbraham terrace ..	2	0
Robert street ..	1	0	Wilkinson street ..	10	5
Roe street ..	1	1	Wilk's court ..	1	0
Romilly street ..	1	0	Willaston place ..	2	1
Rose street ..	5	0	William street ..	5	1
Rowland street ..	1	1	Wilson street ..	2	2
Russell place ..	1	0	Wilton street ..	3	2
Russell street ..	2	0	Windsor street ..	3	0
St. Anne's balcony ..	3	0	Wirral children's h'spital	5	0
St. Anne street ..	47	8	Woodchurch road ..	6	1
St. Mary's gate ..	2	0	Wood street ..	7	0
Saxon street ..	3	1	Woodville road ..	8	2
Shaw's place ..	1	0	York place ..	2	1
Shrewsbury rd., north ..	1	0			

TABLE VI.—Continued.

B.—OXTON, EGERTON, CLIFTON AND MERSEY WARDS.

STREETS.	Total from all Causes.	From Zymotic Diseases only.	STREETS.	Total from all Causes.	From Zymotic Diseases only.
Albert place	2	1	East bank	1	0
Albert road	1	0	Ebenezer street.. ..	1	0
Alison street	2	0	Eldon road	4	2
Allerton grove	1	0	Elm grove	2	0
Alton road	2	0	Elm road	1	0
Amery grove	1	0	Fairfield road	1	0
Apple grove	3	0	Fairview road	1	0
Argyle street south	9	2	Farm road	6	1
Arno road	1	0	Fearnley road	1	0
Back Pitt street	2	0	Fountain street.. ..	6	2
Back Portland street	5	0	Frodsham street	3	0
Beaconsfield road	4	1	Gladstone road.. ..	4	0
Bebington road.. ..	1	0	Gothic street	2	0
Bedford place	3	0	Green bank road	1	0
Bedford road	10	0	Green lane	3	1
Beech road	4	1	Green lawn	1	1
Bennett's hill	1	0	Grenville road	5	4
Beresford road	1	0	Grosvenor street	6	1
Bidston road	1	0	Grove mount	1	0
Blucher street	1	1	Grove road	8	0
Bold street	3	0	Haddon road	1	0
Booth street	1	0	Hampden grove	1	0
Borough road	15	1	Hampden street	3	1
Brougham street	11	4	Hazel road	3	1
Brunswick street	*3	0	Heathfield road	1	0
Bulwer street	1	0	Hinderton road.. ..	1	0
Buxton road	6	0	Holborn hill	2	0
Caerwys grove	2	0	Holden's cottages	1	0
Cedar street	1	1	Holly bank road	2	1
Chapel square	1	0	Holme lane	1	1
Chatham road	6	0	Holt hill.. ..	3	0
Chesnut grove	1	1	Holt hill convent	1	0
Church place	1	1	Holt road	2	0
Church road	3	0	Hope terrace	2	1
Church terrace.. ..	2	0	Houlden's place	1	0
Circular road	3	0	Howson street	1	1
Clifton road	2	0	Kellett's place	3	1
Clyde street	1	0	Kingsdown street	3	0
Cobden place	1	0	Larch road	11	3
Cobden street	6	1	Laurel road	2	0
Combermere terrace	1	1	Leighton road	1	0
Comet street	2	1	Lilly street	1	0
Croxtheth street	1	0	Livingstone road	2	2
Dee street	1	0	Lorne road	1	0
Derby road	3	1	Lowwood road	1	0
Dingle road	3	0	Maple street	1	0
Earl street	9	1	Marsden villas	1	1

TABLE VI.—*Continued.*

STREETS.	Total from all Causes.	From Zymotic Diseases only.	STREETS.	Total from all Causes.	From Zymotic Diseases only.
Meadow lane	4	0	Seymour street.. ..	4	0
Medway road	1	0	Shaw street	3	1
Mersey road	2	0	Shrewsbury road	8	0
Meteor street	1	0	Sidney buildings	5	3
Mill street	7	1	Sidney road	3	0
Milton road	3	0	Sidney terrace	1	0
Moss grove	3	0	Silverdale road	1	0
Mount street	1	1	South bank	1	0
Mulberry road	1	0	Southwick road.. ..	1	1
Newburn's lane.. ..	1	0	Stanley place	1	0
New Chester road	20	0	Stanley street	8	2
Oak tree place	6	2	Star street	3	0
Oak tree terrace	2	0	Stewart's place.. ..	1	0
Old Chester road	14	0	Storeton road	1	0
Orchard road	3	1	Taylor's delph	2	1
Oxton common.. ..	1	0	Temple road	1	1
Park grove	1	0	The Woodlands	2	0
Peel street	16	3	Thomas' court	2	0
Percy place	2	0	Thompson street	2	0
Pitt street	4	1	Tower hill	1	0
Planet street	3	0	Tower road	1	1
Poplar road	2	0	Tudor road	1	0
Prenton road east	1	0	Union street	1	0
Prenton road west	1	0	Victoria road	6	3
Price's lane	1	0	Village road	2	0
Princes place	2	1	Walker place	2	0
Queen's buildings	5	2	Walker street	3	0
Queen's place	3	0	Warrington street	1	0
Queen street	1	1	Wellington road	2	0
Rawcliffe road	1	0	Wellington terrace	1	0
Railway road	1	0	Well lane	8	1
Railway terrace.. ..	3	0	Wesley terrace	1	0
Randle street	3	1	Westbank road.. ..	1	0
Rhoden's place	2	1	Westbury street	1	0
River Mersey	1	0	West view	4	1
Rockville street.. ..	3	0	Wexford road	1	0
Rodney street	15	0	Whetstone lane	6	0
Roseberry grove	2	1	Whitfield street.. ..	2	0
Rose mount	2	0	Whitford road	6	1
Rose place	1	1	Willmer road	11	2
Roslin road	1	0	Willow bank road	2	0
Roslyn street	6	1	Willy street	3	2
Russell road	5	1	Woburn place	1	0
St. Paul's place.. ..	1	0	Woodchurch lane	2	0
St. Paul's road	10	0	Wycliffe street	3	0
Sea bank cottages	1	0	Wye street	5	2
Seaton road	1	0			

