

**[Report 1901] / Medical Officer of Health, Liverpool City.**

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**Publication/Creation**

1901

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HEALTH DEPARTMENT.

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REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING

**1901,**

BY

E. W. HOPE. M.D., D.Sc.,

*Medical Officer of Health.*




*(Ordered by the Health Committee to be printed 15th May, 1902)*

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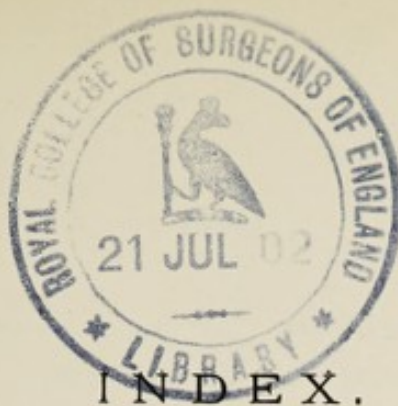
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## APPENDIX.

Local Government Board Tables of Population, Births, Deaths and Infectious  
Sickness.

Plan-Map showing Birth Rate in Districts of City.

„ „ Death Rate „ „

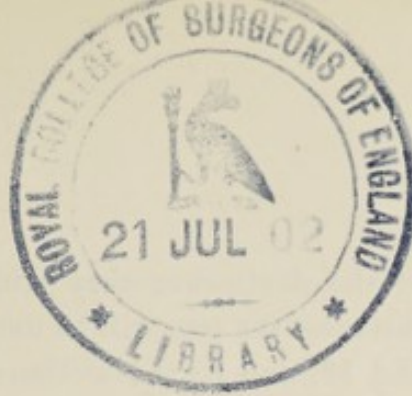
„ „ Number of Deaths of Infants under one year out of every  
1000 born.

„ „ Density of Population in Districts of City.

Diagram illustrating Death Rate since 1861.

Table of Total Deaths registered in the City.

Map indicating Districts referred to in Report.



## PREFACE.

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Without attempting to further epitomise the information contained in the following pages, it may be well to direct attention to one or two special points.

The area of the city of Liverpool comprises 13,236 acres ( $20\frac{1}{2}$  square miles); and the population of the City, estimated at the middle of the year, is 686,332, being a slight increase on the carefully taken census in March.

It will be seen from the Census abstracts that the changes which have taken place in the distribution of the people during the last ten years have affected districts in a very different way to the changes which were in progress during the preceding ten years, *e.g.*, the steady decline in the number of inhabitants in Scotland Ward has ceased altogether, the numbers of inhabitants being practically the same in 1901 as they were in 1891, while the decline in Exchange Ward and Abercromby Ward has lessened to a very remarkable degree. In Toxteth, the population has remained almost stationary in numbers for 20 years; the census of 1891 showed a very trifling increase, and the census of 1901 shows a trifling decrease. The most marked increase which has taken place in the last decade has been in Everton and in the outlying districts, especially in Wavertree, in which the rate of increase is very striking. West Derby West shows practically the same actual increase during the ten years ending 1901 as in the ten years ending 1891.

All the figures in the following pages relating to vital statistics are corrected by the census results, but in order to appreciate fully the effects of age distribution upon these statistics, particular attention must be given to the important tables upon pages 9 and 19.

The birth-rate during the year was 32.0 per thousand, the average of the previous five years being 33.3.

The death-rate during the year was 21.6, as against 23.1 last year, representing a saving of 1,030 lives.



Both the birth-rate and the death-rate vary widely in different districts, and the connection between the two will be understood by reference to the tables on pages 9 and 19, and to the sections dealing with infant mortality.

With regard to the deaths ascribed to zymotic diseases, the figure does not indicate the full extent of the mischief done by these forms of sickness, owing to the fact that death is very frequently the result not of the disease itself, but of complications or sequelæ consequent upon these diseases, *e.g.*, influenza, measles, or whooping-cough have been predisposing causes of many deaths primarily ascribed to respiratory disease.

Considerable interest was aroused during the latter part of the year by the appearance in the City of Bubonic Plague. Until within recent years there has been no European experience of this disease, and it was known only by its ravages in these latitudes two and a half centuries ago, or by its consequences in the East. So far as can be judged from recent limited experiences, the disease appears to be quite amenable to modern methods of sanitation. Notwithstanding this, however, the presence of the disease in a British sea-port is still regarded by some foreign countries as necessitating precautionary measures which involve serious commercial restrictions.

Some trouble was occasioned by the importation of small-pox, and although no one who has an opportunity to form an opinion would hesitate to accept the views of the Royal Commission on Vaccination, yet unfortunately there are many people so imperfectly protected by vaccination that they are quite susceptible to small-pox, even if in a modified form.

With regard to what are commonly considered the less serious forms of zymotic disease (presumably because children are the chief sufferers), measles was once more especially destructive, nearly 500 deaths being directly attributed to it. The presence of this disease led to a considerable interference with the work of the schools during one part of the year.

For reasons which will be ascertained in the text, the deaths ascribed to zymotic diarrhœa were very large. Experience alone will show whether the greater efforts made by the Health Committee to provide suitable food for infants will be attended with results as satisfactory as

those which followed the experiment made during 1901. Before results sufficiently marked to modify statistics can be looked for, the experiment must be tried on a sufficiently large scale. The method has received the approval of the staff of the Children's Infirmary, as well as the support of a large section of the medical profession. The success is, however, altogether dependent upon maternal attention.

The voluntary notification of cases of consumption was commenced early in the year, the object being to obtain knowledge of those cases of consumption in which the services of the Health Department could be of use. The system has worked remarkably well so far, and has enabled a good deal of cleansing and disinfecting of infected rooms and things to be carried out. In connection with this subject, attention may be called to some interesting investigations in connection with the habit of spitting in public places, and it will be seen that the real danger arising from this habit has been very clearly demonstrated by bacteriological examination. (See pages 167-8.) Cards and notices relating to this objectionable practice have been widely distributed.

It is to be noted with satisfaction that deaths from excessive drinking, alcoholism, &c., show a marked decline, but nevertheless the numbers of deaths ascribed to these causes is serious evidence of the extent to which the abuse of alcohol is carried in this City.

During the year important changes came into operation in connection with the administration of Sub-let Lodging Houses. New bye-laws, the main feature of which was to ensure a larger cubic space per lodger, came into operation. Although these new and more stringent bye-laws were applied gradually and with care, in order to give time for their purport to be understood, yet a considerable increase in the prosecutions for overcrowding was inevitable.

The food supply has been good.

There has been a considerable decrease in the number of cattle slaughtered in the City, and a considerable increase in the number of carcasses imported for sale. With regard to sheep, there is a decrease both in the number killed and the number of carcasses imported for sale. The relatively recent industry of the importation of carcasses of pigs, appears to be in a flourishing condition, and shows a considerable increase during the past year.



The practice of sending diseased and worn-out cows to City slaughter-houses is giving way to the more appropriate course of sending them to the knackers yard.

Several steps in the improvement of the scavenging and cleansing of the City have been taken during the year. The substitution of improved sanitary ash-bins for the old insanitary ash-pits—a project always advocated by the late Alderman Houlding—has been proceeded with, with markedly beneficial results, and as regards the general scavenging of the City there can be no question as to the marked improvements which have taken place.

Some very important work has been embarked upon by the Housing Committee during the year, not the least being the application of the Housing of the Working Classes Act to insanitary areas. A reference to this will be found on pages 203-208.

Circumstances already alluded to taxed to the utmost the hospital accommodation in the City, and a record of the work of these Institutions will be found in its proper place.

The maps, charts and photographs considerably simplify descriptions.

E. W. HOPE,

MEDICAL OFFICER OF HEALTH.

Public Health Department,

Municipal Offices,

Liverpool, *May 15th*, 1902.

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C E N S U S .

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## CENSUS.

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During the ten years ending 1891 the net gain in population over what is now the entire City was found to be only 5,261.

The Census last taken shows that during the ten years ending 1901 the increase was more than 10 times as great as it was during the preceding ten years, identically the same areas being referred to in each case. Of the central districts, Everton shows the most marked increase; the increase in West Derby (West) is practically the same as it was during the ten years ending 1891. Perhaps the most noteworthy circumstance, however, is that the decrease in Scotland District has practically ceased, whilst that in Exchange and Abercromby have been markedly arrested. Toxteth shows a slight falling off in the old Municipal district.

A correct enumeration of the people involves much care and labour. In Liverpool considerable pains were taken for some time beforehand to ensure that the enumeration should be correct. The Superintendents and District Registrars spared no effort to effect this end. The enumerators, 512 in number, were carefully selected, and a large proportion of them was furnished by the staff of the School Board, the Select Vestry, the Boards of Guardians, the Health Committee, and other public Departments. Besides this, teachers of the Board and denominational Schools gave instruction to the elder scholars upon the objects of the Census and the way in which the papers should be filled up. The Liverpool Police and other public bodies also obtained information upon which a very correct forecast of the population was based. So far as Liverpool was concerned, the pains and care bestowed on taking the Census have made it as accurate as it could possibly be.

Accuracy in this matter is necessary for many reasons. The total population is the foundation upon which all figures relating to births, deaths, and the incidence of disease are based, and if this foundation is inaccurate, all deductions from the figures are worse than useless; but if it is fairly accurate it furnishes undoubtedly the simplest and most popular way in which the results of sanitary measures can be gauged.

There is no duty imposed upon the City Council which can compare in importance with the care of the health of the people; it is to promote this that the labours of Committees are directed, and that large sums of money are spent.

The recent Census of the City shows that this labour and expenditure have been followed by a reduction in the sick-rate, and by a reduction in the death-rate. The following pages indicate the direction in which the health and comfort of the inhabitants have been promoted.

There is no reason to doubt that importance will always be attached to the returns relating to sickness and mortality, and it is absolutely essential in the interests of sanitary progress that the basis upon which these returns rest should be accurate. Unfortunately the Census is only taken once in ten years, and in the intervals the populations are guessed at by the Registrar-General by a process which again and again has resulted in the most hopeless mistakes. At the present time the health returns published from the Registrar-General's Office may be regarded as approximately correct, but there is no disguising the fact that for years past the returns issued by the Registrar-General's Department relating to Liverpool, and published far and wide, have been inaccurate and misleading, and so far as dependence has been placed upon them, their tendency has been not only to cripple and retard the sanitation of the City, but to affect prejudicially its commercial progress.

The circumstance illustrates the necessity for a quinquennial census—a necessity emphasised by the resolutions of Statistical Societies familiar with the question, but in the meantime every available means ought to be taken to ensure the accuracy of published figures, more especially in the directions of correcting estimates of population, which can very easily be done.



The results of the Census taken on the 31st March, 1901, show that during the 10 years ending 1901, there has been an increase in the population of the City of Liverpool of 55,410.

The accompanying table indicates the extent to which changes in the numbers of the people have taken place, and it also shows the changes which had occurred during the previous intercensal period:—

(A) Changes during last intercensal period.

Population.

DISTRICT.					1891. Census.	1901. Census.	Increase.	Decrease.
Scotland	...	...	...	...	53,713	52,966	...	747
Exchange	...	...	...	...	47,738	41,999	...	5,739
Abercromby	...	...	...	...	55,530	52,440	...	3,090
Everton	...	...	...	...	110,556	121,469	10,913	...
Kirkdale	...	...	...	...	66,131	69,386	3,255	...
West Derby—West	...	...	...	...	76,971	86,694	9,723	...
Toxteth	...	...	...	...	107,341	106,043	...	1,298
					517,980	530,997	23,891	10,874
Walton	...	...	...	...	40,892	54,615	13,723	...
West Derby—East	...	...	...	...	35,866	43,856	7,990	...
Wavertree...	...	...	...	...	13,764	25,303	11,539	...
Sefton Park (late Toxteth Rural)	...	...	...	...	21,046	30,187	9,141	...
					111,568	153,961	42,393	...
Total	...	...	...	...	629,548	684,958	66,284	10,874

Total Increase = 55,410.

## (B) Changes during previous intercensal period.

## Population.

DISTRICT.	1881. Census.	1891. Census.	Increase.	Decrease.
Scotland ... ..	70,606	53,713	...	16,893
Exchange ... ..	72,007	47,738	...	24,269
Abercromby ... ..	67,551	55,530	...	12,021
Everton ... ..	109,812	110,556	744	...
Kirkdale ... ..	58,145	66,131	7,986	...
West Derby—West ... ..	67,727	76,971	9,244	...
Toxteth ... ..	106,660	107,341	681	...
	552,508	517,980	18,655	53,183
Walton ... ..	18,536	40,892	22,356	...
West Derby—East ... ..	31,778	35,866	4,088	...
Wavertree... ..	11,097	13,764	2,667	...
Sefton Park ... .. (late Toxteth Rural)	10,368	21,046	10,678	...
	71,779	111,568	39,789	...
Total ... ..	624,287	629,548	58,444	53,183

Total Increase = 5,261.

The following table indicates the changes which have taken place in the number of inhabited houses in each of the Districts of the City, also the changes which had occurred during the previous intercensal period.

(A) Changes during last intercensal period.

Inhabited Houses.

DISTRICT.					1891.	1901.	Increase.	Decrease.
Scotland	...	...	...	...	9,061	8,428	...	633
Exchange	...	...	...	...	8,176	6,726	...	1,450
Abercromby	...	...	...	...	8,056	7,487	...	569
Everton	...	...	...	...	19,981	21,724	1,743	...
Kirkdale	...	...	...	...	11,368	12,034	666	...
West Derby—West	...	...	...	...	15,231	17,363	2,132	...
Toxteth	...	...	...	...	19,361	19,635	274	...
					91,234	93,397	4,815	2,652
Walton	...	...	...	...	7,430	10,112	2,682	...
West Derby—East	...	...	...	...	6,826	8,703	1,877	...
Wavertree...	...	...	...	...	2,641	5,378	2,737	...
Sefton Park (late Toxteth Rural)	...	...	...	...	3,852	5,879	2,027	...
					20,749	30,072	9,323	...
Total	...	...	...	...	111,983	123,469	14,138	2,652

Total Increase = 11,486.



**(B) Changes during previous intercensal period.  
Inhabited Houses.**

DISTRICT.	1881.	1891.	Increase.	Decrease.
Scotland ... ..	10,717	9,061	...	1,656
Exchange ... ..	11,301	8,176	...	3,125
Abercromby ... ..	9,616	8,056	...	1,560
Everton ... ..	19,183	19,981	848	...
Kirkdale ... ..	9,793	11,368	1,575	...
West Derby—West ... ..	12,752	15,231	2,479	...
Toxteth ... ..	18,995	19,361	366	...
	92,307	91,234	5,268	6,341
Walton ... ..	3,032	7,430	4,398	...
West Derby—East ... ..	6,146	6,826	680	...
Wavertree... ..	2,050	2,641	591	...
Sefton Park ... .. (late Toxteth Rural)	1,682	3,852	2,170	...
	12,910	20,749	7,839	...
Total ... ..	105,217	111,983	13,107	6,341

Total Increase = 6,766.

