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ANNUAL REPORT

ON THE

Health of St. Helens,

For the Year ending January 2nd, 1904.

BY

F. DREW HARRIS,

M.B.Lond, D.P.H.,

Medical Officer of Health;

AND

Public Analyst.

St. Helens:

Westworth and Sons, Printers and Stationers, Lowe Street.

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HEALTH COMMITTEE

OF THE

ST. HELENS CORPORATION NOVEMBER, 1903.

THE RIGHT WORSHIPFUL THE MAYOR, (ALDERMAN J. MASSEY, J.P.), Deputy-Chairman.

Alderman J. Forster, J.P., Chairman. Councillor J. Burchall, J.P. ,, SIR DAVID GAMBLE, Bart., C.B., J.P. ,, J. C. Gamble, J.P. Councillor H. B. Bates, L.S.A. ,, F. J. Brown.

" J. Fisher. J. GREEN, J.P. W. MOLYNEUX. " ,, P. J. O'KEEFFE, L.R.C.P., L.R.C.S. A. R. PILKINGTON.

HOSPITALS SUB-COMMITTEE.

THE RIGHT WORSHIPFUL THE MAYOR. Alderman J. Forster, J.P.

SIR DAVID GAMBLE, Bart., C.B., J.P.

Councillor H. B. Bates, L.S.A.

F. J. Brown.

SANITARY SUB-COMMITTEE.

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,, J. C. Gamble, J.P.
Councillor H. B. Bates, L.S.A.

Councillor J. Burchall, J.P.
,, J. Green, J.P.
,, W. Molyneux.

INFANT MILK SUPPLY SUB-COMMITTEE.

THE RIGHT WORSHIPFUL THE MAYOR. Councillor H. B. Bates, L.S.A. Alderman J. Forster, J.P. ,, SIR DAVID GAMBLE, Bart., C.B., J.P.

SEWAGE SUB-COMMITTEE.

THE RIGHT WORSHIPPUL THE MAYOR. erman J. Forster, J.P., Sir David Gamble, Bart., C.B., J.P. Councillor H. B. Bates, L.S.A. Alderman J. Forster, J.P.

STATISTICAL SUMMARY FOR 1903.

Population—Estimated to the middle of the year—	
Males 45167 Females 42218 Total	87,385
Natural increase during the year	1,886
Marriages	569
Annual Rate of Persons Married per 1000 of the Population	6.51
Births Males 1,752 Total	3,421
Annual Rate of Births per 1000 of Population	39.14
Mean ,, ,, during years 1893 to 1902	37.64
The state of the s	
Deaths Males 830 Total	1,535
Annual Rate of Mortality (Males 18.9) per 1000 (Females 16.1) Total	17:5
Mean Rate during years 1893 to 1902	20.3
Total Deaths from Zymotic Diseases	151
Annual Rate of Mortality from Zymotic Diseases	1.72
Mean Rate of Mortality from Zymotic Diseases for years 1893 to 1902	3.21
10 1002	0.21
Infantile Mortality Rate, 1903	138
Mean Rate for years 1893 to 1902	175

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,

TOWN HALL,

ST HELENS,

June 8th, 1904.

To the Chairman and Members of

The Health Committee,

Corporation of St. Helens.

GENTLEMEN,

I have the honour to present to you the 31st Annual Report on the Health of the Borough of St. Helens, being the seventh issued since my appointment to be your Medical Officer.

This report deals with various statistics relating to the Public Health, and also with the work done by the Health Department during the year ending January 2nd, 1904.

The year 1903 may be regarded as one in which substantial progress has been made in promoting the Health interests of the Borough.

By reference to the various rates, it will be seen that in no previous year has the health of the Borough been so good.

The Birth-rate for 1903 was 39·14 per 1000, being 1·5 lower than the mean of the previous 10 years; the Death Rate was 17·5 per 1000, being 2·8 below the mean of the previous 10 years, and though Scarlet Fever was epidemic during the year, the Zymotic Rate was only 1·72 per 1000, this rate being 1·49 below the mean of the previous 10 years.

I would particularly draw your attention to my remarks on Small-Pox, and also to the report on the working of the Factory and Workshops Act. This Act has thrown considerably more work on the Health Department, and for its efficient working necessitates the appointment of an additional inspector.

The figures which I have worked out regarding the relative mortality of the different wards of the Borough have entailed a great amount of labour, but they will be of great interest in the future and even now merit your careful attention.

The appointment of a Veterinary Inspector still proves most beneficial, both as regards meat inspection and the work which he has done in examining the cows in the various shippons.

Never before, in the history of the Borough, has Typhoid Fever caused so little sickness, the number of notifications being even less than in the previous year, and the Health Committee may well congratulate themselves on the results of their efforts.

I would again urge upon you the necessity to prosecute with energy the sewage scheme for Sutton and Parr, and I would suggest that that part of the area which can be drained to the present outfall, should be proceeded with at the earliest possible moment.

The report of the work done by the Special Inspector appointed to test drains, both of old and new property, merits, I think, your attention. It is a matter for regret that this work must necessarily be slow.

I wish again to acknowledge and thank you sincerely for the kindness and assistance which it has been my good fortune to receive from every member of the Committee—and especially the Chairman and Vice-Chairman—during the year.

My thanks are also due to the Medical Practitioners in St. Helens for their assistance and cordial co-operation in all efforts to improve the Public Health.

I have further to report that the various officials connected with my department have discharged their duties satisfactorily and conscientiously.

I am, Gentlemen,

Your obedient Servant,

F. DREW HARRIS.

POPULATION.

The population of the Borough of St. Helens was found at the census of April 1901 to be 84,410, showing an increase for the ten years 1891-1901 of 12,043. In estimating the population at the middle of the year (June 30th) 1903 the usual and, on the whole, the most reliable method is that adopted by the Registrar-General.

This method assumes that the same ratio of increase has been maintained since 1901, as took place during the intercensal period 1891-1901. Though the last census returns showed that this method was liable to very considerable errors in certain towns, it still remains the only recognised method for estimating the progress of populations. With a quinquenial census instead of a decennial one, this method would gain largely in accuracy, and it is to be hoped that the time is not far distant when a Bill will be introduced, establishing a census every five years.

The figures therefore for estimating the population in the middle of 1903 are as follows:—

Population, 1891 72,367 (April)
Population, 1901 ... 84,410 (April)
Population, **1903** (estimated) ... **87,385** (June)

It is on this latter figure that the various rates of the Borough are based.

The results obtained by the Registrar-General's method may be checked with fair accuracy in the following way:—It is an ascertained fact that the birth-rate in any district remains fairly constant, so long as no new conditions of labour, etc., are introduced. The average birth-rate of the last ten years is therefore found, and from the known number of births which have occurred in the year for which the estimated population is desired, the population is calculated which would give the said number of births at the above mentioned birth-rate. Thus the mean annual birth-rate in St. Helens for the years 1893-1902 is 37·64 per 1,000 of the population, whilst the number of births registered during 1903 was 3,421. This number at the above rate (37·64) would give a population of 90,914. In the present instance, however, there is reason to believe that the number of births in 1903 was in excess of the average of the past ten years. On the whole the figure obtained by the Registrar-General's method is preferable and as before stated the one adopted in this report in the calculation of the various rates.

CAUSES OF INCREASE OF POPULATION.

The following figures show the various increases which have been registered as occurring in St. Helens during the past 19 years:—

Year.	Natural Increase.	Estimated Increase.	Increase due to Immigration.	Natural Increas Rate per 1000 of Population.
1885.	1062	1348	286	16.8
1886	1193	1379	166	18.5
1887	1030	1407	337	15.6
1888	1322	1440	118	19.6
1889	1236	1470	234	18.0
1890	1032	1504	472	14.7
+1891	1094		_	15.2
1892	1408	1574	166	19.2
1893	1236	1600*	364	16.4
1894	1482	1660	178	19.0
1895	1476	1710	234	18.5
1896	1389	1785	336	17.2
1897	1447	1774	327	17.4
1898	1621	1820	189	19.2
1899	1415	1858	448	16.3
1900	1184	1892	708	13.4
†1901	1453			17.1
1902	1520	1306	_	17.6
1903	1886	1345	_	21.5

^{*} This number does not include the increase which took place in the new area during 1893. † Census Year.

A natural increase of 1886 in the population of 87,385 is at the rate of 21.5 per 1000 per annum, against 17.6 in 1902.

DISTRIBUTION OF THE POPULATION.

In the accompanying Table are given the Statistics relating to the Distribution and Density of the Population in the various Wards.

WARDS.	Population Census 1901.			Persons per Acre in 1903	
Eccleston, North	10551	11009	Acres. 235·439	46.8	
T 1 (C (1	8835	9400	621.625	15.6	
0 1	7235	7240	94.459	77.0	
Windle, North	11475	12002	697.084	17.2	
Windle, South	. 8315	8439	67.116	125.9	
Hardshaw	9690	9901	342.684	28.9	
Sutton, East	8771	8975	1312-319	6.8	
Sutton, West	9524*	9979	2429.151	4.1	
Parr	10014	10440	1484.550	7.0	
Whole Borough	84410	87385	7284.427	11.9	

^{*} Including 936 in Rainhill Asylum.

AGE DISTRIBUTION, 1903.

AGES.	CENSUS, 1891, Old Borough Area.	CENSUS, 1901, Extended Borough.	Estimated Population at each Age in the Extended Borough, 1903.
Under 1 year	 2398	2611	2703
1 to 2 years	 01.10	2397	2481
2 ,, 3 ,,	 2140	2380	2464
8 ,, 4 ,,	 2068	2358	2441
4 ,, 5 ,,	 1967	2324	2406
Total under 5 years	 10716	12070	12495
5 to 10 years	 9221	10884	11290
10 ,, 15 ,,	 8334	9727	10090
15 ,, 20 ,,	 7441	8546	8866
20 ,, 25 ,,	 6582	7961	8024
25 ,, 30 ,,	 6023	7274	7550
30 ,, 35 ,,	 5129	6047	6280
35 ,, 40 ,,	 4465	5257	5462
40 ,, 45 ,,	 8674	4451	4628
45 ,, 50 ,,	 2685	3688	3838
50 ,, 55 ,,	 2484	2860	2980
55 ,, 60 ,,	 1620	1999	2078
60 ,, 65 ,,	 1407	1679	1746
65 ,, 70 ,,	 763	998	1041
70 ,, 75 ,,	 461	590	618
75 ,, 80 ,,	 227	249	265
80 ,, 85 ,,	 83	99	102
85 ,, 90 ,,	 19	23	24
90 ,, 95 ,,	 4	5	5
95 ,, 100 ,,	 -	3	3
	71288	84410	87985

BIRTHS.

The number of Births registered during 1903 was **3,421**. This number is 199 above that registered in 1902, The birth-rate, therefore is **39.14** per 1000 of the population.

In the following Table will be found the number of births registered during the years 1893 to 1903 and the birth rate for each year:—

YEAR	t.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Totals.	Rate per 1000 per year.
1893 .		745	747	776	781	3029	40.1
1894 .		781	716	658	732	2882	87.0
1895 .		884	796	775	710	3165	32.8
1896 .		777	783	714	768	3042	37.4
1897 .		823	769	813	788	3193	38.5
1898 .		896	776	767	823	3262	38.4
1899 .		802	762	768	788	3115	35.9
1900 .		886	748	768	701	3098	35.0
1901 .		815	765	792	756	3128	36.9
1902 .		848	798	801	775	3222	37.4
Mean o		825	765	762	757	3113	36.9
(M	ſales	403	439	428	482	1752	
Fe	emales	416	406	391	456	1669	39.14
1903 To	otal	819	845	819	938	3421	
R	ate per 1000	37.4	38.6	37.4	42.9		

In England and Wales the birth-rate during 1903 was 28.4 per 1000 of the population, it is 1.0 per 1000 below the average rate of the previous ten years; that of St. Helens being 2.24 above the mean of the previous ten years.

It will be observed that during 1903, the highest birth-rate was registered during the 4th Quarter.

Of the 3,421 children born during 1903, 1,752 were males, and 1,669 were females, this being in the proportion of 100 males to 95.2 females. According to the Census of 1901 there were 100 males to 93.5 females in St. Helens, whereas in England and Wales at the same period there were 100 males to 106.4 females.

YEAR.	Birth Rates.							
I EAR.	England and Wales.	St. Helens.	33 Great Towns.	25 other Large Towns				
1893	30.8	40.1	81.9	31.8				
1894	29.6	37.0	80.7	80.8				
1895	30.3	39.8	31.3	31.3				
1896	29.7	37.4	30.7	30.1				
1897	29.6	38.5	30.7	30.0				
1898	29.4	38.4	30.3	29.4				
1899	29.8	85.9	30.1	30.2				
1900	28.9	35.0	29.4	29.2				
1901	28.5	36.9	30.0	29.9				
1902	28.6	87.4	80.0*	-				
Means	29.4	87.6	80.5	30.2				
1903	28.4	39·1	27.4*	_				

^{*} Birth-rate of the 76 great towns, so classified since the last census.

In the Table given above are set out the birth-rates for the past 10 years in England and Wales, the 33 great towns, 25 other large towns, and St. Helens. The consistently high birth-rate of St. Helens compared with these will be noted.

In Table E will be found the birth-rates for each of the 76 great towns in England and Wales, and it will be noticed in only one of these towns was there a birth-rate higher than in St. Helens, viz.:—Rhondda. Merthyr, Middlesboro', Gateshead, Wigan, Warrington, and Sunderland, are the only other towns with a birth rate over 35.0 per 1,000.

ILLEGITIMACY.

St. Helens has always had a comparatively low rate of illegitimacy, so low indeed that probably it does not influence the mortality statistics to any appreciable degree as it does in some other districts.

Of the 3,421 births registered during 1903, 76 were illegitimate. This is in the proportion of 977.8 legitimate births and 22.2 illegitimate births in every 1000, or, in other words, 2.2% of the total births were illegitimate.

Year.	Legitimate.	Illegitimate.
1887	971	29
1888	970	-30
1889	975	25
1890	976	24
1891	974	26
1892	981	19
1893	974	26
1894	968.5	31.5
1895	975.0	24.9
1896	972.8	27.6
1897	976.5	23.4
1898	972.4	27.5
1899	977.9	22.1
1900	978.4	21.6
1901	975.7	24.3
1902	976.7	23.2
1903	977.8	22.2

The above figures do not include the births which occurred in Whiston Workhouse.

It is satisfactory to know that the statistics for St. Helens regarding illegitimacy compare favourably with those of any other town in England, and are below the figures for the whole of England.

MORTALITY RATE.

The deaths of **1,535** persons took place during 1903 within the Borough of St. Helens. Of these **830** were males and **705** females. This number is equal to an uncorrected death-rate of **17.5** per 1000 of the population.

For comparative purposes certain corrections have to be applied as follows:—

***	.0.1.0.1			
I.	To be deducted—	MALES.	FEMALES.	TOTAL.
	(a) Deaths in Rainhill Asylum (Main)			
	Building)	52	85	87
	(b) Deaths of Haydock patients at the)			
	Isolation Hospitals	3	0	3
	(c) Deaths of patients at the St. Helens)			
	Hospital who were admitted from	3	0	3
	Districts outside the Borough			
	(d) Deaths at the Providence Hospital)	0	0	0
	under similar conditions	3	0	3
	Totals	61	35 .	96
	Totals	OT	00 .	00

11.

To	be added—		MALES	з.	FEMALES.	TOTAL.
(a)	Deaths of St. Helens patients Whiston Workhouse Infirms		74		42	 116
(b)	Deaths at Old Wint Small-Hospital, of patients from Helens	St.	0	•••	0	 0
(c)	Deaths at Rainhill Asylum patients from St. Helens		8		5	 13
	Total		82		47	 129

The corrected number of deaths is therefore **1,568**, and the death-rate for St. Helens, with these corrections, is **17.9** per 1000 of the population. This number is 1.8 per 1000 below the rate in the preceding year—i.e., 1902, **19.7**.

The death-rate for 1903 is also 2.8 per 1000 below the mean-rate of the preceding 10 years (20.3).

In England and Wales the death-rate during 1903 was at the rate of 15.4 per 1000 of the population, and this rate was 2.2 per 1000 below the mean rate for the ten years—1893 to 1902.

On page 40 will be found the recorded death-rates for St. Helens during 30 years.

It will be noted that never before has so low a death-rate been recorded. The nearest approach is the death-rate of 18.02 recorded in 1894. This must certainly be regarded as a most satisfactory state of affairs.

In Table E (page 36) will be found the Mortality Statistics in other towns. In comparing these with St. Helens,—the social conditions,—the age and sex distribution,—and the nature of the staple industries in each town should be taken into consideration. It will, however, be noted in comparing the Mortality Statistics of St. Helens with those of the 75 other great towns that though the St. Helens death-rate is above the mean death-rate of these towns (17.9 against 16.3), that there are twenty towns with a higher mortality and fifty-five with a lower rate—a great improvement to last year when there were only seven towns with a higher death-rate.

In former reports great stress has been laid on the influence which the age and sex constitution of a population exercises on the death-rate, and in the report for 1898 it was shown how these factors might be eliminated and the rates of different centres be accurately compared.

It is unnecessary to recapitulate these facts, and it will be sufficient merely to append the following table,

Subjoined is a Table showing accurate comparison between the deathrates for St. Helens with those for England and Wales, and also the comparative mortality figures for the years 1891—1903.

YEAR.	Crude Death-rates of St. Helens.	Standard Death-rates of St. Helens.	Factor of Correction.	Corrected Death-rates of St. Helens.	Death-rates for England and Wales.	Comparative Mortality figures, England and Wales, = 1000
1891	26.02	17.46	1.09679	28.53	20.22	1411
1892	20.55	,,	,,	22.53	18.98	1187
1893	28.46	,,	,,	25.73	19.17	1342
1894	18.02	,,	,,	19.76	16.59	1191
1895	21.08	,,	,,	23.12	18.73	1234
1896	20.24	,,	,,	22.19	17:19	1291
1897	21.0	,,	,,	23.03	17.48	1321
1898	19.06	,,	,,	20.9	17.6	1187
1899	19.42	,,	,,	21.3	18.33	1162
1900	21.54	-,,	,,	23.62	18.3	1291
1901	19.76	,,	,,	21.67	16:9	1282
1902	19.7	16.80	1.0839	21.71	16.28	1334
1903	17.9	39	,,	19.40	15.4	1259

Thus taking the present year, the number of persons among whom 1,000 deaths would have occurred in England and Wales would have given 1259 deaths in St. Helens. This comparative mortality figure is considerably better than that of the last three years, but still leaves room for improvement.

By reference to Table F it will be seen, judging by the comparative mortality figure, that as many as 19 towns stand below St. Helens.

The death-rates in each Quarter of the past six years are seen below:-

			1898	1899	1900	1901	1902	1903
1st Q	uart	er	18.4	 20.0	 26.2	 18.5	 23.4	 17.1
2nd	,,		16.4	 16.1	 19.6	 18.2	 19.6	 15.9
3rd	,,		21.9	 22.9	 23.2	 24.6	 17.5	 17.1
4th	,,		20.5	 19.3	 17.3	 17.5	 18.5	 20.0

It will be noted that the death-rates in the first, second, and third quarters were quite satisfactory, the highest rate being in the 4th Quarter,

In order to analyse broadly the causes of death the following table has been appended. It shows the number of deaths from various groups of diseases for the years 1893-1903, together with the average for the ten years.

Table Showing Annual Number of Deaths from Various Groups of Diseases During Past Eleven Years.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean	1903
Zymotic diseases	425	191	276	326	388	285	278	319	245	243	297	166
Parasitic diseases	. 1	2	2	2	5	2	_	3	I	-	I	-
Dietic diseases	. 2	_	4	2	7	5	4	7	7	1	4	10
Constitutional diseases	. 210	216	241	230	234	219	222	264	209	265	231	232
Developmental ,,	. 84	74	122	96	101	114	99	125	123	143	108	125
Diseases of Nervous System	191	180	182	197	182	210	217	237	181	211	198	211
,, ,, Respiratory ,,	390	302	344	356	375	332	379	439	326	142	338	364
,, ,, Respiratory ,, ,, ,, Circulatory ,,	63	74	88	77	71	73	90	100	94	82	81	89
" " Digestive "	147	116	146	150	148	154	157	176	192	135	152	113
Other local diseases)	52	38	47	39	51	43	52	54	54	55	48	67
Deaths from violence	. 49	65	53	61	48	56	55	52	65	56	56	68
Ill-defined diseases	. 154	142	169	132	136	148	147	138	150	109	142	90
All causes	. 1769	1400	1674	1668	1746	1641	1700	1914	1675	1702	1688	1535

From the above table it will be seen that the deaths from all causes were 153 below the mean of the previous ten years. This reduction was due practically entirely to the diminished number of deaths from zymotic diseases, which were as much as 131 below the mean, and this, in spite of the fact that Scarlet Fever and Whooping Cough were epidemic during the year, and that the Borough was visited by an epidemic of small-pox. The large reduction, however, in diarrhoeal diseases, due largely to the cold wet, summer, was mainly responsible for this. Digestive Diseases were also 39 below the mean, and deaths from ill-defined causes were 52 below.

On the other hand Developmental Diseases caused 17 deaths above the mean; Diseases of the Nervous System 13; Diseases of the Respiratory System 26; and deaths from Violence 12 above the mean. In the other classes of diseases set out the number of deaths recorded, corresponded closely with the mean number recorded in the previous ten years.

These results may be regarded as highly satisfactory, the marked reduction in deaths from zymotic diseases being specially so.

It should be added that this comparison is only approximate, as no account is taken of the increase of the population. The various diseases will be treated of more fully under their respective heads.

The death-rates of Males and Females during the past six years are as follows:—

	Males.	Females.	Total.
1898	 20.9	 17.7	 19.3
1899	 21.5	 17.7	 19.6
1900	 21.8	 21.3	 21.6
1901	 21.3	 18.1	 19.7
1902	 20.2	 19.2	 19.7
1903	 18.9	 16.1	 17.5

The death-rates in the various Wards are shewn below:-

WARDS.	Death-rate 1898.	Death-rate 1899.	Death-rate 1900.	Death-rate 1901.	Death-rate 1902.	Death-rate
Eccleston, North	28.1	19.1	21.7	22.1	19.2	17.7
Eccleston, South	11.3	13.3	17.4	18.8	15.0	14.7
Central	14.6	16.3	19.7	14.4	20.1	13.0
Windle, North	17.6	15.2	18.1	18.4	14.2	14.9
Windle, South	14.8	15.9	17.9	18.4	17.5	12.1
Hardshaw‡	24.4‡	22.6‡	21.0‡	17.7‡	20.3	21.6
Sutton, East†	15.6†	17.9+	17.7†	15.8†	19.3	18:3
Sutton, West*	31.4*	32.1*	35.2*	32.7*	31.9	24 2
Parr	21.1	24.0	25.3	20.6	20.7	20.0

^{*}Including Deaths in Rainhill Asylum (main building), and in the Fever Hospital.

The reduction in the death-rate in North Eccleston and Parr is a matter for congratulation. It should also be pointed out that the high rate in West Sutton is almost wholly accounted for by the deaths in Rainhill Asylum, this institution furnishing one third of the total deaths in the Ward. The very low death-rate in South Windle and Central Wards is worthy of comment.

[†] Do. do. The St. Helens Hospital.

[†] Do. do. The Providence Hospital.

In the report for 1898, the influence on the death-rate of the age an sex constitution of a population was emphasised at some considerable length. The steps by means of which this factor could be eliminated were there set out, and in explanation of the following tables it will be only necessary to briefly summarise these steps.

At the last census, the age and sex constitution of the populations of the various wards of the Borough were obtained, and from these, factors of correction have been worked out. By this means an absolute test is provided of the relative healthiness of the various wards, and should prove of the greatest value in the future.

The steps briefly are as follows: -

- 1. Having obtained the age and sex constitution of the given population and the mean death-rate in England and Wales at the same age groups for the decennial period 1891-1900, it is calculated what the yearly number of deaths should be among the total population, assuming that the death-rates were the same in the given population as in the whole of England and Wales.
- 2. The death-rate per 1,000 is then found from the total population and from the total number of deaths as calculated above. The rate, so obtained, is known as the standard death-rate.
- 3. The ratio which the mean annual death-rate for England and Wales during the ten year 1891-1900 (18·21) bears to the standard death-rate taken as unity is now found, such ratio being the "factor of correction" for age and sex constitution.
- 4. By multiplying the crude or recorded death-rates of each ward from 1901-1910 by this "factor of correction," the true or corrected death-rate will be obtained. In other words the death-rate has been found which would have occurred if the age and sex constitution of the population of each ward had been the same as that of England and Wales as a whole, and the effect of age and sex constitution has been eliminated. The true influence which insanitary conditions etc., exercise on the public health is at once apparent.
- 5. The comparative mortality figure can then be obtained by finding the proportion which the corrected death-rate in each year bears to the death-rate for England and Wales in the same year taken as 1,000.

NORTH ECCLESTON.

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 65—75 ,, 75—85 ,, 85 and upwards	893 758 633 1086 949 599 345 184 80 16	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	56.00003 3.26698 1.55085 4.75668 6.41524 6.88850 6.53775 6.43080 5.63120 2.33792 0.28687
10000	5544		100-10282
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	865 731 554 851 846 514 347 195 92 10 2	52·80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60·72 130·60 261·42	45.67200 3.19447 1.42378 3.45506 5.14368 4.92926 5.11478 5.54580 5.58624 1.30600 0.52284
Females Males	5007 5544		81 89391 100·10282
Total	10551		181-99673

SOUTH ECCLESTON.

Ages.	Population.	Death rates in England & Wales.	No. of Deaths,
0— 5 yrs	630 544 513 956 714 484 323 195 84 24	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	39·50730 2·34464 1·2568 5 4·28728 4·82664 5·56600 6·12085 6·81625 5·91276 3·50688 0·86061
35 and upwards	4470	FEMALES.	81.00606
0 *	*00	F0.00	111 5 7 4 4 0
0— 5 yrs 5—10 ,, 10—15 ,,	598 547 526 843	52·80 4·37 2·57 4·06	31·57440 2·39039 1·35182
15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,,	651 525 336 204 105 30	6.08 9.59 14.74 28.44 60.72 130.60	3.42258 3.95808 5.03475 4.95264 5.80176 6.37565 3.91800
15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,,	651 525 336 204 105	6.08 9.59 14.74 28.44 60.72	3·95808 5·03475 4·95264 5·80176 6·37565

CENTRAL.

Ages.	Population.	Death rate for England & Wales.	No. of Deaths.
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 25—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	441 439 432 798 534 512 396 186 60 13	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	27·65511 1·89209 1·05840 3·49524 3·60984 5·88800 7·40420 6·50070 4·22340 1·89956
- : :::::::::::::::::::::::::::::::::::	3811		63.62654
		FEMALES.	
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	468 427 409 714 439 401 313 164 79 9	52·80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60·72 130·60 261·42	24.71240 1.86599 1.05113 2.89884 2.66912 3.84559 4.61362 4.66416 4.79688 1.17540 0.26142
Females Males	3424 3811	17·14 19·32	52·65455 63·62654
Total	7235		116-28109

NORTH WINDLE.

Ages.	Population.	Death rate in England & Wales.	No. of Deaths.
0-5 yrs $5-10$,, $10-15$,, $15-25$,, $25-35$,, $35-45$,, $45-55$,, $55-65$,, $65-75$,, $75-85$,, 85 and upwards	744 729 672 1168 957 655 434 228 94 23	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	46.65624 3.14199 1.64640 5.11584 6.46932 7.53250 8.22430 7.96860 6.61666 3.36076 0.28687
	5705		97.01948
		FEMALES.	
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—30 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	741 727 668 1155 950 643 453 266 133 31	52·80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60 72 130·60 261·42	39.12480 3.17699 1.71676 4.68930 5.77600 6.16637 6.67722 7.56504 8.07576 4.04860 0.78426
Females Males	5770 5705		87·80110 97·01948
Total	11475		184.82058

SOUTH WINDLE.