TABLE VI.—*Continued.*

C.—BEBINGTON WARD.

STREETS.			Total from all Causes.	From Zymotic Diseases only.	STREETS.			Total from all Causes.	From Zymotic Diseases only.
Acton road	..	..	2	0	Rock lane	..	..	1	0
Dacre Hill	..	..	1	0	Rock lane east	..	..	1	0
Dacre terrace	..	..	1	0	Rock park	..	..	1	0
Esplanade	..	..	1	0	St. Margaret's Home	..	..	1	0
Highfield grove	..	..	1	0	Training ship "Akbar"	..	..	2	0
King street	..	..	1	1	Training ship "Clarence"	..	..	4	0
Nelson road	..	..	3	0	Training ship "Conway"	..	..	1	0
New Chester road	..	..	1	0	Wilton road	..	..	2	0
Queen's road	..	..	1	1	Woodlands road	..	..	1	0

SUPPLEMENT TO TABLE VI.

RETURN of DEATHS in Birkenhead Union Hospital and Workhouse,
during 1897.

Date.	Sex.	Age.	Occupation, &c.	Cause of Death.	Date and Address of Deceased when admitted.	
Jan.						
1	M	70	Gardener ..	Senile dementia..	Nov. 30, '96	73 Beckwith street
3	F	60.	Dom. serv. daugh.	Morbus cordis ..	Dec. 28, '96	Born in House
4	M	76	Sailmaker ..	Cystitis ..	Dec. 16, '96	231 Oliver street
9	M	52	Labourer ..	Pneumonia ..	Dec. 31, '96	Tranmere
12	M	73	Tailor ..	Senile decay ..	June 26, '84	Tranmere
24	M	24	Labourer ..	Alcoholism ..	Jan. 17, '97	2 Ivy street
24	F	80	Tanner's widow..	Senile decay ..	Dec. 8, '96	51 Park road East
24	F	65	Labourer's widow.	Senile decay ..	May 27, '95	35 Thomas street
25	M	47	Labourer ..	Phthisis..	Oct. 19, '96	106 Bk. Beckwith st.
26	M	65	Labourer ..	Inanition ..	Oct. 14, '91	5 Castle buildings
26	M	47	Labourer ..	Heart Disease ..	Nov. 7, '94	Birkenhead
Feb.						
1	F	66	Boilermaker's wid.	Senile decay ..	Apr. 18, '96	20 Oak street
2	M	76	Scissor grinder ..	Pneumonia ..	May 5, '92	75 Market street
3	M	81	Labourer ..	Mortification ..	June 16, '96	14 Cleveland av.
5	M	81	Labourer ..	Senile decay ..	Oct. 3, '94	6 Carpenter's row
6	F	28	Fitter's wife ..	Tuberculosis ..	Jan. 22, '97	8 Anglesea terrace
6	F	82	Stonebreakr's wid.	Erysipelas ..	Aug. 15, '94	6 Heathfield rd., T.
8	M	59	Labourer ..	Diabetes ..	Jan. 28, '97	24 Lowther street
8	F	63	Dr'ghtsman's wid.	Arthritis ..	April 13, '95	Birkenhead
9	F	49	Labourer's wife..	Cancer ..	Dec. 29, '96	16 Queen's bdgs., B
10	F	42	Shoemaker's dau.	Heart disease ..	Jan. 30, '97	42 Derby street
11	M	64	Cabinetmaker ..	Pneumonia ..	Feb. 5, '97	1 West view, Tra.
12	M	35	Labourer ..	Apoplexy ..	Nov. 4, '96	75 Market street
13	M	41	Labourer ..	Phthisis..	Feb. 1, '97	2 Tranmere vale
14	F	73	Carpenter's wid..	Senile decay ..	Nov. 24, '96	219 Conway street
19	M	63	Joiner ..	Brain disease ..	April 30, '95	25 Randle street, T.
19	F	76	Labourer's widow.	Erysipelas ..	Feb. 15, '97	16 Meadow lane, T.
19	M	42	Fireman ..	Bronchitis ..	Jan. 21, '97	31 Thomas street
25	M	37	Labourer ..	Pneumonia ..	Feb. 24, '97	15 Leicester street
25	F	43	Letter sorter's wife	Pyelitis ..	Jan. 14, '97	65 Paterson street
Mar.						
5	M	70	Farm labourer ..	Kidney disease..	July 18, '95	Gillbrook
8	M	78	Tailor ..	Uraemia ..	Aug. 19, '96	75 Market street
10	F	3	Clerk's daugh. ..	Pneumonia ..	Mar. 4, '97	Union Schools
13	M	44	Labourer ..	Phthisis ..	Aug. 10, '96	15 Tranmere vale
15	M	74	Labourer ..	Senile decay ..	Mar. 8, '97	Tranmere
17	M	83	Seaman ..	Senile decay ..	July 5, '93	Chester street
17	F	46	Domestic servant.	Debility ..	Mar. 8, '97	16 Dee street, Tra.
20	M	53	Labourer ..	Bronchitis ..	Oct. 22, '96	38 Payson street
26	M	25	Butcher ..	Phthisis ..	Feb. 19, '97	20 Priory street
27	F	65	Waterman's wid..	Enteritis ..	Mar. 11, '97	48 Rodney st., T.
April						
1	F	69	Domestic servant.	Pneumonia ..	Nov. 24, '96	6 Vernon place
2	F	55	Gas stoker's wife..	Paraplegia ..	June 11, '91	14 Elizabeth street
2	M	28	Carter ..	Alcoholism ..	Mar. 29, '97	Tranmere
3	M	25	Labourer ..	Phthisis ..	Mar. 2, '97	Birkenhead
5	M	83	Timber sawyer ..	Senility ..	Oct. 3, '88	108 Argyle street