Number of persons per inhabited house :—

1881	-	-	-	-	-	= 5.9
1891	-	-	-	-	-	= 5.6
1901	-	-	-	-	-	= 5.5

It will be noted that during the 10 years preceding 1891, whilst the increase in the suburban townships (since incorporated) was 39,789, only four of the City districts showed any increase at all, viz., Everton, Kirkdale, West Derby and Toxteth, the increase in these districts amounting to 18,655, but on the other hand, the three remaining districts, Scotland, Exchange, and Abercromby, show a decrease amounting to 53,183.

The following table indicates the ages of Persons, Males and Females, in the City of Liverpool, at the Census, 1901 :—

	All Ages.	Under 1 year.	Years. 1 to 2	Years. 2 to 3	Years. 3 to 4	Years. 4 to 5	Total under 5 years.
Males ... ..	330,665	9,508	8,270	8,049	7,980	7,804	41,611
Females ... ..	354,293	9,558	8,242	8,213	8,095	7,965	42,073
Total ... ..	684,958	19,066	16,512	16,262	16,075	15,769	83,684
Ages.		Years. 5 to 10	Years. 10 to 13	Years. 13 to 14	Years. 14 to 15	Years. 15 to 16	Years. 16 to 17
Males ... ..		36,727	20,833	6,723	6,986	6,559	6,686
Females ... ..		37,126	20,870	6,872	6,911	6,891	6,992
Total ... ..		73,853	41,703	13,595	13,897	13,450	13,678
Ages.		Years. 17 to 18	Years. 18 to 19	Years. 19 to 20	Years. 20 to 21	Years. 21 to 25	Years. 25 to 30
Males ... ..		6,378	6,621	6,284	6,533	25,724	29,813
Females ... ..		6,919	7,143	6,988	7,255	29,648	33,664
Total ... ..		13,297	13,764	13,272	13,788	55,372	63,477
Ages.		Years. 30 to 35	Years. 35 to 40	Years. 40 to 45	Years. 45 to 50	Years. 50 to 55	Years. 55 to 60
Males ... ..		25,185	22,150	19,525	15,882	13,206	9,571
Females ... ..		27,646	23,856	20,061	16,411	14,036	10,578
Total ... ..		52,831	46,006	39,586	32,293	27,242	20,149
Ages.		Years. 60 to 65	Years. 65 to 70	Years. 70 to 75	Years. 75 to 80	Years. 80 to 85	Years. 85 to 90
Males ... ..		8,288	4,566	2,822	1,306	530	135
Females ... ..		9,391	5,684	3,944	2,016	1,041	215
Total ... ..		17,679	10,250	6,766	3,322	1,571	350
Ages.		Years. 90 to 95	Years. 95 to 100	Years. 100 and upwards.			
Males ... ..		18	2	1	...	...	...
Females ... ..		48	12	2	...	...	...
Total ... ..		66	14	3	...	...	...



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STATISTICS  
RELATING TO  
BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,  
ZYMOTIC DISEASES AND THEIR INCIDENCE.

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# STATISTICS

OF THE  
POPULATION AND  
INDUSTRY OF THE  
UNITED STATES

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## BIRTHS.

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During the fifty-two weeks of the year 1901 (terminating on Saturday, December 28th, 1901) the returns of the local registrars recorded 21,980 births within the city. Of the total births 11,151 were males and 10,829 were females.

The birth-rate in the City of Liverpool is considerably above the average of the great towns. During 1901 the birth-rate was 32·0 per 1,000 of the population ; the average of the previous five years (1896-1900) being 33·3. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

The variations in the birth-rate and the distribution of the births in the different wards and districts of the city, which together comprise 13,236 acres ( $20\frac{1}{2}$  square miles), are indicated upon the accompanying plan-map (see Appendix), and have also been arranged in the following tables:—



## BIRTHS.

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		1901.		Corrected Average Rate per 1000 during the 5 years 1896-1900.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Births.	Rate per 1000	
Scotland .....	274	279	245	242	245	226	263	270	2044	38·6	39·7
Exchange .....	156	179	135	151	145	122	150	142	1180	28·2	30·9
Abercromby .....	224	193	195	202	194	175	205	177	1565	29·9	31·5
Everton .....	546	578	525	485	497	542	542	501	4216	34·5	37·1
Kirkdale .....	275	296	301	269	293	287	302	269	2292	33·0	34·8
West Derby—West .....	388	347	392	348	368	349	374	355	2921	33·6	36·3
Toxteth .....	403	473	440	415	405	385	396	439	3356	31·6	32·9
Walton .....	234	189	215	241	226	220	220	197	1742	31·6	32·5
West Derby—East .....	157	150	153	158	142	144	135	123	1162	26·4	24·7
Wavertree .....	107	116	115	111	131	94	104	110	888	34·5	28·1
Sefton Park .....	85	81	80	67	82	64	87	68	614	20·1	22·8
(late Toxteth Rural)											
City.....	2849	2881	2796	2689	2728	2608	2778	2651	21980	32·2	33·3

The birth-rate, though declining, is still very high in the old parts of the city, in some instances higher than in the rapidly-extending areas in the suburbs. The high birth-rate amongst the poorer classes no doubt partially results from very early marriage.

The following table shows the population, number of births, and the corrected birth-rate per 1,000 during the last twenty-five years:—

Year.	Population.	No. of Births.	Rate per 1,000.
1877	527,083	20,333	38·6
1878	532,681	20,612	38·7
1879	538,338	20,844	38·7
1880	544,056	20,783	38·2
1881	551,617	20,762	37·6
1882	548,065	20,498	37·4
1883	544,547	19,907	36·6
1884	541,031	20,071	37·1
1885	537,548	19,464	36·2
1886	534,088	19,559	36·6
1887	530,649	18,414	34·7
1888	527,233	17,777	33·7
1889	523,838	17,676	33·7
1890	520,466	17,592	33·8
1891	518,302	17,832	34·4
1892	519,590	17,758	34·2
1893	520,882	18,328	35·2
1894	522,178	17,893	34·3
*1895	*652,523	*22,006	*33·7
1896	658,050	21,943	33·3
1897	663,633	22,280	33·6
1898	669,243	22,227	33·2
1899	674,912	22,488	33·3
1900	680,628	22,762	33·4
1901	686,332	21,980	32·2

\* City area extended.

The foregoing table shews the remarkable decrease in the birth-rate during the last 25 years. This decrease has, however, been even more pronounced in other parts of the country, and notwithstanding the decline in Liverpool, the birth-rate in this City is still amongst the highest, being exceeded by only five of the large towns.

The following table shows the *Natural* increase or decrease of population, that is, the increase or decrease in the number of births over deaths during the year 1901, in the several districts of the City. In only one district, viz., Exchange, is any decrease shown; the nett result in the City showing an increase of births over deaths of 6,483.

DISTRICTS.							Births.	Deaths.	Number of Births over Deaths.	Number of Deaths over Births.
Scotland	...	...	...	...	...	...	2,044	1,694	350	—
Exchange	...	...	...	...	...	...	1,180	1,299	—	119
Abercromby	...	...	...	...	...	...	1,565	1,099	466	—
Everton	...	...	...	...	...	...	4,216	2,902	1,314	—
Kirkdale	...	...	...	...	...	...	2,292	1,438	854	—
West Derby—West	...	...	...	...	...	...	2,921	1,736	1,185	—
Toxteth	...	...	...	...	...	...	3,356	2,349	1,007	—
Walton	...	...	...	...	...	...	1,742	824	918	—
West Derby—East	...	...	...	...	...	...	1,162	763	399	—
Wavertree	...	...	...	...	...	...	888	411	477	—
Sefton Park (late Toxteth Rural)	...	...	...	...	...	...	614	364	250	—
City	...	...	...	...	...	...	21,980	14,879	7,101	119
Hospitals (Residences outside City)	...	...	...	...	...	...	—	618	—	—
Total	...	...	...	...	...	...	21,980	15,497	6,483	—



The following table gives the estimated population, number of births recorded and birth-rate of thirty-six of the large towns of the United Kingdom.

TOWNS.							Estimated Popula- tion in the middle of the year 1901.	Births in 52 weeks ending 28th Dec., 1901.	Annual Rate to 1,000 of population.
London	...	...	...	...	...	...	4,543,757	131,278	28·8
West Ham	...	...	...	...	...	...	268,868	9,435	35·0
Croydon	...	...	...	...	...	...	134,665	3,548	26·3
Brighton	...	...	...	...	...	...	123,668	2,979	24·0
Portsmouth	...	...	...	...	...	...	189,907	5,267	27·7
Plymouth	...	...	...	...	...	...	107,974	2,889	26·7
Bristol	...	...	...	...	...	...	329,831	8,877	26·9
Cardiff	...	...	...	...	...	...	165,308	5,206	31·4
Swansea	...	...	...	...	...	...	94,618	2,838	29·9
Wolverhampton	...	...	...	...	...	...	94,467	2,990	31·6
Birmingham	...	...	...	...	...	...	523,284	16,735	31·9
Norwich	...	...	...	...	...	...	111,997	3,177	28·3
Leicester	...	...	...	...	...	...	212,498	6,155	28·9
Nottingham	...	...	...	...	...	...	240,400	6,812	28·3
Derby	...	...	...	...	...	...	106,076	2,939	27·7
Birkenhead	...	...	...	...	...	...	111,203	3,219	28·9
Bolton	...	...	...	...	...	...	168,748	4,627	27·4
Manchester	...	...	...	...	...	...	544,934	15,806	29·0
Salford	...	...	...	...	...	...	221,526	6,457	29·1
Oldham	...	...	...	...	...	...	137,382	3,374	24·5
Burnley	...	...	...	...	...	...	97,295	2,657	27·3
Blackburn	...	...	...	...	...	...	127,714	3,381	26·4
Preston	...	...	...	...	...	...	113,117	3,432	30·3
Huddersfield	...	...	...	...	...	...	94,998	2,175	22·8
Halifax	...	...	...	...	...	...	105,113	2,353	22·3
Bradford	...	...	...	...	...	...	280,161	6,464	23·0
Leeds	...	...	...	...	...	...	430,489	12,897	29·9
Sheffield	...	...	...	...	...	...	382,129	12,586	32·9
Hull	...	...	...	...	...	...	241,622	8,017	33·1
Sunderland	...	...	...	...	...	...	146,937	5,189	35·3
Gateshead	...	...	...	...	...	...	110,492	4,059	36·7
Newcastle-on-Tyne	...	...	...	...	...	...	215,516	6908	32·0
Edinburgh	...	...	...	...	...	...	317,885	7,879	24·7
Glasgow	...	...	...	...	...	...	764,423	24,118	31·5
Dublin	...	...	...	...	...	...	375,076	10,298	27·4
<b>LIVERPOOL</b>	...	...	...	...	...	...	<b>686,332</b>	<b>21,980</b>	<b>32·0</b>

## DEATHS.

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The most interesting, as well as the most important statistics are those dealing with mortality and its causes. These are set forth in the ensuing pages; the total death-rate of the city during the year was 21·6 per 1,000; the average rate during the seven years (1895-1901) since the extension of the city boundaries was 22·9.

The deaths of 4 residents of the City in the Infectious Diseases Hospital, Fazakerley, have been added to the total deaths within the City, and the deaths in public institutions of 618 non-residents, equal to 0·9 per 1,000, have been eliminated. On comparing the death-rates of one locality with those of another, it is absolutely necessary, before any correct conclusions can be drawn from the comparison, to ascertain whether the populations of the two localities are comparable in point of age; if they are not, then certain corrections must be made.

Quite apart from conditions of sanitation, mortality varies widely at different age-periods, as the next table shows; consequently the death-rate of the community is largely influenced by the proportions living at each age-period; the effect of a high birth-rate in raising the crude death-rate is well seen by the table, which also indicates plainly enough how the crude returns are modified if there happens to be an unusual proportion at any one age-period. A hospital for foundlings, or a home for aged people, will have a very different influence upon mortality returns than a school containing an equal number of boys from 10 to 15 years of age.

It will be seen from the table that if, for example, we could conceive that the whole population of Liverpool consisted of persons between the ages of 20 and 30, the death-rate last year would have been 5·4 per 1,000; if, on the other hand, we could conceive that it consisted entirely of people under 1 year of age, the death-rate would be about 214·4 per 1,000, and if above 60 years, 73·2 per 1,000. It is plain that any variation in the *proportions* living at the respective age periods would affect the death-rate, and this with absolutely no change whatever in the condition of municipal sanitation.



THE FOLLOWING TABLE SHOWS THE ANNUAL RATE OF MORTALITY PER 1,000 AT EACH OF TWELVE AGE-PERIODS DURING LAST YEAR IN LIVERPOOL, AS WELL AS THE TOTAL NUMBER OF DEATHS.

THE DIFFERENCES WHICH THE FIGURES SHOW ARE VERY STRIKING:—

1901.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 and upwards.	Total at all Ages.
Rate of Mortality per 1,000 living at ages indicated.	214.4	82.5	19.7	6.3	3.3	5.4	10.7	18.6	31.9	55.7	99.3	186.1	21.6
Total Number of Deaths at each Age Period.	4089	1363	950	466	454	720	1054	1339	1512	1557	1002	373	14879



The following table gives the total number of deaths occurring in each of the four quarters of the year, allocated to each district:—

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Year.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total Deaths.
Scotland .....	206	255	201	192	233	204	212	191	1694
Exchange .....	191	159	169	148	164	141	175	152	1299
Abercromby .....	145	145	139	138	133	139	142	118	1099
Everton .....	399	417	325	308	416	406	321	310	2902
Kirkdale .....	185	168	162	153	220	223	174	153	1438
West Derby (West)..	237	237	203	194	256	239	194	176	1736
Toxteth .....	346	320	279	277	292	291	271	273	2349
Walton.....	89	106	94	91	128	123	100	93	824
West Derby (East)...	100	111	91	94	99	96	90	82	763
Wavertree .....	55	54	41	43	55	56	48	59	411
Sefton Park .....	48	50	39	43	49	42	46	47	364
(late Toxteth Rural)									
Deaths of Non-Resi- dents of the City in Workhouses and Hospitals.....	91	63	102	63	82	63	102	52	618
Total Deaths in City	2092	2085	1845	1744	2127	2023	1875	1706	15,497

Deaths of residents of the City in Public Institutions have been transferred to the districts from whence they came.

DEATHS IN PUBLIC INSTITUTIONS.

Deaths in Public Institutions are referred to the Wards from whence the patients came, but the following table shows that the deaths of 4,231 persons occurred in the undermentioned Institutions for the treatment of the sick:—

					Total Deaths.	Non-Residents of City.
Parish Workhouse	...	...	...	...	1,160	57
Royal Infirmary	...	..	...	...	314	90
Children's Infirmary	...	...	...	...	106	15
Lying-in Hospital	...	...	...	...	19	3
Consumption Hospital	...	...	...	...	10	1
Hahnemann Hospital	...	...	...	...	18	2
David Lewis Northern Hospital	...	...	...	...	176	28
Stanley Hospital	...	...	...	...	131	25
Royal Southern Hospital	...	...	...	...	223	52
Mill Road Infirmary	...	...	...	...	633	80
Hospital for Women	...	...	...	...	23	13
City Hospital North	...	...	...	...	110	4
Do. South	...	...	...	...	54	2
Do. Parkhill	...	...	...	...	103	3
Do. East, Mill Lane	...	...	...	...	11	—
Do. Priory Road	...	...	...	...	10	4
Do. Fazakerley	...	...	...	...	4	—
Walton Workhouse	...	...	...	...	594	136
Belmont Road Workhouse	...	...	...	...	64	30
St. Joseph's Home	...	...	...	...	32	25
Toxteth Workhouse	...	...	...	...	329	11
Home for Incurables	...	...	...	...	7	4
Turner Memorial Home	...	...	...	...	6	3
St. Augustine's Home	...	...	...	...	23	5
Kirkdale Home	...	...	...	...	7	2
Walton Gaol	...	...	...	...	16	10
Other Public Institutions	...	...	...	...	48	13
					4,231	618

From the returns made as to the residences of these persons 3,613 of the deaths in these establishments are classified in the districts from whence the patients were removed, viz.:—511 under Scotland district,



542 under Exchange district, 360 under Abercromby district, 696 under Everton, 278 under Kirkdale, 363 under West Derby (West), 512 under Toxteth, 133 under Walton, 107 under West Derby (East), 55 under Wavertree, and 56 under Sefton Park (late Toxteth Rural); 472 were non-residents, who had sought relief in Liverpool Institutions, and the remainder, 146 were waifs, strangers to the city, whose previous residences were unknown.