Ages.	Population.	Death rate in England & Wales.	No. of Deaths.
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	587 523 455 859 661 505 335 191 82 8	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	36·81077 2·25413 1·11475 3·76242 4·46836 5·80750 6·34825 6·67545 5·77198 1·16896
	4206		74.18257
0— 5 yrs. 5—10 ,, 10—15 ,, 15 –25 ,, 25—35 ,, 35—45 ,, 45—55 ,,	533 577 485 773 622 467 307	52·80 4·37 2·57 4·06 6·08 9·59 14·74	28·14240 2·52149 1·24645 3·13838 3·78176 4·47853 4·52518
55—65 ,, 65—75 ,, 75—85 ,, 85 and apwards	217 98 29 1	28·44 60 72 130·60 261·42	6·17148 5·95056 3·78740 0·26142
Males Total	4206 8315		74·18257 138·18762

HARDSHAW.

Ages.	Population.	Death rates in England & Wales.	No. of Deaths
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	649 598 572 1068 791 603 430 230 90 11	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	40.69879 2.57738 1.40140 4.67784 5.14716 6.93450 8.14850 8.03850 6.33510 1.60732 $.57374$
	5044		88.14023
	FE	MALES.	
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25—35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	629 567 555 962 706 519 378 216 85 20 9	52 80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60·72 130·60 261·42	33.21120 2.47779 1.42635 3.90572 4.29240 4.97721 5.57172 6.14304 5.16120 2.61200 2.35278
Females Males	4646 5044		72·13141 88·14023
Total	9690		160-27164

EAST SUTTON.

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0 - 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25 - 35 ,, 35—45 ,, 45—55 ,, 65—75 ,, 75—85 ,, 85 and upwards	627 572 476 893 805 581 348 190 77 16	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	$39 \cdot 31917$ $2 \cdot 46532$ $1 \cdot 16620$ $3 \cdot 91134$ $5 \cdot 44180$ $6 \cdot 68150$ $6 \cdot 59460$ $6 \cdot 64050$ $5 \cdot 42003$ $2 \cdot 33 \cdot 92$ $0 \cdot 28687$
1,000	4586		80.26525
0— 5 yrs 5—10 ,, 10—15 ,, 15—25 ,, 25 – 35 ,, 35—45 ,, 45—55 ,, 55—65 ,, 65—75 ,, 75—85 ,, 85 and upwards	676 564 511 747 638 437 301 199 92 20	52·80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60·72 130·60 261·42	35·69280 2·46468 1·31327 3·03282 3·87904 4·19083 4·43674 5·65956 5·58624 2·61200 0·26142
Females Males	4186 4586		69·12940 8 0 ·26525
Total	8772		149.39465

WEST SUTTON.

		Death rates in	
Ages.	Population.	England & Wales.	No. of Deaths.
0— 5 yrs	666	62.71	41.76486
5—10 ,,	566	4:31	2.43946
10—15 ,,	556	2.45	1.36220
15-25 ,	913	4.38	3.99894
25—35 ,,	831	6.76	5.61756
3545 ,,	639	11.50	7.34850
45—55 ,,	414	18.95	7.84530
55-65	227	34.95	7.93365
65—75 ., 75—85	82	70.39	5.77198
	18	146·12 286·87	2.63016
85 and upwards	_	200.07	_
	4912		86:71261
			-
0— 5 yrs	680	52.80	35 90400
5—10 ,,	609	4.37	2.66133
10—15 ,,	498	2.57	1.27986
15-25 ,,	853	4.06	3.46318
25—35 ,,	695	6.08	4.22560
35—45 ,,	543	9.59	5.20737
45—55 ,,	384	14.74	5.66016
55-65 ,,	217	28.44	6.17148
65—75 ,,	96	60.72	5.82912
75—85 ,,	33 3	130·60 261·42	4·30980 0·78426
85 and upwards	ð	201.42	0 70420
Females	4611		75.49616
Males	4912		86.71261
Total	9523	-	162-20877

PARR.

Ages.	Population.	Death rates in England & Wales.	No. of Deaths.
0-5 yrs $5-10$,, $10-15$,, $15-25$,, $25-35$,, $35-45$,, $45-55$,, $65-75$,, $75-85$,, 85 and upwards	853 740 595 1044 839 603 387 184 73 19	62·71 4·31 2·45 4·38 6·76 11·50 18·95 34·95 70·39 146·12 286·87	53·49163 3·18940 1·45775 4·57272 5·67164 6·93450 7·33365 6·43080 5·33847 2·77628 0·86061
	5340		98.05745
0-5 yrs $5-10$,, $10-15$,, $15-25$,, $25-35$,, $35-45$,, $45-55$,, $55-65$,, $65-75$,, $75-85$,, 85 and upwards	790 666 617 824 693 478 317 185 86 18	52·80 4·37 2·57 4·06 6·08 9·59 14·74 28·44 60·72 130·60 261·42	41·71200 2·91042 1·58569 3·34544 4·21344 4·58402 4·67258 5·26140 5·22192 2·35080
Females Males	4674 5340		75·85771 98·05745
Total	10014		173.91516

NORTH EC	CLESTON	l		Standard	Death.	rate		17.25
				Factor fo	r Corre	ection]	1.0556
	C	ORRECTE	DEAT:	H-RATE.	Co	MPARATIVI	MORTAL	LITY FIGURE.
1901			23.33	-			1380	
1902			20.27				1245	
1903			18.68				1213	
				A ===	wa cao		1279	
				Ave	rage		12/3	
SOUTH EC	CLESTON			Standard	Death.	rate		16.97
000111 20	01.0101			Factor fo				1.0737
	(OBBECTE		H-RATE.				LITY FIGURE.
1901			20.18				1193	DATE A TOURS.
1902			16.10				989	
1903			15.78				1624	
1000			10.0					
				Ave	rage		1069	
CENTRAL.				Standard	Death	rata		16.07
OLIVINAL.				Factor fo			1	13316
	,	٧	- Dave					
1901	, ,		16.31	H-RATE.			965	LITY FIGURE.
1902			22.77				1398	
1903			14.73			•••	956	
1303			1410			***		
				Ave	rage		1106	
NODTH W	MDIF			C433	D41	4		10.10
NORTH WI	MDLE.		••	Standard				16.10
				Factor fo				1.1310
1001	C			H-RATE.	Co			LITY FIGURE.
1901	•••		20.81	•••			1231	
1902			16.06	•••			986	
1903	***		16.85				1094	
				Ave	rage		1104	
COUTH WI	NDIE			Standard	Dooth	wata		16.62
SOUTH WI	MDLE.							
	H. E.		-	Factor fo				1.0957
1001	(H-RATE.				LITY FIGURE.
1901			20.16	•••			1192	
1902	•••		19.17	•••			1177	
1903			13.25			•••	863	
				Ave	rage	***	1077	

HARDSHAW.			Standard	Death	-rate		16.54
			Factor fo	r Corre	ection		1.1009
	Corre	CTED DEAT	H-RATE.	C	OMPARATI	VE MORTA	LITY FIGURE.
1901		19.48				1152	
1902		22.34				1372	
1903		23.78				1544	
			Ave	rage		1356	
			~				
EAST SUTTON.			Standard				17:03
			Factor fo		A CONTRACTOR		1.0693
	Corre	CTED DEAT	H-RATE.	Co	MPARATI		LITY FIGURE.
1901		16.89				999	
1902		20.63				1261	
1903	•••	19.56		***	•••	1270	
			Ave	rage		1177	
WEST SUTTON		:	Standard	Death	-rate		17.13
WEST SUTTON			Standard Factor fo				17·13 1·0630
WEST SUTTON			Factor fo	r Corre	ection		
WEST SUTTON			Factor fo	r Corre	ection		1.0630
1001	Corre	CTED DEAT	Factor fo	r Corre	ection OMPARATI	 VE MORTA	1.0630
1901	Corre	стер Реат 34:76	Factor fo H-RATE. 	c Corre	ection OMPARATI	 ve Morta 2057	1.0630
1901 1902	Correc	34·76 33·90	Factor fo H-RATE. 	correction Correction	ection OMPARATI	 VE MORTA 2057 2082	1.0630
1901 1902	Correc	34·76 33·90	Factor fo	correction Correction	ection OMPARATI	WE MORTA 2057 2082 1670	1.0630
1901 1902	Correc	34·76 33·90 25·72	Factor fo	r Corre	ection OMPARATI	WE MORTA 2057 2082 1670	1.0630
1901 1902 1903	Correc	34·76 33·90 25·72	Factor for H-RATE	r Corre	ection OMPARATI	WE MORTA 2057 2082 1670 1936	1.0630
1901 1902 1903	Correc	34·76 33·90 25·72	Factor fo	r Corre	ection OMPARATIrate ection	2057 2082 1670 1936	1.0630 LITY FIGURE.
1901 1902 1903	Correc	34·76 33·90 25·72	Factor fo	r Corre	ection OMPARATIrate ection	2057 2082 1670 1936	1.0630 LITY FIGURE. 17.36 1.0489
1901 1902 1903	Correc	34·76 33·90 25·72	Factor for H-RATE. Average Standard Factor for H-RATE.	rage Death	ection OMPARATI	VE MORTA 2057 2082 1670 1936 VE MORTA	1.0630 LITY FIGURE. 17.36 1.0489
1901 1902 1903 PARR	Correc	34·76 33·90 25·72	Factor for H-RATE. Average Standard Factor for H-RATE.	rage Death	ection OMPARATIrate ection OMPARATI	VE MORTA 2057 2082 1670 1936 VE MORTA 1278	1.0630 LITY FIGURE. 17.36 1.0489
1901 1902 1903 PARR	Correc	34·76 33·90 25·72 21·60 21·71	Factor for H-RATE. Average Standard Factor for H-RATE.	rage Death	ection OMPARATIrate ection OMPARATI	VE MORTA 2057 2082 1670 1936 VE MORTA 1278 1333	1.0630 LITY FIGURE. 17.36 1.0489

Taking then the comparative mortality figures for the different wards for the three years 1901-2-3, and striking an average we obtain the following table in which the wards are arranged in the order of their healthiness. In this connection it must be pointed out that the figures for West Sutton are wholly falacious, including as they do the deaths in Rainhill Asylum. Another year it may be possible to obviate this.

Table showing comparative healthiness of the wards of the Borough obtained by taking an average of the comparative mortality figures of each ward for the past three years. The wards are arranged in the order of their healthiness.

				RAGE COMPARATIVE PRIME FIGURE.
England and V	Vales		 	1000
South Ecclesto	n		 	1069
South Windle				1077
North Windle			 	1104
Central			 	1106
East Sutton		***	 	1177
North Ecclesto	n		 	1279
Hardshaw				1356
Parr			 	1361
West Sutton			 	1936

It will be noted that the healthiness of the first four wards is quite satisfactory, and it is remarkable that Central Ward should occupy so high a position. Much work evidently remains to be done to bring Hardshaw and Parr into an equally satisfactory state. As stated above the figures for West Sutton must be put on one side for the present.

MORTALITY AT VARIOUS AGES.

In the following Table will be seen the Death-rates at each age group during the years 1898—1903; also the Mean rate at each age for the five years, 1898-1902.

AGES.	Death Rate per 1000 of the Population at each age Group.						
	1898	1899	1900	1901	1902	Means	1903
Under 1 year	. 198.5	168.9	196.2	192.9	203 3	191.9	175.7
	. 77.3	71.8	78.5	67.1	69.9	72.9	53.6
	. 20.4	22.3	22 9	28.3	25.9	23.9	21.1
	. 13.4	15.1	15.1	10.5	14.5	18.7	13-1
4 ,, 5 ,,	0.0	6.6	102	11.9	11.3	9.7	8.7
5 ,, 10 ,,	0.4	8.5	4.6	5.0	5.8	4.3	5.9
10 ,, 15 ,,	0.0	2.8	2.1	2.8	2.5	2.6	25
4 × 00	. 4.0	2.9	4.0	8.5	3.4	8.5	3.4
20 25	. 5.2	5.2	6.1	6.3	5.5	5.6	3.3
25 ,, 35 ,,		8.7	9.6	7.8	6.9	8.1	6.8
0.5	. 12.4	15.8	14.5	18.7	13.6	14.0	10.5
	. 21.1	24.3	26.9	21.0	20.5	22.7	20.9
0-	. 40.1	41.2	46.5	38.0	40.5	41.2	37.6
0	. 61.8	96.8	96.7	70.8	79.1	81.0	69.9
	. 114.1	117.0	137.6	154.8	144.0	133.5	160 7
Upwards of 85 years		269.2	285.7	74.0	281.2	212.9	312.5
All under 5 years .	. 68.2	60.7	69.0	66.4	68.0	66.4	57.0
All over 5 years .	. 10.7	12.3	13.2	11.5	11.7	11.8	10.9
All ages	. 19.3	19.6	21.6	19.7	19.7	19.9	17.5

From the above table, it will be seen that with the exception of the 5-10, 75-85, and 85 and upwards age groups, there was a marked reduction all round. Especially was this the case under 1 year of age, and also in the groups from 1 to 5 years. The increase noted in the two groups above 75 years may be practically neglected, as they represent comparatively few deaths, and are largely a matter outside the scope of Preventive Medicine.

The causes of death at each age group and in each Ward are set out in Table B at the end of this Report.

MORTALITY AMONG CHILDREN UNDER ONE YEAR OF ACE.

The Infantile Mortality Rate shows the number of deaths under one year of age per 1000 births. In 1903 it was **138** as against 167 in 1902, and an average of 175 during the last ten years. In England and Wales the Infantile Mortality was 132.

Appended is a Table showing the Infantile Mortality rates for the past ten years in England and Wales, the 76 great towns, 103 smaller towns, rural districts, and in St. Helens.

	INFANTILE MORTALITY RATE.								
YEAR.	England and Wales.	St. Helens.	33 Great Towns.	67 Large Towns (other than the 33).	Rural Districts.				
1893	159	196	181	173	139				
1894	137	161	152	115	98				
1895	161	181	182	141	114				
1896	148	177	168	161	104				
1897	156	181	176	169	110				
1898	160	172	178	173	116				
1899	163	157	182	179	145				
1900	154	188	172	166	138				
1901	151	175	168	168	137				
1902	133	167	76 Grea	t Towns.	108 Smaller Towns.				
			14	14	184				
Average of 10 yrs.	152	175	-	-	104 — 108 Smaller				
			76 Grea	t Towns.	Towns.				
1903	132	138	14	14	135				

It will be noted that the Infantile Mortality for St. Helens for 1903 is 37 per 1,000 below the mean of the last 10 years, representing a saving of over 125 infant lives. While this rate is still 6 per 1,000 above England and Wales as a whole, it is 14 per 1,000 below the mean rate for the country for the past ten years and is also 6 per 1,000 below the rate for the 76 great towns, and is only 3 per 1,000 above the rate for the 103 smaller towns.

This is a state of affairs which must be regarded as highly satisfactory.

By reference to Table E however it will be seen that of the great towns, 45 had a higher rate and 30 a lower rate. This is a great improvement on last year when St. Helens was eight from the top.

Coming now to a minute analysis of the infantile mortality in St. Helens, a Table has been prepared showing the death rates per 1,000 living under 1 year from the principal diseases incident to infant life during the past eleven years. This Table has been calculated on the population under 1 year, estimated from the returns at the last census, and is not based on the number of births per annum. By this means a more accurate result is obtained and the influence of temporary fluctuations in the birth-rate is obviated.

Death Rates per 1000 Living under 1 Year.

Disease.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge.	1903
Measles	15.08	2.68	3.36	2.56	8.61	.70	1.37	4.37	.35	6.38	4.24	0.00
Whooping Cough	3.17	9.95	1.87	12.44	2.21	3.21	5.12	8.40	1 05	3.38	5.14	6.28
Diarrhœa	44:46	11.49	23.18	16.83	30.21	31.59	21.29	22.21	27.01	11.27	24.01	12 94
Other Zymotics	.79	-76	1.13	5.29	1.76	2.10	'34	1.7	1.40	I 12	1.63	2.58
All Zymotics	63.20	25.08	29.53	35 12	43.42	37:90	28.15	36.98	29.82	22.17	36.16	21.82
Tabes Mesenterica	5.95	3.83	5.53	6.28	8.25	5.56	3.09	6.02	7:01	7:14	5.83	4.07
Other Tubercular Dis.	2.38	2.68	3.74	3 66	5.03	3.86	4.13	3.05	3.85	4.88	3.72	4.40
All Tubercular Dis	8.33	6.21	8.97	10*24	13.27	9.12	7.21	9.07	10.87	12.02	9.56	8 50
Premature Birth	20.24	16.47	28.05	21.59	16.87	23.21	18.54	19.82	23.20	33.07	24.16	25 89
Nervous System	25.40	22.21	25.80	21.96	23.33	19.65	18.20	24.86	21.40	24.80	22.76	25.52
Respiratory System	38.20	35.94	39.64	34.77	34.10	35'45	24.38	29.23	28.07	47.35	34.34	38.10
Digestive System	5.92	11.49	19.82	10.54	5.74	15.44	6.25	9.74	5.26	12:02	10.55	9.98
Enteritis	19.45	12.64	8.60	15.00	20.46	11.82	17.51	21.17	22.10	9.77	15.85	6.65
Debility	30.96	25.66	30.66	25.25	25.48	23.10	25.06	20.82	23.85	22.17	25.30	19.97
Marasmus	12.70	12.64	15.33	10.98	12.56	18.60	15 79	16.15	18.24	12.40	14.23	7.76
Other Causes	8.33	9.57	11.96	12.81	12.50	5.96	7.55	6.05	9.82	7.21	9.17	11.46
Total Mortality	233.43	178-47	215.42	198-00	207.50	198-66	168-95	196.2	192.98	203.3	199.29	175.7

On comparing the rates of 1903 with the average of the past ten years, it will be seen that the total rate is below the average by as much as 23.59 per 1,000. Only once in the last ten years, namely in 1899 when the rate was 168.95 per 1,000, has so low a rate been recorded.

Taking the diseases individually it will be noted that no death occurred from Measles in a child under one year, a rate of 0.00 being recorded, as against an average rate of 4.54. This is a record which has never been approached. Whooping Cough on the other hand was above the average by 1.14 per 1,000. Most marked, however, was the enormous reduction in the rate caused by Diarrhœal diseases which was reduced by nearly half, being 11.07 below the average. This reduction almost equalled that of last year and is most gratifying, even allowing for the fact that the climatic conditions of the year were not favourable to the spread of this disease. Other zymotics caused an increased rate of nearly 1 per 1,000. Taking the rate caused by all the zymotic diseases it will be noted that a reduction is recorded equal to 14.84 per 1,000.

Tabes mesenterica gives a rate of 1.8 below the average whilst other tubercular diseases were above the average by 0.68 per 1,000. Thus the rate from all forms of tubercular disease was below the average by 1.06 per 1,000.

Premature birth was accountable for a rate of 1.73 above the average; nervous diseases and respiratory diseases also gave rates of 2.76 and 3.7 respectively above the average. On the other hand the rates caused by digestive diseases, enteritis, debility, and marasmus were below the average by 0.24, 9.20, 5.33, and 6.77 per 1,000 respectively.

Summing up then, the reduction in the zymotic, tubercular, and enteritis rates must be regarded as eminently satisfactory, pointing as they do to increased care of, and the improved conditions under which, infant life exists in the Borough.

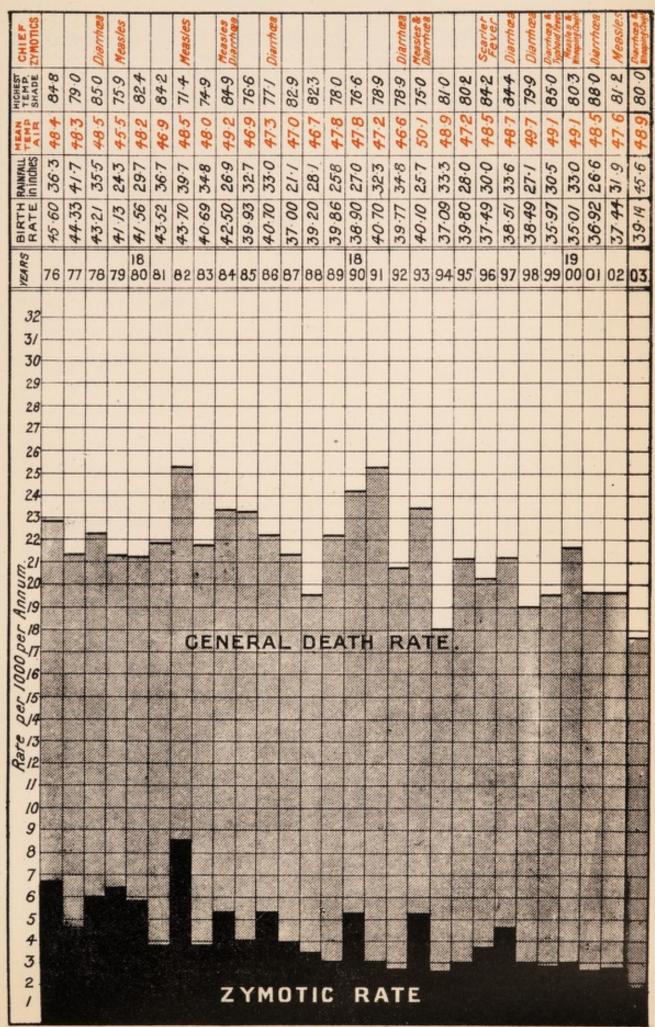
MORTALITY RATE PER 1,000 LIVING UNDER 5 YEARS.

The mortality rate per 1000 living under 5 years in England and Wales and St. Helens, for each of the past 5 years, is set out below:—

	1898	1899	1900	1901	1902	Average.	1903
England and Wales	55.6	55.2	53.1	54.1	_	For 4 years 54.5	_
St. Helens	68.2	60.7	69.0	66.4	68.0	$\begin{cases} \text{For 5 years} \\ 66.4 \end{cases}$	57.0

It will be noted that the rate for 1903 is greatly below the average of the past 5 years, but is still above that of England and Wales as a whole.

CHART NOI.



FOR 28 YEARS.

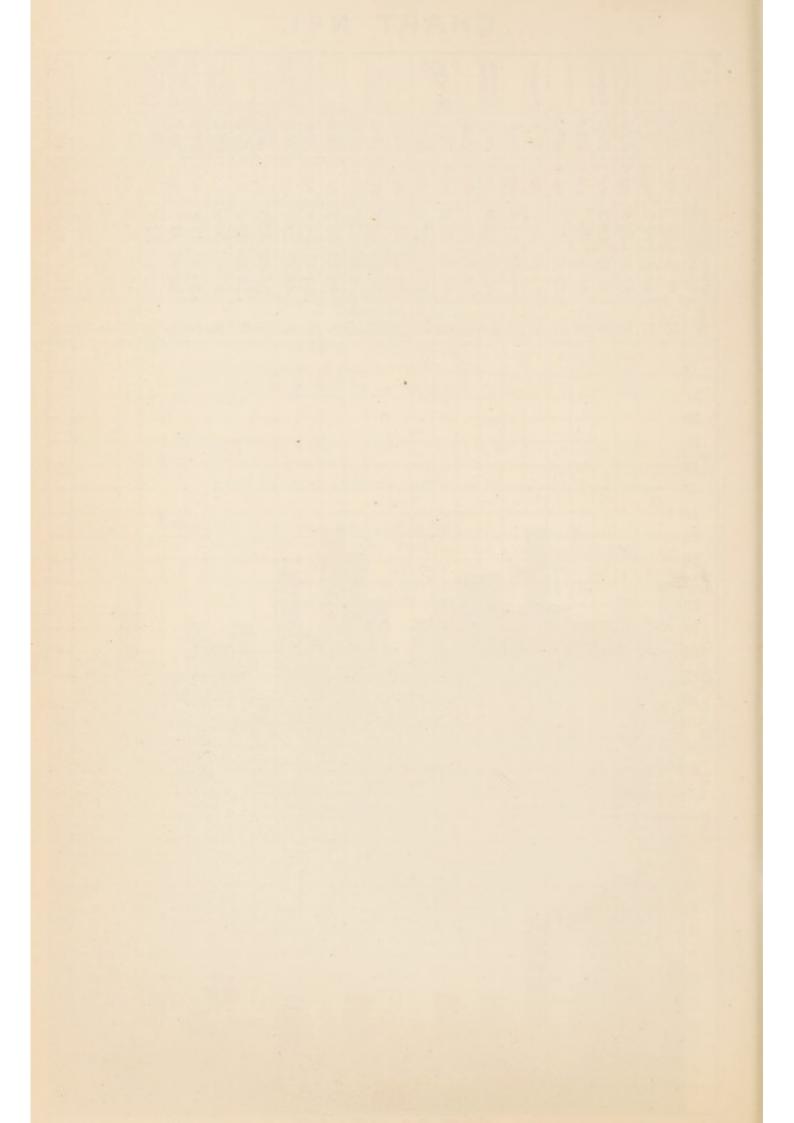


Table showing the Vital and Mortal Statistics for St. Helens during 30 years.

DEATHS FROM												
YEARS,	Population.	Birth Rate.	Death Rate.	Zymotic Death Rate.	Small Pox.	Measles.	Scarlet Fever	Typhoid and Continued Fever.	Typhus Fever.	Diarrhea.	Whooping Cough.	Diphtheria.
1874	48790	43.0	31.43	9.2	0	29	231	25	I	110	41	14
1875	49970	45.42	24.69	5'3	0	4	77	65	I	101	31	10
1876	51190	45.60	23.28	5.1	0	102	21	40	I	86	7	15
1877	52430	44.33	22.84	3.2	0	2	12	34	I	74	48	11
1878	53700	46.51	23.99	4.5	0	4	22	40	0	132	15	20
1879	55010	41.13	22.40	5.7	0	143	83	34	2	52	2	3
1880	56340	41.56	20.02	4.6	0	0	27	40	2	130	71	1
1881	57711	43.22	21.69	2.92	0	14	28	56	0	76	3	3
1882	58972	43.70	25.46	7.4	0	250	36	33	I	85	36	6
1883	60263	40.69	21.65	2.2	0	3	14	31	τ	69	24	11
1884	61584	42.20	24.16	5 3	0	131	16	33	2	131	9	11
1885	62932	39.93	23.32	3.2	0	81	13	7	1	56	53	11
1886	64311	40.20	22.46	5.5	0	102	34	28	0	122	41	10
1887	65718	37.00	21.69	3.9	0	53	35	34	0	101	28	11
1888	67158	39.20	19.80	3.1	0	38	П	22	0	65	61	2 I
1889	68628	39.86	23.20	4.18	0	78	3	81	1	85	15	29
1890	70132	38.90	25.43	5.3	0	19	181	24	I	74	68	13
1891	71666	40.40	26.02	3.0	0	54	24	26	0	78	29	9
1892	73240	39.77	20.22	2.64	I	23	18	25	0	84	31	12
1893	*75390	40.10	23.46	5.3	5	135	6	52	0	168	19	16
1894	*77690	37.09	18,02	2.3 I	0	21	- 14	26	2	38	61	10
1895	*79400	39.8	21.08	3.08	I	54	9	59	0	101	14	8
1896	*81136	37.49	20.24	3.63	0	38	59	40	0	63	78	17
1897	*82910	38.21	21.0	4.55	0	87	44	33	0	133	33	20
1898	*84730	38.49	19 3	3.00	0	17	24	30	0	140	34	16
1899	*86588	35.97	19.6	2.74	0	21	8	43	0	114	41	15
1900	*88480	35.0	21.6	3.04	0	59	25	19	0	91	56	19
1901	*84734	36.9	19.7	2.56	0	7	29	34	0	95	17	33
1902	*86040	37.4	19.7	2.60	0	59	52	25	0	50	18	20
1903	87385	39-1	17.5	1.72	0	1	26	18 Area add	0	53	30	23

* These figures include Population in Area added 1894.

TABLE E.

TABLE SHOWING COMPARATIVE STATISTICS BETWEEN
ST. HELENS AND THE 75 OTHER GREAT TOWNS DURING 1903.