SUPPLEMENT TO TABLE VI.—*Continued.*

Date.	Sex.	Age.	Occupation, &c.	Cause of Death.	Date and Address of Deceased when admitted.	
April						
6	M	50	Greengrocer ..	Nephritis ..	Feb. 15,'97	53 Dacre street
7	M	15	Labourer's son ..	Phthisis ..	Mar. 11,'97	Albert Ind. Schools
8	F	38	Labourer's wife..	Phthisis.. ..	Mar. 23,'97	20 Eldon place
9	M	57	Bricklayer ..	Phthisis.. ..	Jan. 23,'97	140 Chester street
9	F	32	Labourer's wife..	Phthisis.. ..	April 1,'97	3 Myrtle street
10	F	65	Labourer's wid...	Conges of Lungs	Mar. 24,'96	16 Cambridge place
14	M	56	Carter	Apoplexy ..	Feb. 16,'97	8 Castle buildings
16	F	60	Domestic cook ..	Debility ..	Mar. 30,'97	8 Railway terr., T.
20	M	56	Labourer ..	Phthisis ..	Jan. 28,'97	5 Marshall place
21	M	68	Labourer ..	Gangrene ..	July 12,'92	54 Bk. St. Anne st.
23	F	70	Striker's wid. ..	Bronchitis ..	Dec. 5,'95	7 Castle buildings
28	F	79	Chimneyswp's wid	Senile decay ..	May 16,'94	12 Waterloo place
28	M	51	Labourer ..	Lupus ..	April 23,'97	Birkenhead
29	M	55	Labourer ..	Syphilis.. ..	Mar. 5,'97	17 Matthew's court
29	M	4н.	Carter's son ..	Atelectasis ..	April 29,'97	Born in House
30	F	36	Labourer's wife ..	Heart disease ..	April 22,'97	18 Oakfield view
May						
2	M	60	Labourer ..	Bronchitis ..	Feb. 3,'90	41 Morpeth bldgs.
5	M	39	Labourer ..	Pneumonia ..	April 22,'97	Birkenhead
7	M	46	Labourer ..	Cancer ..	Jan. 11,'97	33 Up. Beckwith st.
10	M	36	Labourer ..	Phthisis ..	April 23,'97	12 Waterloo place
10	M	55	Labourer ..	Bronchitis ..	Mar. 10,'97	75 Market street
13	F	45	Steward's wife ..	Paraplegia ..	April 27,'97	Birkenhead
18	M	62	Labourer ..	Empyemia ..	April 2,'97	2 Percy place, Tra.
19	M	60	Clerk	Heart disease ..	Nov. 2,'96	15 Westbourne rd.
20	M	48	Labourer ..	Bronchitis ..	May 15,'97	15 Tunnel road
25	M	35	Butcher ..	Heart disease ..	April 15,'97	63 Cathcart street
30	F	75	Labourer's wid...	Senility ..	Dec. 24,'90	Byrom street
31	F	70	Labourer's wid...	Bronchitis ..	Oct. 13,'96	55 Mill street, Tra.
June						
3	F	30	Slater's wife ..	Phthisis.. ..	April 24,'97	5 Albert terrace
4	F	61	Labourer's wife..	Bronchitis ..	Aug. 4,'96	Birkenhead
6	M	60	Labourer.. ..	Senility ..	Feb. 5,'97	32 William street
9	F	31	Butcher's widow..	Phthisis ..	May 6,'97	63 Cathcart street
15	F	64	Joiner's widow ..	Apoplexy ..	June 6,'97	2 Elizabeth street
15	M	71	Labourer ..	Senility ..	Jan. 13,'96	39 St. Anne street
19	M	68	Boilermaker ..	Senility ..	July 27,'96	62 Thomas street
20	F	68	Salesman's widow	Cancer ..	April 7,'97	94 Exmouth street
22	M	41	Butcher ..	Pneumonia ..	June 8,'97	23 Ivy street
28	M	60	Boilermaker ..	Heart disease ..	April 24,'97	9 Ivy street
July						
2	F	76	Labourer's widow.	Heart disease ..	June 4,'97	196 Beckwith st.
2	F	49	Stonemason's wid.	Phthisis ..	July 1,'97	7 Orderly residence
7	F	60	Stonebreakr's wife	Senility ..	May 19,'97	103 Back Price st.
8	F	16	Labourer's daugh.	Hydrocephalus..	Mar. 19,'97	1 Myrtle court
11	F	54	Charwoman ..	Heart disease ..	Mar. 10,'97	459 Brook street
18	M	45	Painter ..	Phthisis ..	June 19,'97	75 Market street
23	M	47	Mariner ..	Syncope ..	July 21,'97	50 Duke street
25	M	45	Labourer ..	Heart disease ..	July 1,'97	Birkenhead
25	M	51	French polisher..	Cancer ..	June 1,'97	6 Waterloo place
26	F	93	Pedlar's widow ..	Senility ..	Feb. 17,'97	2 Scott's court
30	F	54	Labourer's widow.	Pneumonia ..	July 27,'97	Tranmere