It is noteworthy that in Liverpool the proportion of deaths which take place in Public Institutions is larger than is the case in other towns, and the fact is an interesting one, as something may be learned of the social conditions of a locality when so large a proportion in times of sickness seek refuge in public institutions, more especially in the work-houses. Generally it implies poverty and want; but on the other hand it may also, and no doubt does, imply that the institutions have a wide reputation, and attract sufferers to them not only from within the city, but from a distance. Probably both of these conditions exercise influence, but be that as it may, the fact remains that there is no provincial city in which so large a proportion of the deaths take place in workhouses and hospitals.

The following table shows the percentage of deaths which have occurred in public institutions during the 5 years, 1897-1901, in the great towns of Birmingham, Leeds, Manchester and Liverpool:—

	1897.	1898.	1899.	1900.	1901.	Average.
Birmingham .....	14·0	15·3	16·1	20·4	19·8	17·1
Leeds .....	10·8	11·8	12·4	12·5	14·0	12·3
Manchester .....	20·0	19·0	19·7	21·9	23·3	20·8
Liverpool .....	23·1	24·7	25·3	25·9	27·3	25·2

The results of the allocation of deaths in public institutions to the districts from whence the patients had been removed, and the addition



of these to the number of deaths of residents in those various districts, are shown in the following table, from which a calculated rate of mortality per 1,000 per annum of the inhabitants has been made. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

DISTRICTS.	Population.	1901.		Corrected Average Rate per 1000 during the five years 1896-1900.
		Deaths.	Rate per 1000	
Scotland ... ..	52,934	1,694	32·0	33·2
Exchange ... ..	41,831	1,299	31·0	35·3
Abercromby ... ..	52,301	1,099	21·0	23·0
Everton ... ..	121,953	2,902	23·8	24·3
Kirkdale ... ..	69,410	1,438	20·7	21·4
West Derby (West) ... ..	86,882	1,736	19·9	21·4
Toxteth ... ..	105,922	2,349	22·1	22·8
Walton ... ..	54,977	824	14·9	15·6
West Derby (East) ... ..	44,016	763	17·3	16·7
Wavertree ... ..	25,670	411	16·0	14·4
Sefton Park (late Toxteth Rural) ... ..	30,436	364	11·8	11·7
City ... ..	686,332	14,879	21·6	22·7

The District Registrars' Returns show that there were 25 deaths (21 of women and 4 of men) at the age of 90 and upwards, viz., 2 males and 5 females at 90, 6 females at 91, 1 male and 4 females at 92, 1 male at 93, 1 female at 94, 2 females at 95, 1 female at 98, 1 female at 99, and 1 female at 102.

The death-rate per 1,000 for 1901 in each of the districts of the city is indicated upon the appended map. Scotland and Exchange districts, it must be remembered, contain a great number of common lodging-houses, some of which are resorted to by non-residents of the districts, persons of very migratory habits, and often indigent and broken down. This class tends to swell the mortality of these two districts.

The following table gives the estimated population, the number of deaths recorded, death-rate, and population per acre of thirty-six of the large towns of the United Kingdom :—

TOWNS.	Estimated Population in the middle of the year 1901.	Deaths in 52 weeks ending 28th Dec., 1901.	Annual Rate to 1000 of Popula- tion.	Population per Acre.
London ... ..	4,543,757	79,924	17·5	60·7
West Ham ... ..	268,868	4,787	17·7	57·4
Croydon ... ..	134,665	1,728	12·8	14·9
Brighton ... ..	123,668	2,039	16·4	48·8
Portsmouth ... ..	189,907	3,367	17·7	37·9
Plymouth ... ..	107,974	1,929	17·8	45·8
Bristol ... ..	329,831	5,250	15·9	28·2
Cardiff... ..	165,308	2,597	15·7	25·9
Swansea ... ..	94,618	1,760	18·6	18·2
Wolverhampton ... ..	94,467	1,592	16·8	26·8
Birmingham ... ..	523,284	10,709	20·4	41·4
Norwich ... ..	111,997	2,090	18·6	14·8
Leicester ... ..	212,498	3,366	15·8	24·7
Nottingham ... ..	240,400	4,442	18·4	22·0
Derby ... ..	106,076	1,607	15·1	30·8
Birkenhead ... ..	111,203	2,076	18·6	28·9
Bolton... ..	168,748	3,070	18·1	11·0
Manchester ... ..	544,934	12,012	22·0	42·1
Salford ... ..	221,526	4,786	21·6	42·6
Oldham ... ..	137,382	2,692	19·5	29·0
Burnley ... ..	97,295	1,845	18·9	24·3
Blackburn ... ..	127,714	2,486	19·4	18·3
Preston ... ..	113,117	2,365	20·9	28·5
Huddersfield ... ..	94,998	1,581	16·6	8·0
Halifax ... ..	105,113	1,718	16·3	7·5
Bradford ... ..	280,161	4,696	16·7	12·2
Leeds ... ..	430,489	8,274	19·2	19·9
Sheffield ... ..	382,129	7,781	20·3	16·1
Hull ... ..	241,622	4,488	18·5	26·9
Sunderland ... ..	146,937	3,130	21·3	43·8
Gateshead ... ..	110,492	2,380	21·5	35·3
Newcastle-on-Tyne ... ..	215,516	4,714	21·8	40·2
Edinburgh ... ..	317,885	6,134	19·2	29·8
Glasgow ... ..	764,423	16,114	21·1	60·1
Dublin ... ..	375,076	9,221	24·5	27·8
<b>LIVERPOOL...</b>	<b>686,332</b>	<b>14,879</b>	<b>21·6</b>	<b>51·8</b>

The above table is, with the exception of Liverpool, taken without correction from the Registrar-General's Return.



## INFANTILE MORTALITY.

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The term "infant" is restricted to twelve months of age. It will be seen from the tables, or perhaps more readily from the plan-map appended, that the loss of infant life in the various districts of the City varies widely, the range being from 120 per 1,000 in the district where it is the lowest, up to 241 in the district where it is the highest. Even in the lowest, the death-rate of infants is more than five times as high as the general death-rate of the community.

The high mortality amongst infants, however good their surroundings, and however intelligently maternal care is exercised, arises from many causes: a certain proportion are premature, and cannot all survive, some are born with malformations and other defects which soon terminate their existence; others, the offspring of weakly parents, cannot long survive, and in spite of all care, there is a large proportion who will succumb to one or other of the many ailments to which infancy is susceptible. Making due allowance for these, it may be taken that an annual death-rate amongst infants, of 100 per thousand, is unavoidable, and if this be granted, it follows that anything above this is preventable, although the necessary means to prevent it are so extremely difficult to apply that even in the best districts the loss of infant life is in excess of the standard. In the poorer districts it is plain to the most casual observer that necessary care and attention are not given to infants: nothing is more common than to see the infant handed over to the custody of children or irresponsible persons, whilst the responsible guardians are either at work or engaged in some other occupation. The children of the very poor are in this way exposed to neglect and inattention which is practically unavoidable, and which, together with improper food and scanty clothing, is reflected in the sacrifice of life.

A much closer differentiation, however, is possible in each district than is indicated by these broad distinctions. Thus, in the districts of highest mortality, whilst there are instances in abundance of families in which every child has been reared, there are examples, far too numerous, in which all, or nearly all, of the children have perished in infancy, or before attaining to the age of five years.



In the course of an inquiry into infantile mortality, 1,082 families in which the death of an infant had occurred, were taken consecutively, and certain particulars concerning them ascertained. The total number of children born in these families had been 4,574, but out of that number 2,229 had died, practically all in infancy, representing 487 deaths out of every 1,000 born, a waste of life nearly five times as great as the standard alluded to. But the most remarkable series of excessive fatality occurred in twelve families in which the large total of 117 infants had been born, and no less than 98 had perished in infancy. These extreme examples, it must be remembered, are occurring in families in which, so far as municipal sanitation is concerned, there is very little to choose between them and many of the families who rear all, or nearly all, their children, nor can it be shown or inferred that there was any inherent weakness in the offspring, since those who have survived are of fair physique, not, as a class, suffering under any inherited condition likely to terminate their lives; but it is in the personal and domestic circumstances that the contrasts are most marked.

As regards the nature of the illness to which death is most commonly ascribed, it must be borne in mind that the obscurity of symptoms of illness in infants and young children often leaves a doubt as to which of two or more causes was the primary one. However during the year 1901 the total number of deaths of infants under one year of age was 4,138, developmental diseases accounted for 1,169, premature birth being answerable for 457, and atrophy for 654; general experience justifies the assumption that the atrophy owed its origin in a very large proportion of cases to want of proper feeding. Zymotic diseases accounted for 1,180 deaths, the great majority of them, viz., 892, being due to diarrhœa, the exciting cause being no doubt the same as that in the case of atrophy. Following upon this comes measles with 120 deaths, and whooping-cough with 63 deaths. Under the heading, "Diseases of the digestive system," no less than 398 deaths of infants are recorded, and under that of "Diseases of the respiratory system" 582 deaths of infants are recorded.

A careful investigation has been made into the circumstances of upwards of 1,000 consecutive deaths in districts where infantile mortality was excessive. In 21 per cent. the families may be described as extremely and exceptionally dirty, in 18 per cent. the mothers went out to work, leaving the infant in the custody of others, frequently in



the custody of another child, who could give it no proper attention. About 11 per cent. of the total were living in dwellings unfit for human habitation. In upwards of 25 per cent., and these are the cases where the mortality appears to be highest, the parents are markedly intemperate. Upon this question it hardly needs to be pointed out that if the rearing of young infants requires care, and extreme care, the prospects of life of the infant are poor if the drunkenness of the mother results in its starvation and neglect during the bouts of drunkenness, and they are still poorer when, in addition, injury results from exposure, or from tumbles in the street when the woman, with the child in her arms, is too drunk to stagger along without falling; but direct violence and brutality too often force themselves into prominence to be left out of consideration; the extreme suffering inflicted upon the young by drunkenness, and the loss of life resulting from it, are the saddest features of city squalor, and are beyond the power of sanitation to ameliorate.

Inquests were held on the bodies of 81 infants, under 12 months of age, who had been suffocated—a noticeable reduction.

Always remembering that the natural guardian of the infant is the mother, and that it is only with extreme caution that the efforts of the municipality can be specially directed to the preservation of infant life, many matters present themselves in which action of the municipality cannot be other than beneficial.

It is necessary that some hospital provision should be made for infants suffering from whooping-cough, and in which they could be received together with the mother, or other natural guardian of the child, if necessary. With regard to feeding, there is strong evidence that the efforts of the Health Committee in widely circulating instructions as to the feeding of infants, in employing a large staff to give verbal instructions and to supervise, in establishing sterilised milk depôts at which milk specially prepared for infants can be obtained, in improving the general sanitation of slums, scavenging, &c., have resulted in marked benefit. The great difficulty which is encountered in some towns, owing to the fact that the work of the mother necessitates that the infant should be left often in incompetent hands, is not of relatively frequent occurrence in this City.

The following table indicates the incidence of infantile mortality in the various wards of the City, and during different seasons, also the proportion of deaths under five years to the total deaths.

DISTRICTS.	Quarters.				Total Deaths.	Deaths under 5 years of age.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.
	March.	June	Sept.	Dec.				
Scotland .....	192	150	247	175	1,694	764	45.1	22.2
Exchange .....	134	102	132	106	1,299	474	36.4	24.1
Abercromby .....	81	84	130	76	1,099	371	33.7	15.6
Everton .....	340	259	517	279	2,902	1,395	48.0	19.4
Kirkdale .....	119	124	258	138	1,438	639	44.4	19.5
West Derby (West).	196	157	280	163	1,736	796	45.8	17.8
Toxteth .....	243	226	319	191	2,349	979	41.6	18.8
Walton .....	76	71	161	89	824	398	48.3	15.5
West Derby (East) .	69	63	101	55	763	288	37.7	16.5
Wavertree .....	38	41	66	45	411	190	46.2	16.5
Sefton Park .....	27	21	32	27	364	107	29.3	12.0
(late Toxteth Rural)								
Workhouses & Hospitals (Residences outside City) .....	22	16	23	12	618	73	11.8	...
City .....	1,537	1,314	2,266	1,356	15,497	6,474	41.7	18.8

Deaths in Public Institutions are transferred to the Districts from whence the patients came.



The proportion which the deaths of children under five years of age has borne to the total deaths in the various districts of the City during the last five years is shown in the following table, and also the proportion of deaths of infants under one year of age to every hundred births registered.

DISTRICTS.	1897.		1898.		1899.		1900.		1901.	
	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.
Scotland .....	48.4	24.2	50.4	23.8	49.9	25.1	45.0	24.1	45.1	22.2
Exchange .....	41.4	28.2	37.8	26.6	34.9	27.4	34.0	26.0	36.4	24.1
Abercromby .....	35.2	14.6	33.4	16.1	30.6	14.5	28.3	15.4	33.7	15.6
Everton .....	49.6	21.0	46.8	19.4	46.2	21.0	44.8	19.0	48.0	19.4
Kirkdale .....	46.1	19.3	46.4	17.5	44.7	18.8	44.6	19.5	44.4	19.5
West Derby (West) .....	48.9	18.9	45.5	17.7	42.1	18.8	40.5	16.8	45.8	17.8
Toxteth.....	48.2	20.9	43.5	18.3	43.4	20.4	42.0	19.9	41.6	18.8
Walton .....	44.3	15.3	42.2	12.5	47.0	16.5	42.1	14.0	48.3	15.5
West Derby (East).....	37.6	18.4	30.7	13.9	37.1	16.6	31.9	13.4	37.7	16.5
Wavertree .....	45.9	17.1	46.4	16.8	45.7	16.4	41.1	14.0	46.2	16.5
Sefton Park .....	36.3	14.4	37.0	12.2	34.8	13.6	36.0	10.5	29.3	12.0
(late Toxteth Rural)										
Workhouse and Hospitals (Residences outside of City)	12.6	...	10.2	...	8.6	...	10.8	...	11.8	...
City .....	44.7	20.1	42.1	18.4	42.0	19.9	39.1	18.6	41.7	18.8

## CAUSES OF DEATH.

Full details as to the causes of death are set forth in table *E* in the Appendix; in this table the age at which each death took place and the district in which it occurred will also be found.