TOWN.	Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
76 Towns	 15,075.011	29.6	16.5	144	1.88
London	 4,613,812	28.5	15.2	130	1.76
Croydon	 141,157	26.4	11.8	104	1.08
Willesden	 129,315	31.9	12.8	129	2.03
Hornsey	 78,386	19.9	7.21	83	.61
Tottenham	 118,000	29.5	10'7	124	1.4
West Ham	 281,894	33.6	15.2	148	2.6
East Ham	 110,451	34.4	11'4	113	1.57
Leyton	 102,000	32.0	10.0	99	1.7
Walthamstow	 106,290	33.5	11.0	113	1.9
Hastings	 66,200	18.3	12.8	107	.64
Brighton	 125,406	24.3	14.5	114	.84
Portsmouth	 194,960	27.9	14.7	114	1.48
Bournemouth	 63,132	17.7	12.1	81	.39
Southampton	 110,120	28.8	13.9	114	1.31
Reading	 75,277	26.9	12'9	121	.97
Northampton	 89,960	24.4	13.2	137	1.3
Ipswich	 68,818	28.4	15.3	140	1.38
Great Yarmouth	 51.851	27.4	17.8	121	2.5
Norwich		27.8	15.4	149	1.1
Plymouth	 	25.4	16.2	144	1.04
Devonport	 0	28.3	14.1	117	.93
Bristol	 0.0	27.2	14.2	116	1.10
Hanley	 600	34.8	19.0	170	2.3
Burton-on-Trent	 ** ***	26.5	11.8	89	.7
Wolverhampton	 96,994	30.4	15.2	141	2.0
Walsall	 0- 0-0	34.0	16.4	150	1.83
Handsworth		24.6	12.5	102	.85
West Bromwich	 660	34.6	16.8	160	2.34
Birmingham	 	31.7	17.2	158	65
Kings Norton	 6	27.5	10.5	98	.74
Smethwick	 -0	34.1	14.1	141	1.3
Aston Manor	 	28.7	14.8	159	2.3
Coventry	 60.	29.7	16.6	114	5.0
Leicester	 	27.3	13.9	161	1.45
Grimsby	 	28.8	14.5	167	1.93
Nottingham	 . 0 0	28.3	16.9	165	5.0
Derby	 **0 ***	27.0	13.4	128	.91

TABLE E (Continued).

TOWN.	Population	Birth Rate per 1300	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
St. In	05 500			.02	
Stockport	 95,709	29.2	20.0	183	2.23
Birkenhead	 113,343	1.05	17.0	127	2.2
Wallasey	 56,000	28.7	14.0	113	1.33
Liverpool	 716,810	33.3	19.8	159	2.8
Bootle	 60,800	33.0	18.3	161	3.6
Wigan	 62,689	35.4	21.6	174	4.18
Warrington	 67,153	35.6	18.4	154	3.6
Bolton	 173,401	27.1	17.6	151	1.98
Bury	 58,313	22.7	17.6	174	2.13
Manchester	 554,331	31.6	19.4	168	2.24
Salford	 226,480	32.2	10.1	168	2.8
Oldham	 138,786	25.6	18.6	160	2.4
Rochdale	 84,824	24.4	17.1	138	1.38
Burnley	 98,500	27.7	19.0	216	1.43
Blackburn	 131,079	25.2	15.7	158	1.7
Preston	 114,404	30.4	18.6	163	3.11
Barrow-in-Furness	 65,010	30.5	11.2	99	.67
Huddersfield	 94,973	23.7	16.7	120	.84
Halifax	 106,800	21.0	14.9	124	.66
Bradford	 283,412	23.2	16.2	147	1.35
Leeds	 443,559	29.4	16.6	153	1.74
Sheffield	 426,686	33.1	18.7	184	3.5
Rotherham	 57,000	33.3	17.3	187	3.19
York	 80,186	29.1	16.2	154	2.0
Hull	 249,639	31.2	16.6	162	2.2
Middlesborough	 96,684	36.7	21.8	186	2.8
Stockton-on-Tees	 52,196	31.6	16.1	137	1.1
West Hartlepool	 67,201	33.9	14.3	131	.84
Sunderland	 149,572	35.1	19.9	158	2.30
South Shields	 105,325	34.2	17.1	132	1 02
Gateshead	 115,531	35.7	16.7	160	1.88
Newcastle-on-Tyne	 222,241	31.1	19.2	166	1.22
Tynemouth	 52,506	33.0	18.4	160	1.33
Newport (Mon.)	 68,862	32.9	15.9	145	1.8
Cardiff	 172,598	30.4	14.4	122	1.3
Rhondda	 119,652	40.0	16.6	157	2.4
Merthyr Tydfil	 71,651	38.6	18.9	153	2.6
Swansea	 95,624	31.7	18.5	164	2.3
St. Helens	87,385	39.1	17.5	138	1.7

TABLE F.

RECORDED AND CORRECTED DEATH RATES PER 1,000
PERSONS LIVING IN 76 GREAT TOWNS IN 1903.

Towns in the order of their Corrected Death-rates.	Standard Death-rate.	Factor for Correction for Sex and Age Dis- tribution.	Recorded Death-rate, 1903.	Corrected Death-rate, 1903.	Comparative Mortality Figure, 1903.
England and Wales	18.21	1.0000	15.41	15.41	1,000
England and Wales (less the 76 towns	18.84	0.9666	14.72	14.23	923
76 Towns	17:14	1.0624	16.26	17:27	1,121
Hornsey	15.95	1.1417	7.85	8.96	581
King's Norton	17:40	1.0466	9.96	10.42	676
Leyton	17.69	1:0294	10.80	11.12	722
Handsworth (Staffs.)	16.55	1.1003	10.40	11.44	723
East Ham	17:06	1.0674	10.96	11.70	759
Walthamstow	17.20	1.0587	11.10	11.75	762
Croydon	17.75	1.0259	11.83	12 14	788
Hastings	18.92	0.9625	12.89	12.41	805
Bournemouth	17:25	1.0557	12.10	12.77	829
Willesden	16.98	1.0724	12.11	12.99	843
Reading	17:57	1.0364	12.71	13.17	855
Burton-on-Trent	16.93	1.0756	12:32	13.25	860
Southampton	18.30	0.9951	13.78	13.71	890
Tottenham	16.87	1.0794	13.03	14.06	912
Brighton	18.47	0.9859	14.27	14.07	913
Barrow-in-Furness	16.01	1.1374	12.73	14.48	940
Norwich	19.04	.0.9564	15.23	14.57	945
Derby	16.89	1.0782	13.59	14.65	951
Bristol	17.73	1.0271	14.28	14.67	952
Northampton	17.55	1.0376	14.19	14.72	955
Smethwick	16.65	1.0937	13.48	14.74	957
Devonport	17.35	1.0496	14.13	14.83	962
Ipswich	18.64	0.9769	15.24	14.89	966
Portsmouth	10.00	1.0259	14.75	15.13	982
Leicester	17.05	1.0680	14.21	15.18	985
Wallasey	16.63	1.0950	13.86	15.18	985
Grimsby	17.01	1.0705	14.19	15.19	986
Cardiff	16.74	1.0878	13.99	15.22	988
Aston Manor	16.41	1.1097	13.89	15.41	1,000
West Hartlepool	16.59	1.0976	14.29	15.68	1,018
Plymouth	18.68	0.9748	16.51	16.09	1,044
Wolverhampton	17.59	1.0352	15.54	16.09	1,044
Coventry	18.18	1.0017	16.17	16.20	1,051
Halifax	16.78	1.0852	15.02	16.30	1,058
West Ham	15.00	1.0693	15.26	16.32	1,059
London	15.00	1.0514	16.67	16.48	1,069
Great Yarmouth	10.01	0.9178	18.16	16.67	1,082

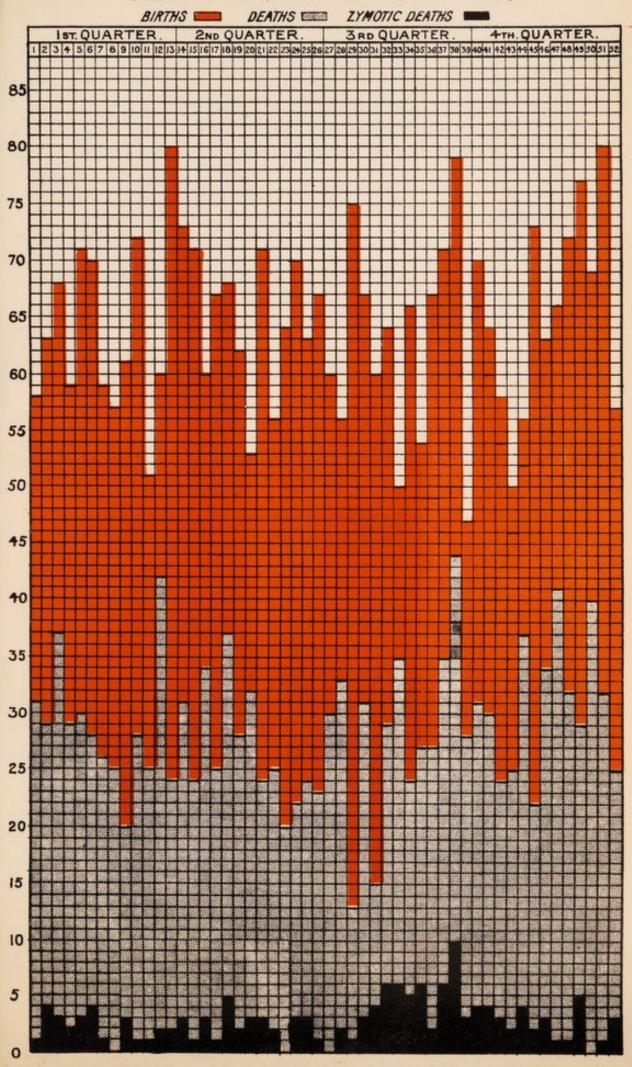
TABLE F. (Continued).

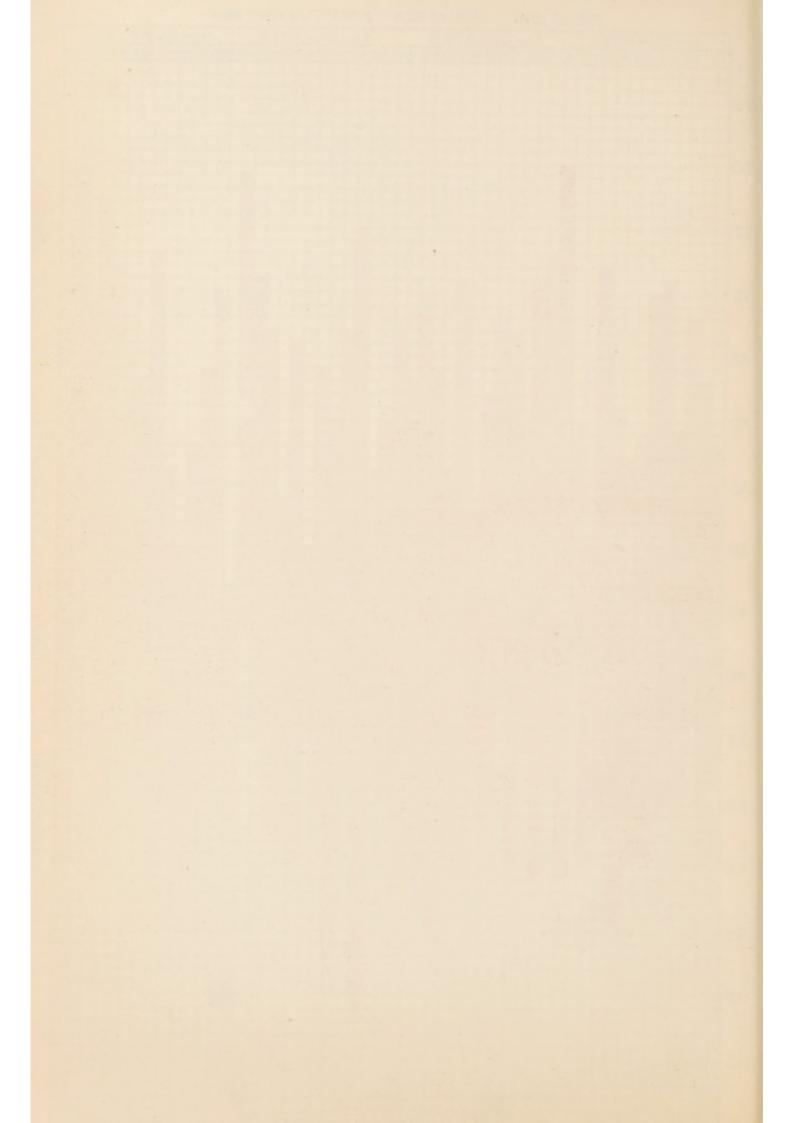
Towns in the order of Corrected Death-rate		Stan lard Death-rate.	Factor for Correction for Sex and Age Dis- tribution.	Recorded Death-rate, 1903.	Corrected Death-rate. 1903.	Comparative Mortality Figure, 1903.
York		17.69	1.0294	16.27	16.75	1,087
Stockton-on-Tees		17:37	1.0484	16.00	16.77	1,088
West Bromwich		18.04	1.0094	16.81	16.97	1,101
Newport (Mon)		The state of the s	1.0820	15.71	17.00	1,103
Hull		17.78	1.0242	16.92	17.33	1,125
Walsall		17.18	1.0600	16.45	17.44	1,132
Gateshead		17.27	1.0544	16.73	17.64	1,145
Blackburn		16.10	1.1311	15.73	17.79	1,154
Nottingham		17:28	1.0538	16.93	17.84	1,158
Birkenhead		17:06	1.0674	16'76	17.89	1,161
Huddersfield		16.95	1.0743	16.73	17.97	1,166
Leeds		16.68	1.0917	16.56	18.08	1,173
Bradford		16.47	1.1056	16.39	18.12	1,176
South Shields		17:19	1.0593	17.18	18.20	1,181
Rhondda		16.55	1.1003	16.56	18.22	1,182
Rotherham		17.57	1.0364	17.63	18.27	1,186
Tynemouth		17.64	1.0323	18.17	18.76	1,217
Rochdale		16.46	1.1063	17.15	18.97	1,231
Birmingham		16.92	1.0762	17.78	19.13	1,241
St. Helens		16.80	1.0839	17:71	19:20	1,246
Bury		16.25	1.1206	17.32	19.41	1,260
Bolton		16.09	1.1318	17.46	19.76	1,282
Stockport		16.87	1.0749	18.45	19.91	1,292
Swansea			1.0731	18.59	19.95	1,295
Sheffield			1.0782	18.62	20.08	1,303
Warrington			1.0794	18:67	20.15	1,308
Merthyr Tydvil			1.0593	19.07	20.20	1,311
Hanley			1.0911	18.69	20.39	1,323
Preston			1.0950	18.68	20.45	1,327
Sunderland			1.0311	19.94	20 56	1,334
Newcastle-on-Tyne			1.0788	19.22	20.73	1,345
Oldham			1.1255	18.62	20.96	1,360
Salford			1.1056	18.97	20.97	1,361
Bootle			1.1050	19:04	21.04	1,365
Burnley			1.1283	19.16	21.62	1,403
Liverpool			1 0699	20.48	21.91	1,422
Manchester			1.1172	19.72	22.03	1,430
Middlesborough			1.0898	21.53	23.46	1,522
Wigan			1.1043	22.16	24.47	1,588
	100	10 49	1 1040	22 10	21 11	1,000

TABLE G.
WEEKLY RETURNS OF BIRTHS AND DEATHS FOR 1903.

	1903.		Deaths from all causes.	Annual Rate per 1000.	Deaths from seven principal Zymotics.	Annual Rate per 1000, for Zymotics.	Births.	Annual Rate per 1000, Births.
Week endi	ng January	3	31	18.7	1	-59	58	35.0
,,	ng January	10	29	17.5	4	2.3	63	38.0
,,	"	17	37	22.0		2·3 1·7	68	40.4
,,	,,	24	29	17.2	3 2 3	1.1	59	35.1
"	February	31 7	30 28	17·8 16·6	3	1·7 2·3	71 70	42·2 41·6
"		14	26	15.4	4	.59	59	35.1
,,	"	21	25	14.8	_	-	59 57	33.9
,,		28 7	20	11.9	3 1	1.7	61	36.2
,,	March	.7	28	16.6	1	.59	72	42.8
22	,.	14 21	25 42	14·8 24·9	1 0	.59	51 60	30·3 35·7
,,	**	28	24	14.2	2	1·1 1·1	80	47.6
,,	April	4	31	18.4	1 2 3 1 3 1 5 2 3 3 2	1.7	73	43.4
,,	,,	11	24	14.2	1	.59	71	42.2
,,	,,	18	34	20.2	3	1:7	60	35.7
,,	May	25	25 37	14·8 22·0	1	2.9	67 68	39·8 40·4
"		18 25 2 9	28	16.6	9	1.1	62	36.8
,,	"	16	32	19.0	3	1.7	53	31.5
"	",	16 23	24	14.2	3	1·7 1·1	71	42.2
2.5	,,	30	25	14.8	2	1.1	56	33.3
,,	June	6	20	11.9	-	1.7	64 70	38.0
"	,,	13	22 24	13·0 14·2	3 3 1	1·7 1·7	63	41.6 37.4
"	,,	20 27	23	13.6	1	-59	67	39.8
,,	July	4	30	17.8	-	_	60	35.7
"	,,	11	33	19.6	2 1	1.1	56	33.3
"	,,	18 25	17 31	10.1	1	:59	75	44.6
,,	Anomot	25	15	18·4 8·9	3 4	1.7	67 60	39·8 35·7
,,	August	1 8	29	17.2	6	2 3 3.5	64	38.0
"	,,	15	35	20.8	6	3.5	50	29.7
"	,,	22	24	14.2	5	2.9	66	39.2
,,	,,	29	27 27	16.0	6	3.5	54	32.1
,,	September	5 12	35	16·0 20·8	6	1·1 3·5	67 71	39·8 42·2
"	",	19	44	26.1	10	5.9	79	47.0
"	"	26	28	16.6	3	1.7	47	27.9
"	October	3	31	18.4	4	2.3	70	41.6
,,	,,	10	30 24	17.8	4	2.3	64	38.0
,,	,,	$\frac{17}{24}$	24 25	14·2 14·8	3	1·7 1·1	58 50	34·5 29·7
"	",	31	37	22.0	2 4	2.3	56	33.3
",	November	7	22	13.0	2	1.1	73	43.4
,,	,,	14	34	20.2	3	1.7	63	37.4
**	**	21	41	24.3	1	:59	66	39.2
,,	Dogombon	28 5	32 29	19.0	1 5	.59	72	42.8
,,	December	12	40	17·2 23·8	9	2.9	77 69	45·8 41·0
"	"	19	32	19.0	1	-59	80	47.6
"	",	26	25	14.8	3	1.7	57	33.9
,,	January	2	35	20.8	3	1.7	83	49.3

& ZYMOTIC DEATHS DURING 1903.





CAUSES OF DEATH.

THE ZYMOTIC DISEASES.

The mortality from the seven principal Zymotic Diseases, *i.e.*, Small Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (including Typhus, Typhoid, and Continued), and Diarrhæa, was at the rate of **1·72** per 1000 per annum during 1903.

In England and Wales the rate of mortality for this Group was 1.46 per 1000 per annum during last year.

The Zymotic rate of 1.72 during 1903, which was 0.88 lower than in the preceding year, was made up as follows:—

	1899	1900	1901	1902	1903
Small Pox	0.00	 00.0	 0.00	 0.00	 0.00
Measles	0.24	 0.66	 0.02	 0.68	 0.01
Scarlet Fever	0.00	 0.58	 0.34	 0 60	 0.29
Diphtheria	1.07	 0.51	 0.38	 0.23	 0.26
Whooping Cough		 0.63	 0.50	 0.50	 0.34
"Fever"	0.49	 0.51	 0.40	 0.29	 0.20
Diarrhœa	1.31	 1.05	 1.41	 0.28	 0.60
	2.79	3.04	2.26	2.60	 1.72

Thus the mortality from Diphtheria, Whooping Cough, and Diarrhea is slightly higher than in the preceding year, whilst that from Measles, Scarlet Fever, and Fever is considerably lower.

The following Table shows the yearly death-rate from Zymotic Diseases during each of the past 31 years, and also the rate of each quinquennial period. It will be seen that there has been a gradual diminution taking place in the number of deaths from this group of eminently preventible Diseases, and that the rate for the past year is the lowest yet recorded.

Year.	Rate.	Year.	Rate.	Year.	Rate	Year.	Rate.	Year.	Rate.	Year.	Rate.
1873 1874 1875 1876 1877	5.0 9.2 5.3 5.1 3.2	1878 1879 1880 1881 1882	4.2 5.7 4.6 2.9 7.4	1883 1884 1885 1886 1887	2·5 5·3 3·5 5·2 3·9	1888 1889 1890 1891 1892	3·1 4·1 5·3 2·6	1893 1894 1895 1896 1897	5.3 2.2 3.0 4.2	1898 1899 1900 1901 1902	3.0 2.7 3.0 2.5 2.6
Mean	5.2		4'9		4.0		3.6		3.6		2.7

1903 ... 1.72.

In Table E will be found the Zymotic rates for 1903 of other towns.

These rates are however not strictly comparable, owing to the fact that Medical Officers of Health include under the heading of Diarrhœa different causes of death, some including deaths from Enteritis, etc., others excluding these deaths. It should also be borne in mind that in working-class towns like St. Helens, Zymotic Diseases are not only more prevalent but also cause a higher mortality than in towns where the children are fewer and a larger proportion are well cared for.

Taking the comparison for what it is worth, however, it will be seen that among the great towns thirty-five have a higher rate, and forty a lower rate, Wigan and Warrington heading the list with rates of 4·18 and 3·29 per 1000 respectively.

The relative prevalence of the diseases in this group in 1903 compared with the mean during the ten years—1893—1902—is set out in the following Table:—

D			Per cent. of Zyme	otic Death:
Diseasi	3.		10 Years, 1893-1902.	1903.
Small Pox		Ţ.,	.22	0.00
Measles			18.61	0.66
Scarlet Fever			10.00	17.22
Diphtheria			6.20	15.23
Fever			13.57	11.92
Whooping Cor	ugh		13.86	19.87
The state of the s			37.12	35.10
			100%	100.00

It will be seen, therefore, that the relative proportion of deaths from Scarlet Fever, Diphtheria, and Whooping Cough was in excess of the mean. On the other hand, Fever, Diarrhœa, and Measles were below the mean to an even greater extent.

The Zymotic rates during each of the 4 Quarters of the years 1894 to 1903 were as follows:—

	Ist	Quarter.	2nd	Quarter.	3rd	Quarter.	4th	Quarter.
1894		2.26		1.39		2.62		2.57
1895		2.00		1.45		6.06		2.80
1896		2.21		4.19		4.63		3.20
1897		1.44		4.00		8.20		3.23
1898		1.46		1.79		6.93		2.12
1899		1.38		0.87		6.55		2.35
1900		2.66		2.26		5.21		1.71
1901		1.60		0.99		5.41		1.93
1902		2.37		3.30		2.46		2.27
1903		1.32		1.46		2.47		1.64

In Table B will be found certain details regarding the deaths from Zymotic diseases as to age groups and localities.

The following gives the number of deaths in each Ward during the nine years, 1895 to 1903:—

WARDS.		Total Deaths from 7 Principal Zymotics in each year.									
WARDS.	1895	1896	1897	1898	1899	1900	1901	1902	1903	per Acre.	Estimated Population
Eccleston, North	33*	50*	58*	53*	29*	41*	25*	22*	23*	46.8	11,009
Eccleston, South	19*	18*	33*	11*	17*	22*	19*	16*	11*	15.6	9,400
Central	36	36	32	24	29	29	14	7	9	77.0	7,240
Windle, North	20*	25*	40*	23*	19*	23*	19*	14*	12*	17.2	12,002
Windle, South	20	32	33	24	21	17	20	22	10	125.9	8,439
Hardshaw	19	31	36	29	26	23	23	26	14	28.9	9,901
Sutton, East	17	25	21	20	15	25	11	18	9	6.8	8,975
Sutton, West (†	59	32	69	44	53	47	56	65	47	4.1	9,979
Parr	22	46	28	34	33	42	20	34	16	7.0	10,440
Totals	245	295	350	242	242	269	217	224	151	119	87,38

^{*} Including Deaths in the Area added to these Wards in August, 1893.

(†) Including Deaths in Fever Hospital.

It will thus be seen that the total number of deaths for 1903 was considerably less than in any of the eight previous years.

88.88 2.38 20.31 19.28 2.47 Fatality % Appended is a Table showing the Yearly Number of Notifications, the Case Rate and Fatality Rate since the year 1895. 1899. .10 1.39 8.8 2.57 per 1000 .74 Case Rate 121 335 64 0.1 6 221 Notifications. 26.26 1.78 22.62 6.58 Fatality % 1898. 1.61 .70 2.04 90. 4.54 per 1000. Case Rate 10 885 178 0 50 136 1 Notifications. 1.85 30.30 52.68 4.81 22.44 Fatality % 1897. 1.77 11.02 .55 1.95 per 1000. 64. Case Rate 914 1 147 162 0 59 13 Notifications. 23.80 4.50 69-69 2.91 28.61 Fatality % 2.07 1896. .13 1.68 1310 16-14 .88 per 1000. Case Rate 10 165 187 0 Notifications. 12.12 22.69 52.94 4.05 1.44 .10 Fatality % 1895. 2.70 .83 .8-27 98. per 1000. .21 Case Rate 09 69 10 222 9 257 9 17 Notifications. Typhus Fever : : Relapsing Fever ... Croup Puerperal Fever Typhoid Fever Membranous Scarlet Fever DISEASE. Diphtheria Erysipelas Small Pox

	Fatality %	O.	3.57	18.25	23.68	00.	00.
1903.	Case Rate per 100a.	.30	8.33	1.44	98.	90	69.
	Notifications.	27	728	126	76	9	61
ge.	Fatality %	. 10-	4.82	24.69	22-21	55.04	2.05
Average.	Case Rate per 1000.	-03	8.42	98.	1.94	.15	1.49
	Notifications.	1.75	711-1	72.8	163.0	18.5	126.8
	Fatality %	0.	4.24	21.50	30-86	21.42	2.75
1902.	Case Rate per 1000.	-04	14.22	1.08	-94	.16	1.26
	Notifications.	4	1224	98	81	14	109
	Fatality %	1	4.08	38.85	20-73	48-75	1.88
1901	Case Rate per 1000.	1	8.48	1.00	1.93	.18	1.25
	Notifications.	0	719	85	164	16	106
	Fatality %	1	4.31	24.67	15.82	00-09	1.44 106
1900.	Case Rate per 1000.	1	6.2	8.	1-40	.16	1.55
	Notifications.	0	580	77	123	15	138
	Disease.	Small Pox	Scarlet Fever	Diphtheria Membranous Croup	Typhoid Fever Typhus Fever Continued Fever Relapsing Fever	Puerperal Fever	Erysipelas

Thus it will be seen that the Notifications and Case Rates were below the average of the past eight years as regards Scarlet Fever, "Fever," Erysipelas, and Puerperal Fever; they were above the average as regards Small Pox and Diphtheria.

SMALL POX.

After a lapse of six years, during which the Borough was entirely free from this disease, small pox once more visited the town in the closing weeks of 1902. From that time a steady succession of cases occurred till May 23rd, 1903, when there was a break of nearly two months. Two cases however occurred in August, after which no further cases were recorded until the end of the year. In all, 31 cases were recorded. Although the first four cases belong to the year 1902, and were referred to in last year's report they are again included now as they undoubtedly belonged to the present epidemic and the statistics would therefore be incomplete without them.

In the following account, the several cases are first referred to individually.