SUPPLEMENT TO TABLE VI.—*Continued.*

Date.	Sex.	Age	Occupation, &c.	Cause of Death.	Date and Address of Deceased when admitted.	
Aug.						
3	M	36	Joiner	Conges. of Lungs	Feb. 6,'96	116Argyle st.Sth.,T
3	F	5m.	Fireman's daugh.	Tabes M'terica..	May 10,'97	14 Godfrey's terr.
6	M	66	Labourer ..	Bronchitis ..	July 10,'94	5 Orderly home
7	F	65	Carpenter's wid..	Pneumonia ..	Sept. 18,'96	35 White street
8	F	64	Enginedriver'swid	Apoplexy ..	Feb. 25,'96	22 Banning street
8	M	53	Porter	Paralysis ..	Mar. 11,'97	81 Bentinck street
10	F	3m.	Butcher's daugh.	Premature birth.	May 6,'97	63 Cathcart street
13	F	65	Fruiterer's wife	Pneumonia ..	Aug. 11,'97	Tranmere
14	F	70	Greengrocer'swid.	Senility ..	June 7,'92	78 Brassey street
18	M	1m.	....	Marasmus ..	July 9,'97	Born in House
19	M	27	Fireman	Phthisis ..	July 30,'97	46 Egerton street
24	F	38	Labourer's wife..	Phthisis ..	Jan. 7,'97	32 Bk. St. Anne st.
27	M	31	Tailor	Paralysis ..	April 1,'95	Birkenhead
27	M	57	Pensioner ..	Phthisis ..	April 16,'96	110 Exmouth st.
29	M	74	Boilermaker ..	Senility ..	Nov. 21,'94	5 Lowther street
31	M	43	Assurance agent	Phthisis ..	Aug. 20,'97	47 Chester street
Sept.						
2	F	73	Labourer ..	Senility ..	Jan. 27,'96	27 St. Anne street
4	F	40	Engineer's wife..	Anæmia ..	Feb. 2,'97	12 Chapel street
7	M	8m.	Dom. serv. son ..	Enteritis ..	Aug. 25,'97	12 Waterloo place
8	F	41	Labourer's widow	Phthisis ..	Aug. 13,'97	40 Roslyn street,T.
14	M	80	Joiner	Senility ..	Sept. 9,'97	23 Taylor street
15	M	38	Labourer ..	Apoplexy ..	Aug. 18,'97	382 Brook street
15	M	63	Rag gatherer ..	Apoplexy ..	July 29,'97	Birkenhead
17	M	14	Labourer's son ..	Paralysis ..	Oct. 14,'95	Tranmere
20	M	70	Labourer ..	Apoplexy ..	Mar. 15,'97	7 Old priory
20	F	69	Gardener's widow	Pneumonia ..	April 11,'94	21 Mona st. Claug.
22	M	35	Labourer ..	Phthisis ..	June 24,'97	12 Waterloo place
24	F	53	Labourer's wife ..	Apoplexy ..	Mar. 16,'97	12 Wood street
30	F	84	Groom's widow ..	Senile dementia..	June 5,'93	12 Lowther street
Oct.						
6	F	38	Enginedriver'swid	Phthisis ..	Aug. 31,'97	45 William street
7	F	35	Domestic servant.	Cancer ..	Aug. 6,'97	Birkenhead
8	M	26	Labourer ..	Phthisis ..	Feb. 11,'97	75 Market street
11	F	14	Labourer's daugh.	Hydrocephalus..	May 4,'97	238 Beckwith street
21	M	54	Labourer ..	Paralysis ..	Oct. 18,'97	11 Back Myrtle st.
22	M	45	Plumber ..	Periphl neuritis.	June 23,'97	19 Albert place, T.
22	M	2m.	Charwoman's son	Bronchitis ..	July 27,'97	Born in House
23	F	55	Labourer's widow.	Cancer ..	July 6,'97	150 St. Anne street
23	F	37	Labourer's wife..	Phthisis ..	Sept. 30,'97	14 Wye street, Tra.
25	F	45	Shoemaker's wife.	Pneumonia ..	Sept. 28,'97	366 Brook street
25	F	67	Carpenter's wife..	Senility ..	Oct. 20,'97	2 Bridge End terr.
25	F	62	Cook	Dementia ..	June 22,'97	59 Westbourne rd.
26	F	48	Labourer's widow.	Pneumonia ..	Sept 14,'97	36 Field street
28	F	34	Fireman's widow	Phthisis ..	Aug. 16,'97	11 Peel street, Tra.
29	M	43	Fitter	Bronchitis ..	Aug. 28,'97	14 Russell place
Nov.						
1	M	51	Boilermaker ..	Pneumonia ..	July 21,'97	45 Morpeth bldgs.
1	M	60	Labourer ..	Sarcoma ..	Sept. 16,'97	12 Waterloo place
3	M	51	Labourer ..	Cirrhosis of liver.	Sept. 16,'97	61 St. Anne street
13	F	54	Labourer's widow.	Apoplexy ..	June 2,'97	5 Marshall place
15	M	41	Labourer ..	Pneumonia ..	Nov. 13,'97	12 Menai street