The following table gives a classification of the causes of death during the four quarters of the year, grouped under 16 classes.

CLASSES.	QUARTERS.				YEAR 1901.
	March	June.	Sept.	Dec.	
1. Zymotic and Septic Diseases .....	556	423	1,325	453	2,757
2. Diseases of Uncertain or Variable Seat.....	162	165	155	154	636
3. Constitutional Diseases.....	52	42	36	42	172
4. Tubercular Diseases .....	466	469	402	431	1,768
5. Diseases of the Nervous System .....	491	413	358	356	1,618
6. „ „ Circulatory „ .....	284	255	254	255	1,048
7. „ „ Respiratory „ .....	1,078	735	491	766	3,070
8. „ „ Digestive „ .....	220	261	311	223	1,015
9. „ „ Lymphatic „ .....	4	9	7	5	25
10. „ „ Urinary „ .....	120	104	95	107	426
11. „ „ Reproductive „ .....	30	22	17	23	92
12. „ „ Joints, &c. ....	7	8	9	9	33
13. „ „ Integumentary System .....	17	14	9	20	60
14. Dietetic Diseases.....	4	4	3	3	14
15. Developmental Diseases .....	429	428	500	500	1,857
16. Causes investigated at Coroner's Inquests ...	253	232	173	225	883
Causes not specified .....	4	5	5	9	23
All Causes .....	4,177	3,589	4,150	3,581	15,497



## ZYMOTICS.

This class of disease is one calling for special attention, and is dealt with in some detail in the following tables, the first of which shows the localities and the periods of the fatal prevalence of zymotic diseases, and the subsequent tables deal specifically with each form of zymotic disease during 1901 :—

DISTRICTS.	Deaths from all causes.	ZYMOTICS.				
		Quarters.				Per Centage of Zymotic Deaths to Deaths from all causes.
		March.	June.	Sept.	Dec.	
Scotland.....	1,694	67	53	181	67	21·1
Exchange .....	1,299	54	32	78	35	15·3
Abercromby .....	1,099	27	24	56	20	11·5
Everton .....	2,902	136	92	274	101	20·7
Kirkdale .....	1,438	40	35	168	36	19·4
West Derby (West).....	1,736	84	36	177	33	19·0
Toxteth .....	2,349	80	78	166	63	16·0
Walton .....	824	20	23	103	30	21·3
West Derby (East) .....	763	20	23	58	22	16·1
Wavertree .....	411	13	10	33	13	16·7
Sefton Park .....	364	6	4	18	19	12·9
(late Toxteth Rural)						
Workhouses and Hospitals (Residences outside City) .....	618	9	13	13	14	7·9
City .....	15,497	556	423	1,325	453	17·7

Deaths in Public Institutions are transferred to the Districts from whence the patients came.



Zymotic diseases occasioned 2,757 deaths during the year 1901, and accounted for 17·7 per cent. of the total mortality within the City during this period. The death-rate from zymotic diseases per 1,000 was 4·0. The deaths were as follows:—

	QUARTERS.				YEAR 1901.
	March.	June.	Sept.	Dec.	
Total Zymotics .....	556	423	1,325	453	2,757
Smallpox .....	—	4	1	1	6
Measles .....	276	150	33	14	473
Scarlatina .....	36	34	48	77	195
Diphtheria .....	47	32	27	52	158
Membranous Croup .....	8	6	6	5	25
Whooping-cough .....	46	28	22	70	166
Diarrhœa .....	35	76	1,067	91	1,269
Influenza .....	42	16	6	9	73
Plague .....	—	—	—	3	3
Fever {	Typhus .....	6	7	1	14
	Typhoid .....	25	20	69	154
	Simple Continued .....	2	1	—	3
Other Zymotics.....	39	50	68	61	218

NOTE.—Influenza, Measles, and Whooping-cough appear to have been predisposing causes in the case of many deaths primarily ascribed to Respiratory Disease (page 30), inasmuch as one or other of these Zymotics had preceded the fatal illness. See also notes to succeeding tables.

## PLAGUE.

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Throughout the year the wide diffusion of plague, which had followed the lines of seaborne commerce to every quarter of the globe (as will be seen by a study of the accompanying map), caused much anxiety, and the Committees concerned were alive to the importance of using every available measure to strengthen the safeguards against it. The Orders of the Local Government Board, the communications from the shipping community, the interest aroused in the Consular body, all tended to emphasise this. The services of medical men who had gained a practical acquaintance with plague in India were secured, and a considerable number of beds in one of the Hospitals were held in readiness for the accommodation of persons whom it was deemed expedient to isolate.

A circular indicating the salient features of plague had been forwarded to every member of the Medical Profession in the City in September, 1900, and the same circular was again forwarded early in October, 1901. The following are the points to which attention was called:—

“ Plague is generally associated with enlarged lymphatic glands, but not always. In the greater proportion of cases the enlarged glands are those of the groin, both the inguinal and femoral chains of glands being involved; next in frequency come the axillary glands, those in the cervical region are rarely enlarged. It is seldom possible to find a peripheral focus of infection, when it is found it is often a mere pimple.

In an early case, tenderness on pressure over one or other glandular region is found, before the glands enlarge.

There are two types of plague—*Pestis minor* and *Pestis major*.

*Pestis minor* or ambulatory plague. In these cases enlarged and tender glands are found, the constitutional symptoms are malaise and slight rise of temperature. In some such cases of exceptional mildness, advice would probably not be sought.



Pestis major    Three forms are found. (a) Bubonic.    (b) Pneumonic.  
(c) Septicæmic.

(a) The bubonic form in which enlarged lymphatic glands occur is the most common. The buboes may vary in size from an almond to a small orange. At first a hard and enlarged gland is felt, tender on pressure. Afterwards there is generally more or less œdema of the subcutaneous tissue around the gland, and the skin pits on pressure and appears sodden and of a dull red colour. Later on the bubo begins to soften in the centre, and a hard ring is felt round the breaking down mass.

The patient has an anxious and dazed expression; he appears dull and stupid as if under the influence of a drug, and later there may be delirium.

The conjunctivæ are injected.

The temperature varies from 101° to 104° F. or so.

(b) The pneumonic form is generally that of broncho-pneumonia. It may follow on the bubonic form, or it may be primary, in which case buboes are seldom found. It is rapidly fatal.

(c) The septicæmic form has no peculiar characteristics to show that the blood poisoning is caused by specific infection. It is rapidly fatal.

The bubonic form is the only form that would be likely to be diagnosed from the symptoms and signs *per se*. A case of broncho-pneumonia where the constitutional symptoms were severe in proportion to the amount of lung trouble, or a case of septicæmia which could not be accounted for, would suggest the advisability of questioning the family for any other case of illness.

Should plague unfortunately come to this City, it would be very important to discover the first case. To this end you could help if you would bear in mind the possibility, however remote, of (1) cases with enlarged glands appearing suddenly and without apparent cause, or (2) cases of pneumonia, being due to this disease."



From time to time cases simulating plague were reported, but in every case the suspicions were proved to be groundless, excepting in the case of Christopher McC., of No. 5 court, Horatio Street, and in this case the results of the investigation were not considered to be absolutely conclusive. The following are the circumstances of this case:—

Christopher McC., aged about 20, was removed to the Parish Workhouse Hospital on 28th September on account of illness. The Medical Officers who examined him did not regard the case as one of exceptional character, and after a brief treatment in hospital he was ascertained to have some enlarged glands in the groin. He was transferred to the surgical ward of the Workhouse, and on October 2nd the glands were removed. The patient died on October 3rd, and it was the condition of the glands which led to the suspicion that the man might have had plague. The incident however was not regarded seriously, and no communication was made at that time to the Medical Officer of Health. It was only upon subsequent investigation that suspicion was aroused, and no report of the case was made to the Health Office until inquiries were set on foot three weeks later. No further sickness whatever was traceable to or in any way connected with this case.

The following cases were more serious:—

On October 23rd two children named Edward and David W., living at 134, Radcliffe Street, were reported to be suffering from typhus fever. The Ambulance Inspectors found, on arriving at the house, that one of them, David, was dying, and that a third one, James, was ill. Edward and James were removed to hospital. On Friday evening, October 25th, some doubt was raised as to the real nature of the illness of the two children, and the Medical Officer examined the children with Dr. Balfour Stewart. The suspicious character of the illness led to a close investigation in the locality from whence the patient came, and it was at once ascertained that a young woman, named Margaret K., aged 29, residing at 18, Exmouth Street, which is in the immediate rear of W.'s house, was ill. Margaret K. was immediately removed to the hospital, the symptoms being indicative of plague. Some very suspicious circumstances were brought to light in connection with this family. Mrs. K., the mother of the young woman, had died at the same address on September 28th; Rosie K., the sister of Margaret, had died at the same address on October 3rd, each after a brief illness, one at least of them having, it was alleged, complained of tenderness under the armpits. The



deaths in each of these cases was certified to have been due to influenza and disease of the chest. It also transpired that Mrs. L., living at 82, Radcliffe Street, and who was associated with the K. family, and had assisted in washing and laying out the body of Mrs. K., had died suddenly on October 18th. Into each of these fatal cases no further investigation was, of course, possible, as the bodies had been buried for some time. In the case of the boys, Edward and James W., a fatal termination to the illness occurred on October 26th and October 27th respectively. Bacteriological examination proved conclusively that these were cases of plague.

On October 26th it was ascertained that two children, named J., aged respectively 9 and 7 years, were ill at 14, Exmouth Street. They were, with their mother, removed to hospital. One of the children, named Rubina J., died after a short illness, the cause of death being plague.

All of these cases were connected together, either the parents were friends or the children playmates.

Besides the actual cases of plague, a considerable number of persons, either members or friends of these families were at once isolated in hospital.

Persons who had been associated with the sick were detained from business and their wages paid to them.

There was no further extension of the disease.

On November 8th a certificate was issued that the cases remaining in hospital were convalescent and free from infection.

Not the least remarkable circumstance about the outbreak was the social respectability of the families of the persons attacked, some of the adults in fact being employees of leading firms in the millinery business, and the parents of the children being in reasonably comfortable circumstances. The cases were entirely dissociated from the squalor and filth with which plague is commonly connected.

The actual source of the infection of these people was never conclusively traced. So far as their dwellings were concerned, there was no condition in or about them which afforded any explanation whatever.

There was no evidence of rats, although careful examination was made for them and the floors taken up. There was, however, a circumstance which suggested a possible means of transference of the contagion. A police constable, who had charge of the Princes Dock Mortuary, was a lodger with the K. family. To this mortuary are taken the bodies of all persons unknown, or found dead, or who have died in common lodging-houses and such places, and whose relatives and friends cannot be ascertained. It is conceivable that an undiagnosed case of plague may have been conveyed to the mortuary, and the clothing and effects of the deceased person dealt with by the constable in the usual way, and it is also possible that the contagion may have been conveyed in the clothing of the police constable to the house in which he lodged. The closest investigation failed to reveal any more probable explanation than this.

Just as apprehensions of plague had led to a considerable number of cases being reported as suspicious, so the actual presence of plague in the city led to a still larger number of suspected cases being brought to notice, and in each of these cases, however slight the suspicion may have been, yet pending confirmation or otherwise, it was deemed expedient to relax no precaution in regard to them.

Immediately the presence of plague was suspected, a suspicion very rapidly followed by confirmation, a large addition was made to the medical staff for house-to-house visitation and other purposes, and the Committee were fortunate in securing several gentlemen familiar with plague, viz., Dr. Balfour Stewart, Dr. Hanna, Dr. Travis and Dr. Ransome.

The Sanitary Staff was also largely supplemented. The precautions taken in dealing with the more formidable forms of infectious diseases were rigidly applied, every case of sickness reported in the vicinity being specially and carefully examined. Absentees from business and from schools were visited, and lists of employees were obtained in cases in which any connection between the employees and the infected families existed. The homes of these persons were visited, the whole of them being kept under a practically constant supervision until all risk of the possibility of the incubation of plague was at an end. Certain day and Sunday schools were temporarily closed in order to avoid the close contact which attendance at school must necessarily involve.



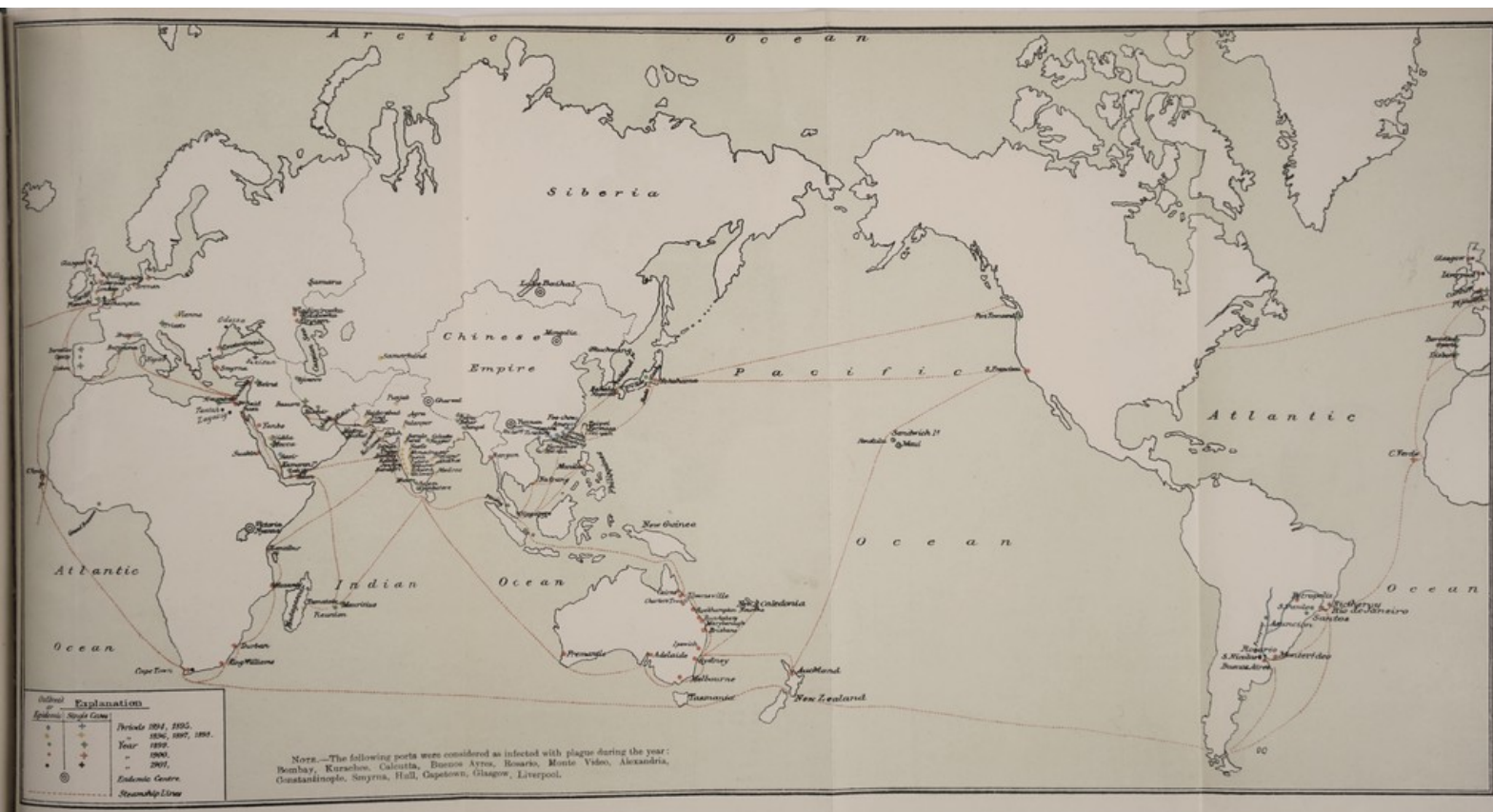
Considerable quantities of articles of apparel, bedding, &c., which might possibly retain infection were destroyed, and the owners fully compensated. The raid against rats was carried on throughout the city in sewers, markets, warehouses, and the co-operation of warehouse keepers, shipping firms and others was obtained. The bodies of rats were examined bacteriologically. (See p. 169.)