- Case 1. The patient was a tramp, aged 50, who apparently contracted the disease at a common lodging-house at Ormskirk, and who journeyed thence through Skelmersdale, Wigan, back to Skelmersdale and Ormskirk, and thence to St. Helens, where he took up his abode in a common lodging-house in Sandfield Crescent. Fortunately he was discovered before the disease had advanced and he was immediately removed to the Old Wint Hospital on December 20th, 1902. This patient had been vaccinated in infancy, and had two good marks, measuring about § of square inch. The disease ran a mild course, being discrete in type, and he was discharged cured after being in Hospital 31 days. While at the St. Helens lodging-house, he came in contact with 36 persons, all of whom were promptly re-vaccinated, and it is satisfactory to note that no further case occurred in any way attributable to this case.
- Case 2. The second case, also a man of no fixed abode, and aged 32, was discovered in one of the electric cars by the Matron of the St. Helens Hospital, on December 23rd. Recognising the case as one of Small Pox, she immediately called in a medical man to confirm the diagnosis, and the case was immediately removed to Hospital. The infection in this case was clearly traceable to a lodging-house in Liverpool, where he had slept a fortnight previously, and from which cases of Small Pox had been removed. On that occasion, though offered the protection of re-vaccination, he refused to avail himself of it. He had, however, been vaccinated in infancy, and possessed three good marks, measuring $1\frac{1}{z}$ square inch. The disease was discrete, and ran a mild course. He was discharged after being in Hospital for 30 days. All the contacts it was possible to lay hands on were revaccinated, and the car was thoroughly disinfected. It was ascertained that this case had been to Runcorn, Rainhill, and Prescot, subsequently to his contracting the disease at Liverpool, and before he arrived at St. Helens. As far as St. Helens was concerned, no further case was attributable to him.
- Case 3. The patient was a little girl, aged 10, who resided at Allanson Street, Parr. The case was notified on Sunday, December 28th, and was immediately removed to Hospital. The source of the disease was never traced. It was found that she had never been vaccinated, and the disease, which was confluent in type, ran a severe course. She, however, eventually recovered, and was discharged after being in Hospital for 38 days. All the contacts were re-vaccinated, and no further case occurred.

Case. 4. This patient was a rabbit hawker, aged 38, and was notified on December 30th. He was discovered in a lodging-house in Liverpool Street, where he had been living for three days. He was at once removed to Hospital, and the contacts, numbering 40, were all re-vaccinated. The source of the disease was traced to the same lodging-house at Ormskirk where case No. 1 contracted his disease. This case was also unvaccinated, and the disease, which was confluent, ran a very severe course. He was, however, discharged cured, after being in Hospital for 73 days. No further case was attributable to him.

Case 5. This patient, aged 42, resided on Croppers Hill, and was notified on January 5th. He was at once removed to Hospital, and the contacts, numbering 6, were re-vaccinated. No definite source of the disease was discovered, though a fortnight before the appearance of the rash, he was at Newton, Lowton St. Mary's, and Haydock, and it seems probable that on this occasion he unwittingly caught the disease. He had been vaccinated in infancy, and possessed three rather faint marks, having an area of 1½ square inch. The disease was discrete in type, and he was discharged after remaining in Hospital 32 days. No further case occurred attributable to him.

Case 6. This patient was a boy, aged 10, who lived in Merton Bank Road. He was notified on January 6th, and was at once removed to Hospital. The source of this case was not satisfactorily cleared up, though some suspicion attached to a foreign sailor, who had come on a visit a short time previously. Nothing definite however could be ascertained. This patient, through ill health in early childhood, had never been vaccinated. The disease, which was confluent in type, ran a severe course, and the patient was discharged after remaining in Hospital for 58 days. The contacts, numbering 14, were successfully re-vaccinated, and no further case occurred.

All the foregoing cases were discovered in the earliest stage of the disease.

Case 7. This patient, a man aged 33, presented himself at the surgery of one of the medical men in the town, on January 15th, who at once notified the case as Small Pox. The case was removed to Hospital the same evening. This man, though a native of St. Helens, was at the time resident in Oldham, which town he left, a fortnight before the onset of the disease. From that town he proceeded to Chorley, where he slept in the casual ward on the nights of January 2nd and 3rd. He then walked to Wigan, stopping at a common lodging-house for the nights of the 4th, 5th, and 6th. On the nights of the 7th and 8th, he slept in the casual ward of the Warrington Workhouse, and on the 9th and 10th, he slept in the casual ward at Prescot. He then came to St. Helens, and stopped at a common lodging house in Salisbury Street. This case was in a more advanced stage than the previous Contacts numbering 45, were all promptly re-vaccinated, but one mild case occurred amongst them, while another contact, who refused to be vaccinated, also contracted the disease. The patient had been vaccinated in infancy, and possessed three marks, measuring \(\frac{1}{4} \) square inch. The type of the disease was very discrete, and he was discharged after remaining in Hospital 22 days.

Case 8. This patient, aged 34, was notified on January 17th. He resided in Brynn Street, and undoubtedly caught the disease in the discharge of his duties as relieving officer. He had been vaccinated in infancy, but never re-vaccinated. He possessed two good marks, measuring 1½ square inch. The disease, which was discrete in type, ran a mild course, and he was discharged after being in Hospital 20 days.

Case 9. This patient, a little girl aged 11, was the daughter of the preceding case, from whom the disease was contracted. She had been vaccinated in infancy, and had one good mark, measuring \(^3_4\) square inch. The type of the disease was extremely discrete, only two spots being found. She was discharged after 20 days isolation. The contacts in these cases, numbering 7, were re-vaccinated, and no further cases occurred.

Case 10. This patient, aged 29, resided in Hall Street, and was notified on January 17th. He was at once removed to Hospital. The source of the disease could not be traced. He had been vaccinated in infancy, and possessed three marks, having an area of $1\frac{1}{2}$ square inch. The disease was very discrete, and he was discharged after being isolated for 20 days. The contacts, numbering 11, were re-vaccinated, and no further case occurred.

Case 11. This man, aged 28, resided in Stephen Street, Thatto Heath. He was notified on January 29th, and removed to Hospital the same day. The man was a collier working at one of the local collieries, and though no definite source of the disease could be traced, it seems probable that he came into contact with the infection while at his work. He had been vaccinated in infancy and possessed one very faint cicatrix, measuring ½ square inch. The disease, which was confluent in type, ran a severe course, and he was discharged after being in Hospital for 60 days. Fifteen contacts were re-vaccinated, whilst three refused. No further case however occurred.

Case 12. This patient, aged 23, was notified on January 27th and removed to Hospital. He had been living for some time at the common lodging-house from which case No. 7 was removed, and undoubtedly contracted the disease there. He stated that he had been vaccinated in infancy, but no marks were to be found. On January 15th, when the former case was removed, he was successfully re-vaccinated, and although this measure did not prevent the disease, it undoubtedly modified it. In this case the infection must have been contracted between three and four days before the re-vaccination, and it seems to indicate what is generally accepted, that re-vaccination up to three days after exposure to infection stops the disease, whilst re-vaccination at a later period will modify the disease. This case ran a normal course, being discrete in type, and the patient was discharged from Hospital at the end of 24 days.

Case 13. This patient, a man aged 51, was notified on January 30th. He had been resident at the common lodging-house in Salisbury Street, from which cases 7 and 12 had been removed. He refused the protection afforded by re-vaccination, when offered to him on the removal of the first case. He was kept under strict supervision, and on the first manifestation of the disease was removed to Hospital. He stated that he had been vaccinated in infancy, but no cicatrices could be found. The disease was confluent in type, and ran a severe course, and he was discharged after a period of isolation extending over 49 days. It is almost certain that had this man been re-vaccinated on January 15th, he would have escaped the disease. Three fresh contacts were re-vaccinated, and no further case occurred from this source.

- Case 14. This patient, a man aged 24, was notified from Albion Street on February 23rd, though he had been under observation for some days previously. The case was an extremely difficult one to diagnose, and was of a very mild type. This man, who was by trade a bricksetter, seems to have contracted the disease whilst working at the foundations of the new pavilion which was being erected at the Old Wint Hospital. He had been vaccinated in infancy, and possessed three good marks, having an area of 13 square inch.
- Case 15. This patient, aged 26, was the wife of the preceding case, from whom she undoubtedly contracted the disease. She was notified on February 23rd, and removed to Hospital. She had been vaccinated in infancy, and had three good marks with an area of \(\frac{3}{4}\) square inch. Ten days before the appearance of the rash, she was successfully re-vaccinated. The disease was very discrete in type, and she was discharged after 20 days' isolation.
- Case 16. This old lady, aged 62, was the mother of case No. 14, from whom she contracted the disease. She was notified on February 23rd, from Exeter Street, and removed to Hospital. She had been vaccinated in infancy, and had two faint marks measuring \(^3_4\) square inch. The type of the disease was confluent, and ran a severe course. She was discharged after remaining in Hospital 47 days.
- Case 17. This patient, aged 40, was the sister of case No. 14, from whom she undoubtedly contracted the disease. She was notified on February 24th, from Maxwell Street. She was vaccinated in infancy, and possessed two small but distinct marks, having an area of \(\frac{1}{4}\) inch. The disease was very discrete, and she was discharged after being in Hospital only 14 days.
- Case 18. This little boy, aged 4 years, was notified from Back Bolton Street on February 24th. No definite source of the disease could be traced, though a tramp had been at the house some little time before, and had had the child on his knee. He had been vaccinated in infancy, and had three marks, with an area of \(\frac{3}{4}\) square inch. The disease was discrete in type, but was complicated with Meningitis. He was discharged after remaining in hospital for 57 days. The contacts were re-vaccinated, and no further case occurred.
- Case 19. This was a boy, 16 years old, who was notified from Lyon Street on March 3rd. The source of the disease could not be traced. He had been vaccinated in infancy, and possessed three cicatrices, with an area of ½ square inch. The disease was discrete, and he was discharged after 25 days' isolation. The contacts, 8 in number, were re-vaccinated, and no further case occurred.
- Case 20. This case was that of a police constable, 42 years of age, and residing in Sutton Road. He was notified on March 5th, and removed to Hospital. The source of the infection was not traced, but it is highly probable that he contracted the disease in the discharge of his duties. He had only been vaccinated in infancy, and had three fair marks, having an area of 1½ square inch. The disease was discrete in type, and he was discharged after 44 days' isolation. The contacts were all re-vaccinated, and no further case occurred.

Case 21. This patient, a woman 35 years of age, was a sister of case No. 14, and a daughter of case No. 16. She was vaccinated in infancy, and had two cicatrices with an area of one square inch. On the removal of her mother on February 23rd, she was successfully re-vaccinated. On March 2nd she was confined, and five days later she developed an extremely modified form of Small Pox. Owing to her condition, it was impossible to remove her to Hospital till March 12th. The source of the infection was undoubtedly her mother. The case ran a mild course, and she was discharged after 23 days' isolation.

Case 22. This case was the newly born infant of previous case. He was successfully vaccinated in four places two days after birth. On the removal of his mother, he being then 10 days old, was admitted to Hospital with her. Three days later he developed an extremely modified form of Small Pox. He was discharged with his mother after 23 days in Hospital.

Case 23. This patient, a woman 29 years of age, was notified from Exeter Street on March 13th. The source of the infection could not be traced. This woman had been vaccinated in infancy, and had three good marks, having an area of 1½ square inch. The contacts, numbering 7, were all re-vaccinated, and no further case occurred.

Case 24. This case, a boy 5 years of age, was also a son of case No. 21. He was discovered by the Sanitary Authority whilst visiting the contacts, and was removed to Hospital on March 18th. He had been vaccinated in infancy, having three marks with an area of \(^3\)4 square inch. He was also successfully re-vaccinated on February 23rd, on the outbreak of the disease in the house. It was an extremely mild case, and but for the history would no doubt have passed undetected. He was discharged after 17 days' residence in Hospital. No further cases occurred in this family.

Case 25. This patient, a woman aged 38, was notified from Sandfield Crescent on March 21st. Although the source of the infection was at first a mystery, it has since been ascertained that she visited an old lodger of hers, resident in Prescot, about a fortnight before her own rash appeared. This man was removed to the Prescot Hospital suffering from Small Pox, the day after her visit. She stated that she had been vaccinated in infancy, but no cicatrices could be found. The disease, which was confluent in type, ran a severe course, and she was only discharged after a period of 74 days' isolation. The contacts, numbering 9, were all re-vaccinated, and no further case occurred.

Case 26. This was a woman, 29 years old, who resided in Lyon Street. From information received, the Sanitary Inspector visited her house, and found her to be suffering from a suspicious form of illness. A medical man was at once called in, who (March 21st) notified the case as Small Pox. It is possible that this case contracted the disease from case 19, who was removed to Hospital on March 3rd, though as the rash was stated to have appeared on March 20th, the interval is rather excessive. She had been vaccinated in infancy, and possessed four marks, with an area of 1\frac{3}{4} square inch. The type of the disease was very discrete, and she was discharged after 18 days' isolation, The contacts, numbering 11, were re-vaccinated, and no further case occurred.

Case 27. This patient, a man 27 years old, was notified from a lodging-house in Mount Street on March 24th. He accompanied case No. 25 on her visit to Prescot, and undoubtedly caught the infection there, He had never been vaccinated, and the disease which was confluent in type

ran a particularly severe course, indeed this was by far the most malignant case during the epidemic. He however eventually recovered, and was discharged after remaining in Hospital 74 days. The contacts, numbering 13, were all re-vaccinated, and no further case occurred.

CASE 28, This patient, a man aged 28, was notified from Lord Street on April 6th. The source of the infection was not traceable. He was vaccinated in infancy, and possessed three good marks, having an area of $1\frac{1}{2}$ square inch. The case was one of markedly modified Small Pox. At first it was thought that the disease would run a severe course, but the rash rapidly faded, and he was discharged after 34 days' isolation. No further case occurred among the contacts, 28 in number, who were all re-vaccinated. This case is particularly instructive as showing the efficacy of prompt and successful re-vaccination. The patient was working in a confined space with 14 others up to 6 a.m. of the day on which he was removed, yet not one of these contacts contracted the disease. They were all re-vaccinated within 36 hours of their exposure to infection.

Case 29. This case was that of a man, 35 years old, who resided in Scholes Lane. He was notified on May 23rd, and removed to Hospital. The source of the infection was not satisfactorily traced, though he visited Liverpool about a fortnight before the appearance of the rash. He had been vaccinated in infancy, and possessed three cicatrices, with an area of $1\frac{1}{2}$ square inch. The disease was confluent in type, and ran a fairly severe course, being complicated with a slight attack of pneumonia. He was discharged after remaining 35 days in Hospital. The contacts, numbering 9, were all re-vaccinated, and no further case occurred.

Case 30. This case was that of a woman, aged 28, living at 3, off Hoghton Road. The rash appeared on the 28th July, and the case was notified on the 4th August. Seventeen persons in contact were re-vaccinated with the exception of a woman—a lodger at the house, who was not re-vaccinated on account of her recent confinement. There was some suspicion that the disease had been imported from Bolton. She had been vaccinated in infancy, having one mark with ½ square inch area. The disease was discrete in type.

Case 31. This case was the woman referred to above. She was 26 years of age. The rash appeared on August 16th, and the case was notified and removed to Hospital the same day. No further case occurred from these cases. She had been vaccinated in infancy, and had four marks with 1½ square inch area. The disease was discrete in type.

The foregoing cases are summarised in the following table:-

(Condition as regards		Type of the Disea	ase
	Vaccination.	Discrete.	Semi-confluent.	Confluent.
1.	Vaccinated in infancy, cicatrices good	19	1	1
2.	Vaccinated in infancy, no cicatrices	1	_	2
3.	Vaccinated in infancy, cicatrices faint	1		1
4.	Vaccinated in infancy, and re-vaccinated	1		1
5.	Un-vaccinated	_	_	4
	Total	22	1	8

From the above table it is at once apparent how efficacious is vaccination in modifying the disease. One case only amongst the well vaccinated was of the confluent type, and that one occurred in a woman 62 years of age. It is hardly surprising that the effect of a primary vaccination in infancy should have lost its power in the course of 62 years. On the other hand, all the undoubtedly unvaccinated cases were confluent, and of a very severe type, whilst three others of the confluent cases occurred in patients with none or very faint marks. In other words, 90·4% of the well-vaccinated cases were discrete in type, while only 9·5% were of the semi-confluent or confluent type. Of the badly vaccinated cases 60% were confluent, and 40% discrete. Of the unvaccinated cases, the whole or 100% were confluent.

It is worthy of note that the whole of the cases recovered, a fact which cannot but reflect credit on the nursing and the medical attention which they received.

The precautions which were taken in the epidemic were as follows. They proved eminently successful:—

- Prompt removal of the patient to Hospital.
- Disinfection of all clothes, etc., both of the patient and of the contacts.
- Disinfection of the house with sulphur dioxide, while subsequently the walls were washed with strong carbolic, stripped and lime-washed.
- 4. Re-vaccination of all contacts who had not been re-vaccinated within a year. With the aid of a little bribery, it was found that exceedingly few refused. The contacts were subsequently kept under daily observation for a period of 17 days.
- Where it was found that a patient had passed through other towns, the addresses of the houses where he stopped were at once forwarded to the Medical Officer of Health.

It was not found necessary to stop any of the contacts from following his employment.

In the first weeks of January, when Small-pox was spreading with great rapidity throughout Lancashire, it seemed that St. Helens would share largely in the general epidemic. Under these circumstances, it was decided to erect another pavilion. This was at once put in hand, and there is now an excellent structure of corrugated iron lined with wood, capable of containing 20 beds. This pavilion is provided with a kitchen, bath-room, linen closet, and private ward, and is supplied with hot and cold water. It is an immense improvement on the old wards, and will greatly facilitate the nursing. Although the fears expressed above were not realised, it is still a matter for congratulation that this pavilion was erected, as the old one is now getting somewhat dilapidated, The present accommodation should be sufficient for many years to come.

One lesson which has been emphasised by the epidemic, has been already alluded to, namely, the efficacy of vaccination and re-vaccination in modifying or preventing the disease. Attention is here directed to one or two points under this head, which should be included in the next Vaccination Act.

- 1. Compulsory re-vaccination of children on leaving school—say at 12 years of age. By this means it seems probable that future epidemics would be much limited, if not entirely prevented.
- 2. Compulsory re-vaccination of all persons who can be proved to have come in contact with the infection of Small Pox. Although with the aid of a little bribery it was found possible to obtain the re-vaccination of a very large percentage of the contacts, still on more than one occasion, though every available means was tried, the offer was refused. This was notably the case in patient No. 13.
- 3. The transference of the administration of the Vaccination Acts to the Sanitary Authorities. Although in the epidemic just passed, the greatest and most willing assistance was rendered to the Health Department both by the public Vaccinators and by the Guardians, it seems only reasonable that the authority who has the responsibility of isolation, disinfection, and other precautionary measures, should also control the most important preventive measure of the lot.

The other point which has been brought out as the result of the experience of the past few months, is the great danger to the community at large, from tramps. Passing from place to place, they are the means of introducing the disease into a town time after time. The vagueness and often the untruthfulness of their statements as to their previous movements, render the task of tracing the source of the infection very difficult. A Clause in the last Liverpool Corporation Act, renders the occupier of a house liable to a heavy penalty, if he refuses or gives false information. I believe this has been found beneficial, and it might with advantage be made applicable to the country as a whole. It should certainly be included in the next Bill which your Corporation introduce.

At present, too, there are no powers by which the lodgers in a common lodging-house, can be compelled to submit to a medical examination. This should be remedied.

Lastly, the inmates of casual wards should be medically examined, and where no evidence of recent re-vaccination is discoverable, it should be competent for the Medical Officer to at once insist on this being done.

The cases of Small Pox which have occurred in recent years in St. Helens are set out in the following Table.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Cases of Sickness from Small Pox	40	2	10	0	0	0	0	0	0	4	27
No. of Deaths	5	1	1	0	0	0	0	0	0	0	0

By reference to the Vaccination returns given below it will be seen that St. Helens is well equipped for dealing with an epidemic of Small Pox. In past years the percentage of un-vaccinated children has been very small, only between 3 and 4 per cent. being so returned. Even of this small proportion, a large number is due to removals from the Borough.

VACCINATION.

The following Table shows the Vaccination Returns for 12 years. It compares favourably with that of other towns.

YEAR	1 Births.	Vaccin- ated.	3 Insus- ceptible	4 Dead.	5 Con. Obje't'r	6 Post- poned.	7 Removed	8 Un- accounted	Percentage not Vaccinated including Columns 5, 6, 7, 8
1891	*2827	2345	15	386	_		76	5	2.8
1892	*2817	2424	6	318	_	_	63	6	2.4
1893	*2856	2378	14	371	1	-	91	1	3.8
+1894	*2711	2284	10	312	1	-	99	5	4.6
†1895	*2943	2443	17	378	8	1	99	2	8.4
+1896	*8006	2538	14	356	_	4	92	2	3.2
+1897	*3209	2680	11	390	4	7	110	7	3.8
+1898	*3238	2696	15	383	14	1	103	15	4.4
†1899	*3126	2625	32	346	10	8	94	16	4.3
†1900	*3148	2654	10	367	5	12	82	18	4.2
j1901	3157	2639	4	391	11	29	59	24	3.8
†1902	3245	2788	4	342	7	12	58	34	3.4

^{*}The above Returns are for St. Helens Sub-District of the Prescot Union, which does not include quite the whole of the Borough.

The above figures have been supplied by Mr. Griffin, Vaccination Officer for St. Helens.

[†]The returns in Columns 6, 7, and 8, will still further be reduced for these years.

MEASLES.

Measles caused 1 death during the year, giving a death-rate of 0.01 per 1000 as against 0.68 in 1902, and .27 in England and Wales. Comparing this number with that in former years, we obtain the following figures:—

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean of 15 years	1908
St. Helens.	n	75	16	54	23	135	21	54	38	87	17	21	59	7	-59	47	1
Peath 1 per 10		1.09	-22	.75	·31	1.80	·27	-68	-46	1.04	-20	0.24	0-66	.07	-68	-60	*01
England & Wales De	eath '34	-50	-43	.43	-30	-30	-37	-37	-55	40	-42	.30	.39	.40	.38	-45	.27

The following Table shows the periods during which Measles, judged by the number of deaths, has been prevalent in each of the 20 years—1884—1903.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Deaths in each year
1884	0	0	2	8	1	0	0	0	8	16	45	75	145
1885	86	0	10	3	2	5	2	1	0	0	0	1	70
1886	3	10	1	8	3	2	16	8	3	15	29	11	102
1887	4	3	6	6	2	1	1	4	1	6	10	10	58
1888	3	2	0	0	0	0	0	0	1	3	7	27	41
1889	10	0	8	11	5	11	3	3	1	7	2	1	75
1890	0	13	0	0	0	0	0	0	0	6	5	5	16
1891	4	0	3	14	11	6	3	0	2	3	5	0	54
1892	0	3	0	1	0	0	0	1	0	1	5	15	28
1893	81	0	31	28	5	4	2	1	2	0	0	0	135
1894	0	31	1	0	0	0	0	0	0	8	11	1	21
1895	3	0	5	8	2	11	9	6	1	1	3	0	54
1896	1	10	11	10	2	1	4	2	0	2	1	1	88
1897	0	3	2	2	15	19	9	8	6	8	18	9	87
1898	2	1	0	1	2	8	1	0	1	0	1	0	17
1899	0	1	0	0	0	2	0	0	1	5	4	9	21
1900	19	0	6	9	5	2	8	5	1	0	0	0	59
1901	0	9	1	0	1	1	0	0	0	1	0	3	7
1902	7	7	8	8	9	9	1	2	2	5	1	0	59
1903	0	0	1	0	0	0	0	0	0	0	0	0	1
Totals	123	93	96	107	65	72	54	41	25	82	142	168	1078

The following table shews the ages at which deaths from Measles occurred during the past ten years, From this it will be seen that Measles is essentially a disease of childhood, the maximum mortality being reached in the second year of life.

Ages at Death from Measles-1894 to 1903.

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total.
0 to 3 months	1	0	0	0	0	0	1	0	2	0	5
8 ,, 6 ,,	0	1	0	2	0	0	1	0	1	0	10
6 ,, 12 ,,	6	8	7	22	2	4	11	1	14	0	107
1 ,, 2 years	9	26	14	32	12	8	25	3	28	0	216
2 ,, 3 ,,	2	11	11	19	2	7	12	1	6	0	86
3 ,, 4 ,,	2	4	3	3	0	1	4	0	8	0	30
4 ,, 5 ,,	0	1	3	6	1	1	2	0	3	1	24
5 ,, 10 ,,	1	3	0	2	0	0	3	2	2	0	17
Over 10 ,,	0	0	0	1	0	0	0	0	0	0	4
Total at all Ages	21	54	38	87	17	21	59	7	59	1	499

Never before in the history of the Borough has St. Helens been so free from Measles. Only one death occurred during the whole year, while only thirty cases were notified by the School Teachers. This compares most favourably with last year when 1,245 cases were notified and 59 deaths occurred. It was therefore not found necessary to close any Schools. This is a matter for congratulation, seeing that under the new Act the closure of a Department means financial loss to the Borough.

SCARLET FEVER.

Scarlet Fever was again prevalent in St. Helens during 1903. 728 cases of this disease were notified, of which 26 terminated fatally, giving a death-rate of ·29 per 1000.

In England and Wales the death-rate was 0.12 per 1000.

On page 35 will be found the number of deaths from Scarlet Fever for each year since 1873. These figures, however, indicate very imperfectly the degree of prevalence of the disease, as it is evident that, at any rate in St. Helens, the degree of virulence of Scarlet Fever varies much from year to year.

The cases of sickness and death, together with the death-rates from Scarlet Fever during the years 1894-1903 are set out in the following Table:—

	1894	I895	1896	1897	1898	1899	1900	1901	1902	1903
Cases of Sickness	342	220	1310	914	385	335	580	719	1224	728
No. of Deaths	14	9	59	44	24	8	25	29	52	26
Death-rate per 1000	·18	·11	.72	•53	.28	0.09	0.28	0.34	0.60	0.29
Mortality per 100 Cases.	4.0	4.0	4.5	4.8	6.2	2.38	4.3	4.03	4.2	3.57

From the above Table it will be seen that one case died in every 22.5 attacked in 1896, 1 in every 20.75 in 1897, 1 in every 16.04 in 1898, 1 in every 41.8 in 1899, 1 in every 23.2 in 1900, 1 in every 24.8 in 1901, 1 in every 23.5 in 1902, and 1 in every 28 in 1903. Thus with the exception of 1899, the fatality was less than in any of these years. That this was largely due to the large proportion of cases isolated there can be no doubt.

AGE INCIDENCE.

The following Table shows the ages at which the notified cases and deaths occurred.

SCARLET FEVER NOTIFICATIONS AND DEATHS AT VARIOUS AGES.

	DCAR.	LET TI	SVER	NOTIF	ICATIO:	NS AND	DEATHS AT	VARIOUS	AGE	5.
	Total.	728			8.53		26	3.5		
	20 & over.	25			7.0		0	0		
	9-10 10-15 15-20 20 &	33	-100		3.7		-	3.0		
	10-15	102			10.1		67	1.9		
	9-10	45	1				0	0		
RS.	8-0	41						2.4		
YEARS.	7-8	49	900	230	25.9		1	2.0		
	2-9	67					0	0		
	5-6	91	j				-	1:0		
	4-5	92			38.5		99	3.5		
	3-4	85			33.5		7	8.5		
	2-3	52		, 275	21.0	22.0	9	4.1 11.5		3, 7-2
	I-2	39		years	15.7	ears,	61	4.1		years
1	9-12	9	, 10	Under 5 years, 275	Under 1 year, 3.6 15.7 21.0 33.5 38.2	Under 5 years, 22-0	0	16.6	Under 1 year, 20.0	Under 5 years, 7.2
rhs.	6-9	-	Under 1 year, 10	Und	year,	Unde	-	0 0 100-0 16-6	year,	Un
MONTHS.	3-6	1 2	der 1		der 1		Н	0	der 1	
	0-3	-]	Un		Un		0	0	Un	
	Ages	Total No. of Cases) Notified			Sickness Rate per 1000 of the Popu-	lation at each age)	Deaths from Scarlet Fever at various ages	Percentage or Case) Mortality		

SEASONAL INCIDENCE.