SUPPLEMENT TO TABLE VI.—*Continued.*

Date.	Sex.	Age.	Occupation, &c.	Cause of Death.	Date and Address of Deceased when admitted.	
Nov.						
16	M	40	Tailor	Heart disease ..	Nov. 15,'97	42 Oliver street
17	M	64	Joiner	Joint & bone dis.	Oct. 12,'95	Taylor's vi., Boro'rd
18	M	80	Labourer's son ..	Senility ..	June 15,'95	46 Bk. St. Anne st.
20	M	16	Labourer	Cephalitis ..	Aug. 5,'96	35 Hope street
23	M	35	Fireman	Heart disease ..	Oct. 11,'97	4 Oak street
26	M	24	Naval signalman..	Phthisis ..	Aug. 12,'97	47 Grosvenor st., T.
27	F	25	Labourer's wife..	Anæmia ..	Aug. 17,'97	23 Fox street
Dec.						
4	M	36	Gardener	Phthisis ..	Dec. 30,'97	12 Birch rd., Oxton
6	F	64	Labourer's widow.	Pneumonia ..	Sept. 21,'97	67 Tunnel road
7	M	13	Boilermaker's son	Otitis media ..	Dec. 1,'97	10 William street
9	M	52	Sawyer	Erysipelas ..	Dec. 7,'97	25 Lowther street
11	F	40	Labourer's wife..	Phthisis ..	Nov. 18,'97	34 Leicester street
17	F	34	Carpenter's wife..	Heart disease ..	Dec. 23,'97	4 Rhyl street
18	M	54	Upholsterer ..	Nephritis ..	Nov. 29,'97	Tranmere
21	M	66	Gardener	Brain disease ..	Aug. 13,'96	28 Wilkinson street
22	M	70	Labourer	Nephritis ..	Sept. 14,'97	21 Sandford street

TABLE VII.

Description of those who Died during 1897.

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Accountant	2	..	..	1	..	1
Actor .. ..	..	..	..	1	..	..
Agent .. ..	..	..	1	..	..	..
Agricultural implement mkr.	..	..	..	1	..	..
Annuitant	6	1	..	..	1	..
Architect	1	..	..	..	..	..
Army pensioner	1	..	..	..	2	..
Artist .. ..	..	..	..	..	..	1
Assistant Art Gal. curator ..	1	..	..	..	..	..
Assurance agent .. ..	..	..	2	1	1	1
Auctioneer	1	..	1	..	..	..
Baker	3	..	5	5	4	2
Bandmaster .. ..	..	..	1	..	..	..
Bank manager	1	..	..	1	..	..
Barmaid .. ..	..	..	..	1	..	..
Barman	1	..	2	2	1	..
Barrister .. ..	..	..	..	..	..	1
Basket maker	1	..	..	..	..	..
Billiard marker .. ..	..	..	..	1	..	..
Billiard room manager .. ..	..	..	1	..	..	..
Bill poster	1	..	..	..	..	1
Blacklead manufacturer	1	..	..	..	..	..
Blacksmith	3	..	1	2	1	2
Boat builder	1	..	..	..	..	..
Boiler cleaner .. ..	..	..	4	..	1	..
Boiler maker	11	..	21	10	4	3
Boiler riveter	1	..	1	1	..	1
Book keeper	4	..	1	2	3	1
Book seller .. ..	..	..	..	..	..	1
Boot and shoe maker	6	..	..	6	2	..
Boot repairer .. ..	..	..	..	1	..	..
Borough coroner	1	..	..	..	..	..
Brass finisher	1	..	..	..	1	..
Brass moulder	1	..	..	..	..	..
Brewer	1	..	..	..	..	..
Brewer's cellarman .. ..	..	..	2	..	..	..
Bricklayer	5	..	2	3	3	..
Brick maker .. ..	..	..	2	..	..	1
Bridewell keeper .. ..	..	..	..	..	1	..
Builder .. ..	..	..	1	1	..	1
Butcher	6	..	13	11	6	1
Butler .. ..	..	..	..	..	1	..
Cab driver	4	..	2	2	1	..
Cabinet maker .. ..	..	..	1	..	1	..
Candle maker .. ..	..	..	1	1	..	..
Cargo checker .. ..	..	..	..	1	1	..
Carpenter .. ..	..	..	1	..	..	1
Car proprietor	2	..	..	..	..	..
Carter	5	..	27	14	3	3
Cart owner .. ..	..	..	2	1	..	..