With regard to the outbuildings, domestic offices, sewers, back passages, in the infected district, the most thorough and careful cleansing and disinfection with solution of perchloride of mercury, was carried out under the personal supervision of the City Engineer, and there can be no doubt of the value of the prompt and efficient action so taken. The Local Government Board was at once apprised of the outbreak, and the Consular body, under the terms of the Venice Convention, was kept fully informed of the exact position of affairs. At the request of the American Consul, a special examination of outward-bound travellers was made, emigrant houses were closely supervised, and the keepers instructed as to what they were required to do, whilst the railway companies carried out an extended system of cleansing and disinfecting the carriages which had been occupied by emigrants on their way to Liverpool.

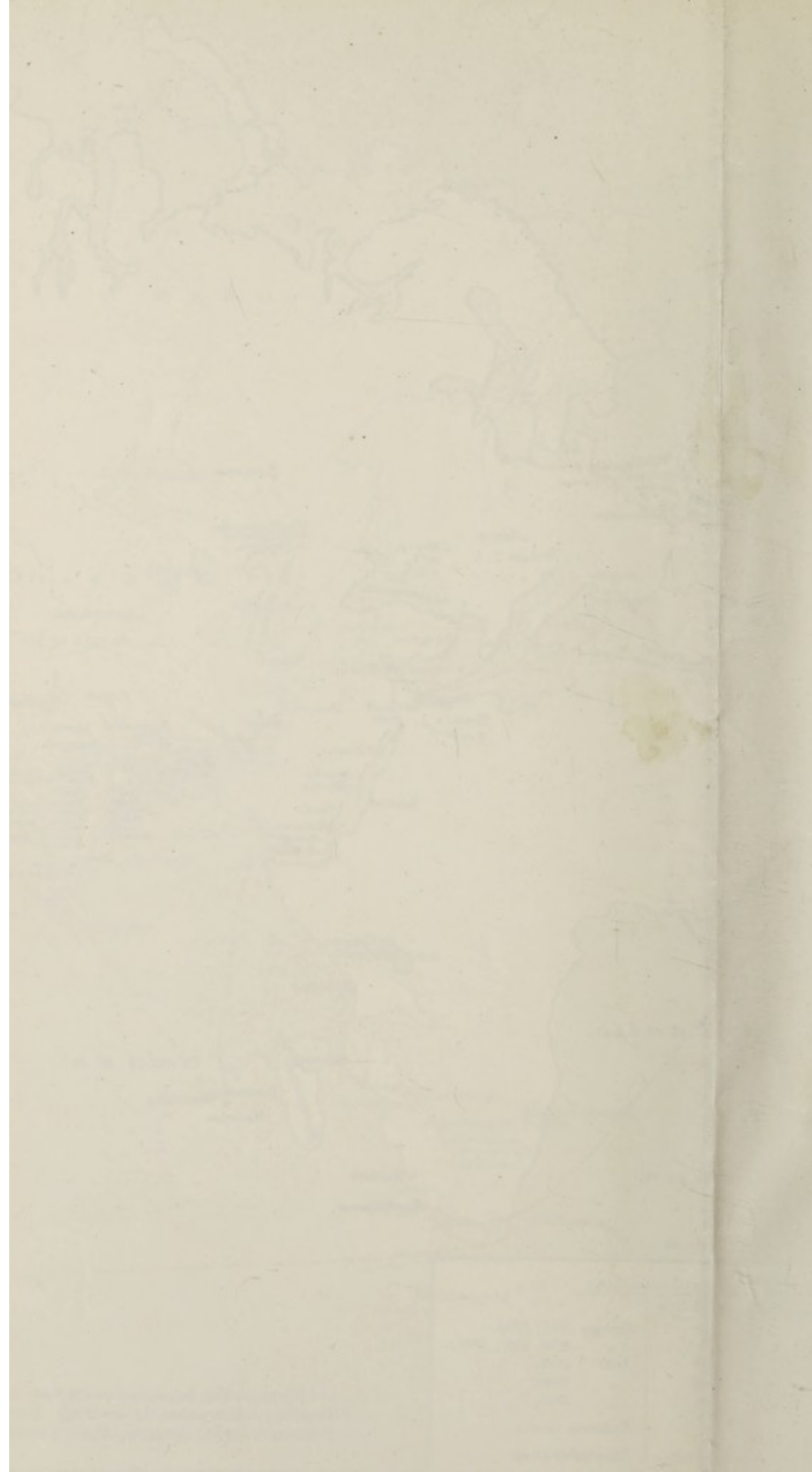
Having regard to the gravity of the points involved, it was not unnatural that the commerce of the port would to a certain extent be hampered, more especially as under the terms of the Venice Convention it became necessary to officially declare Liverpool an infected port. Owing, however, to the great personal interest taken in the circumstances by Consuls, more especially the American Consul, foreign Governments were kept fully informed of the exact position of affairs, and although in one or two countries quarantine was ordered against Liverpool ships, yet, happily, this procedure was had recourse to in only a few instances, and for a very limited period.

The outbreak has not been without its uses, as it proved a severe test upon the preventive measures adopted in the city, and as far as that goes, the results were satisfactory; and again, it should serve to educate public opinion to the fact that plague, even if it is brought into a European port, will not be attended with consequences in any way resembling the destructive epidemics of bygone centuries.

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## SMALLPOX.

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Smallpox was imported into the City from abroad on seven occasions, the most important being that of the ss. "Volta," which arrived with 5 cases on board. (See Report to Port Sanitary Authority, 1901). The ss. "Thebes" and the ss. "Norseman" brought three cases each, and the ss. "Craftsman" two cases, and two other vessels each brought one case. In the seventh case the disease was in an incipient stage, and was not recognised until after the patient reached home. In each case every possible precaution was taken to prevent any extension of the disease by isolation of the infected persons, disinfection of the infected clothing, houses, &c., and revaccination of those who had been exposed to infection, and daily visitation for 14 days to infected houses, to inquire if any further sickness of any kind had arisen. (See page 123.)

Including the imported cases there was a total number of 37 cases notified. They were all isolated in hospital. There were 6 deaths during the year, two being residents, and four non-residents (seamen).

Of the fatal cases 4 were unvaccinated, and two were imperfectly vaccinated.

The following six photographs are fairly illustrative of average cases of smallpox as it affects unvaccinated people and as it affects vaccinated people. Amongst the former class the disease is almost invariably severe, the eruption copious, the suffering great, and it is usually followed by permanent scarring, disfigurement, or even blindness. Amongst the vaccinated, on the other hand, the disease is modified according to the efficiency with which vaccination has been performed, and the length of time which has elapsed since it was done. A vaccinated child, if it contracts smallpox at all, will usually contract it in a form so highly modified that the real nature of the disease is sometimes unrecognised even by medical men. Adults, on the other hand, who have not been vaccinated since infancy will probably suffer more severely, but the great contrast between the vaccinated and unvaccinated cannot be more forcibly indicated than by the photographs. Amongst infirm or aged people, even if they have been vaccinated in infancy, a mild attack of smallpox super-added to their other infirmities may result fatally, just as in the same class a mild attack of bronchitis would be sufficient to destroy life. The chances of recovery from smallpox of unvaccinated infants are unhappily small.



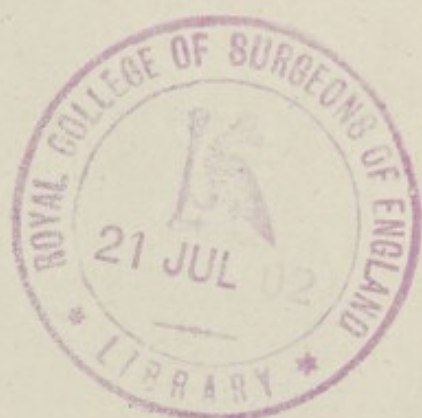
## SMALLPOX.

The next tables show the incidence of smallpox in regard to season and locality, and the ages at death of the fatal cases.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Scotland.....	...	...	...	...	...	...	...	...	...	...	...
Exchange .....	...	...	1	...	...	...	...	...	1	...	1
Abercromby .....	...	...	...	...	...	...	...	...	...	...	...
Everton .....	...	...	...	...	...	...	...	...	...	...	...
Kirkdale.....	...	...	...	...	...	...	...	...	...	...	...
West Derby (West) .....	...	...	...	...	...	...	...	...	...	...	...
Toxteth .....	...	...	...	...	...	...	...	...	...	...	...
Walton .....	...	...	...	...	...	1	...	...	...	1	1
West Derby (East) .....	...	...	...	...	...	...	...	...	...	...	...
Wavertree .....	...	...	...	...	...	...	...	...	...	...	...
Sefton Park .....	...	...	...	...	...	...	...	...	...	...	...
(late Toxteth Rural).	...	...	...	...	...	...	...	...	...	...	...
Hospitals (Residences outside the City)	...	...	3	...	...	...	1	...	4	...	4
City.....	...	...	4	...	...	1	1	...	5	1	6

AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
...	...	..	...	...	...	...	...	3	2	1	...	...	6

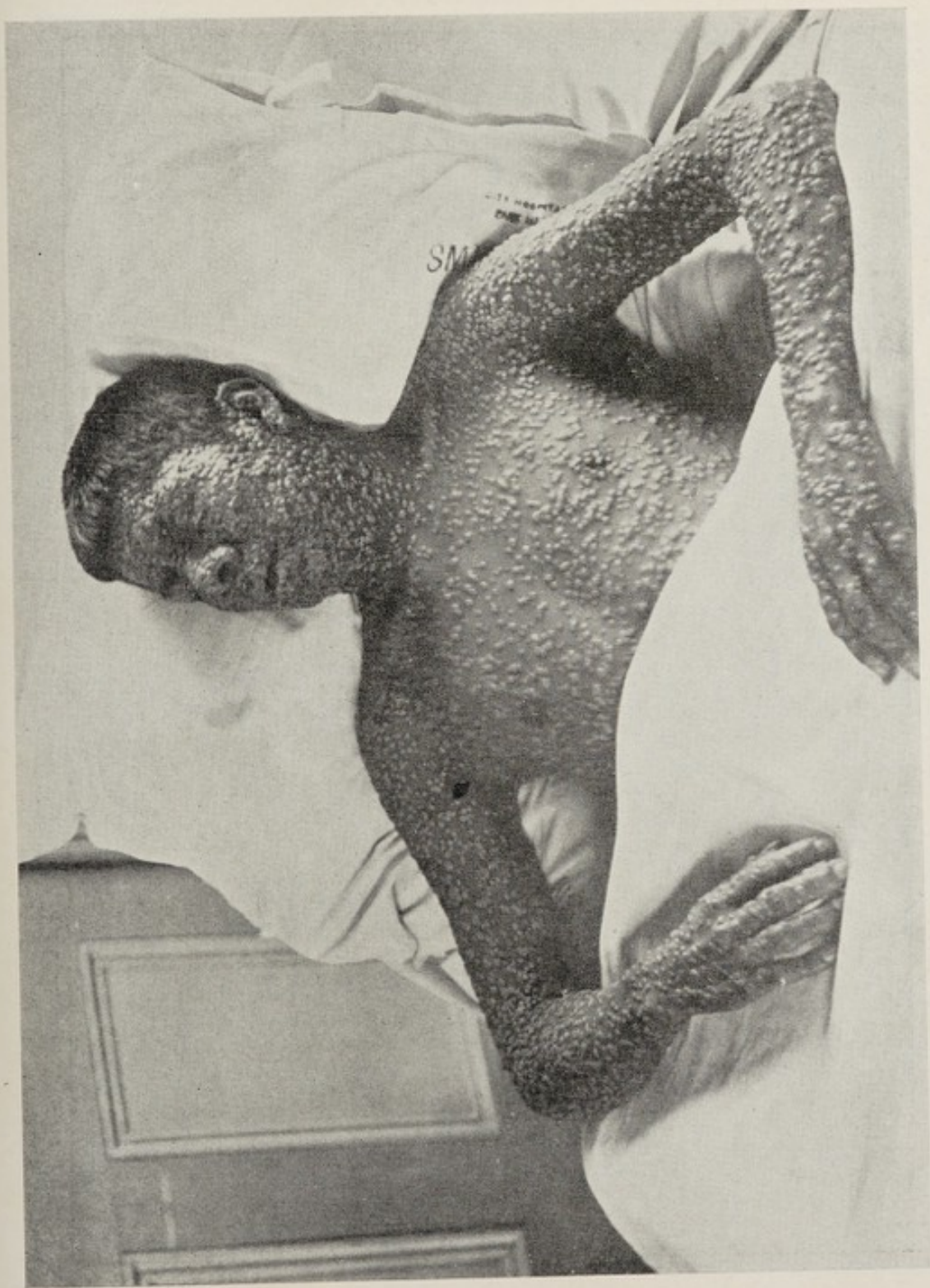
Deaths in Public Institutions are transferred to the Districts from whence the patients came.







AN UN-VACCINATED WOMAN, AGED 23.