The following Table shows the period of greatest prevalence of Scarlet Fever during the past 7 years in St. Helens.

Year.	January	February	March	April	May	June	July	August	September	October	November	December	Total
1897	123	91	118	82	70	39	40	41	68	89	78	75	914
1898	63	44	35	26	13	23	23	26	32	32	32	39	385
1899	47	87	27	28	18	26	27	23	21	34	31	16	335
1900	38	21	15	36	46	48	48	38	54	86	83	77	580
1901	59	47	45	48	56	78	78	47	76	74	57	64	719
1902	86	69	93	55	58	88	66	76	92	215	190	136	1224
1903	106	85	52	42	45	46	42	36	44	99	79	52	728

DISTRIBUTION OF SICKNESS CASES.

Wards.		No. of Cases of Sickness from Scarlet Fever.													
WARDS.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903					
Eccleston, North	29	12	231	188	54	19	52	170	201	92					
Eccleston, South	29	19	214	90	37	14	30	60	160	46					
Central	43	8	54	73	17	20	52	33	54	21					
Windle, North	81	24	131	102	45	32	90	75	204	143					
Windle, South .	21	19	152	78	36	26	31	46	97	44					
Hardshaw	46	45	163	89	75	47	59	66	120	90					
Sutton, East	19	35	141	108	27	61	71	84	98	156					
Sutton, West	35	25	103	90	18	48	120	96	130	28					
Parr	39	35	121	96	66	68	75	109	160	108					
Totals	342	222	1310	914	385	335	580	719	1224	728					

Scarlet Fever is a disease which is stated to recur in an epidemic form at somewhat regular intervals, the maximum being reached about every five years. The table on page 35 seems to bear this out, for the last maximum occurred in 1896, when 1,310 cases were notified. From that point the prevalence of the disease gradually dropped till in 1899 it reached its minimum. From that point it began once more gradually to ascend. There can be no doubt that but for efficient isolation the rise of the curve would have been much more rapid. As it was, it took three years to reach its maximum and it was not till 1902 that the notifications approached the number of 1896. During the past year the number dropped to nearly one-half.

Passing next to the table showing the seasonal incidence of the disease, it will be seen that the maximum occurred in January, after which a gradual decline took place to a minimum in August After this a second maximum was reached in October.

Referring next to the distribution of the disease, it will be noted that the heaviest incidence fell on North Windle and East Sutton. Parr and North Eccleston also had very numerous cases. Next in numbers came Hardshaw, with Central considerably lowest, and it is at least a curious fact that the most crowded ward contributed the fewest number of cases. On examining the table it will be found that this has been the case in more than one year. What the explanation of this fact is, it is almost impossible to say.

Of the 728 cases which occurred, it was found possible to isolate 476 or 65.4%, which, considering the number of cases, may be considered a very satisfactory proportion.

The main causes of the past epidemic are probably two in number.

- Insufficient isolation accommodation at the Borough Sanatorium and the consequent impossibility of removing to hospital many cases which it would undoubtedly have been advisable to admit. Indeed the number of second and third cases which occurred were, undoubtedly, due to this cause.
- 2. The extreme mildness of many of the cases. Thus a doctor was often not called in until a second case had occurred, and by that time much mischief might have been done. In one case in particular a boy attended school for some days after the onset of the disease, and from this one case no less than 12 others were attributable. Among minor causes may be mentioned the Schools, which in some small degree seem to have aided the spread of the disease. In no instance was there shown to be sufficient cause to occasion the closure of a School.

No cases were traceable to milk.

The 728 cases occurred in 629 houses as follows :-

In 559 houses only one case occurred, being 76.8% of the cases.

- , 49 ,, two cases occurred.
- ,, 15 ,, three ,,
- " 5 " four " ,
- ,, 1 ,, six ,, .

A much smaller proportion of second cases occurred than during 1902.

In the 629 houses in which the disease occurred there were 1,032 children under 12 years of age, who were said not to have had Scarlet Fever previously, and who did not contract it during the year. This would seem to show, as indeed one's experience confirms, that reasonable care is taken in a large proportion of the houses to prevent the spread of the disease.

The precautions adopted to prevent the spread of Scarlet Fever were the same as in former years, and comprised (1) Visit of Sanitary Inspector; (2) removal to Hospital; (3) Disinfection and Supply of Disinfectants, &c.; (4) Exclusion from School of all children from infected households.

HOSPITAL RETURN CASES OF SCARLET FEVER.

By this term is meant those cases of Scarlet Fever which occur in a house after the return home of cases from Hospital. The term is usually limited to those cases which occur within seven days after the discharge of the patient.

Their causation has been the reason of much speculation and research. It has been suggested that they are due (1) to the retention in the cavities of the nose of certain infective material in spite of the fact that all peeling and all discharge from nose and ears have ceased, and that the greatest care has been taken; (2) that some article of clothing worn by the patient before entering hospital which had been put away and escaped disinfection, was brought out on the patient's return home; (3) the occurrence of secondary peeling; (4) secondary discharge from nose or ear.

It is probable that all these causes are sometimes factors in the causation of return cases, but the two former are probably by far the most common.

The number of return cases are so small annually as not seriously to militate against the use of a hospital for isolation purposes. Their number might doubtless be limited by removing cases on their convalescence to a convalescent ward and allowing them to remain there a couple of weeks before discharging them. With the new blocks now erected it will be possible to pursue this course.

During 1903, 10 cases occurred in houses within seven days of the return of other cases from hospital.

The lesson of the epidemic is undoubtedly the necessity for increased hospital accommodation, and it is satisfactory to note that much progress had been made in this direction.

One prosecution for exposure of a scarlet fever patient was undertaken during the year.

DIPHTHERIA.

The death-rate from this disease was 0.26 per 1000 of the population of St. Helens during 1903. In England and Wales it was 0.18 for the same period.

The following Table shows the cases of sickness per annum, the deaths, the death-rate per 1000, and the case mortailty,—

Year.	1894	1895	* 1896	1897	1898	1899	1900	1901	1902	1903
Cases of Sickness.	86	66	72	66	60	64	77	85	93	126
Deaths	9	8	17	20	16	15	19	33	20	23
Death-rate per 1000	·11	·10	.20	.24	.18	.17	·21	-38	•23	·26
Mortality per 100 Cases	10.4	12.1	23.6	30.3	26.6	23.4	24.6	38.8	21.50	18-25

^{*} Years in which Scarlet Fever was epidemic.

The following Table shows the periods of greatest prevalence of Diphtheria during the past six years in St. Helens:—

SEASONAL INCIDENCE.

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1898	8	8	4	3	4	2	6	6	4	3	5	7	60
1899	7	3	5	3	7	4	1	3	5	9	10	7	64
1900	5	6	9	7	5	3	3	10	4	6	8	11	77
1901	10	12	9	8	4	4	4	5	3	12	10	4	85
1902	5	8	9	14	5	5	9	0	6	13	10	9	93
1903	11	9	6	13	10	10	11	9	12	11	18	6	126

Distribution of Cases of Sickness from Diphtheria and Membranous Croup.

Wards,	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total.
Eccleston, North	7	10	6	9	4	9	6	6	8	13	78
Eccleston, South	8	5	1	4	4	1	10	11	7	9	60
Central	5	3	6	4	4	3	8	3	1	4	41
Windle, North	20	13	12	6	8	2	12	12	14	28	127
Windle, South	3	6	9	6	2	3	2	8	6	15	60
Hardshaw	9	10	12	14	10	14	4	12	16	27	128
Sutton, East	9	4	6	9	10	14	14	8	11	12	97
Sutton, West	10	6	10	3	5	3	6	11	7	7	68
Parr	15	9	10	11	18	15	15	14	23	11	136
Totals .	86	66	72	66	60	64	77	85	98	126	795

The number of notified cases and the percentage mortality at each age group was as follows:—

$\Lambda \mathrm{ge}$.	Number of Cases, 1903.	Percentage Mortality.		
Under 1 year	6	88%		
1 and under 5	87	27%		
5 ,, 10	43	16.3%		
10 and upwards	40	2.5%		

From the foregoing tables it will be noted that diphtheria was more prevalent than it has been in any of the ten preceding years. Although this was so, it was not so fatal as in either of the seven previous years. In no case was it possible to trace the infection from a previous case, as cases occurring within a few days of each other were nearly always found to be situated in parts of the borough widely separate one from the other. It must, of course, be borne in mind, that scarlet fever was epidemic during the year, and that some of the cases notified as diphtheria may have been cases of malignant scarlet fever. It is further to be noted that dampness, which is so favourable to the spread of this disease, was extremely frequent throughout the year.

In addition, the drains of the houses where diphtheria occurred were in every case tested, and in 39% defects were found.

The greatest prevalence of the disease occurred in April and November, though the cases were fairly evenly distributed.

Taking the total cases occurring in each ward during the past ten years, it will be seen that this disease is by far the most prevalent in Parr, Hardshaw, and North Windle, while the comparative immunity of Central is again remarkable.

It was not found possible to isolate more than 3 cases in the sanatorium, but again a supply of anti-toxin for use among the poorer class of patients was kept. This was extensively used by the medical men in the town, and was undoubtedly of great service. Unfortunately, however, the doctor was called in too late in many cases to use this valuable remedy with any chance of success. When employed on the first, second, or third day of the disease, its effect is often marvellous. Later than this, however, its effect is greatly diminished.

With the increased accommodation provided at the Sanatorium, it will now be possible to isolate a large proportion of the cases, and consequently the death-rate should be greatly diminished.

The work commenced in 1893 of aiding the Medical Attendant in diagnosing doubtful cases by the bacteriological examination of a piece of membrane, or of a swabbing from the throat, was continued during the year It frequently proved of service.

WHOOPING COUGH.

This disease caused **30** deaths during the year, equal to a death-rate of **0.34** per 1000, as against 0.20 per 1000 for the preceding year.

In England and Wales the rate was 0.27 per 1000 during 1903.

In former years the deaths from this disease were as follows:-

1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
18	61	14	78	88	84	41	56	17	18	30

The deaths were all of children under 5 years of age, and were as follows:—

0 to	3	months	 	 3
3 ,,	6	,,	 	 8
6 .,	12	,,	 	 11
1 ,,	2	years	 	 8
2 ,,	3	,,	 	 8
8 ,,	4	,,	 	 2

The cases were distributed over the Borough as follows:-

Eccleston, Nort	h	 	9
Eccleston, Sout	h	 	1
Central		 	1
Windle, North		 	
Windle, South		 	_
Hardshaw		 	5
Sutton, East		 	6
Sutton, West		 	4
Parr		 	4

The number of deaths in each Quarter of this highly infectious disease was as follows:—

6 deaths occurred in the 1st Quarter.

-					4
12	,,	,,	,,	2nd	,,
5	,,	,,	,,	3rd	,,
7	,,	,,	,,	4th	,,

At the present time practically nothing is done in St. Helens or in other towns to reduce the mortality and the serious damage to health which this disease causes. There are features in the natural history of the disease which render the usual preventive measures unavailable to a large extent. When children suffering from this disease are everywhere allowed to go about n public places, it is not to be wondered at that so many cases occur.

TYPHOID FEVER.

The death-rate from Typhoid Fever was at the rate of **0.20** per 1000, being 0.23 below the mean for the previous 10 years. In England and Wales the rate was 0.12 per 1000.

The number of cases of sickness from this disease notified was **76** being 5 below the number reported last year, and 102 below the mean number reported annually since 1892. The case-mortality is 23.7 against 20.7 and 30.8 in the two preceding years.

The following Table shows the number of cases of sickness and the death-rates from Typhoid Fever in each year since 1883:—

		1903			76	·20	23.7
Mean.	257	•46	16.0	Mean.	178	·48	20.8
1892	138	.34	17.8	1902	81	.29	30.8
1890 1891	558 150	·34 ·36	18·0 13·9	1900 1901	123 164	·21 ·40	15·4 20·7
1889		1.18	14.5	1899	221	.49	19.4
1888	Z	.32		1898	136	.36	22.6
1887	No.	.51	-	1897	147	.39	22.4
1886	of	.43	_	1896	166	.49	23.8
1885	Ca	·11	_	1195	257	.74	22.6
1884	of Cases known.	.53		1894	172	-33	14.2
1883	**	.51		1893	315	-68	16.8
Year.	No. of cases of Sickness.	Death Rate.	Fatality %	Year.	No. of Cases of Sickness.	Death Rate per 1000.	Fatality 9

The following Table shows the distribution of deaths in St. Helens during the past 14 years:—

WARDS.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total.
Eccleston, North Eccleston, South Central Windle, North Windle, South Hardshaw Sutton, East Sutton, West Parr	4 3 2 2	- 2 4 3 1 2 1 12 1	1 3 1 - 5 2 3 6 4	4 5 2 6 2 4 3 18 8	2 3 2 2 2 - 5 1 10 1	6 5 2 3 3 1 2 34 3	4 2 3 7 3 4 2 10 5	3 1 - 4 - 3 - 20 2	4 - 3 1 2 2 - 16 2	2 2 - 1 2 2 - 2 - 2 5	- 1 2 - - - 14 1	- 1 3 3 1 1 2 22 1	1 1 2 2 2 - 1 2 15 1	1 1 - 15 1	36 33 27 39 28 34 23 228 39
Totals	24	26	25	52	26	59	40	33	30	43	19	34	25	18	487

*Including Deaths in the Sanatorium

It will be noted how large a proportion of the deaths since 1893 have occurred in West Sutton. This increase is coincident with the greatly increased facilities for isolation provided at the Sanatorium and the greater proportion of cases isolated there,



CHART No. 2.

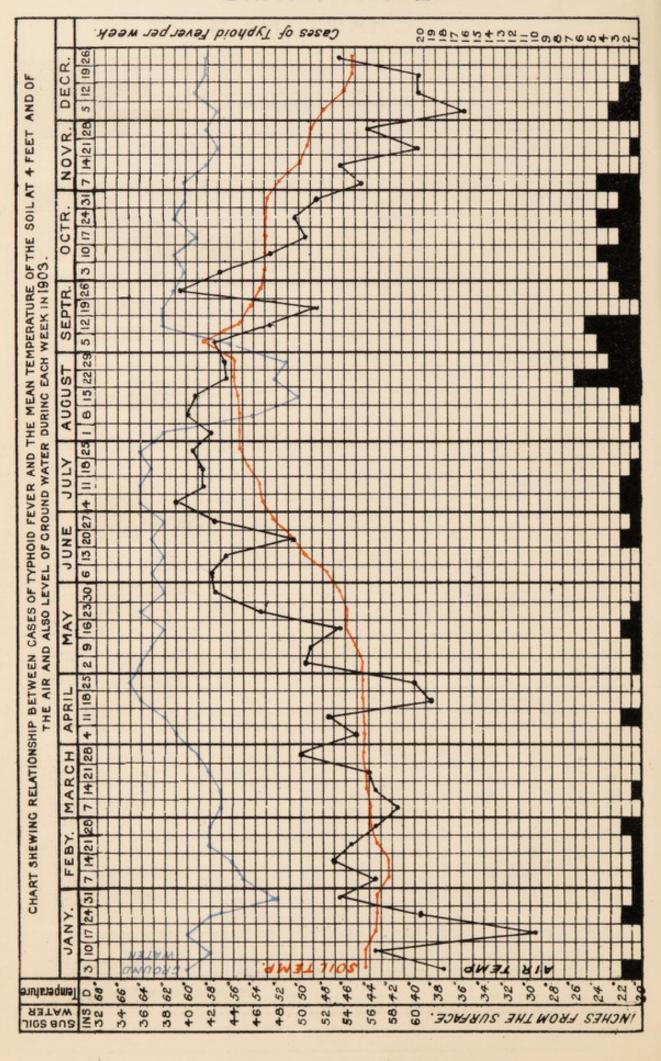
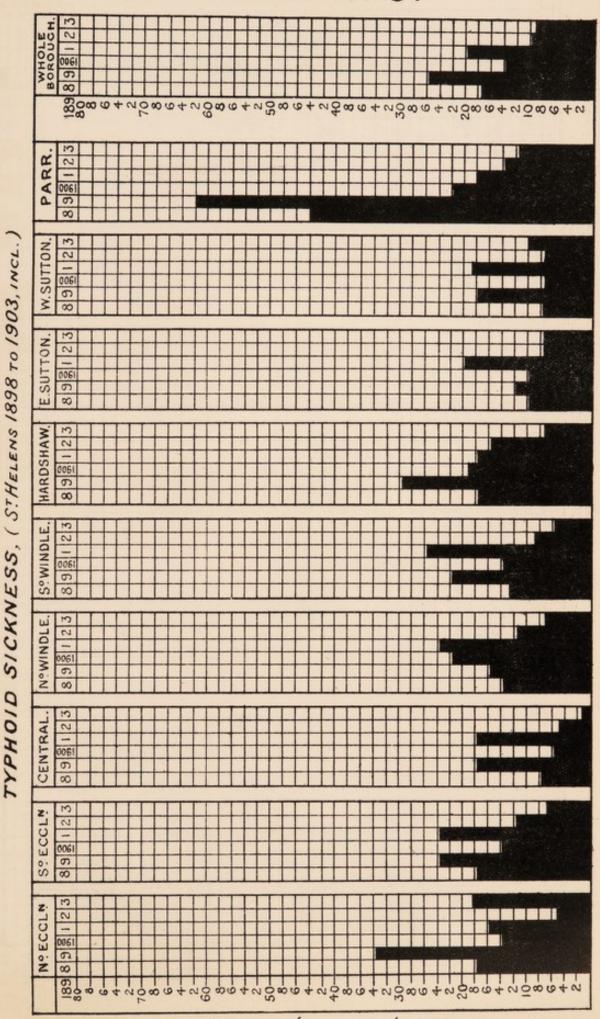


CHART Nº 3.



Rates per 10000 per Annum.



It will be noted that in 1903 the greatest number of deaths occurred in the third and fourth quarters.

Year.	Deaths 1st Qtr.	Deaths 2nd Qtr.	Deaths 3rd Qtr.	Deaths 4th Qtr.	Total
1894	13	2	4	7	26
1895	12	2	19	26	59
1896	4	5	15	16	40
18 7	3 -	4	16	10	33
1898	5	3	12	10	30
1899	11	3	21	8	43
1900	2	3	7	7	19
1901	5	1	18	10	34
1902	7	12	2	4	25
1903	3	2	4	9	18
Totals.	65	37	118	107	327

The distribution of Typhoid Fever is shown in the accompanying Table, where also the number of cases occurring in each of the months of the preceding 10 years is set out. It will be noted that the largest number of cases occurred in the month of September and October.

Year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1893	10	11	18	0	3	10	26	41	73	70	34	19	315
1894	19	11	18	9	6	5	15	17	25	24	11	12	172
1895	9	9	10	2	9	9	12	37	42	48	58	22	257
1896	9	9	7	2	8	7	17	21	34	22	24	8	168
1897	6	11	7	4	5	4	2	43	27	15	18	5	147
1898	6	4	8	7	4	6	7	10	27	32	16	9	136
1899	11	9	9	9	5	6	11	21	80	39	11	10	221
1900	10	1	4	9	7	6	5	24	27	13	13	4	123
1901	4	5	8	8	8	2	11	30	44	23	11	15	164
1902	8	12	4	8	5	3	5	4	12	8	6	6	81
1903	3	5	2	4	3	6	4	11	13	12	5	8	76
		Qtr. 903	10	2nd 190	Qtr.	13	3rd 19	Qtr. 03	28	4th 19	Qtr. 03	25	

The following Table shows the distribution of the Notified cases over the Borough during each of the last 11 years:—

Wards.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Average.	1903
Eccleston, North	 36	21	68	22	18	17	34	14	15	5	25	20
Eccleston, South	 22	17	25	18	7	15	20	11	19	11	17	6
Central	 19	16	27	14	13	7	15	5	16	3	14	1
Windle, North	 51	29	26	34	40	13	14	22	20	14	28	8
Windle South	 40	12	24	19	9	11	20	13	24	7	19	5
Hardshaw	 57	22	23	10	16	16	31	20	19	15	23	7
Sutton, East	 10	26	8	5	5	9	11	9	18	6	11	7
Sutton, West	 33	10	43	20	21	7	16	7	16	6	18	10
Parr	 47	19	13	20	18	41	60	22	17	14	27	12
Whole Borough	315	172	257	168	147	136	221	123	164	81	178	76

The sickness rates per 1000 of the population in each Ward for the 10 years—1893 to 1903—as well as the average for the previous 10 years are set out in the following Table :—

SICKNESS RATES PER 1000 OF THE POPULATION IN EACH WARD.

Wards.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge. 10 yrs.	1903
Eccleston, North Eccleston, South Central Windle, North Windle, South Hardshaw Sutton, East Sutton, West Parr	4 07 3 09 2 29 7 57 4 67 5 85 1 23 3 93 5 46	2·28 2·29 1·92 3·74 1·39 2·23 3·03 1·18 2·16	7.17 3.37 3.24 2.97 2.78 2.30 .85 5.03 1.45	2·29 2·19 1·68 3·71 2·18 1·59 -55 2·27 2·15	1.83 0.83 1.52 4.27 1.01 1.55 53 2.44 1.89	1.69 1.75 0.80 1.36 1.21 1.52 .94 .76 4.23	3.22 2.28 1.68 1.43 2.15 2.88 1.13 1.70 6.06	1'34 1'23 0'55 2'20 1'37 1'82 0'91 0'73 2'17	1'49 2'38 1'66 2'28 2'43 1'75 1'86 1'84 1'80	0.46 1.18 0.42 1.18 0.84 1.53 0.67 0.61 1.36	2.58 2.06 1.47 3.07 2.00 2.30 1.17 1.95 2.87	1 · 81 0 · 63 0 · 13 0 · 66 0 · 59 0 · 70 0 · 77 1 · 00 1 · 14
Whole Borough	4.50	2.23	3.53	2.07	1.78	1.60	2.22	1.37	1.93	0.94	2.19	0.86

During 1903 the chief incidence of the disease was manifested in North Eccleston, West Sutton, and Parr.

The following Table shows the ages at which the various cases of Sickness and Death from Typhoid Fever occurred:—

	Under 5 Years.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	Over 55	Total.
Cases of Sickness	4	19	22	16	9	2	4	76
Deaths	3	3	4	6	I		-	18
Percentage Mortality 1903	75-0	15.8	18 • 1	35.0	1-1	50.0	_	23-7
Do. 1902	50.0	23.8	10.0	62.5	16.6	6.66	100	30.8
Do. 1901	0.0	11.9	24.2	19.3	42.8	17 6	33.3	20.7
Do. 1900	20.0	8.1	13.0	22.2	11.1	0.0	100.0	15.4
Do. 1899	27.2	15.2	16.1	15.4	30.0	20'0	62.5	19.4
Do. 1898	18.1	2.7	23.6	25.0	43.7	75.0	33.3	22.0

I have been enabled, by the courtesy of the various Medical Officers of Health, to obtain the following figures.

Table showing the number of cases of Enteric Fever and the rate per 1000 of the population in several large towns and in St. Helens:—

Town.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the population.	Town.	No. of Cases of Typhoid Fever notified.	Sickness— Rate per 1000 of the population.
London	2889	.51	Leeds	358	-80
	007	.84	Sheffield	345	.88
		-22	Hull	97	-36
	219	1.12	Sunderland	122	.81
TO 13	75	.67	Gateshead	25	-21
	134	-39	Newcastle	77	.34
a 2101	100	.57	South Shields	58	.55
	85	-88	Northampton	25	.28
Wolverhampton .		.73	Rhondda Urban	077	0.0
m: 1 1	. 348	-65	Dist. Ystradyfodwg	275	2.2
	92	-80	Middlesborough	81	23
Leicester	***	.26	Southampton	148	1.34
Nottingham .	. 200	.80	Aston Manor	77	.96
	62	.53	Coventry	15	.20
Birkenhead .	75	-66	Newport (Mon.)	35	.50
Liverpool .	681	- 95	Stockport	34	.35
Bolton	178	1.02	Rochdale	31	-36
Manchester .	387	.70	Bootle	61	1.20
Salford	178	.80	Wigan	51	.81
0131	52	.37	Warrington	00	.20
Burnley	41	.41	Barrow	58	.89
Blackburn .	97	.70	Bury	87	.63
Preston	139	1.21	West Bromwich	68	.94
Huddersfield .	37	-89	Hanley	38	.93
Halifax	61	.57	Dudley	59	.76
Bradford	275	-97	St. Helens	76	-86

It will be seen that in 14 of the towns set out above a higher rate occurred than in St. Helens, while 37 had a lower rate, a most marked improvement on past years.

In last year's report, it was remarked that 1902 might be regarded as a red letter year for St. Helens as regards the prevalence of Enteric Fever. The year 1903 has, however, surpassed even that record year. Only 76 cases were notified during the year, being 102 below the average of the previous ten years and 5 below the previous lowest year. The type of the disease also was not so virulent. This continued, if gradual, reduction in the number of cases occurring annually, would appear to indicate that the Health Committee are working on the right lines.

As in previous years, a large proportion of the cases occurred in privy-midden houses, as many as 45, or 59 per cent. being so found. Twenty-nine per cent. of the cases were found in houses served with pails, whilst only 12 per cent. occurred in water closet houses. Defective drains were also found in a large proportion of the cases, and there can be little doubt that the pollution of the subsoil with excremental matter containing the specific organism is mainly responsible for the prevalence of Enteric Fever in St. Helens. No case was traceable to milk or water.

Chart No. 2 is appended—as in former years—to show the weekly number of cases of Enteric Fever, the temperature of the soil at four feet, the mean temperature of the air and the level of the subsoil water in inches from the surface. The relationship between the temperature of the soil and the prevalence of Enteric Fever, is seen in the maximum which occurred in August and September when the cases increased as the temperature reached 56°F. More striking however in the past year is the relationship between the prevalence of the disease, and a high level of the subsoil water. The maximum in August and September coincided with a sudden rise in the level of the subsoil water.

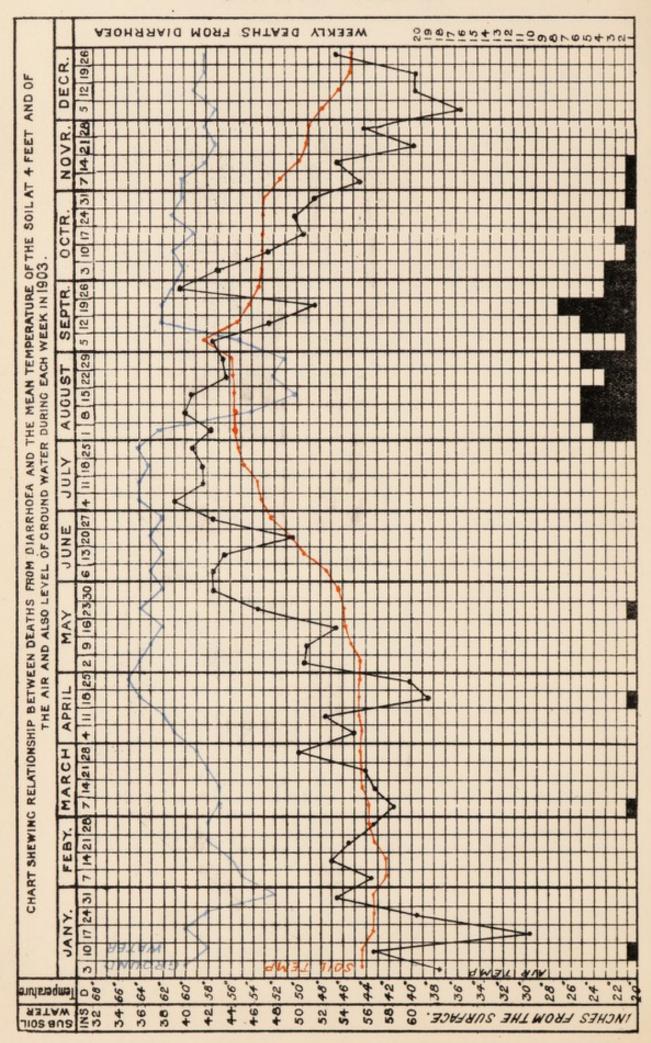
Chart No. 3 shows graphically the Enteric Fever rates for each Ward and also for the whole Borough for the years 1893-1903. The usual spot map is appended showing the distribution of cases during 1903.