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Carver and gilder	1	..	..	..	..	..
Cashier .. ..	..	..	..	1	..	..
Catholic bishop	1	..	..	..	..	..
Catholic priest	1	..	..	..	..	..
Cattle dealer .. ..	..	..	..	..	1	..
Cattle drover .. ..	..	..	2	..	..	..
Caulker .. ..	..	..	..	1	..	1
Charwoman	4	..	5	1	..	..
Cheese factor .. ..	..	..	..	2	..	..
Chemist	1	..	..	1	1	..
Church verger .. ..	..	..	1	..	..	..
Civil engineer .. ..	..	..	..	1	..	..
Clergyman .. ..	..	..	..	1	2	1
Clerk	17	..	9	4	5	4
Clerk of works .. ..	..	..	..	..	..	1
Clock cleaner .. ..	..	..	1	..	..	..
Clogger .. ..	..	..	..	1	..	..
Clothier	1	..	..	..	..	..
Club secretary	1	..	..	..	..	..
Coach builder	1	..	..	..	..	..
Coachman	2	..	..	4	2	..
Coal heaver	1	..	..	..	..	..
Coal merchant	4	..	1	3	2	1
Coal trimmer .. ..	..	..	3	2	..	..
Coffin maker .. ..	..	..	..	1	..	..
Coke dealer .. ..	..	..	..	1	..	..
Collector .. ..	..	..	..	1	..	..
Commercial agent .. ..	..	..	1	..	1	..
Commercial traveller ..	2	..	..	2	..	1
Commission agent .. ..	..	..	..	..	..	1
Compositor .. ..	..	..	..	1	..	..
Confectioner .. ..	..	..	1	1	..	..
Consulting Boro' treasurer ..	1	..	..	..	..	..
Contractor .. ..	..	..	..	..	..	1
Cook .. ..	..	1	3	2	..	..
Cooper .. ..	..	..	1	1	..	1
Copper refiner .. ..	..	..	1	..	..	..
Cotton broker .. ..	..	..	..	1	..	..
Cotton merchant .. ..	..	..	..	..	..	1
Cow keeper .. ..	..	..	..	..	1	..
Currier .. ..	..	..	1	..	..	..
Custom's officer	1	..	..	1	1	1
Cycle maker .. ..	..	..	1	..	..	..
Decorator .. ..	..	..	..	1	..	..
Dentist	1	..	..	..	..	..
Dock gateman	1	..	1	..	..	..
Domestic servant .. ..	..	10	..	2	..	..
Draughtsman .. ..	..	..	..	..	..	1
Drayman	1	..	..	2	..	..
Dressmaker .. ..	..	4	..	..	..	..

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Drug merchant .. ..	..	..	..	..	1	..
Dry goods merchant.. ..	..	..	..	1	..	..
Electrician	1	..	..	..	..	..
Engine cleaner .. ..	..	..	..	..	1	..
Engine driver.. ..	2	..	9	4	4	2
Engineer	2	..	4	6	4	2
Engine fitter	2	..	6	8	2	3
Engine greaser .. ..	..	..	1	..	1	..
Engraver	1	..	..	..	..	1
Estate agent	2	..	1	..	1	1
Fancy ware dealer	1	..	..	..	..	..
Farmer .. ..	..	..	1	1	1	5
File cutter .. ..	..	..	..	3	..	..
Fireman	3	..	19	6	4	2
Firewood dealer	1	..	1	..	1	..
Fisherman .. ..	..	..	1	1	..	..
Fishmonger .. ..	..	..	..	1	1	..
Flagger .. ..	..	..	1	..	..	..
Flatman	4	..	5	7	2	3
Flatowner	1	..	..	1	..	..
Foreman	3	..	..	..	..	1
French polisher	1	..	..	..	1	..
Fruiterer .. ..	..	..	..	1	2	..
Fruit salesman .. ..	..	..	..	1	..	..
Furniture packer .. ..	..	..	..	1	..	..
Furrier .. ..	..	..	..	..	..	1
Game keeper .. ..	..	..	..	1	..	..
Ganger .. ..	..	..	..	..	1	..
Gardener	9	..	2	3	5	2
Gas fitter .. ..	..	..	2	..	1	..
Gas stoker	1	..	1	..	..	..
General broker	2	..	..	..	..	..
General merchant	1	..	..	..	..	..
Glazier .. ..	..	..	1	..	..	..
Gold miner	1	..	1	..	..	..
Green grocer	1	..	1	..	1	..
Grinder .. ..	..	..	1	1	..	..
Grocer.. ..	1	..	2	5	..	..
Groom .. ..	..	..	..	1	..	..
Gun maker	1	..	..	..	..	..
Hair dresser .. ..	..	..	3	2	..	..
Hat manufacturer .. ..	..	..	1	..	..	..
Hawker .. ..	..	..	1	..	1	1
Hay and provender merchant .. ..	..	..	..	..	1	1
Hide salesman .. ..	..	..	..	1	..	..
Holder-up	1	..	1	1	1	..
Hop merchant .. ..	..	..	..	..	..	1
Horse breaker .. ..	..	..	..	..	..	1
Hospital secretary .. ..	..	..	..	..	1	..
Hospital ward maid .. ..	..	1	..	..	..	..