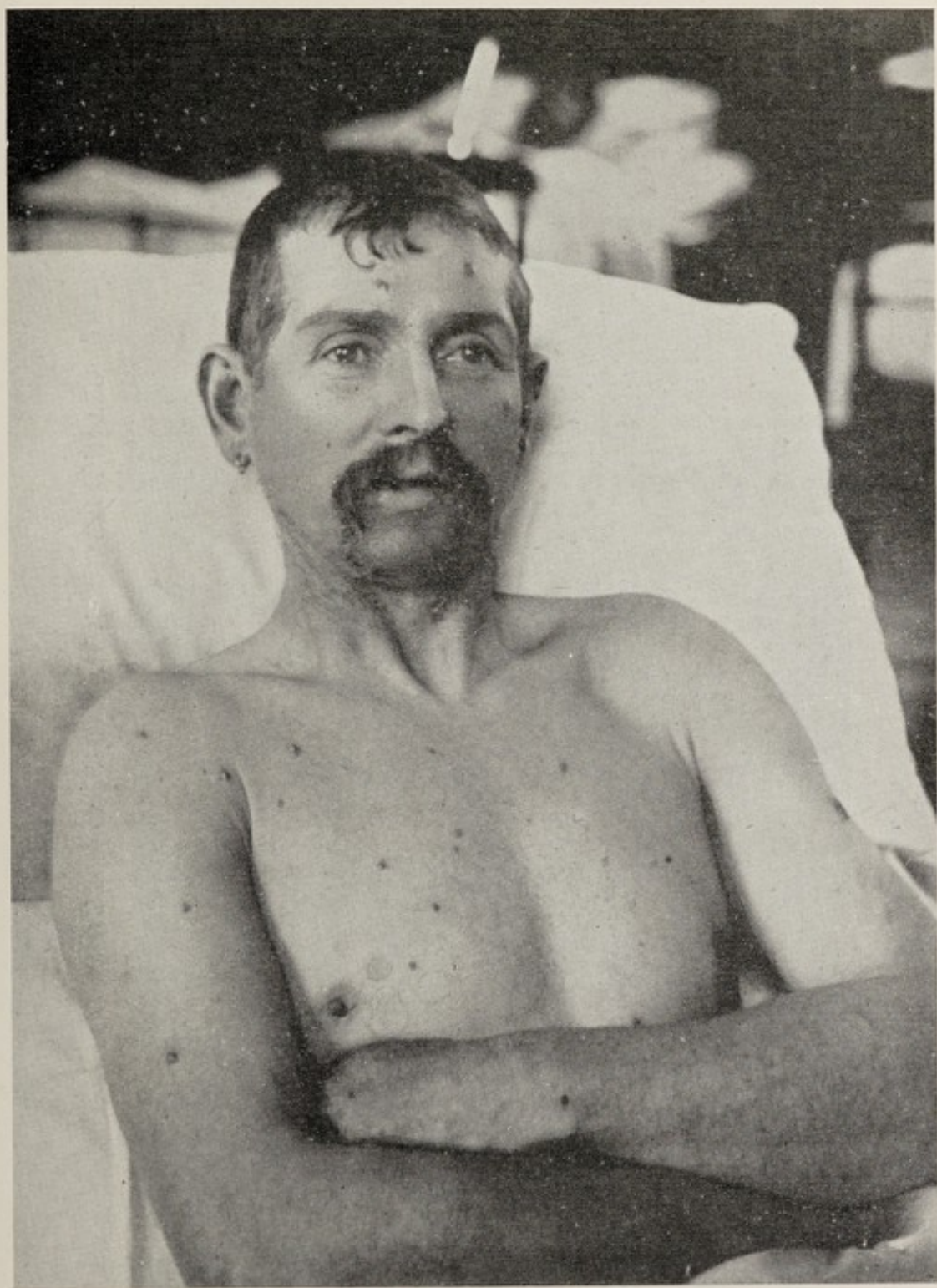


AN UN-VACCINATED MAN, AGED 28.





A WOMAN, AGED 32, VACCINATED IN INFANCY.

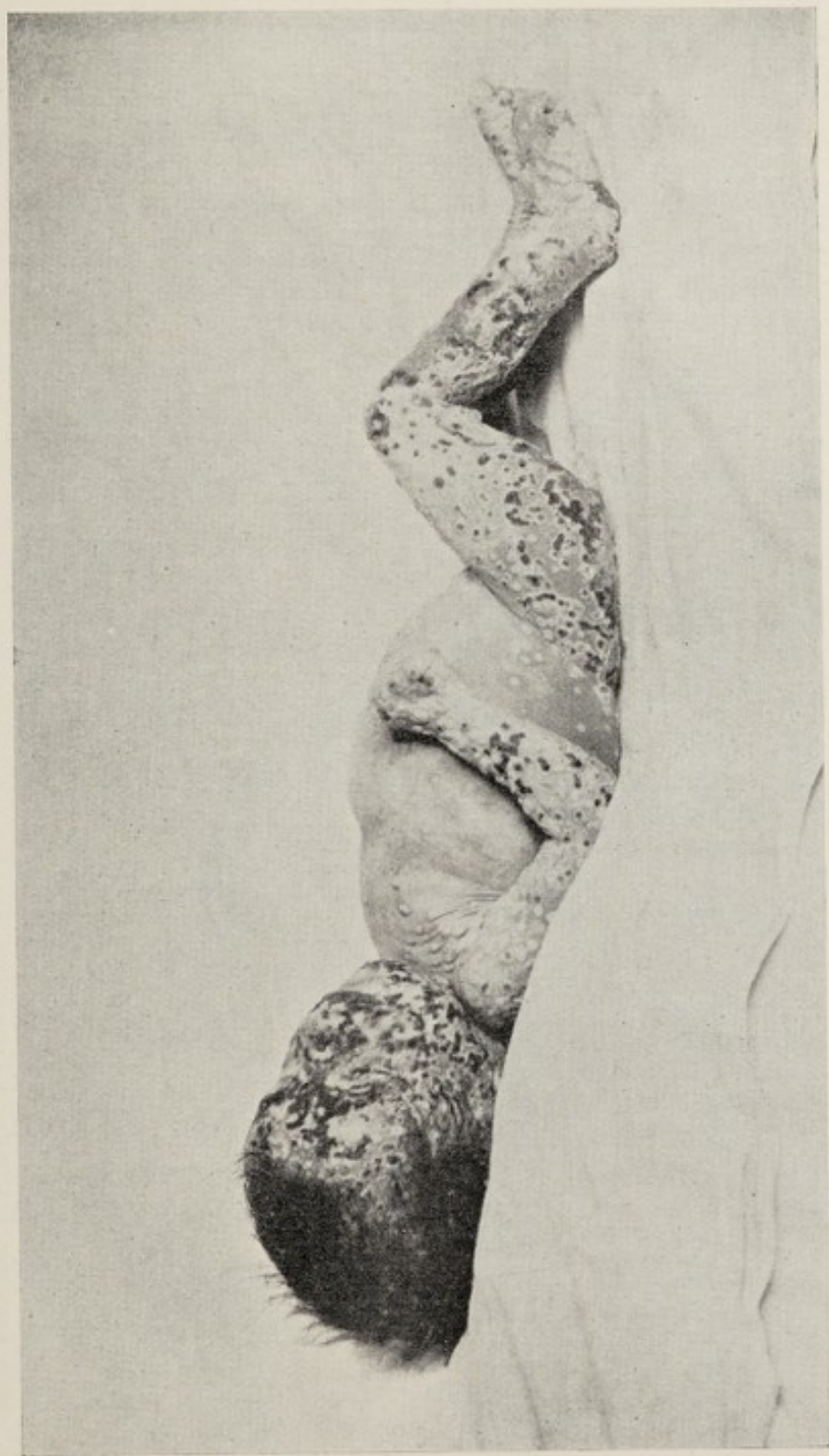


A MAN, AGED 44, VACCINATED IN INFANCY.



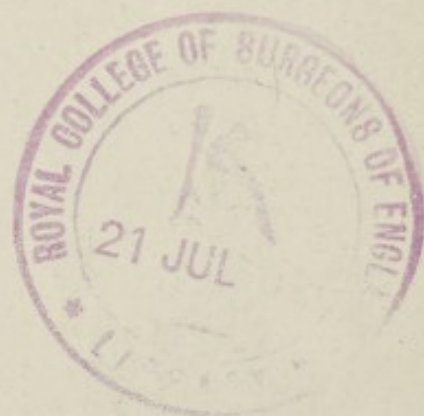


AN INFANT 4 MONTHS OLD, UN-VACCINATED (Dead).



AN INFANT 10 MONTHS OLD, UN-VACCINATED (Dead).





## SMALL-POX DURING THE LAST THIRTY-NINE YEARS.

Years of Increase.	No of Cases.	Deaths.	Years of Subsidence.	No of Cases.	Deaths.
1863	Unrecorded	100			
1864	"	482			
1865	"	459			
1866	"	102			
			1867	Unrecorded	22
			1868	"	18
			1869	"	20
1870	"	174			
1871	"	1,919			
1872	"	50			
			1873	"	10
			1874	"	30
			1875	"	29
1876	"	386			
1877	1,660	299			
			1878	35	3
			1879	12	...
			1880	14	2
			1881	262	34
			1882	67	6
			1883	126	26
1884	832	106			
			1885	375	46
			1886	234	29
			1887	23	1
			1888	27	1
			1889	9	1
			1890	2	...
			1891	21	2
			1892	177	13
			1893	75	9
			1894	229	20
			1895	130	12
			1896	8	..
			1897	6	..
			1898	17	2
			1899	10	1
			1900	156	23
			1901	37	6



## TYPHUS FEVER.

---

Cases of typhus have gradually diminished as sanitary administration has become more precise, and during 1901 the number of cases was 55.

The disease is particularly liable to spread amongst dirty, ill-fed, and intemperate persons, and incessant watchfulness is necessary in order to hold it in check. (See page 123.) The disease almost always attacks the children of the family first; in them the symptoms are obscure, and are often unrecognised until adults succumb.

Of the total number of 55 cases, 14, as the table shows, resulted fatally, the majority of the deaths taking place during adult age, the period when the disease is most fatal.

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
—	—	—	—	—	3	1	3	5	2	—	14

Reports for preceding years sufficiently illustrate the importance of the daily visits which are made to houses which have been infected with typhus fever, as well as the importance of keeping under supervision every person who is known to have been in contact with the patient. It is not necessary to allude to this at present, further than to say that none of the stringent measures which have been adopted against typhus are in any way relaxed.

The number of deaths during each of the preceding six years have been as follows:—24, 36, 23, 19, 13, and 11.

List of streets in the city where cases of TYPHUS FEVER occurred  
during the year 1901.

STREETS.	Cases.	Deaths.	STREETS.	Cases.	Deaths.
Bevington .....	1	1	Gerard .....	2	1
Boundary .....	1	...	Grafton Street Hospital ... (Nurses)	2	...
Brownlow Hill .....	1	...	Hunter .....	1	...
(inmate of Workhouse)					
Burlington .....	9	1	Lionel .....	1	...
Carlton .....	3	...	H.M. Prison, Walton ..... (from Upper William Street)	1	...
Clement .....	1	...	Regent .....	1	...
Clay .....	1	1	Saltney .....	10	3
Circus .....	1	...	Sherwood .....	6	2
Cotton .....	1	...	Upper William .....	5	2
Collingwood .....	2	1	Vernon.....	3	1
Forge Place .....	1	...	Zante .....	1	1



### TYPHOID FEVER.

---

There were 864 cases of Typhoid Fever reported during the year, against 731 in the preceding year, and the deaths from the disease were 154, being 34 in excess of the preceding year, when seasonal influences were such as to tend to a lessening of diarrhoeal and typhoid forms of disease. These figures are below the average of the preceding six years.

Upwards of 65 per cent. of the total number of cases notified during the year were removed to hospital. (See page 216.)

The following table gives the ages at death of the fatal cases :—

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30	40—	50—	60 & up- wards.	All Ages.
1	—	3	15	11	12	57	29	19	5	2	154

The deaths during each of the preceding six years have been as follows :  
197, 166, 145, 148, 182 and 120.

Table showing the locality and season, of deaths from Typhus Fever, Typhoid Fever, and the obscure form of disease known as Continued Fever during the year 1901. Under this latter name, three deaths were registered, one less than last year, and one below average of the last five years. (See also page 70).

Districts.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.				YEAR.			
	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.
Scotland.....	—	3	—	3	4	4	—	8	6	7	—	13	1	8	—	9	11	22	—	33
Exchange .....	—	3	—	3	2	2	—	4	—	6	—	6	—	7	—	7	2	18	—	20
Abereromby .....	—	4	—	4	—	1	—	1	—	2	—	2	—	3	—	3	—	10	—	10
Everton .....	—	—	1	1	—	2	—	2	—	6	—	6	—	13	—	13	—	21	1	22
Kirkdale.....	—	5	—	5	—	1	—	1	1	6	—	7	—	4	—	4	1	16	—	17
West Derby (West) .....	—	2	—	2	—	2	—	2	—	4	—	4	—	6	—	6	—	14	—	14
Toxteth .....	—	3	1	4	—	2	—	2	—	2	—	2	—	13	—	13	—	20	1	21
Walton .....	—	—	—	—	—	1	—	1	—	—	—	—	—	4	—	4	—	5	—	5
West Derby (East) .....	—	2	—	2	—	2	1	3	—	—	—	—	—	3	—	3	—	7	1	8
Wavertree .....	—	—	—	—	—	1	—	1	—	2	—	2	—	1	—	1	—	4	—	4
Sefton Park .....	—	—	—	—	—	—	—	—	—	2	—	2	—	1	—	1	—	3	—	3
(late Toxteth Rural)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hospitals (Residences out of City) ...	—	3	—	3	—	2	—	2	—	3	—	3	—	6	—	6	—	14	—	14
TOTAL FOR WHOLE CITY ...	—	25	2	27	6	20	1	27	7	40	—	47	1	69	—	70	14	154	3	171

In arranging this table, all deaths occurring in hospitals have been transferred to the districts from whence the patients came.



## SCARLATINA.

---

Want of hospital accommodation (page 214) goes far to explain the increase in the number of cases of scarlet fever.

The reduction in the number of cases of this disease which had been noted in 1900, ceased immediately the removal of patients to hospital was stopped. In only 54·8 per cent. of the cases was removal possible, and out of a total of 3,310 cases reported, only 1,814 were removed to hospital, showing a proportion of cases isolated about 6 per cent. lower than in 1900. The percentage of the total number of scarlet fever patients removed to hospital during each of the preceding six years has been as follows:—38·3, 44·3, 54·6, 60·5, 63·6 and 60·8. The public appreciation of the value of isolation is well established, and the inability to find accommodation for the sick was very much felt.

The mortality from the disease reached 5·8 per cent., the great majority of the deaths being below five years of age. (See table, page 47).

The total number of deaths was 195, against 113 last year, and an average of 181 during the preceding five years.

## DEATHS FROM SCARLATINA.

DISTRICTS.	QUARTERS.								YEAR.		
	March		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Scotland .....	1	...	...	2	2	3	3	3	6	8	14
Exchange .....	...	1	...	...	2	...	2	1	4	2	6
Abercromby .....	2	...	2	...	1	2	2	2	7	4	11
Everton .....	5	4	1	5	3	7	6	6	15	22	37
Kirkdale .....	2	2	3	1	2	5	8	6	15	14	29
West Derby (West) .....	2	4	...	1	1	2	...	1	3	8	11
Toxteth .....	5	3	4	7	6	4	3	7	18	21	39
Walton .....	...	...	2	...	3	2	4	9	9	11	20
West Derby (East) .....	1	1	1	1	1	2	4	1	7	5	12
Wavertree .....	2	...	...	...	...	...	1	1	3	1	4
Sefton Park .....	...	...	...	...	...	...	4	2	4	2	6
(late Toxteth Rural)											
Hospitals (Residences outside the City) .....	...	1	2	2	...	...	1	...	3	3	6
City .....	20	16	15	19	21	27	38	39	94	101	195

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
5	26	26	38	24	60	10	3	1	2	...	...	195

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

## MEASLES.

---

Measles showed a marked increase as compared with the preceding year, the cases reported reaching 6,766, as against 2,372 in 1900. There were 473 deaths directly ascribed to it, the great majority of them being of infants below 3 years of age.

The number of deaths does not fully indicate the destruction of life due to measles, since this disease is commonly associated with bronchitis and pneumonia, and it is beyond any question that deaths primarily due to measles are entered in the returns as due to pulmonary disease.