By reference to Chart No. 3, to the spot map, and to the more extended figures to be found on page 50, the distribution of Enteric Fever in the Borough since 1893 will be seen. It will be noted that in every ward the rate was considerably below the average of the past ten years, while the total rate was only about one third of the average. The highest rates occurred in North Eccleston and Parr. The rate in Parr this year shows a further diminution. When the sewage scheme for Sutton and Parr becomes an accomplished fact, there is little doubt that the reduction of cases in the latter ward will be still more marked. It is satisfactory to note that some progress has been made with this scheme.

During the year the Inspector appointed to test drains did much valuable work, which cannot but react favourably on the health of the Borough, especially in reducing the number of Enteric Fever cases. A summary of the work done by him during the year will be found on page 97.



CHART No. 4.



Of the 76 cases notified, 59, or 77.6 per cent. were removed to hospita. as against 72.0 per cent. in the previous year. This is a most satisfactory result.

The precautions adopted to prevent the spread of the disease were the same as in former years, namely (1) enquiry as to origin of case and the existence of insanitary conditions in the house; (2) the removal, by means of special pails, of all infective and infected material, twice or thrice weekly; (3) the supply of disinfectants twice a week, and the final disinfection of the premises; and (4) the removal of the patient, when practicable to hospital.

The diagnosis of Enteric Fever by the serum test was extensively employed during 1903, almost every case notified, besides numerous other doubtful cases, being examined. It was often found of great value in confirming the clinical diagnosis.

DIARRHŒA.

The disease which is treated of under this head is commonly known as Epidemic, Zymotic or Summer Diarrhœa. It occurs principally in children It owes its origin to a microbe or series of microbes, the organisms growing most freely in an organically polluted soil. The infection is probably conveyed in the food, and improper feeding prepares the way for the reception and growth of the microbe. This disease is particularly fatal in young children, especially those who are bottle-fed. In 1903 53 deaths occurred as against 50 in 1902, 97 in 1901, and an average of 103 in the previous ten years.

The death-rate from diarrhoa in St. Helens during 1903 was at the rate of 0.60 per 1000 per annum as against 0.58 in 1902. In England and Wales the death-rate was 0.50 per 1000.

In the following table are placed, side by side, certain statistics relating to Diarrhea and Typhoid Fever, and also certain meteorlogical statistics. It will be noted that the death-rates from Diarrhea have fluctuated very considerably from year to year.

YEAR.	Total Deaths from Diarrhosa.	Total Deaths from Typhoid and Continued Fever.	Death Rate from Diarrhœa per 1,000.	Death Rate from Typhoid & Continued Fever per 1,000.	Death Rate from Diarrhœa in England and Wales.	Mean Temperature of the Air for the year.	Rainfall at Eccleston Hill (Total ins).
1878	79	24	1.65	.50	-96	48.2	24.9
1874	110	25	2.25	.51	.92	48.6	27.8
1875	101	65	2.02	1.30	1.02	48.4	30.1
1876	86	40	1.69	.78	.91	48.4	86.8
1877	74	84	1.41	1.46	·61	48.3	41.7
1878	132	40	2.45	.74	1.00	48.5	85.5
1879	52	84	.94	.61	.45	45.5	24.3
1880	130	40	2.30	.70	1.17	48.2	29.7
1881	76	56	1.31	.97	.55	46.9	36.7
1882	85	88	2.12	.55	-65	48.5	39.7
1883	69	31	.89	.51	.59	48.0	34.8
1884	181	88	2.12	.53	.27	49.2	26.9
1885	56	7	.89	.11	.49	46.9	32.7
1886	122	28	8.01	.48	-89	47.3	88.0
1887	101	84	1.58	.51	.72	47.0	21.1
1888	65	22	.96	.32	.45	46.7	28.1
1889	85	81	1.27	1.18	.64	47.8	25.8
1890	74	24	1.05	.84	.60	47.8	27.0
1891	78	26	1.08	.36	.46	47.2	32.3
1892	84	25	1.14	.84	.50	46.6	34.8
1893	168	52	2.20	•68	.95	50.1	25.7
1894	85	26	•48	•33	.85	48.9	88.3
1895	101	59	1.27	.74	.88	47.3	28.0
1896	63	40	.77	•49	.56	48.7	81.8
1897	133	88	1.60	.39	.85	48.6	84.0
1898	140	81	1.65	.36	.95	49.7	28.9
1899	114	43	1.31	.49	.98	49.1	30.0
1900	91	19	1.02	·21	.69	49.1	29.59
1901	97	34	1.14	.40	.91	48.5	25.55
1902	50	25	.58	·29	.87	47.6	24.21
1903	53	18	.60	·20	·50	48.9	39 34

As in former years by far the larger number of deaths occured during the 3rd Quarter as is seen below :—

DEATHS IN ST. HELENS FROM DIARRHEA.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Mean of 10 years	1903
January	1	0	0	1	2	0	1	1	1	0		3
February	0	0	0	0	1	0	2	0	0	0		0
March	2	2	0	0	0	1	0	2	0	1		0
1st Quarter	3	2	0	1	8	1	8	8	1	1	1.8	3
April	1	0	1	3	0	0	0	2	0	1		1
May	5	0	1	2	2	2	0	0	1	1		1
June	32	0	4	6	3	4	0	2	2	3		0
2nd Quarter	38	0	6	11	5	6	0	4	3	5	7.8	2
July	71	5	29	22	13	16	28	13	33	0		3
August	32	14	39	15	79	54	47	42	50	5	-	19
September	21	7	12	9	25	51	29	23	7	26		16
3rd Quarter	124	26	80	46	117	121	104	78	90	31	81.7	38
October	2	8	12	3	3	9	5	4	1	8		7
November	1	1	3	1	4	3	1	1	1	8		3
December	0	1	0	1	1	0	1	1	1	2		0
4th Quarter	3	10	15	5	8	12	7	6	3	13	8.2	10
Total each y'r	168	38	101	63	133	140	114	91	97	50	99.5	53

On reference to the table on page 55 it will be seen that during the last thirty-one years, on only two occasions, namely 1894 and 1902, has a lower death-rate been recorded. Undoubtedly the meteorological conditions were unfavourable to the spread of this disease, still the result is none the less satisfactory.

As heretofore every birth in the Borough was visited by the Female Sanitary Inspectors and advice was given with regard to the feeding of infants and a leaflet on the subject was left. It is a matter for regret that the Infant Milk Depôt was not more extensively used. Possibly the teaching of children in the elementary schools as to the rearing of infants would have a beneficial effect.

As regards the distribution of Deaths in the various wards, it will be seen that in each case, the number occurring was below the average of the past ten years. In no case was there any marked preponderance. East Sutton was, however, easily lowest.

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The following Wards in which the cases occurred are shewn in the following table:—

WARDS.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge 10 years	1903
Eccleston, N.		9	18	10	23 16	36 6	16 10	20	10	6	17·9 8·3	7
Central Windle, N	20	2 2	18	10	10 16	18 13	16	16 10	9	2 4	12·1 8·5	7 8
Windle, S Hardshaw	29	5	11	8	17 16	16 11	14 15	8	24 15	10	14·2 11·7	4
Sutton, E Sutton, W	8	4 3	5 11	2 5	11 14	7 15	8 9	5	4 7	4 5	5·8 9·5	2
Parr		4	11	5	10	18	17	10	10	7	11.4	8
Total	168	38	101	63	133	140	114	91	97	50	99.5	53

The ages at death of the 53 persons who died of Diarrhea during 1903 are shown in the following Table, as well as the similar returns for the eight previous years.

AGE.	1895	1896	1897	1898	1899	1900	1901	1902	1903	Total
0 to 3 months	19	7	15	18	7	17	13	6	8	113
8 ,, 6 ,,	19	16	24	86	28	23	30	8	16	205
6 ,, 12 ,,	26	28	46	41	27	27	34	16	11	268
1 ,, 2 years	33	7	26	31	26	11	18	9	11	171
2 ,, 3 ,,	2	2	4	6	3	3	2	4	-	26
3 ,, 4 ,,	-	1	6	4	3	-	1	2	-	17
4 ,, 5 ,,	1	_	1	_	_	1	3	-	1	7
Over 5 ,,	1	7	11	9	20	8	1	5	6	72
Totals	101	63	133	140	114	91	97	50	53	880

Out of the 880 persons who died during these nine years, over 86 per cent. were under 2 years of age.

Of the 53 persons who died from Diarrhœa during 1903, 8 were under 3 months, and 16 between 3 and 6 months old.

Particulars were obtained as to the method of feeding these children, and it was again found that the chief incidence of the disease fell on bottle-fed children.

Chart No. 4 is again appended. It shows the weekly number of deaths from Diarrhea, with the corresponding air temperature and temperature of the soil at 4 feet, together with the level of the subsoil water.

The relationship between the temperature of the soil at 4 feet, and the Diarrhea Mortality is not so marked as in former years.

Diarrhœa began to be epidemic in the first week in August, the soil temperature reaching 54° (the critical point) during the last week of July. The maximum was reached in the third week in September, the soil temperature reaching its maximum in the first week. After this the diarrhœa mortality rapidly declined.

MINOR ZYMOTICS.

INFLUENZA.

Ten deaths only were due to this disease in 1903. All of these, with one exception, were of persons between 25 and 85 years of age. In the previous years the deaths were:—

YEAR.	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Deaths from Influenza	19	3	7	8	7	17	18	19	33	16	6	10

It will be noted that the number of deaths in 1903 is slightly higher than that which occurred in 1902, but is lower than the average of the previous 11 years.

ERYSIPELAS.

There was no death registered among the 61 cases of sickness from this disease which were notified during the year.

The cases of sickness were distributed over the Borough as follows :-

WARDS.	1895	1896	1897	1898	1899	1900	1901	1902	1903	Totals.
Eccleston, North Eccleston, South Central Windle, North Windle, South Hardshaw Sutton, East Sutton, West Parr	3 12 3 15 5	9 9 6 15 14 33 18 12 21	14 7 17 11 19 30 18 8 38	17 4 13 12 10 45 15 7 50	6 5 10 12 8 25 17 7 31	15 9 11 11 22 8 18 14 31	14 6 7 17 3 14 16 8 21	12 5 10 13 9 21 7 16 22	10 1 3 5 10 3 10 12 7	111 57 82 120 91 219 136 91 244
Total cases of Sick- ness	69	137	162	178	121	138	106	109	61	1151
Total No. of Deaths in each year	1	4	3	3	3	2	2	3	0	23

The fatality or case mortality was therefore nil during 1903, as against a mean-rate of 2.00 in the previous 9 years,

On account of the industrial occupations of St. Helens, a very large number of minor accidents take place, and it is therefore not surprising that a large number of cases of Erysipelas are notified during the year. By far the majority however of these cases are of a most trivial nature, as shown by the excessively low case-mortality and by the investigations to which every case is subjected. In many cases it is found the patient returns to work within two or three days of the notification being received.

It may be again pointed out that the time seems to have arrived when this disease might be eliminated from the Notification Act. It appears to entail a needless expense and its investigation takes up valuable time which might be more profitably employed.

PUERPERAL FEVER.

There were 6 cases notified during 1903, as compared with an average of 15·3 during the previous ten years.

The following Table shows the notified cases, deaths and case-mortality during the past eleven years.

		1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge.	1903
Cases of Sickness		19	26	17	11	19	7	9	15	16	14	15.3	6
Deaths		10	6	9	7	10	4	8	9	7	4	7:4	0
Case Mortality		52.6	23.1	53.0	63.6	52.6	57:1	88.8	60.0	43.7	28.5	52-3	-
*No. of Births to each death	{	302	480	351	434	319	815	389	416	446	805	475	_

^{*} This does not include Still Births, Abortions, &c., which are occasionally followed by Puerperal Fever.

From the above Table it will be noted that the case-mortality for the year was nil as against 52.3 in the previous ten years.

This is the best record that the Borough has yet had. When the Midwives Act is in full force it should be possible to make this record permanent.

CLASS II.—PARASITIC DISEASES.

There were no deaths last year in this class, against 0 in 1902, 1 in 1901, 3 in 1900, 0 in 1899, and 2 in 1898.

CLASS IV.—CONSTITUTIONAL DISEASES.

(a)—There were 3 deaths from Rheumatic Fever in 1903, against 8 in 1902, 3 in 1901, 6 in 1900, 6 in 1899, 0 in 1898, 6 in 1897, 6 in 1896, 7 in 1895, 10 in 1894, 6 in 1893, and 8 in 1892.

(b)—Cancer and Malignant Diseases.

The following shows the deaths from this group during the years 1892 to 1903:—

1892	1893	1894	189a	1896	1897	1898	1899	1960	1901	1902	1903
1892	36	36	42	35	40	44	35	46	31	35	37

Cancer and Malignant new growths in any Organ are included in the above figures. It is probable that the apparent increase since 1892 is due more to methods of classification, and the better recognition of obscure cases than to any real increase of the disease.

(c)—Tubercular Diseases.

Under this heading are included Tabes Mesenterica, Tubercular Meningitis, Hydrocephalus, Phthisis, and other Tubercular Diseases.

The following are the number of deaths during each of the past 8 years:—

1896	1897	1898	1899	1900	1901	1902	1903
179	178	162	168	196	158	198	171

The following shows the Distribution of cases:-

WARDS.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	Avge. of 10 yrs.	1903
Eccleston, North	 32	16	25	14	25	21	24	24	21	23	22.5	15
Eccleston, South	 15	9	8	15	12	12	18	19	12	10	13.0	8
Central	 11	12	16	19	20	14	8	22	10	16	14.8	21
Windle, North	 6	17	19	26	15	18	17	16	20	26	18.0	17
Windle, South	 13	16	15	11	19	17	16	26	19	17	16.9	11
Hardshaw	 33	24	26	25	15	19	14	21	12	19	20.8	20
Sutton, East	 13	15	22	11	15	12	13	11	11	19	14.2	18
Sutton, West	 24*	39*	33*	36*	42*	35*	43*	43*	43*	47*	38.5	37
Parr	 13	16	15	22	10	14	15	14	10	21	15.0	24
Totals	 160	164	179	179	173	162	168	196	158	198	183.7	171

^{*} Including deaths from Tubercular Diseases occurring in Rainhill Asylum.

It will be seen that in 1903 the rate was considerably lower than in the previous year but was higher than that of 1901.

The mortality from Phthisis during 1903 was at the rate of 1.45 per 1000 of the population, as against 1.66, 1.34 and 1.65 in the three preceding years.

At the end of 1899 the Council decided to request the Medical Men of the Borough to notify cases of Phthisis to the Health Department, paying them for so doing the ordinary notification fee. As a result of this 66 cases of Phthisis were notified during 1900, 56 in 1901 and 82 in 1902, and 67 in 1903. Each case was visited and advice given as to the disposal of the sputum, the necessity of ventilation, &c.

As in the two previous years the houses where deaths from Phthisis occurred, were thoroughly disinfected after the death of the sufferer.

LOCAL DISEASES.

(a) DISEASES OF THE NERVOUS SYSTEM caused 211 deaths; against 211 in 1902, 201 in 1901, 234 in 1900, 215 in 1899, 207 in 1898, 179 in 1897, 191 in 1896, 178 in 1895, 172 in 1894, 191 in 1893, 187 in 1892, and 226 in 1891.

78 of the above 211 deaths were due to "Convulsions." Of these cases 62 were of children under one year of age.

It should be noted that by far the larger number of deaths in this group occurred in the Rainhill Asylum, and therefore have only an indirect bearing on the Health Statistics of the Borough.

(b) Diseases of the Respiratory System caused the following number of deaths:—

1896	1897	1898	1899	1900	1901	1902	1903
856	375	332	379	439	326	402	364

The deaths from Bronchitis and Pneumonia are set out in the following Table:—

	1899	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
Bronchitis	219	232	300	243	215	154	164	171	186	169	213	219	163	214	189
Pneumonia	133	172	218	141	147	118	118	154	167	145	130	192	133	156	149

The following figures show the distribution of cases of Bronchitis and Pneumonia over the Borough:—

WARDS.		Bronchitis.						Pneumonia.							
	1897	1898	1899	1900	1901	1902	1903	1897	1898	1899	1900	1901	1902	1903	
Eccleston, North Eccleston, South	17 27 16 23 27 17	20 11 24 16 16 26 12 20 24	19 17 40 8 19 28 26 20 36	27 24 29 19 19 31 10 22 38	22 22 27 7 19 13 20 17 16	28 22 28 18 14 27 25 27 25	23 27 27 18 9 23 25 13 24	9 12 19 16 10 32 19 34 16	12 10 5 15 11 25 10 34 23	10 9 7 9 11 21 24 20 16	15 11 16 15 10 20 30 51 24	16 5 12 6 14 17 20 26 17	16 8 18 12 6 17 32 31 16	14 8 6 14 13 28 28 21 17	

DEATH RATES FROM ALL RESPIRATORY DISEASES PER 1000.

YEAR.	England and Wales.	St. Helens.
1886	3.64	4.82
1887	3.62	5.81
1888	8.50	4.54
1889	8.80	5.87
1890	4.12	5.78
1891	4.47	7.81
1892	3.96	5.18
1898	3.60	5.17
1894	3.02	3.89
1895	8.47	4.32
1896	2.98	4.38
1897	2.96	4.51
1898	2.89	3.91
1899	8.47	4.37
1900	3.86	4.96
1901	_	3.84
1902		4.67
1903		4:16

From these tables it will be noted that respiratory diseases were somewhat prevalent during 1903. The unfavourable climatic conditions were undoubtedly responsible for this.

- (c) DISEASES OF THE DIGESTIVE SYSTEM caused 113 deaths; against 135 in 1902, 192 in 1901, 176 in 1900, 157 in 1899, 154 in 1898, 148 in 1897, 150 in 1896, 146 in 1895, 115 in 1894, 147 in 1893, and 132 in 1892.
- (d) DISEASES OF THE URINARY SYSTEM caused 38 deaths; against 33 in 1902, 36 in 1901, 24 in 1900, 23 in 1899, 24 in 1898, 28 in 1897, 25 in 1896, 33 in 1895, and 17 in 1894.
- (e) DISEASES OF THE REPRODUCTION SYSTEM caused 15 deaths last year; against 12 in 1902, 10 in 1901, 21 in 1900, 19 in 1899, 13 in 1898, 15 in 1897, 10 in 1896, 10 in 1895, and 12 in 1894.

DEATHS FROM VIOLENCE.

- (a) Deaths from Accident or Negligence numbered **59** during 1903; against 47 in 1902, 59 in 1901. 46 in 1900, 48 in 1899, 50 in 1898, 45 in 1897, 53 in 1896, 52 in 1895, and 58 in 1894.
- (b) Deaths from Homicide.—There were no deaths under this heading last year, against 1 in 1902, 1 in 1901, 1 in 1900, 0 in 1899, 1 in 1898, and 2 (1896) during the previous 4 years.
- (c) Suicide caused **9** deaths during 1903; against 8 in 1902, 8 in 1901, 5 in 1900, 7 in 1899, 5 in 1898, 3 in 1897, 6 in 1896, 1 in 1895, and 7 in 1894.

The death-rate from violence is therefore '77 per 1,000.

DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.

90 deaths occurred under this heading during the year, being made up as follows:—Dropsy 3, Debility and Atrophy 57, Marasmus 24, Mortification 1, Tumour 1, Abscess 1, and other causes not specified 3 deaths. The deaths for the previous 6 years under the same heading were—109 in 1902, 150 in 1901, 138 in 1900, 147 in 1899, 148 in 1898, 136 in 1897, and 132 in 1896.

The gradual diminution in the deaths certified under this heading, is a matter for congratulation as showing the transfer from this undesirable heading to the more definite causes of death.

BOROUGH SANATORIUM.

During the year the Hospital has been largely used, 617 cases having been admitted. Of these 511 were cases of Scarlet Fever, while 70 were cases of Enteric Fever.

The following shows the percentage of the notifiable infectious diseases treated in the Sanatorium:—

1891	 18.4 per	cent.	admitted	to the	Sanato
1892	 17.1	,,	,,		,,
1893	 18.65	,,,	,,		,,
1894	 22.50	,,	,,		,,
1895	 40.21	,,	,,		,,
1896	 18.3	,,,	,,		,,
1897	 20.1	,,	"		,,
1898	 32.02	,,	,,		,,
1899	 50.5	,,	,,		,,
1900	 47.5	. ,,	,,		,,
1901	 56.9	,,	,,		,,
1902	 49.3	,,	,,		,,
1903	 55.6	,,	,,		"

It will thus be seen that the percentage of admissions to notifications, though not so good as in 1901, is still most satisfactory. Indeed had it not been that owing to the fact that the accommodation was unable to cope with the great number of Scarlet Fever cases, and the impossibility of isolating more than three cases of Diphtheria, the percentage would probably have been better than in any previous year.

rium.

The following Table gives the yearly number of admissions, &c., since the Sanatorium was opened in 1881:—

YEAR.	No. remain- ing in Sanatorium on Dec. 31.	Number Admitted	No. who died in Sanatorium.	Total Days in Sanatorium of Patients.	Accommodation.
1882		9	3		
1883	_	14	1	_	1
1884		36	6	_	
1885		9	0	_	Rooms in Peasley Vale,
1886		17	0 3		used as Wards and for
1887	_	38	11	_	Administrative purposes.
1888		25	4	_	1 1
1889		116*	15	_	
1890	_	128+	20	_	
1891		89	10	_	1
1892		134	15	_	Outbuildings converted
1893	_	150	25	-	into three Wards.
1894	19	182	22	6184	
1895	44	259	54	8962	,
1896	46	311+	15	16630	2 New Pavilions used in
1897	36	263	24	12955	addition to above.
1898	51	263	28	12742	Large Pavilion and
1899	37	401*	37	18049	Observation Block opened.
1900	88	445+	31	19203	
1901	73	620+	44	26255	
1902	99	753+	50	32879	
1903		617†	36	28067	

^{*} Enteric Fever Epidemic

Forty-four of the above 617 patients were admitted from Haydock.

Cases admitted during 1903	3.	Males.	Females.	Totals.	Deaths.	Average Duration o Cases in Sanatorium 1903.
Small Pox		17	12	29	0	Days. 86.9
,, Observation	ı	1	0	1	0	22.0
Scarlet Fever		235	276	511	21	47.6
Diphtheria		0	8	8	0	18.6
Enteric Fever		49	21	70	15	35.9
Erysipelas		1	1	2	0	82.0
Puerperal Fever		0	0	0	0	0.0
Other Diseases (including Measles)		0	1	1	0	21.0
Totals		808	814	617	86	

[†] Scarlet Fever Epidemic.

The following shows the number of cases of each Notifiable Infectious Disease which was treated in the Sanatorium during 1903:—

DISEASE.		Total cases in Borough.	Number of such removed to Sanatorium.	Percentage of Removals to Notifications.
Small Pox	 	27	27	100%
Scarlet Fever	 	728	476	65.4%
Diphtheria, &c.	 	126	3	2.3%
Typhoid Fever	 	76	62	81.6%
Puerperal Fever	 	6	0.	0%
Erysipelas	 	61	2	3.2%

As before stated the hospital has been very largely used during the year. Its popularity seems to increase yearly, and now very little difficulty is found in inducing all patients whose removal is desirable to come in. During the past year some difficulty was found, owing to the Scarlet Fever epidemic, to select those cases whose removal was most urgent. A number of cases, desirous of admission, had to be refused. Still, to isolate 65.4 per cent. of the Scarlet Fever cases, i.e., 500 out of 700, and 81.6 per cent. of the enteric fever cases is a result of which the Health Committee may well be proud. The use of the Sanatorium may also be seen from the fact that only 5.8 per cent. of the cases died and this in spite of the fact that often only the most malignant cases were removed.

The need also for separating the acute cases of Scarlet Fever from the convalescent ones was urgently felt, while the periodic emptying of the various blocks so as to give them a thorough disinfection and airing is a procedure greatly to be desired.

All these considerations led the Health Committee to direct that plans should be prepared for a considerable increase in the accommodation. This was done, with the result that one large new block capable of containing 26 beds, one smaller block 14 beds, a discharging block and a corresponding addition to the Administrative block were decided upon. The plans received the approval of the Local Government Board and the building operations are now well advanced. With this increase St. Helens should for some years to come be able to cope with any epidemic which is likely to occur.

The Matron and Staff are to be greatly congratulated on the work they have done during the year.

REMOVAL OF PATIENTS AND INFECTED CLOTHING.

No alteration in the procedure in regard to the above was made during the year.

The number of houses which required disinfection was very large.

The following shows the work done during the past seven years: -

	1897	1898	1899	1900	1901	1902	1903
No. of days on which the Disinfecting Apparatus has been used	149	115	108	158	156	246	229
No. of Articles Disin- fected —							
Beds	748	495	654	986	1070	1548	1217
Pillows and Cushions	1183	843	1185	1670	2679	4644	3651
Blankets, Sheets, and Rugs	1991	1819	1569	2808	4170	7760	5861
Other Articles	1117	617	675	702	2149	3096	2890
Clothing	4429	3988	4440	5754	7195	9288	7170
Hospital Clothing	358	395	837	1248	2681	3730	3520
Books from Library and Schools	90	117	133	261	520	624	516
Total	9916	8274	9493	18879	20620	30690	24825
No. of Journeys of (Van for Collection and Delivery	569	547	585	624	724	1092	830
No. of Houses visited	1861	1189	1450	1624	1742	1968	1651

BACTERIOLOGICAL DEPARTMENT.

During the past year a large number of cases of Typhoid Fever were examined by means of Widal's serum reaction. On more than one occasion by its means an earlier diagnosis than would otherwise have been possible was able to be made. In certain other cases a negative result was obtained, although the clinical symptoms pointed to Enteric Fever.

Several suspected cases of Diphtheria were examined with varying results, and several examinations of sputum for the presence of the Tubercle Bacillus were also made.

In addition the mixed water of the Borough was examined bacteriologically from time to time. On each occasion it was found to be very pure.

THE INFANT MILK DEPOT.

Very little new has to be recorded of this institution. It has been described so fully in previous reports, that all that is now necessary will be to detail the results of the years working.

From the point of view of the use made of the Depôt, it must be admitted that the year's working has been not altogether satisfactory. The numbers using the Depôt have fallen from 200 to 183. The apathy of the people of St. Helens in neglecting what on the face of it, is a most useful institution is certainly most strange. As far as one can judge, the distance of the Depôt from the outlying districts limits its usefulness, still the obtaining of a pure food at such a reasonable price, should, one would think, be an inducement to fetch it. The success of the Depôts at Liverpool, Battersea, Ashton, etc., is in striking contrast. During the year too, the milk has been sent to Manchester, Haydock, Earlestown, Rainhill, Widnes, Prescot, etc., and many striking testimonials have been received as to the benefits accruing from its use.

If the amount of use made of the Depot is disappointing, the results obtained by those using it are more striking even than in previous years. Among infants using the milk the death-rate has been only at the rate of 54 per 1000 as against 82 last year, while the infantile rate in the Borough as a whole was 137 per 1000. Thus it will be seen that the saving of life has equalled 83 per cent.

The 10 deaths among children using the milk, include 3 from tubercular diseases, 2 from diarrhoea, 1 marasmus, 2 bronchitis, and 2 catarrh.

Annexed is a Table showing the results obtained each year since the Depôt was started:—

YEAR.	No. of Children on books.	Death-rate per 1000 among children at Depôt.	Infantile Death-rate.
1899	232	103	157
1900	332	102	188
1901	282	106	175
1902	200	82	167
1903	183	54	137

In addition to the 183 shown above, 49 children have used the milk for periods varying from 1 to 14 days.

It is greatly to be hoped that in 1904 more use will be made of this institution.