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Housekeeper .. ..	..	1	1	..	..	..
House owner .. ..	..	..	..	..	..	1
Hydraulic man .. ..	..	..	..	1	..	..
Iron driller	2	..	4	14	3	..
Iron merchant	1	..	..	1	..	..
Ironmonger	2	..	2	..	..	..
Iron moulder	1	..	1	4	..	..
Iron smith	1	..	..	1	1	..
Iron turner	1	..	1	..	..	..
Jeweller	2	..	..	..	..	..
Joiner	20	..	14	11	9	4
Labourer	76	..	130	123	42	23
Lady's companion .. ..	..	1	..	..	..	..
Lamplighter .. ..	..	..	..	3	..	..
Land steward .. ..	..	..	..	..	..	1
Laundress .. ..	..	..	1	2	..	..
Leather merchant .. ..	..	..	..	..	1	..
Librarian .. ..	..	..	..	..	..	1
Licensed victualler	5	..	2	7	5	2
Lodging house keeper .. ..	..	..	1	..	..	..
Manager	2	..	..	1	1	..
Marble mason	1	..	1	..	..	..
Marine officer	1	..	1	1	1	..
Marine superintendent .. ..	..	..	..	..	1	..
Master mariner	3	..	1	4	2	4
Meat salesman	1	..	..	..	..	1
Medical officer of health .. ..	..	..	1	..	..	..
Medical practitioner	3	..	..	1	..	..
Merchant .. ..	..	..	..	..	..	1
Messenger	1	..	..	..	..	..
Metal planer .. ..	..	..	..	5	..	..
Military officer .. ..	..	..	..	..	1	..
Milk purveyor	4	..	3	2	..	..
Miller .. ..	..	..	1	..	..	..
Missionary	1	..	..	..	..	..
Musical hall artiste .. ..	..	..	..	1	..	..
Musician .. ..	..	..	..	1	..	..
Naval architect	1	..	..	..	..	..
Naval pensioner	8	..	1	..	..	..
News agent .. ..	..	..	..	..	..	1
Nurse .. ..	..	3	..	2	..	..
Office boy	1	..	..	..	..	..
Of independent means	3	1	..	..	..	1
Of no occupation	1	..	..	..	..	..
Organ builder	1	..	1	2	..	..
Packing case maker .. ..	..	..	1	..	..	..
Painter	9	..	10	11	4	6
Palliasse maker	1	..	..	..	..	..
Paper hanger	1	..	..	..	..	..
Pattern maker	1	..	..	2	1	1

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Pavior.. ..	..	..	2	..	..	..
Pedlar	1	..	..	..	..	..
Physician .. ..	..	..	..	1	..	..
Pianoforte maker	1	..	..	..	..	..
Pianoforte tuner .. ..	..	..	1	1	..	..
Picture frame maker .. ..	..	..	2	..	..	..
Pilot .. ..	..	..	..	1	..	..
Platelayer .. ..	..	..	2	..	..	..
Plumber	4	..	6	3	1	..
Police inspector .. ..	..	..	1	..	1	..
Policeman	1	..	2	4	1	2
Porter	4	..	4	5	5	3
Postman	1	..	1	..	1	..
Potato dealer.. ..	..	..	..	..	1	..
Poultry dresser .. ..	..	..	1	..	..	..
Printer	2	..	..	..	..	1
Professor of music .. ..	..	..	1	..	..	..
Provision dealer .. ..	..	..	..	2	..	..
Pumpman .. ..	..	..	..	1	..	..
Railway servant	10	..	25	28	8	5
Retired brewer .. ..	..	..	..	1	..	..
„ brush manufacturer.. ..	..	..	..	..	..	1
„ butcher	1	..	..	..	..	..
„ cabinet maker	1	..	..	..	..	..
„ coach proprietor .. ..	..	..	..	..	..	1
„ coal merchant .. ..	..	..	..	..	1	..
„ collector of customs.. ..	..	..	..	1	..	..
„ corn broker	1	..	..	..	..	..
„ corporation official.. ..	1	..	..	..	..	..
„ druggist .. ..	..	..	..	..	1	..
„ engineer	1	..	..	..	1	..
„ farmer	2	..	..	..	1	..
„ flat owner	1	..	..	..	..	..
„ grocer .. ..	..	..	..	..	1	..
„ housekeeper.. ..	..	1	..	..	..	..
„ jeweller .. ..	..	..	..	1	1	..
„ journalist	1	..	..	..	..	..
„ licensed victualler	3	..	..	..	..	..
„ master mariner	1	..	..	..	..	..
„ medical practitioner.. ..	1	..	..	..	..	..
„ merchant	1	..	..	..	..	..
„ metal agent.. ..	1	..	..	..	..	..
„ military officer	1	..	..	..	..	..
„ naval commander	1	..	..	..	..	..
„ naval engineer	1	..	..	..	..	..
„ salt manufacturer	1	..	..	..	..	..
„ stevedore	1	..	..	..	..	..
„ timber merchant	1	..	..	..	..	..
River waterman	1	..	..	..	..	..
Rope maker	1	..	..	..	..	..