During the year, with a view to prevent extension of measles, it unfortunately became necessary to resort to the closure of a considerable number of schools. This necessarily involves a break in the work of the schools, but the action puts an effectual check upon the sickness. (See pages 121 and 122.) The isolation of the infectious sick in hospital is important and necessary. No provision of hospital accommodation, except for a very limited number of cases, has yet been made for measles, and the deaths from measles show no decline comparable to that which has taken place in the forms of infectious disease for which hospital accommodation is available. In the great number of homes in which measles occurs isolation in the house is difficult or impossible. In making arrangements for hospital isolation of measles, difficulties of a special kind will arise owing to the tender age of the patient, and the peculiarities of the infection in this form of disease.



The following table shows the periods of the year and the localities in which deaths from Measles occurred, and also the ages at death.

The number of deaths from Measles during each of the preceding six years, 1895-1900, has been as follows:—398, 312, 344, 283, 321 and 150.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	21	17	8	12	2	5	1	...	32	34	66
Exchange .....	30	12	8	10	3	3	...	...	41	25	66
Abercromby .....	3	2	9	6	...	...	...	...	12	8	20
Everton .....	37	39	12	18	...	3	1	1	50	61	111
Kirkdale .....	6	6	1	2	...	2	1	...	8	10	18
West Derby (West) .....	25	28	6	7	1	...	2	3	34	38	72
Toxteth .....	15	16	15	21	2	8	2	1	34	46	80
Walton .....	2	2	3	2	...	2	2	...	7	6	13
West Derby (East).....	4	1	4	2	1	...	...	...	9	3	12
Wavertree .....	3	2	3	...	...	...	...	...	6	2	8
Sefton Park..... (late Toxteth Rural)	2	...	...	...	...	...	...	...	2	...	2
Hospitals (Residences outside the City) .....	2	1	...	1	...	1	...	...	2	3	5
City .....	150	126	69	81	9	24	9	5	237	236	473

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
120	193	78	30	27	23	...	...	1	...	1	...	473

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

## WHOOPING-COUGH.

---

Whooping-cough, which had been unusually prevalent during the preceding year, showed a considerable decline during 1901. This disease is one of the most distressing and painful causes of death in very early life. A large number of deaths certified to be primarily due to diseases of the lungs are found on inquiry to have originated in whooping-cough. The great majority of the deaths occur below two years of age, and nearly one-half below twelve months of age. It is plain from this circumstance that isolation of the infected infant in hospital presents many difficulties. In a large proportion of cases the patient would have to be accompanied by the mother, and the period of detention in hospital would in the majority of cases be protracted. During last year 166 deaths were directly attributed to whooping-cough, but this figure is by no means a complete representation of the mischief caused by it.

Notwithstanding the difficulties in the way, some means of isolation will have to be found for the infected children, and some lessening of this disease may then be expected with confidence. Experience has repeatedly shown that the introduction of a case of whooping-cough into a court has resulted in the infection of practically the whole of the infant population in the court.

The following table shows the periods of the year and the localities in which deaths from Whooping-cough occurred, and also the ages at death.

The number of deaths from Whooping-cough during each of the preceding six years 1895-1900 has been as follows : - 412, 298, 356, 333, 314, and 538.

DISTRICTS.	QUARTERS.								YEAR.			
	March.		June.		Sept.		Dec.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total	
Scotland .....	5	8	...	3	...	...	5	9	10	20	30	
Exchange .....	...	3	2	1	...	...	4	5	6	9	15	
Abercromby .....	...	1	...	...	...	...	1	...	1	1	2	
Everton .....	5	4	3	5	2	5	10	14	20	28	48	
Kirkdale.....	2	2	...	1	1	1	...	2	3	6	9	
West Derby (West) .....	1	2	1	...	2	2	3	1	7	5	12	
Toxteth .....	4	5	2	3	1	...	3	3	10	11	21	
Walton .....	2	1	5	1	3	1	1	1	11	4	15	
West Derby (East) .....	1	...	...	...	...	2	...	3	1	5	6	
Wavertree .....	...	...	...	...	1	...	1	...	2	...	2	
Sefton Park .....	...	...	...	1	...	1	2	1	2	3	5	
(late Toxteth Rural).												
Hospitals (Residences outside the City)	...	...	...	...	...	...	...	1	...	1	1	
City .....	20	26	13	15	10	12	30	40	73	93	166	
AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
63	58	20	15	2	8	...	...	...	...	...	...	166

Deaths in Public Institutions are transferred to the Districts from whence the patients came.



## DIPHTHERIA.

Deaths from Diphtheria attained their maximum during the first and fourth quarters of the year. Appended is a table showing the periods of the year and the localities in which the deaths from Diphtheria occurred, and also the ages at death.

The deaths during each of the preceding six years have been as follows:—98, 120, 91, 123, 192 and 143.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	1	...	...	1	2	2	2	3	5	8
Exchange .....	...	...	1	1	1	...	...	3	2	4	6
Abercromby .....	...	1	...	...	...	1	1	...	1	2	3
Everton .....	9	9	8	5	3	1	4	9	24	24	48
Kirkdale .....	1	2	2	...	2	3	...	4	5	9	14
West Derby (West) .....	4	4	2	2	2	1	2	1	10	8	18
Toxteth .....	4	4	2	2	1	...	6	2	13	8	21
Walton .....	2	3	2	...	6	3	3	1	13	7	20
West Derby (East) .....	1	1	1	2	...	...	1	1	3	4	7
Wavertree .....	...	...	...	1	...	...	...	2	...	3	3
Sefton Park .....	...	1	...	...	...	...	4	4	4	5	9
(late Toxteth Rural).											
Hospitals (Residences outside the City).....	...	...	1	...	...	...	...	...	1	...	1
City .....	21	26	19	13	16	11	23	29	79	79	158

## AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30	40—	50—	60—	All Ages.
6	24	27	18	27	40	6	5	2	2	...	...	1	158

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

## CROUP.

The following table shows the periods of the year and the localities in which deaths attributed to Croup occurred, and also the ages at death. Twenty-five of the deaths were attributed to Membranous Croup, and twenty-six to Croup.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	1	1	...	1	1	2	...	...	2	4	6
Exchange .....	...	...	...	...	...	...	...	...	...	...	...
Abercromby.....	...	...	...	...	1	...	1	1	2	1	3
Everton .....	1	3	2	1	1	2	3	2	7	8	15
Kirkdale .....	1	1	...	1	2	...	1	...	4	2	6
West Derby (West) .....	...	...	2	1	...	...	1	...	3	1	4
Toxteth .....	...	2	2	1	1	1	2	...	5	4	9
Walton.....	4	...	...	...	...	...	...	...	4	...	4
West Derby (East).....	1	...	1	2	...	...	...	...	2	2	4
Wavertree .....	...	...	...	...	...	...	...	...	...	...	...
Sefton Park .....	...	...	...	...	...	...	...	...	...	...	...
(late Toxteth Rural).											
Hospitals (Residences outside the City) .....	...	...	...	...	...	...	...	...	...	...	...
City .....	8	7	7	7	6	5	8	3	29	22	51

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
9	14	5	8	7	7	...	1	...	...	...	...	51

Deaths in Public Institutions are transferred to the Districts from whence the patients came.



## ZYMOTIC DIARRHŒA.

---

As is always the case, the mortality from diarrhœa chiefly affected infants, nearly three-fourths of the total number of deaths being those of infants under twelve months old. It commenced to increase about the end of June, and continued until October. Over 1,000 deaths were registered from it during this brief period, and to these must be added deaths from the closely-allied or identical disease, English cholera.

During the month of June the Registrar-General issued an instruction which somewhat modified the registration of deaths attributed to diarrhœa. By this instruction gastro-enteritis was excluded from the diarrhœa column, but zymotic enteritis and epidemic enteritis were to be included under this column. The result of this would be a considerable increase in the number of deaths registered from diarrhœa.

Investigation proves incontestably that the deaths of infants from this cause are closely associated with the method of feeding, putrefying food being the medium by which the specific poison is commonly introduced. The deaths amongst children under three months of age, either wholly or partially fed on artificial foods, are fifteen times as great as they are amongst an equal number of infants fed upon breast milk; e.g., investigation has tended to prove that, out of every 1,000 infants under three months of age, naturally fed upon breast milk alone, 20 die of autumnal choleraic disease; but if the same number of infants, at the same age, are artificially fed, then, instead of 20 dying, as many as 300 will die from this cause.

The mortality is always highest in the season of decay; if the summer and autumn are wet and cool it is comparatively small, but a warm, dry season is invariably attended with a high mortality. (See page 177.)



## DEATHS FROM DIARRHŒA.

DISTRICTS.					QUARTERS.								YEAR.		
					March.		June.		Sept.		Dec.				
					M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.
Scotland ...	...	...	...	...	4	2	8	4	77	62	12	12	101	80	181
Exchange ...	...	...	...	...	...	2	...	2	26	31	4	3	30	38	68
Abercromby ...	...	...	...	...	1	3	2	2	26	22	4	2	33	29	62
Everton ...	...	...	...	...	2	5	5	11	117	115	11	9	135	140	275
Kirkdale ...	...	...	...	...	1	3	13	6	66	74	4	5	84	88	172
West Derby (West) ...	...	...	...	...	1	2	4	2	73	80	3	1	81	85	166
Toxteth ...	...	...	...	...	2	1	5	5	71	63	4	6	82	75	157
Walton ...	...	...	...	...	...	1	4	1	34	34	2	2	40	38	78
West Derby (East) ...	...	...	...	...	1	2	1	1	25	23	4	1	31	27	58
Wavertree ...	...	...	...	...	1	...	...	...	16	11	2	...	19	11	30
Sefton Park (late Toxteth Rural) ...	...	...	...	...	1	...	...	...	7	7	...	...	8	7	15
Hospitals (Residences outside the City) ...	...	...	...	...	...	...	...	...	3	4	...	...	3	4	7
City ...	...	...	...	...	14	1	42	34	541	526	50	41	647	622	1269
AGES AT DEATH.															
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.		
892	256	45	5	5	10	...	...	3	1	4	9	39	1269		

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

List of Streets in the City wherein Three or more Deaths from  
Diarrhœa occurred during the year 1901.

STREETS.	No. of Deaths.	STREETS.	No. of Deaths.
Andrew .....	3	Elias .....	10
Ashfield .....	3	Epsom .....	5
Barnet .....	4	Field .....	3
Barry .....	3	Great Crosshall .....	3
Beacon Lane .....	3	Great Homer .....	7
Beatrice .....	3	Grafton.....	4
Beaufort .....	4	Gordon .....	5
Bidder .....	5	Hartnup .....	3
Birchfield Road, Walton .....	3	Heyworth.....	4
Blenheim .....	3	Hornby.....	12
Bond.....	5	Howe .....	5
Boundary .....	9	Hughes.....	3
Braemar .....	6	Iliad .....	3
Brisbane .....	3	Lancaster.....	3
Buckingham .....	4	Lance .....	6
Burlington .....	11	Langham .....	3
Chapel Lane .....	3	Latham .....	5
China .....	3	Latimer .....	3
Cottenham .....	3	Laxey .....	4
Dagmar .....	3	Leopold Road .....	3
Dorothy .....	4	<sup>2876</sup> Leta .....	3
Easby Road.....	3	Leyden.....	4
Edgeware .....	3	Mann .....	11
Eldon .....	6	Major .....	3

In arranging the foregoing list of streets, all deaths occurring in hospitals have been transferred to the streets from whence the patients were removed.

List of Streets in the City wherein Three or more Deaths from  
Diarrhœa occurred during the year 1901.—*Continued.*

STREETS.	No. of Deaths.	STREETS.	No. of Deaths.
Nesfield .....	3	Salop.....	3
Newsham .....	3	Saltney .....	5
Northumberland .....	5	Scotland Road.....	3
Nursery .....	3	Sessions Road .....	3
Opie .....	5	Skirving .....	3
Paget.....	3	Smollett .....	3
Park Road .....	4	Snowdon .....	3
Park .....	5	Stanley Road .....	4
Pembroke.....	5	Stitt .....	4
Penrhyn .....	3	Tatlock .....	8
Pickwick .....	3	Teulon .....	3
Prince Edwin .....	5	Timpron .....	4
Poplar .....	3	Titchfield .....	3
Prospect .....	3	Upper Stanhope .....	4
Pugin .....	3	Wellington Road S. ....	3
Rathbone .....	4	Westminster Road.....	3
Raymond .....	3	Wilfer .....	3
Reading .....	3	Woodbine.....	3
Robsart.....	10	Wolfe .....	4
Rosalind .....	4	Zante .....	4

In arranging the foregoing list of streets, all deaths occurring in hospitals have been transferred to the streets from whence the patients were removed.



## OTHER ZYMOTICS.

The following table indicates the localities in which deaths from other forms of zymotic disease occurred during the year:—

DISTRICTS.	Influenza.		Erysipelas.		Syphilis.		Rheumatic Fever.		Puerperal Fever.		Other Zymotics.		YEAR. Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Scotland .....	1	...	...	2	6	5	3	6	...	1	6	2	32
Exchange .....	2	1	2	1	3	2	1	...	...	1	1	3	17
Abercromby .....	4	8	...	1	3	...	...	...	...	1	1	...	18
Everton .....	7	6	3	...	5	7	6	3	...	4	9	3	53
Kirkdale .....	...	1	1	...	2	2	1	3	...	2	2	2	16
West Derby (West) ..	5	7	1	1	3	5	3	1	...	3	3	3	35
Toxteth .....	8	9	...	2	2	8	5	3	...	2	7	...	46
Walton .....	1	2	...	1	2	2	...	...	...	1	6	6	21
West Derby (East)...	2	4	1	2	2	...	1	3	...	...	2	2	19
Wavertree .....	1	1	...	3	1	1	2	...	...	6	3	...	18
Sefton Park..... (late Toxteth Rural)	2	1	1	1	...	...	1	...	...	...	...	1	7
Hospitals(Residences outside the City) ..	...	...	...	...	...	4	...	...	...	1	7	...	12
City .....	33	40	9	14	29	36	23	19	...	22	47	22	294

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

THE FOLLOWING TABLE SHOWING THE ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES DURING EACH OF THE LAST THREE DECENNIAL PERIODS, IS INTERESTING AND INSTRUCTIVE. THE DECLINE IN THE MORE FORMIDABLE FORMS OF INFECTIOUS DISEASES IS VERY MARKED.

Years.	Small Pox.	Typhus.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhœa.
1866 to 1875 .....	237·4	652·8	789·4	425·7	496·8	995·3
1876 to 1885 .....	90·8	238·0	421·2	517·8	472·3	658·4
1886 to 1895 .....	8·8	37·1	257·5	399·5	322·4	600·6
*1896 to 1901 .....	5·3	19·3	173·8	313·8	334·1	1102·6

\* Including extended City area.

ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES  
DURING EACH OF THE LAST THREE DECENNIAL PERIODS, DISTINGUISHING THOSE  
OF PERSONS ABOVE AND BELOW FIVE YEARS OF AGE.