During the year, with a view to increasing the efficiency of the Depôt, it was decided to supply the milk in three strengths, and this certainly seems to be a move in the right direction. If some arrangement could be arrived at, by means of which sub-depôts could be established at Sutton, Parr and Thatto Heath, the scope of the work might be greatly enlarged.

The following is a statement of the cost up to date :-

1899-1900. 1900-1901. 1901-1902 (8 months). Cost of Installation ... £235 2 5 ... £123 7 1 ... £32 8 7

This £358 9 6d., though paid out of revenue, may be really regarded as a capital charge, as it will not occur in future years.

Current Expenditure—	1900	-190	01.	1901	-19	02.	1902	-19	03.	1903	-19	04.
	6	s.	d.	b	s.	d.	L	s.	d.	L	S.	d.
Wages for Attendance	 115	11	5	119	2	2	116	7	9	108	13	11
Milk	272		2	185	5	10	185	13	4	123	13	2
Rent of House and Rates	 18	0	0	18	0	0	21	15	0	22	3	11
Sugar	 8	6	6	14	2	6	16	6	6	9	2	0
Fuel, Gas and Water	 9	4	0	9	19	10	15	4	8	12	2	8
Sundries	 21	13	5	22	19	6	22	16	1	25	11	7
Renewal of Bottles, &c.	 25	18	8	33	6	5	62	1	2	24	14	2
	471	3	2	402	16	3	440	4	6	326	7	5
Income from sale of Milk	328	9	5	245	16	3	208	16	8	139		8
Amount falling on Rates	 £142	13	7	£157	0	0	£231	7	10	£186	13	9

Thus it will be seen that the cost to the town has been very small, and has been more than repaid by the benefits which have accrued.

SANITARY STAFF.

This consists of-

The Medical Officer of Health.

Canal Boats Inspector. This Office is held by the Surveyor.

Chief Inspector of Nuisances.

Four Male Assistant Nuisance Inspectors.

Two Female

A Veterinary Inspector, who acts as Meat Inspector.

An Inspector under the Sale of Food and Drugs Act.

One Clerk

Two Disinfecting Men.

One Laboratory Attendant.

GENERAL SANITARY WORK DURING 1903.

At the fortnightly meetings of the Health Committee a report was presented dealing with the Health Statistics for the previous fortnight, and in these reports special attention was drawn to points requiring consideration.

The following special reports were also submitted during the year :-Report on the Royal Institute of Public Health Congress at Liverpool. Report on the out-break of Small-pox.

WATER SOFTENING WORKS.

Samples have been taken from these works daily, and tested as to their hardness by the Medical Officer of Health. Each sample is obtained by allowing the softened water to drop for twenty-four hours into a glass vessel. At the end of this time the contents are well mixed, and the sample taken. In this way a true sample is obtained.

	Sa	No. of mples Test	 	Mean Hardness.
January		31	 	 10.1
February		28	 	 10.2
March		31	 	 10.1
April		30	 	 10.2
May		31	 	 10.2
June		30	 	 10.1
July		31	 	 10.5
August		81	 	 10.1
September		30	 	 10.1
October		31	 	 10.1
November		80	 	 10.1
December		81	 	 10.1

Total 365 Mean for the year = 10.19.

The average hardness of the unsoftened water was 21.8.

MILK SUPPLIES.

A pure milk supply is one of the most important points, from a health point of view, in the sanitary administration of a town. The year 1903 shows a marked advance in obtaining this object.

The milk-shops, dairies and cowsheds were visited frequently by the assistant Sanitary Inspectors and as a rule were found in good order. Some of the smaller milk-shops still leave much to be desired, but on the whole they were found in an improved state.

In addition to this, every shippon in the Borough was inspected by the Medical Officer of Health and the Veterinary Inspector. The shippons were found in a distinctly better condition than in the previous year. More ventilation and light had been provided and but little overcrowding was found. In nearly all cases the middensteads were in good order.

The Veterinary Inspector also examined every cow found in the shippons, especially with a view to the detection of tubercular disease, particularly tubercular disease of the udder. In no single instance did he discover signs of this or indeed of any other diseased condition of the udder. This may be considered a most satisfactory state of affairs.

The total number of cowsheds in use in the Borough of St. Helens during 1903 was 43, while the total amount of accommodation in the shippons belonging to them was for 337 cows. The number of persons registered as purveyors of milk, exclusive of cowkeepers, was 144.

Twelve new premises were registered during the year, namely, three as cowkeepers and nine as purveyors of milk.

No case of infectious disease was traceable to milk during the year.

PROPERTY UNFIT FOR HUMAN HABITATION.

The following is a list of houses which have been closed by order of the Sanitary Authority during 1903 (under Bye-law No. 93 with regard to Buildings):—

Jan. 7th—No. 5, Copperas Street Jan. 7th—Nos. 132, 134, and 136, and Nos. 1, 3, and 5, Back of Mertonbank Road

CANAL BOATS ACT.

The following is a copy of the Annual Report of the Inspector under this Act to the Local Government Board:—

In compliance with Section 3 of the Canal Boats Act, 1884, I have to present to you my Annual Report as to the execution of the Canal Boats Acts, 1877 and 1884, for the year ending December 31st, 1903.

(1) The Corporation of St. Helens have appointed me to be Inspector under the Canal Boats Act, in addition to my duties as Borough Engineer. No special remuneration is made for my duties under the Canal Boats Acts

- (2) The number of boats inspected in 1903 was 21, against 22 in 1902.
- (3) There were nine infringements of the Acts and Regulations on eight of the twenty-one boats inspected, Of these one boat contravened article 3, clause H Local Government Board Regulations, 1878, the bulkhead next cargo being defective.

One boat contravened article 10 Local Government Regulations 1878, the pump being defective.

Two boats contravened Section 1 Canal Boats Act, 1877, the cabins being over-

crowded.

Another boat contravened Article 3, Clause H, Local Government Board Regulation, the cabin floor being defective. One contravened Section 2, Canal Boats Act, 1877, and article 2, part 4, Local Government Board Regulations, there being no certificate on board and cabin requiring re-painting. One boat contravened Section 3, Canal Boats Act, 1877, there being no certificate on board; whilst one boat was found to contravene Section 1 Canal Boats Act, 1877, the boat not being registered.

Complaint notes were served in each case.

A certificate was received from another Registration Authority stating that the necessary work had been done in respect to one boat, whilst four were subsequently re-inspected here and the causes of complaint had been attended to. The other three boats were met with late in the year and they are still the subject of correspondence, one is in dock undergoing the necessary repairs, another has been inspected with a view to registration and the owners state that a new certificate has been put aboard the other.

- (4) No legal proceedings were taken during the year for infringements.
- (5) No case of Infectious disease was discovered on any Canal Boat during the year, nor was any case reported to the Medical Officer of Health.
 - (6) No boats were detained for cleansing or disinfection.
 - (7) No boats are at present on the Register.
 - (8) No boats were registered during 1903.

The canal was visited 31 times for the afore mentioned number of Inspections.

I herewith append a table showing the foregoing facts.

I am, Gentlemen,

Your obedient servant,

GEO. J. C. BROOM,

Canal Boats Inspector for the County Borough of St. Helens, Registration Authority.

BLACK SMOKE NUISANCE.

There can be no doubt that the nuisance arising from this cause has been considerably mitigated during the year, and this without resorting to prosecution.

It was considered by the Health Committee that if black smoke issued from any chimney for any longer period than five minutes at one time, that a nuisance which could be prevented was thereby caused.

During the year considerably more attention was devoted to this subject than was the case ever before. The new method of timing the chimneys which was adopted in the previous year was continued. It consists in timing each chimney for half-an-hour and recording the emission of smoke every half minute, and noting whether it was dense, moderate, faint, or absent. By this method a fairer measure of the nuisance caused can be obtained. Appended is a copy of the chart on which the observations are recorded, a copy of which is at once sent to the works offending. Altogether 407 chimneys were timed during 1903. Of these 407 observations taken, in 90 instances black smoke was emitted for over five minutes, the longest time being 17 minutes.

In each of the 90 cases the works were at once communicated with and a reply obtained as to the cause, together with an assurance that greater care would be exercised in the future.

ST. HELENS CORPORATION.

	Medical		N HALL, S	h's Departme r. Helens,	
	BLACK SM	OKE OB			
		***************************************	Date		190
Name of Firm				****	
Chimney Time—From					

5 10 15 20 25 30 30 30 30 30 30 30 30 30 30 30 30 30	Minutes.	Dense.	Moderate.	Faint.	Nil.	Remarks.
10						
10	5					
10		100000000000000000000000000000000000000				
15						
10						
20 25 30	10					
20 25	10	The state of the s				
25						
25						
25						
25	19					
25						
25						
25						
25	20					
30						
30						
30						
30	25					
30						4
30						
30						
	30					
	Total					

SWINE FEVER.

The prevalence of this disease has no very direct bearing on the public health, but from the fact that so many pigstyes exist, even in populous areas in St. Helens, it is not uninteresting to note the number of outbreaks from year to year. Again the destruction of the affected animal in the Refuse Destructor at Parr, and the cleansing of the premises, have been carried out by the Health Committee.

The number of outbreaks reported in each of the past ten years is as follows:—

1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
10	27	33	26	20	45	19	27	8	10

OFFENSIVE TRADES

The following	offensive	trades are on	the register :-
---------------	-----------	---------------	-----------------

Tripe Boilers					5
Gut Scrapers					1
Manure Manufact	urers				1
Soap Boilers					1
Fat Boilers					1
Bone Boilers					1
		1	Total	224	10

COMMON LODGING HOUSES.

There are 13 Registered Common Lodging Houses in St. Helens against 13 in the previous year. These contain 85 Registered Sleeping Rooms, having beds for 331 adults.

These have been inspected regularly during the day by the Nuisance Inspectors, and at night by the Police, and were Lime-washed in April and October.

During the recent epidemic of Small-pox in London and the provinces it was thought advisable to obtain daily a return of all persons lodging in each house, together with the place from which they came and their destination.

Ar	mend	led	is t	the	\mathbf{E}	orm	emp	oved	1:
----	------	-----	------	-----	--------------	-----	-----	------	----

	Common Lodging HouseStreet.
Sir, ne follo	In pursuance of Section 83, Public Health Act, 1875, I beg to inform you that wing persons slept in the above-named Lodging House last night.
	Dated thisday of190
	Signed,
о тне	MEDICAL OFFICER OF HEALTH,

TOWN HALL, St. HELENS.

Name.	Age.	Sex.	LAST TOWN VISITED.	WHERE GOING.

The above Form was found very beneficial, and by its means all persons coming from other towns where Small-pox was prevalent were placed under daily observation during their stay here.

SLAUGHTER HOUSES.

There were on December 31st 11 Licensed Private Slaughter Houses, 8 being fully licensed, 3 pigs only, together with the Public Abbatoir and 1 Knacker's Premises.

The Licenses of the above 11 Slaughter Houses have been renewed for one year.

The following figures show the number of Cattle Beasts killed in the Corporation Slaughter House and in the rest of the Borough:—

		 Corporation		in other ghter Houses.
1891		 995	 	2714
1892		 951	 	2959
1893		 1321*	 	2859
1894		 1203*	 	2847
1895	***	 1226	 	2026
1896		 1763	 	1634
1897		 1976	 	879
1898		 2465	 	623
1899		 2682	 	784
1900		 3131	 	516
1901		 2690	 	628
1902		 4140	 	797
1903		 2710	 	519

^{*} Owing to want of accommodation, butchers had to kill elsewhere, who would have killed here.

The following gives the number of Animals Slaughtered in St. Helens during 1903 and eight preceding years:—

ANIMALS KILLED.	1895	1896	1897	1898	1899	1900	1901	1902	1903
No. of Beasts killed within the Borough in public and private slaughter houses for market purposes		3397	2852	3088	3416	3647	3318	4937	3229
No. of Sheep	3648	3420	4487	3520	3048	3537	3780	3957	3288
No. of Calves	471	459	427	443	401	413	338	451	343
No. of Pigs	3348	7338	6384	5957	6594	7748	6810	7899	8942
Total Beasts killed in the Corpora-		15314	14150	13008	13459	15345	14246	17244	15802
tion slaughter house, which are included in the above number	1226	*6590	*6520	*7430	*7550	*9597	8957	11381	9867

^{*} Including Sheep, Pigs. etc.

Meat or other Articles seized or given up on account of being Unfit for Human Food, during the year ending January 9th, 1904.

Beef and Offal	21 carcases.
Pork and Offal	4 ,,
Beasts Lungs	298 pairs.
Beasts Hearts	93.
Beasts Livers	118.
Beasts Rumen & Intestines	44.
Pigs Offal	14.
Pigs Livers	4.
Pigs Lungs	5.
Beasts Udders	28.
Beasts Head	1.
Hind Quarter	1.
Kidneys	1 box.
Haddies, Kippers, Fillets,	401 horses
Mackerel, etc	491 boxes.
Mussels	6 bags.
Cockles	1 bag.
Shrimps	1 box.
Rabbits	30 couples.

No prosecutions were instituted for offences during the year.

REPORT OF PUBLIC ANALYST FOR YEAR 1903.

The following Table shows the work done by the Public Analyst during the year 1903.

Name of S Analyse		Number of Samples Analysed.	Number of such Samples which were found to be genuine.	Number of such Samples which were found to be adulterated.	No. of Cases in which a Summons was taken out.
New Milk	 	77	70	7	3 cases fined.
Vinegar	 	2	2	-	_
Whiskey	 	10	10	_	_
Butter	 	29	29		_
Cheese	 	8	8	_	-
Lard	 	2	2	-	-
Tea	 	4	4	_	
Coffee	 4.4.7	4	4	_	-
Pepper	 	6	6	-	-
Beer	 	2	2		-
Porter	 	2	2	_	_
Margarine	 41	1	1		-
Mustard	 	3	1	2	-
Totals	 	150	141	7	3

APPENDED IS A TABLE SHOWING THE NUMBER OF SAMPLES SUBMITTED FOR ANALYSIS SINCE 1894, THE NUMBER OF SUCH SAMPLES WHICH WERE ADULTERATED, AND THE PERCENTAGES OF ADULTERATED SAMPLES DURING THE YEAR.

					_	_							_				_
No. Adul- terated	L :::	:::	::	:::	: 81	::	: ::	: :		::	: :	0.0	6	00	1	-j-80	-
Total	10 50 29	- :4	13 00	:00	0 00	::	.4	:81	: : :	::	::	::	150	6,	1	£ 8.	
No. Adul-	۳ : : ۳	:::	::	:::	::	::	::	::	:::	::	::	::	7	9		33 G	1
Total SalqmaS	30 : 82	C4 : C4	PO PO	: 04 00	10 :	::	; cq	100	::	::	::	::	144	₩.		2 N	1
No. Adul- terated	♥:::	:::	::	:::	::	::	::	::	: :	::	::	::	4	17	00	9 4	7
fotal Samples	4 :04	ca : ca	17	:	: 52	::	: 4	: - 00	: :	::	. 9	: :	144	64	óo	Ü	11 13
No. Adul-	:::	:::	٠:	: : :	::	::	::	::	: : :	::	::	: :	1	99	80	9	2 9
Total Samples	36	٦ : ٩٠	400	:⊣∢	36 :	::	: 4	e	0 04 1-1		- :	::	146	9.	80	9	8.9°
No. Adul- terated	:::=	:::	::	:::	::	::	::	::	: : :	::	::	::	4	35	4	0 °G.	65
Total Samples	65 : 29	:0100	0 4	. 64 ro	::	::	: 9	::	: : :	::	::	::	140	9.9	6	î îi	£3
No Adul-	:::-	::	::	: :::	: : :	::	::	::	: :	: :	::	::	C4	62	7	g. 0	8 9
Total	5 : E 7	; 04 04	ro eq	; r4 c4	::	::	: 40	- :	: :	11	::	: :	139	3	òo	ω to	91 17
No. Adul- terated	:::	:::	::	:::	::	::	::	: :	: : :	::	::	::	п	22	*	5 G	11 0
Total Samples	69 : 98	٦ : eq	9	: 01 4	::	::	: 09	::	: :	::	::	1	133	00	6	2 2 3	Ţ,
No. Adul- terated	₩ : :00	:::	::	: : :	::	::	::	: :	: : :	::	::	: •	4	38	01	. d.	10 9
Total Samples	82 1 30	: : 01	eq :	. 60 Gd	; cq	::	::	::	: : :	::	::	::	133	30	6	7.T	113
No. Adul- terated.	∞ : ⊣ :	:::	::	: : :	::	::	::	::	: : :	::	::	::	6	33	60	2.5.5.	5 9
Total Samples	3 : 98	:::	1:	: 00 :	11	m c	· :	: :	::	::	::	::	128	2.0	6	12	£1 15
No. Adul- terated	64 ; 60 64	:::	::	: :	::	: :	::	: : :	: : :	::	::	::	7	09	60	d.	£1 15 7
Total	8 : 22	:::	::	: : :	::	::	::	::	:::	::	::	::	69	14	10	ž.*	ŭ
	::::	:::	::	: :	: :	::	: :	: : :	: :	::	::	: :			-	-	·
rchased.	::::	:::	::	: : :	::	::	. :	: : :	::	::	::	: :		Adulterated Helens.	Adulterated		England and Wales
Articles Pur	Milk Separated Milk Whiskey	Margarine Bread	Vinegar	Lard	Beer	Theture of Opium Spirite of Nitro	Tea	an Syru	Chocolate Cream Spanish	Toast Waste	Raspoerry Noyean Ice Cream	Lobster	tals	Percentage of A Samples—St. I	recentage of A Samples—All E	-	-
	Samples Total Total Samples Total Total Samples Total Total Samples	Total Samples Soc. 29 Samples Soc. 39 Samples Soc. 30	Articles Purchased Auticles Purchased Samples Auticles Purchased Auticles Purchased Auticles Purchased Total Total	Total Total	Articles Purchase Open Color of the Color	Articles Purchase Samples Samples Samples Samples Total Total Samples Sampl	Artheles Pourchase 1972 1973 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 1974 19	Articles Purchased Bandling Bandl	Total Samples So of Only Mire Band	Articles Purchase of Continue of Original State of Continue of Original State of Ori	Articles Anticles Anticl	Articles Articles Parchased Articles Parchased Articles Arti	Articles Articl	Articles Purchasse, Articles	Articles Purchased. Articles Purchased. Articles Purchased. A Milk A Milk	Articles Purchassed. Articles Purchassed.	Articles Purchassed Articles Article

FACTORIES AND WORKSHOPS.

The Factory and Workshops Act, 1901, came into force at the beginning of the year 1902, and has thrown upon the Local Authority a number of additional duties. Section 132 of the Act further lays down that the Medical Officer of Health of every district council shall every year report specifically on the administration of the Act on workshops and workplaces in the district under his supervision, and transmit a copy to the Secretary of State, for the Home Department. Although this has been done for many years in St. Helens this portion of the Annual Report deals more fully with the subject and has reference to everything which has concerned the Public Health Department in 1903, in relation to workshops and workplaces.

A Register of Workshops has been carefully prepared containing the names and addresses of the occupier, the trade or manufacture, the position and cubic capacity of the workrooms, the number of occupants, the means of escape from fire, the number of W.C.'s, &c.

The following table shews the various trades and occupations carried on in workshops, which are now on the register.

Dressmaking and mantle making Milliners Tailors Stocking Knitters Underclothing Joiners, Builders, Cabinetmakers, Plumbers, &c. Blacksmith, Wheelwright, Coach Builders, &c.	65 26 11 8 2 21	Clogger and Boot Repairs Tinsmiths Flour Packing Laundries Herbal Brewers Pearl Ash Manufacturers Seltzogene Charge Makers	42 1 1 2 2 1 1 1 191
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------	----------------------------------------------------------------------------------------------------------------------------	----------------------------------------------

Each of these workshops has during the year been visited several times and has been measured to ascertain their cubical contents. Speaking generally it may be said that they were kept in a clean condition, it only being requisite to serve eight notices requiring owners to limewash workshops, and two notices to repair yard paving. The standard of 250 cubic feet of air space per head was well recognized. Regarding the ventilation, it was found that the workers themselves were very indifferent in the matter and failed to use the means of ventilation provided.

The provision of sanitary accommodation is generally good. Two notices only were served to provide W.C.'s or to increase present accommodation.

Four notices were served to provide additional handrail or protect stairs to workshop.

The following were notified to the Home Office, 21 new workshops, five removals, and ten given up.

Great difficulty has been found in tracing the home workers, and it appears that there are but few of these in St. Helens.

BAKEHOUSES.

Bakehouses are either factories or workshops within the meaning of the Act according as mechanical power is or is not used, and are therefore subject to the general provisions of the Act.

The Act provides that after January 1st, 1904, it will not be lawful to use any underground bakehouse unless the Council is satisfied that it is suitable, and has given a certificate to that effect as regards construction, light, ventilation, and in all other respects. In St. Helens only two underground bakehouses exist and these are in every respect satisfactory. It has therefore been unnecessary to frame regulations on this subject.

There are 94 Bakehouses being used in the Borough, and these were each visited on several occasions. They were limewashed in April and October. It was necessary to serve 30 notices to cleanse and limewash. Three notices were served to remove drains or openings in the bakehouse, and five notices were served to remove litter in close proximity to bakehouse. On one occasion laundry-work was found to be carried on. The whole of the notices were complied with and no further action was necessary.

NUISANCE INSPECTORS' WORK DURING 1903.

Systematic house-to-house inspections have been carried on during the year by the Assistant Nuisance Inspectors, and the following Tables gives a list of the number of cases in which nuisances were found, and for which notices had to be served.

SANITARY NOTICES.

Number of Sanitary Notices Served.	1895	1896	1897	1898	1899	1900	1901	1902	1903
To Clean Choked Drains and W.c.'s	303	230	291	193	285	331	361	375	446
,, Repair or Re-lay Defective Drains	63	66	87	167	209	250	241	57	157
., Drain Dwelling-Houses	25	7	5	15	11	3	6	4	7
,, Disconnect and Ventilate Drains				84	210	270	228	253	393
" Disconnect Downspouts		8	19	60	144	109	175	33	95
., Repair or Lengthen W.P. to Slopstones	55	52	49	53	67	94	85	54	51
" Provide W.P. to Slopstones			12	29	46	40	35	25	22
" ., Slopstones	13	4	19	34	34	53	62	57	21
,. Repair W.C.'s, Baths, Basins, and Lavatories	18	2	26	13	23	48	34	27	38
"Repair Roofs of Dwelling-houses	258	108	129	131	214	182	181	108	169
,, Cleanse Backyards, Privies, & Passages	30	18	21	37	24	46	28	27	16
., ,, and Whitewash Filthy Dwellings	42	31	27	31	35	23	14	18	45
" Provide Doors to Privies, Pail Closets, and Ashpits	050	170	239	252	283	385	298	278	301
,, Repair or Re-hang Doors to Pail Closets, Ashpits and Privies			141	120	157	299	259	96	712
., Repair Privies and Ashpits	21	8	1	51	36	70	86	.76	68
" " Eaves and Downspouts	182	75	134	101	98	124	75	75	103
" Provide " ., .,		42	22	50	37	41	32	50	51
,, Repair Pavement, etc., Backyards	94	69	12 8	267	240	371	298	224	197

Number of Sanitary Notices Served.	1895	1896	1897	1898	1899	1900	1901	1902	1903
To Repair Pavement & Floors in Dwelling- houses					47	69	73	61	20
Dwellings		12	6	16	7	6	3	4	3
,, Remove Pigs	27	28 18	17	6 29	35	31 48	21	19	9
,, ,, Manure	15	17	24	6	18	16	20	18	8 25
,, Reconstruct Middensteads, Clean Foul Ditches and Cesspools	29	14	22	25	106	45	41	43	21
	179		32	54	715	170	116	165	719
,, Overcrowding	153	33	31	24 86	95	108	26 152	18 70	42 72
" Prevent Dampness in Dwellings						25	57	53	13
,, Remove Sheds, etc., from Backyards , Remedy Defects in Bakehouses		::	10	8	4	2	33	11 24	40
" " " Workshops		8				7	5	15	14
,, Provide Water Supply			12.	3	18	9	31	12	11
" Miscellaneous	231	215	164	122	207	175	164	156	84
Foul Ashpits to be Reconstructed to W.C.'s			218	92	227	135	87	102	160
Totals	2026	1579	1895	2159	3714	3619	3394	2740	4144

REPORT OF THE WORK DONE BY THE INSPECTOR APPOINTED TO TEST DRAINS.

The following is a summary of the work done during the year:—

New Drains.—858 new drains have been tested with the water test.

Of these 695 proved satisfactory on the 1st test.

130	,,	,,	,,	2nd	,,
25	,,	,,	,,	3rd	
7	,,	"	,,	4th	,,
1	,,	,,	,,,	5th	,,

The improvement in the laying of the drains will be noted, 81.0% being satisfactory on the first test, and only 3.8% requiring more than two tests.

Old Drains.—The smoke test has been applied to all the houses in the following streets:—Central Street, College Street, Ormskirk Street, North John Street, New Cross Street, Rigby Street, Barrow Street, Hamer Street, Brook Street, King Street, Henry Street, Marsh Street, Park Road, Williamson Street, Park Street, Johnson Street, and Ross Street.

The results were as follows :-

Total number of	of houses	tested	 		657
Drains were for	and defec	etive in	 		236
Gullies	do.	in	 		41
Total defects			 	277 or	42.1%

In 1902, 540 houses were tested, showing 46·1 of defects.

These figures speak for themselves, and more than justify the appointment of the Inspector. This work cannot but re-act most favourably on the health of the Borough. It is however to be regretted that this work cannot be carried on at a much quicker rate. This however is impossible with the present staff.

REMOVAL OF EXCRETA.

Prior to 1884 all houses, with few exceptions, were on the Privy Midden System. Since 1884 the number of houses put on the Tub and Pail System are detailed in the accompanying table, which has been further brought up to date by the inclusion of the number of Water Closets added during the year.

		-		818				-
		1769		00	_	4136		
Total,	3021	:	4071	81	3412	541	183	
1885 1886 1887 1888 1889 1890 1891 1892 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903	:	es	:	:	391	84	52	
1902	-25	99	:	:	259	105	50 00	
1901	-23	:	:	:	315	57	53	
1900	-12	:	:	:	264	101	12	
1899	-36	:	:	:	236	98	36	
1898	-16	:	:	60	355	17	16	
1897	4	:	21	49	142	99	21	
1896	104	:	14	:	1450 142	:	:	
1895	175	:	358		11	-:	:	
1894	277	:	487	:	1896	:	:	
1893	347	:	196	:	\$:	:	
1892	268	:	192	:	dn s	:	:	
1891	221	:	117	:	Closet s up	:	:	
1890	275	:	435	:	er C	:	:	
1889	349	:	602	:	Wat	:	:	
1888	999	:	415	:	Total number of Water	:	:	
1887	307	:	328	:	qum	:	:	
1886	352	:	380	:	al n	:	:	
1885	180	:	526	:	Tot	:	:	
	Houses, Tub and } 180 352	Tub & Pail Houses }	Converted Privies to 7 526 380 328 Tub and Pail	New Houses, No. 2) System	New Houses, Water Closets	Converted Privies to Water Closets	Tub and Pail to Water Closets	

The above Table thus shows the number of Water Closets in the whole Borough to be 4136; Tubs and Pails, 6971; and No. 2 System, 81.

To these must be added 2428 Middens which still exist.

WEEKLY RECORD OF METEOROLOGICAL CONDITIONS TAKEN AT VICTORIA PARK.