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Rope manufacturer .. ..	..	..	..	..	..	1
Sack merchant .. ..	..	..	..	1	..	..
Saddler	1	..	1	2	1	..
Salesman .. ..	..	..	2	..	1	..
Salt worker .. ..	..	..	..	..	1	..
Saw setter	1	..	..	..	..	..
Scale maker .. ..	..	..	..	..	1	..
School master	2	..	..	1	3	1
School mistress .. ..	..	1	..	..	..	..
Seaman	8	..	12	10	4	4
Seaman instructor	1	..	..	..	..	..
Seamstress .. ..	..	1	..	..	..	..
Secretary .. ..	..	..	..	2	..	..
Sergeant .. ..	..	..	1	..	..	..
Servant .. ..	..	1	12	7	1	..
Sewing machine agent .. ..	..	..	1	..	..	..
Sheriff's officer .. ..	..	..	..	1	..	..
Share broker's apprentice	1	..	..	..	..	..
Ship broker .. ..	..	..	..	1	..	..
Ship builder	1	..	..	..	..	1
Ship owner .. ..	..	..	..	..	1	..
Ship plater .. ..	..	..	4	3	2	..
Ship rigger	2	..	1	1	5	..
Ship smith .. ..	..	..	1	..	..	1
Ship steward .. ..	..	..	4	5	..	3
Shipwright	4	..	4	2	3	6
Shop assistant	4	..	3	4	..	..
Shop keeper .. ..	..	1	..	..	..	..
Shop manager .. ..	..	..	1	..	1	..
Sister of charity .. ..	..	1	..	..	..	..
Slate merchant .. ..	..	..	..	..	1	..
Slater and plasterer	6	..	..	3	2	2
Soap maker .. ..	..	..	..	..	1	..
Soap packer .. ..	..	1	..	..	..	..
Soap skimmer .. ..	..	..	1	..	..	..
Soap wrapper .. ..	..	..	1	..	..	..
Solicitor	1	..	..	..	2	..
Spoon and fork maker .. ..	..	..	1	..	..	..
Stageman .. ..	..	..	..	1	..	..
Stationer .. ..	..	..	..	1	..	..
Station master .. ..	..	..	..	1	1	..
Steam crane driver	1	..	..	1	1	..
Steel worker .. ..	..	..	..	1	..	..
Stevedore .. ..	..	..	1	..	..	..
Stock taker .. ..	..	..	1	..	..	..
Stoker	1	..	..	..	1	..
Stonemason	7	..	4	2	1	6
Stone quarrier	3	..	1	..	1	1
Stone quarry proprietor	1	..	..	..	..	..
Store keeper	2	..	1	..	1	1

TABLE VII.—*Continued.*

Occupation, &c.	M.	F.	Son.	Daughter.	Wife.	Widow.
Striker	1	..	..	..	..	..
Superannuated policeman ..	..	..	..	..	1	..
Superannuated postman ..	..	..	..	..	1	..
Superannuated ship steward.	1	..	..	..	..	..
Tailor	4	..	3	1	2	1
Tallow chandler	1	..	..	..	..	..
Tea merchant .. ..	..	..	..	..	..	1
Tea salesman .. ..	..	..	2	..	..	..
Theatrical manager	1	..	..	..	..	..
Theatrical secretary .. ..	..	..	..	1	..	..
Timber measurer	1	..	..	..	..	..
Timber merchant .. ..	..	..	..	..	..	1
Time keeper .. ..	..	..	..	2	..	..
Tinsmith .. ..	..	..	3	..	1	..
Tobacconist .. ..	..	..	..	1	1	..
Tool grinder	1	..	..	..	..	..
Tool smith	1	..	..	..	..	..
Traffic superintendent	1	..	..	..	..	..
Training-ship boy	5	..	..	..	..	..
Tramcar driver .. ..	..	..	1	2	..	..
Tripe dresser	1	..	1	1	..	..
Tug boat owner .. ..	..	..	..	..	..	1
Typist .. ..	..	1	..	..	..	..
Undertaker .. ..	..	..	..	1	..	1
Unknown	3	4	2	1	..	1
Upholsterer	1	..	1	1	..	..
Van driver	1	..	..	1	..	..
Viceman	1	..	..	..	..	..
Vocalist .. ..	..	1	..	..	..	..
Waiter	1	..	..	..	..	..
Warehouseman	1	..	5	1	2	3
Watchmaker	2	..	..	..	..	2
Watchman	2	..	..	2	2	..
Waterman	1	..	..	1	..	..
Weight taker	1	..	..	..	..	..
Wharfinger	1	..	1	..	1	..
Wheelwright	2	..	2	..	3	2
Whip manufacturer	1	..	..	..	..	..
Whitesmith	3	..	1	..	..	..
Window blind maker .. ..	..	..	..	..	1	1
Window cleaner .. ..	..	..	1	2	..	..
Wine merchant	2	..	..	..	1	..
Wood sawyer .. ..	..	..	..	..	1	..
Wool broker .. ..	..	..	..	1	..	..
Wool comber .. ..	..	..	..	1	..	..
Yard man	2	..	1	..	..	..