1	H.	-	-					711123			V	VIND					
NG.	Barometer	Maximum Temp.	Minimum Temp.	n d	Soil Sp.	Rainfall (total in.)	-		Di	rection					Force	of W	ind.
WEEK	опо	faximu Temp.	finimu Temp.	Mean Temp.	Mean Soi Temp. (4 feet.)	E ii				r of Ho				_	100000	Max	Max mile-
PA	Ban	Ma	HE T	T	Me 1	E Po	z	NE	ш	SE	S	SW	2	*	Total Mileage	Gust.	age p
-	ins.	1 0	0	. 0	, 0			2		00		- 00	-	Z			hour.
Jan. 3	29.134	51.0	29.8	37.1	44.4	ins.	123		41/2	41/2	23	397	57	27	2661	34	58
,, 10	29.320	52.8	27.0	43.5	44.4	1.22	71/2	31	175	26	221	552	26	81	2323	34	43
,, 17	29.961	43.5	24.0	29.8	43.7	.20	24	2	592	561	1		3	24	2304	22	34
,, 24	29.866	47.5	31.2	39.5	43.5	1.53			13	72	33	20 81	25	5	2449	20	32
Feb. 7	29.714	24.0	33.0	46.8	43.2	·15	81			5	27½ 41	57,	59½ 35	201	2894	30	47 56
,, 14	30.058	55.5	35.0	47.0	42.3	.25					6	642	561	411	2431	28	40
,, 21	30.014	55.8	32.6	45.2	43'4	.22			10	401	361	47,	22	14	2361	30	50
,, 28 Mar. 7	29:303	53.5	32.8	43.3	44.0	1.67	- 1			49	495	622	56	262	2694	40 28	62
,. 14	29'307	21.8	33.3	43.1	44.0	1.08	32	::	4½ 15	10%	42 ½ 72 ½	41	41½ 13	36½ 36½	2437 1831	24	42 36
,, 21	29.511	54.5	35.5	44.3	44 5	1:27		2	121	211	461	59.	30	61	2549	28	46
,, 28	29 263	91.2	38.0	20.0	44.6	.25				131	901	462	16	$1\frac{1}{2}$	2251	30	47
Apl. 4	29:700	55.0	34.5	45.0	44.6	.86	6		3½	13	13	27	502	55 85½	2447	36	50
,, 11	29.749	56.0	37 0	47.5 38.1	44.7	·19 ·73	421	::		I	9	142	54 14½		2420 2686	36	51 42
,,25	29.568	53.0	28.2	40.1	44.8	.05	411	181	411	171	1		101	361	1393	18	27
May 2	29.220	59.0	38.0	49.8	44.8	1.25	2	1/2	531	511	231/2	81/2	101	18	1275	18	26
,, 0	29.288	57'0	41.8	49.1	45.1	2:36	211	15	72	271	5	2	17	211	1352	16	25
,, 23	29.850	76.0	34.0	53.5	46.0	:58	111	7 ½ 5 ½	7 ½ 9 ½	26 g 26 g	28	35	25 24 ¹ / ₂	31 36½	1598	18	36 31
,, 30	29.988	70.0	43.0	57.4	46.8	.02	3	17	1175	201	4	22		31/2	1657	22	32
June 6	30.013	21.0	43.2	57.8	47.9	10.	221	1112	47½	3	2	12	4,	76	1284	18	27
,, 13	29.883	70.0	37.0	56.5	49'9	.83	192	44 56½	75	6			8½ 2	15	1896	16	36
,, 27	29.235	21.0	35.0	50.2	50.9	1.13	44 7½	202	40½ 22½	15½ 57	421	142	71	171	1455 947	12	24
July 4	29.941	78.5	49.5	61.0	53.5	.19	12		6	111	185	391	59	311	1487	20	30
,, 11	29.920	73.0	46.0	58.4	53.9	.08	15.			6	21	3,	46	75	1627	30	51
,, 18	29.506	60.0	48.0	58.5	22.0	2.32	125	5	21 28	142	192	295	35	36	1204	16	27
,, 25 Aug. 1	29.586	70.0	47.8	59.2	22.1	.83	81	42	41/2	26 15½	27 41/2	105	15 51	44 77½	1115	24	27 30
,, 8	29.739	69.0	53.0	60.0	55.5	.70			72	7	26	25	62	47	1836	23	37
,, 15	29.554	72.0	55.2	20.1	55.8	*97	6		9	19	28	49	$35\frac{1}{2}$	211	1395	24	42
,, 22	29.483	63.5	20.0	26.0	56.0	1.87	9	7	17 184	198	155	10	45	39	1516	26	43
,, 29 Sept. 5	29.704	70.0	49.0	57.7	56.0	.87 1.44	9	4 2	181	15½ 43	152	53	30½ 35	22 11	1987	28	37 46
,, 12	29.754	1	41.0	52.7	55.4	2.22	71		21/2	91	100000000000000000000000000000000000000	271	52	51	2396	36	46
,, 19	30.045	64.0	36.0	48.3	54.5	.20	231	$\frac{1\frac{1}{2}}{7\frac{1}{2}}$	34	38	15½ 14½	5	161	28	1447	20	28
oct. 3	29.935	66.0	53.0	60.7	53.8	.13		2	451	72	621	20	151	14	1965	38 26	45
Oct. 3	29.425	61.0	37.0	57.0	23.5 23.5	1.68	18	21/2	51 172	52½ 26	631/2	301	311	7 1 1 1 1 1 1 1	1721 2140	44	37 68
,, 17	29:394	58.0	42.0	49.5	53.5	2.09	81	3	4	132	33	34	491	172	2356	36	50
,, 24	29.506	58.0	40.0	20.1	53.5	1.41	1112		11	231	55	351	175	241	1878	18	30
Nov 7	29:213	20.0	42.0	48.7	23.0	1.63	1	11/2	7	36	00	25 81 82	32½ 28	55	2051	18	47
Nov. 7	30.524	55.2	35.0	44.4	20.5	75			33	43½ 28	23½ 45	26	381	30½ 26½	1205	28	25 40
,, 21	29.698	52.0	25.0	39.8	49.5	.75	191	I	2	16	61	122	42	68"	2060	40	56
,, 28	29.694	55.0	35.0	44.0	49.2	1.21	361	7	31/2	3	I	20	35	53	1908	30	46
Dec. 5	28.977	47.5	25.0	35.0	48.0	·60 ·64	I	8½ 7	25 26	36 23½	29	27 321 2	23 25½	25 81 82	1888	30 26	45 36
,, 19	29.471	46.0	32.2	39.8	45.2	.40	1/2	7	75	46	53	1 1 1 2	-52	03	1671	24	34
,, 26	29.839	1.0	30.2	46.8	45.2	.13		In	stru	ment	out	of	order		1408	20	37
Totals						45.61	485	2501	10341	1155	12771	12881	14711	1506	Highes	treac	lings
-	29.657	59.0	37.8	48.0	48.9								2		2894	44	68
-	11-2-31	1000	31	1, ,	1 , ,	1	11		1							-	

100

RAINFALL

AT ECCLESTON HILL WATER WORKS FOR 30 YEARS.

	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883
January	2.78		1.70	1.70	3.54	*	•49	-08	2.72	2.58
February	-62	*	3.60	4.50	1.77	*	.80	4.17	1.73	3.38
March	2.02	.63	2.34	2.43	1.13	1.42	1.37	2.4!	2.15	.53
April	1.01	.34	3.25	3.13	2.20	1.14	.66	1.23	4.06	1.09
May	1.44	2.30	.42	2.69	4.34	1.58	1.90	3.35	1.71	*68
June	.96	3.80	2.61	1.07	3.32	3.10	2.15	2.60	6.07	2.90
July	2.65	3.26	2.74	5.32	1.40	4.53	5.82	3.47	5.27	3.32
August	3.24	3.35	3.50	6.16	4.87	5.15	2.38	6.60	4.41	2.25
September	2.43	5.65	3.96	3.01	5.06	3.77	2.90	2.46	3.10	6.41
October	4.26	5.81	2.90	3.46	3.94	2.07	3.13	3.14	3.00	5.81
November	4.50	4.10	4.96	2.50	3.94	.64	2.03	2.91	3.43	2.60
December	1.21	.78	4.38	2.90	*	.61	6.16	4.30	2.15	1.65
Totals	27.42	30.02	36.36	38.87	35.51	24.37	29.79	36.72	39.77	33.20

* Gauge broken.

	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
January	3.51	1.78	3.99	0.98	0.93	0.65	3.17	1.01	1.80	0.88
February	2.33	2.35	0.80	0.61	0.61	1.53	0.19	0.08	1.54	3.07
March	2.49	1.94	1.84	1.33	1.89	1.27	2.28	0.76	0.73	0.77
April	1.07	1.38	1.12	1.06	1.09	1.92	1.31	1.95	1.15	0.38
May	0.82	2.14	4.25	2.03	0.66	2.47	1.58	2.13	3.36	1.30
June	2.11	3.32	1.68	0.91	2.54	0.35	2.27	3.39	4.08	1.74
July	3.30	1.91	3.03	1.17	6.87	2.98	2.43	3.26	3.20	3.35
August	2.02	1.98	1.74	1.50	3.31	4.75	3.67	6.50	4.15	2.79
September	3.09	4.58	3.47	5.36	1.56	2.25	1.48	2.92	3.80	3.85
October	1.49	5.99	4.05	2.37	1.85	2.84	2.09	3.49	6.25	2.18
November	1.57	3.18	3.04	1.17	4.98	2.49	6.41	2.92	2.44	1.88
December	3.15	2.18	4.00	2.61	1.89	2.39	0.14	3.93	1.96	3.25
Totals	26.92	32.73	33.01	21.10	28.18	25.89	27.02	32.34	34.84	25.73

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903.
January	1.87	2.06	1.13	1.11	2.05	3.84	4.29	2.13	0.36	2.36
February	4.02	0.04*	1.54	2.35	1.91	1.82	2.65	1.08	1.51	1.97
March	2.21	0.89	2.94	2.09	0.73	2.34	*	1.56	2.03	2-11
April	1.59	1.74	1.48	2.27	1.40	3.27	1.53	2.14	1.96	1.86
May	2.48	0.54	0.51	1.33	3.88	3.28	1.36	0.78	3.82	3.21
June	2.23	0.82	3.83	8.52	2.87	2.08	2.36	1.72	1.49	1.79
July	3.66	3.72	1.92	1.15	0.52	2.37	0.93	1.40	1.75	4.16
August	4.77	3.31	3.18	4.88	4.54	1.49	5.67	2.78	2.51	4.43
September	0.72	1.17	6.28	4.90	1.28	4.17	0.83	0.95	1.18	4.68
October	3.79	5.13	3.18	1.88	4.55	3.03	3.66	3.68	3.39	7.70
November	2.56	2.65	1.31	4.61	2.42	0.56	3.31	3.42	1.95	3.60
December	3.44	2.88	4.56	3.99	2.84	1.89	2.96	3.86	2.26	1.47
Totals	33.34	25.35	31.86	34.08	28-99	30.09	29.55	25.50	24.21	39.34

^{*} Rain Gauge out of order.

APPENDIX A.

Showing the work done during 1903 in the erection of Buildings and the Paving and Sewering of Streets and Passages.

This information is supplied by

Mr. GEO. J. C. BROOM, M.I.C.E.,

Borough Engineer.

Plans Deposited and Approved by the Health Committee.

	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
For Dwelling-houses	563	310	253	310	329	386	284	293	370	677	626
,, Other Buildings	35	45	24	31	26	22	23	21	12	23	34
,, Alterations to Existing Buildings)	59	73	48	44	40	46	47	52	81	27	128
Total	.477	657	438	325	385	395	454	354	366	727	788

The following Table shows the several Wards of the Borough in which Buildings have been erected during the years mentioned:—

Year.	Eccleston North	Eccleston South	Windle North	Windle	Sutton, East	Sutton, West	Central	Hardshaw	Parr	Total
1896	15	63	57	12	6	36	_	12	43	244
1897	16	28	65	5	15	15	_	7	44	195
1898	40	28	99	14	40	15	_	48	40	324
1899	19	6	42	7	42	11	2	27	80	236
1900	38	56	28	11	16	9	_	21	85	264
1901	26	77	27	1	27	35	8	60	54	315
1902	20	58	14	1	72	11	5	29	54	259
1903	76	48	37	18	100	23	8	43	38	391

STREETS.

sewering.

Proposed Street off Croppers Hill.

Sewering, Levelling, Paving, Flagging, Channelling, and Completing.

Horace-street, from Boundary-road to Virgil-street. Virgil-street, from Horace-street to Hanover-street. Elliott-street.

PASSAGES.

Draining, Levelling, Paving, Channelling, and Completing.

Passage rear Nos. 3-13 Pemberton-street, Nos. 52-66 Borough-road, and Nos. 2-12 Duncan-street.

Nos. 1-19 Duncan-street, Nos. 40-50 Borough-road, and Nos. 35-41 Crispin-street.

Nos. 9-29 and along gable of No. 29 Carlton-street. 33

from Sandfield-crescent to St. James-street.

between Brynn-street and Hardshaw-street, from Cansfield-street to Standish-street.

rear of Nos. 152-162 College-street. Nos. 92-114 Peasley Cross-lane.

Nos. 68-72 North-road, and along gable of 43 Cooper-street.

between Nos. 42-44 Harris-street.

Sewering, Levelling, Paving, Channelling, and Completing.

Passage rear of Nos. 1-113, Eldon-street.

25

22

22

Nos. 6-36 Croppers Hill.

St. Paul-street, Napier-street, Chester-street, and St. Paul's Church.

Nos. 10-34 Williamson-street.

Hanover-street, Horace-street, and Boundary-road.

between Ross-street and Johnson-street.

,, Nos. 4-26 Nutgrove-road, and Nos. 3-15 Scholes-lane.
,, Nos. 37-53 Crab-street. rear of Nos. 156-160 Duke-street, and Nos. 17-25 Chorley-street.

" Nos. 20-26 Cowley Hill-lane, Nos. 58-62 Cooper-street, and Nos. 63-69 Atherton-street.

" Nos. 70-98 Friar-street, and Nos. 23-35 Seddon-street.

Draining, Levelling, Flagging, Channelling. and Completing.

Passage rear of No. 10 Eccleston-street.

between Nos. 3 and 5 Greenough-street, and rear of No. 2 Manor-street.

Sewering, Levelling, Flagging, Channelling, and completing.

Passage rear of Nos. 165-175, Westfield-street, and along gable of No. 13, Crook-street " Westfield-st. and Edward-st., and along gable of No. 4, Edward-st.

between Westfield-st. and Gilbert-st., and rear of Nos. 40-46 St. Thomas'-st. 22 rear of Nos. 72-108 Liverpool-road, and along gable of No. 3, Edward-street. 22

,, Pocket Nook-street and Barber-street.

SEWERING.

Passage rear of Wilson-street, Havelock-street, Chester-street, and Campbell-street.

,, Havelock-street, Lyon-street, Chester-street, and Campbell-street.

" Lyon-street, Raglan-street, Chester-street, and Campbell-street.

PUBLIC HIGHWAYS.

Paving.

Bridge-street. Exchange-street. Cross-street. Bickerstaffe-street. Victoria-square.

STREETS DECLARED PUBLIC HIGHWAYS.

TABLE I.

TABLE SHOWING CERTAIN MORTALITY STATISTICS IN THE COUNTY BOROUGH OF ST. HELENS FOR THE YEARS 1893—1903.

	stimated to ach year.	Вг	RTHS.	ONE	ATHS OBER YEAR AGE.	ALL	THS AT AGES.	Public tions.	n-Residents n District.	of Residents regis- beyond District.	ALL .	HS AT AGES.
Year.	Population estimated to Middle of each year.	Number.	Rate.*	Number.	Rate per 1000 Births registered.	Number.	Rate.*	Deaths in Public Institutions.	Deaths of Non-Residents registered in District.	Deaths of Residents regis- tered beyond District.	Number.	Rate.*
						-						
1893 .	. 75390	3029	40.1	577	196	1769	23.4	161	54	78	1793	23.7
1894 .	. 77690	2882	37.0	466	161	1400	18:0	159	77	78	1401	18.0
1895 .	. 79490	3165	39.8	576	181	1674	21.0	195	88	105	1691	21:2
1896 .	. 81136	3042	37.4	542	177	1668	20.4	194	110	85	1643	20.2
1897 .	82910	3193	38.5	578	181	1746	21.0	189	102	99	1743	21.0
1898 .	84730	3262	38.4	566	172	1641	19.3	198	119	93	1615	19.0
1899	86588	3115	35.9	492	157	1700	19.6	217	125	107	1682	19.4
1890	88480	3100	35.0	584	188	1914	21.6	233	119	111	1906	21.5
1901	84734	3128	36.9	550	175	1675	19.7	209	96	132	1711	20.1
1902	86040	3222	37.4	541	167	1702	19.7	243	109	118	1711	19.8
Averages for years 1893-1902	82718	3113	37.6	547	175	1688	20.3	199	99	100	1689	20.3
1903	87385	3421	39-14	475	138	1535	17.5	209	96	129	1568	17.9

^{*} Rates calculated per 1000 of estimated population.

Area of District in acres (exc	lusive	of area	covere	ed by	Water)	 7284.427	Acres
Total population at all ages						 84,410)	surs L
Total population at all ages Number of inhabited houses Average number of persons p						 15,122	Cens 1901
Average number of persons p	er ho	use				 5.58	At

TABLE II.

TABLE SHOWING CERTAIN MORTALITY STATISTICS, GLASSIFIED ACCORDING TO WARDS, IN THE COUNTY BOROUGH OF ST. HELENS FOR THE YEARS

1				
	E.	Deaths under I year.	69 57 71 71 71 69 69 69 69 69	40
	WINDLE.	Deaths at all Ages.	177 134 142 161 167 170 182 170 182 146	119
	South	Population esti- mated to middle of each Year.	8551 8551 8614 8699 8889 9084 9283 9484 9872 8310	8439
	E.	Deaths under 1 year.	86 64 63 63 63 63 63 63 63 64 64 64 65 64 64 64 64 64 64 64 64 64 64 64 64 64	51
	Windle.	Deaths at all Ages.	133 122 161 173 180 166 147 181 161 163	145
WIND	North	Population esti- mated to middle of each Year.	6733 8333 8747 9152 9352 9558 9768 9980 8755 11810	12002
D I D		Deaths under	69 050 050 050 144 11 150 150 150 150 150 150 150 150 150	43
OR THE	CENTRAL.	Deaths at all Ages.	203 125 160 170 179 188 189 179 179 179 179	127
HEDENS FOR	CE	Population esti- mated to middle of each Year.	8278 8821 8821 8821 8503 8690 8880 9073 9616 7130	7240
170	on.	Deaths under I year,	88 44 44 45 64 64 64 64 64 64 64 64 64 64 64 64 64	50
OTT OF	Eccleston.	Deaths at all Ages.	120 108 1114 1119 140 107 128 136 150 139	143
CONTOCT	South	Population esti- mated to middle of each Year,	7104 7325 7739 8187 8366 8549 8736 8926 7958 9256	9400
	ron.	Deaths under I year,	98 90 90 91 91 94 87 88	65
	Eccles	Deaths at all Ages.	219 165 210 187 202 218 227 221 209 209	183
1	NORTH ECCLESTON.	Population esti- mated to middle of each Year.	8987 9286 9472 9579 9788 10003 10222 10453 10007 10840	11009
	NAMES OF LOCALITIES.	Year.	1893 1894 1895 1897 1899 1900 1901 1902 1902 1902	1903

TABLE II.—CONTINUED.

	ен.	Deaths under I year.	577 466 576 542 578 566 492 584 584 541	475
	Wносе Вовоген	Deaths at all Ages.	1769 1400 1674 1668 1746 1746 1641 1700 1914 1675 1702	1536
	Wносе	Population esti- mated to middle of each year.	74840 77690 79400 81135 82910 84730 86588 88480 84734 86040	87385
		Deaths under I year.	77 77 88 88 88 88 88 88 71 71 71 80 80 80 80 80 80 80 80 80 80 80 80 80	74
NTINUED.	Parr.	Deaths at all Ages.	196 144 200 215 186 199 231 256 194 213	195
STICS—Co	P	Population esti- mated to middle of each Year.	8600 8760 8964 9270 9475 9683 9896 10112 9396 10280	10440
TATI		Deaths under	69 70 60 60 63 64 64 64 64 64 64	46
TILLY S	SUTTON WEST.	Deaths at all Ages.	255 282 280 304 296 308 388 284 314 314	235
TABLE SHOWING CERTAIN MORTALITY STATISTICS—CONTINUED.	Sultc	Population esti- mated to middle of each Year.	8788 8270 8542 8797 8989 9186 9388 9598 8682 9826	9979
RTA		Deaths under 1 year.	8 2 2 2 2 2 2 3 3 4 4 4 5 2 1 2 2 4 4 4 5 4 4 4 5 4 4 4 4 4 4 4 4 4 4	41
TING CE	ON EAST.	Deaths at all Ages.	164 132 157 157 147 178 176 176 171 171	178
LE SHOW	SUTTON	Population esti- mated to middle of each Year,	8120 8981 9074 9272 9475 9683 9683 9652 8838	8975
TAF		Deaths under 1 year.	74 60 68 68 59 70 70 70 63 63 63 63 63 63 63 63 63 63 63 64 64 64 64 64 64 64 64 64 64 64 64 64	65
	Hardshaw.	Deaths at all Ages.	208 238 219 209 230 231 231 191 191 198	210
	Нл	Population esti- mated to middle of each Year.	9729 9834 9970 10056 10276 10782 10782 10796 9750	9901
	NAMES OF LOCALITIES.	Year.	1893 1894 1895 1895 1897 1898 1900 1901 1902 Averages of Years 1893 to	1903

TABLE III.

TABLE SHOWING NEW CASES OF INFECTIOUS SICKNESS, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH DURING THE YEAR 1903, IN THE ST. HELENS URBAN SANITARY DISTRICT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

								_		_	_	_		
1		Parr.	:	:	:	:	78	:	11	:	:	:	:	88
PITA	om.	West Sutt	1	:	-	Н	18	:	10	:	:	:	:	31
Hos TY.	·m	East Sutto	61	:	:	:	114	:	9	:	:	:	:	122
ED TO		Wardshaw	9	:	-:	1	62	-:	50	:	:	:	:	74
No. of Cases Removed to Hospital vrom each Locality.	dle.	South Win	:	:	63	:	22	:	4	:	:	:	:	58
ES RI	elba	North Win	-	:	:	:	80	:	9	:	:	:	:	87
CAS		Central.	Y.O.	:	:	:	15	:	:	:	:	:	:	20
[0.0]		Eccleston.	00	:	:	:	28	:	÷	:	:	:	:	35
Α.	-	Keeleston	6	:	:	:	59	:	16	:	:	:	:	84
		Parr.	:	:	Ξ	1-	108	:	12	:	:	-	:	139
ACH	·uo:	West Sutt	-	:	1	12	28	:	10		:	:	:	80
IN E.	·uc	East Sutto	0.1	:	12	10	156	:	1-	:	:	-	:	188
FIED FY.	•,	Wardsbaa	9	;	27	00	90	:	1-	:	:	67	:	135
S Notifie Locality.	rdle.	South Win	- :	:	15	10	44	:	10	:	:	:	:	#-
TOTAL CASES NOTIFIED IN EACH LOCALITY.	.alba	North Wi	-	:	82	10	143	:	00	:	:	-	:	186
NE C.		Central.	20	:	4	ಣ	21	:	-		:	1	:	35
Tor		Eccleston South	65	:	6	-	46	:	9	:	:	:	1	65
		Recleston	6	:	13	10	36	:	50	:	:	:	:	141
22		bns 69 sbrawqu	:	:	:	6	:	:	:	:	:	:	:	6
Vног	urs.	25 to 65.	18	:	9	40	19	:	31		:	00	:	12
Cases Notipied in Who District.	At Ages—Years.	.62 of 61	7	:	13	10	39	:	55	:	:	25	:	98
OTIFIED E	lges	.61 of 6	00	:	19	20	395	:	19	:	:	:	:	184
Norr	At /	1 to 5.	_	:	100	00	265	:	4	:	:	:	:	310
ASES		Under I.	1	:	9	-	10	:	:	:	:	:	:	18
0	.es.	SA IIs tA	27	:	126	61	728	:	91	:	:	9	:	1024
	NOTIFIABLE DISEASE.		Small-pox	Cholera	Diphtheria Membranous Croup) 126	Erysipelas	Scarlet Fever	Typhus Fever	Enteric Fever	Relapsing Fever	Continued Fever	Puerperal Fever	Plague	Totals

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1903.

											10	-															. >	-	-		
i saths i Public Oitutitent	:	- 0	50	:"	-	:	: 2	-	: :	:	:	G1	_	:	:	-	30	53	1-	101	07	* 0	1 04	:	:	1	12	25	- 00	62	209
Parr.	:	: '	- '	40	89	:	:-	,	: -	:	:	00	4	:		:	50	4	-	# 1	7	6	00	:	12	67	12	9	00 1	19	195
West Sutton.	:	- 0	18	40	0	:	: 10	10	: -	:	:	9	20	:	:	-	8	-	00 0	0 6	100	9 00	01	:	1-	-	12	-	e4 !	=	235
East Sutton.	:	: '		9	:	:	:	:	: :	:	:	?!	63	:	:	-	=	1-1	00 8	000	0,-	20	120	:	00	00	6	16	61 :	7	178
.wadsbaaw.	:		- '	0 1	+	:	:	:	: :	:	:	4	00	:	:	-	17	00 1	000	0 0	0 -	-	4	:	Ξ	:	13	13	: !	19	210
South Janie,	:	:	:	: 10	0	:	:-		:01	:	:	4	00	:	:	:	00 0	00 1	000	200	4.0	: -	-	:	9	-	1-	67	61 5	46	119
North Windle,	:	: "	-	: 0	1	:	:-		: :	:		00	00	:	:	::	2		9	170	1.1	: 4	:	:	9	टा	6	00	: 5	20	145
Central.	:	:	: '		4	:	;		-	:	:	-	es.	:	:	-:	15	9	21 15	9 00	>	: ?	21	:	9	-	00	00	::	9	127
South Eccleston.	:	: "	٠.	- c	4 -	1	: :				:	1-	7	:	:	- ,	0		4.0	7 0		:07	-	:	20	00	10	-		90	143
Keeleston.	:	:0	20 0	20 -		:	:	:	: 01	:		-	20	:	:	::	= '	4	400	3 =		: 00	-	:	=	67	6	67	:00	69	183
sprewqu	:	:	:	:	:	:	: :		. 7	:		01	-	:	:	:	:	:1	- :	200	00	0 01	:	:	:	:	13	4	- 3	84	185
25 and under 65,	:	:	:	:	:		; oc		. 10	:	:	00	61	:	:	24 5	61	21 9	67	A1	1 00	2 10	17	:	:	15	46	28	- 5	143	488
15 and under 25.	:	:-	1	:	:	:	: 4		-1	:		-	:	:	: '	7 9	18	:	:0	1 00		-	:	:		-	00	4	-;	1	57
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TABLE A.—Deaths Registered in the St. Helens Urban Sanita

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CAUSE OF DEATH.	1	2	3	4	5	6	7	8	9	10	11	12	13	Tota 18 Quar	14	15	16	17	18	19	20	21	22	23
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Typhus Fever	١																							١.,
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Simple or Continued Fever Enteric Fever	1:		.:	::	1									3	• •				.;			٠.		
Influenza	1.	1::	1		1		1					i		3						1				
Other Zymotics	١																							
Simple Cholera Diarrhœa		1:								.:							1:					.:		
Diarrhea		1								1				2										
Dysentery	1::						1:										::	::						
Hydrophobia, Anthrax, &c.,	١																							
Syphilis, &c																								
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Pyæmia, &c Puerperal Fever	1::							::																
Thrush, &c																								
Want of Breast Milk											. :			.:		• •	1							
Seurvy											1		٠.	1	٠.	• •	• •		• •				• •	
Rheumatic Fever		::						::						**				i				i		
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Old Age Diseases of Nervous System.	6	2	4	3	3	1	3	3	2	2	4	2		35		2	4	3	5				1	2
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Heart and Blood Vessels	1	2	1	2		3		3			2		1	26		-	4				1	1		1
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Lymphatics and other Glands	. 1										• •	0	2		4			1		0	2	1	1	1
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Homicidal Violence																								
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Dropsy	• •	.:	1	1		1								3		.:							.:	
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district, in weeks, during the year ending January. 2nd. 1904.

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Table B.

MORTALITY STATISTICS for Year ending January 2nd, 1904, showing Age at Death, and Ward.

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