YEARS.	SMALLPOX.		TYPHUS.		SCARLET FEVER.		MEASLES.		WHOOPING COUGH.		DIARRHOEA.	
	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.
1866 to } 1875 }	141.7	95.7	* ...	* ...	187.7	601.7	14.4	411.3	9.9	486.9	105.7	889.6
1876 to } 1885 }	62.5	28.3	* ...	* ..	137.0	284.2	35.4	482.4	18.6	453.7	61.9	596.5
1886 to } 1895 }	6.2	2.6	† 33.2	† .7	87.6	169.9	28.3	371.2	15.1	307.3	60.2	540.4
** 1896 to } 1901 }	4.8	0.5	18.5	.8	50.5	123.3	17.5	296.3	12.1	322.0	63.5	1039.1

\* During these years the ages at death from Typhus were not differentiated.

† During the eight years, 1888-1895.

\*\* Including extended City area.



The following table shows the annual average death-rate, per 100,000 of the population, during each of the last three decennial periods, and during the six years 1896-1901, from the undermentioned Zymotic Diseases :—

DISEASES.	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1901.
Typhus .. .. .	132.1	43.0	7.1	2.9
Small Pox ... ..	48.0	16.3	1.5	0.8
Scarlet Fever ... ..	159.9	76.2	49.6	25.8
Measles .. .. .	86.1	93.6	77.0	46.7
Whooping Cough ... ..	100.5	85.4	62.1	49.7

#### TUBERCULAR DISEASES.

These diseases are associated with insanitary surroundings, and with conditions of life which tend to lower the general health. Improved sanitation is accompanied by a diminished mortality from these forms of disease, as the accompanying table, which relates to the last three decades, indicates :—

	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1901.
Annual Average Death-rate per 100,000 of the population, at all ages, from all forms of Tuberculosis ... ..	430.8	349.8	309.8	253.9
Annual Average Death-rate per 100,000 of the population above 5 years of age from Phthisis ...	362.8	278.6	244.4	207.8
Annual Average Death-rate per 100,000 of the population below 5 years of age from : Tabes Mesenterica    } Hydrocephalus        } Scrofula             }	637.1	597.3	539.1	364.9

The Group of Tubercular Diseases includes Phthisis, Scrofula, Tabes Mesenterica, and Hydrocephalus. They occasioned 1,768 deaths in the City of Liverpool during the year 1901.

### DEATHS FROM PHTHISIS.

The number of deaths from Phthisis during the year was 1,302. The number of deaths during each of the preceding six years, 1895-1900 has been as follows:—1,305, 1,198, 1,220, 1,209, 1,313 and 1287.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland ... ..	19	16	17	12	4	16	29	24	69	68	137
Exchange ... ..	27	12	26	12	24	10	26	14	103	48	151
Abercromby ... ..	22	13	17	8	12	7	16	7	67	35	102
Everton ... ..	38	24	39	27	29	23	29	22	135	96	231
Kirkdale ... ..	16	11	15	11	9	7	17	8	57	37	94
West Derby (West) ... ..	27	19	32	19	26	13	23	10	108	61	169
Toxteth ... ..	26	29	27	24	19	17	22	18	94	88	182
Walton ... ..	10	7	6	20	5	4	12	6	33	37	70
West Derby (East) ... ..	3	12	7	3	9	3	9	9	28	27	55
Wavertree ... ..	2	3	4	2	1	2	2	5	9	12	21
Sefton Park ... .. (late Toxteth Rural)	2	4	2	3	8	4	5	2	17	13	30
Hospitals (Residences outside the City) ... ..	10	5	8	3	8	9	12	5	38	22	60
City ... ..	202	155	200	144	154	115	202	130	758	544	1,302
AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
4	8	20	21	23	63	273	346	313	165	66	1,302

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

## DEATHS FROM OTHER TUBERCULAR DISEASES.

Viz.:—Scrofula, Tabes Mesenterica, and Hydrocephalus.

DISTRICTS.					Scrofula.		Tabes Mesenterica.		Hydrocephalus.		YEAR.		
					M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	...	...	...	...	12	7	7	7	4	6	23	20	43
Exchange	...	...	...	...	10	12	6	5	6	3	22	20	42
Abercromby...	...	...	...	...	3	9	3	3	3	5	9	17	26
Everton	...	...	...	...	32	18	15	14	13	15	60	47	107
Kirkdale	...	...	...	...	3	6	5	7	9	10	17	23	40
West Derby (West)	...	...	...	...	19	9	12	6	10	5	41	20	61
Toxteth	...	...	...	...	5	7	3	4	7	7	15	18	33
Walton	...	...	...	...	4	2	11	8	6	2	21	12	33
West Derby (East)	...	...	...	...	6	3	6	4	2	5	14	12	26
Wavertree	...	...	...	...	3	2	3	3	...	2	6	7	13
Sefton Park (late Toxteth Rural)	...	...	...	...	2	6	1	3	5	4	8	13	21
Hospitals (Residences outside the City)	...	...	...	...	9	5	...	4	2	1	11	10	21
City	...	...	...	...	108	86	72	68	67	65	247	219	466
AGES AT DEATH.													
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up-wards.	All Ages.		
123	80	86	62	29	18	26	16	15	7	4	466		

Deaths in Public Institutions are transferred to the Districts from whence the patients came.



## NOTIFICATION OF PHTHISIS.

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The system of voluntary notification of those cases of consumption in which the services of the Health Department could be of use came into operation on 14th February, 1901.

A special form upon which the notification can be made has been circulated amongst medical men, and in those cases in which the requirements of the Health Committee have been fulfilled, the usual notification fee has been paid. The following is the form used :—

### CITY OF LIVERPOOL.

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#### VOLUNTARY NOTIFICATION OF PHTHISIS AND OTHER FORMS OF TUBERCULOSIS.

To the Medical Officer of Health for the City of Liverpool.

I hereby certify that in my opinion (Name)  
 (aged) (occupation) residing at\*  
 is suffering from the probable duration of which  
 has been

I also consider that the following preventive measures should be adopted, viz. :—

(Please state whether disinfection of rooms, clothing, &c., is desirable.)

Dated the                      day of                      190

(Signed)

Medical Practitioner.

\*If in Hospital please state date of admission and previous residence.

A table of statistics relating to the work is set forth below.

### PHTHISIS.

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During the year 1901, the cases reported	
numbered .....	1,898
Of this number .....	101 were duplicates.
<hr/>	
Leaving a total of.....	1,797 Cases.
Deaths from the Disease totalled .....	1,302
Rooms disinfected, &c.....	506
Bedding, &c., removed and disinfected in	155 instances.

The age period at which the greatest number of cases were reported is from 25 years upwards, when 807 males and 420 females were reported. 176 males and 130 females were reported between 15 and 25 years.

Total number of Males reported .....	1,148
Total number of Females reported .....	649

There were 58 cases of Tuberculosis other than of the lungs reported.

Dirty Houses were reported in .....	11 cases.
Patients were reported to be of intemperate habits in..	18 cases.

In about one-third of the total number of cases the occupation was recorded, viz. :—

Labourers .....	379 Cases.
Hawkers .....	60 „
Seamen .....	50 „
Book-keepers .....	46 „
Carters .....	32 „
Firemen.....	31 „
Domestic Servants .....	46 „
Charwomen .....	36 „



The following table of information for consumptive people was circulated through appropriate channels:—

1.—Consumption is a preventible disease which is caused by minute living germs, called “tubercle bacilli,” which usually enter the body with the air breathed.

2.—The matter which consumptive people cough or spit-up contains the germs of the disease in great numbers. If this matter is spat upon the floors, or the walls of any public or private place, or elsewhere, as soon as it becomes dry the germs of the disease which it contains are blown about and float in the air, like any other minute particles of dust, and are inhaled by anybody breathing that air: or they may fall upon milk or other food, and gain access to the body with that food. These are the commonest ways in which the seeds of the disease enter the body of a healthy person.

3.—It may, therefore, be dangerous to sleep with or to live in close relationship with a consumptive, unless the patient is careful that what he coughs up is destroyed. A cup containing a little water should be used to spit in, so that the matter may not dry, and it should be emptied in the closet (not into the ashpit, or upon the footwalk or the roadway), and carefully washed afterwards with boiling water. If the consumptive prefers to use linen or calico cloths or handkerchiefs to spit in, they should be thrown upon the fire and burnt forthwith. He should take care that his hands, face, and clothing do not become soiled with the matter coughed up, nor should he swallow it.

4.—It is better for a consumptive to sleep alone, and the bed-clothing and personal clothing should be boiled and washed separately from the clothing of other people.

5.—Tubercle bacilli are not only the cause of ordinary consumption of the lungs, but they may also give rise to consumption of the bowels and other parts of the body, and therefore milk and other uncooked food



should be carefully protected from the tubercle bacilli. If such food be kept in a place to which a consumptive patient of careless habits has access and who may spit upon the floor, the dry particles of the matter spat up may blow about with dust and find access to milk or other food, and in this way contaminate it.

6.—Cows suffer from consumption, and the milk from consumptive cows is liable to contain the tubercle bacilli. Milk had better be boiled for a few seconds unless the consumer is sure that it comes from a healthy cow, and that it has not been exposed to danger of contamination afterwards. These precautions should be specially observed in the case of children.

7.—Consumption is a disease from which large numbers of patients recover if the rooms they occupy are always kept thoroughly well-ventilated, and clean and free from dust.

8.—Sunshine and fresh air destroy tubercle bacilli, and are the principal curative agents; the more sunshine and fresh air the consumptive patient gets, the more likely is he to recover.

9.—Sanitary improvements which have been carried out in the city with a view to admit more pure air and sunshine to dwellings, and to lessen overcrowding, have reduced the mortality from consumption to about one-half of what it was 30 years ago, but, to reduce it still further, the people must help themselves by keeping their rooms clean and well-ventilated, and by maintaining strictly temperate habits.

10.—Rooms that have been occupied by consumptives should be thoroughly disinfected and cleansed before they are again occupied, and the carpets and bedding should be disinfected; in fact, so far as these precautions are concerned, consumption may be regarded in precisely the same light as any other infectious disease.

11.—The Officers of the Health Department are always ready to do the necessary disinfection, both of rooms and of clothing, free of charge.

# CANCER.

The following table indicates the number of deaths from Cancer and kindred Diseases during the last five years, and the part of the body affected by the disease:—

DISEASE.	1897.			1898.			1899.			1900.			1901.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Cancer of Stomach and Bowels..	86	126	212	92	89	181	103	86	189	70	101	171	117	106	223
"    Liver .....	24	31	55	23	42	65	29	46	75	25	47	72	21	52	73
"    Urinary and Genera- tive Organs .....	10	94	104	12	73	85	21	89	110	11	103	114	8	116	124
"    Breast .....	...	45	45	...	47	47	1	49	50	...	48	48	...	43	43
"    Head and Face .....	12	6	18	11	7	18	19	8	27	16	8	24	24	4	28
"    Tongue, Neck, and Throat.....	39	9	48	47	10	57	31	9	40	44	9	53	51	6	57
"    Other parts of the Body .....	8	5	13	8	5	13	11	5	16	17	9	26	16	8	24
"    Parts not specified ...	11	8	19	17	12	29	7	16	23	4	14	18	9	12	21
Total .....	190	324	514	210	285	495	222	308	530	187	339	526	246	347	593



## ALCOHOLISM.

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It has already been pointed out in previous reports that there are grounds for the belief that intemperance is becoming less frequent, and for several years past this view has received confirmation by police statistics. Further and very gratifying evidence has been furnished during the past year of a marked diminution in the number of deaths certified by coroners' juries to be the result of excessive drinking. The number so recorded was 155, against 236 persons in the preceding year. The falling off in deaths from excessive drinking is a very satisfactory feature, and this fact, taken in conjunction with other official observations and reports, fully justify the belief that during the past year the abuse of alcohol amongst the lower working classes has been lessened.

With regard to the fatal cases, inquests were held during the year on the bodies of 155 persons (64 of whom had died in Workhouses and Hospitals), viz., 28 men and 20 women, whose deaths were caused by excessive drinking; 56 men and 41 women whose deaths were accelerated by excessive drinking; 5 men and 5 women who were fatally injured by accident whilst under the influence of drink. But besides these, there are many cases of fatal injury in which the verdict of "accidental death" omits any reference to the fact that the injured person was intoxicated at the time.

Injuries to infants and young children whilst in the custody of drunken persons are inevitable.

In three inquests in which death was found to be the result of violence, the person committing the deed was under the influence of drink at the time, and in two of these both the person who inflicted the injuries and the injured person were under the influence of drink at the time; in one case the injured person was drunk.

One female, in a drunken frenzy, poured paraffin oil over her clothes and set them on fire, and so terminated her existence.

In addition to the foregoing, "Alcoholism" is given as the cause of death of 7 men and 4 women.

The general effect of intemperance is indicated by the facts, which speak for themselves, that it is in the districts where there is most



intemperance that the general death-rate is highest and the proportion of deaths in workhouses is greatest.

Three districts are contrasted in these particulars:—

	Population.	General Death-rate per 1,000.	Proportion of Deaths in Workhouses and Hospitals.	Proportion of Deaths due to Excessive Drinking.
Exchange	41,831	31·0	41·7 per cent.	2·0 per cent.
West Derby (East)	44,016	17·3	14·0 „	0·7 „
Wavertree	25,670	16·0	13·3 „	0·7 „

### FEVER AND DIARRHŒA MORTALITY.

The following table shows the death-rate per 1,000 of the population, and the number of deaths from Fever and Diarrhœa during the last eighteen years:—

Year.	*Death Rate per 1,000 of Population from all causes.	Deaths from Diarrhœa.	Deaths from Fever.		
			Typhus.	Typhoid.	Continued.
1884	26·6	841	77	112	16
1885	25·6	422	71	95	16
1886	26·1	781	47	140	11
1887	26·4	619	52	130	12
1888	23·1	431	32	125	4
1889	24·9	575	45	167	...
1890	27·5	468	23	99	1
1891	26·8	330	37	92	2
1892	24·4	415	18	111	2
1893	26·7	866	44	221	5
1894	23·1	503	50	248	7
†1895	24·8	1,108	24	197	4
1896	21·4	851	36	166	2
1897	22·8	1,182	23	145	5
1898	22·2	956	19	148	5
1899	24·1	1,158	13	182	4
1900	23·1	900	11	120	4
1901	21·6	1,269	14	154	3

\* Calculated on corrected population as per Census Returns of 1891 and 1901.

† City Boundaries extended.

Mr. Plummer, M.A. F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, has kindly supplied the following tables relating to Meteorological observations made by him at the Liverpool Observatory, Bidston :—

# LIVERPOOL OBSERVATORY, BIDSTON, BIRKENHEAD.

Latitude  $53^{\circ} 24' 5''$  N. Longitude  $3^{\circ} 4' 20''$  W.

Height above the Mean Level of the Sea 202 feet.

Year and Month, 1901.	Barometer. Mean.	Temperature. Mean.	Rainfall. Amount.	No. of days on which 0.01 in. or more rain fell.	Mean Monthly Humidity. Complete Satur- ation equal 100.
	Inches.	Degrees.	Inches.		
January .....	29.970	38.7	1.839	18	87
February .....	30.074	37.2	1.252	18	85
March .....	29.768	39.9	1.687	18	79
April .....	29.788	47.8	1.587	16	73
May .....	30.099	53.9	0.958	9	69
June .....	30.024	56.8	1.913	14	72
July.....	30.009	63.9	2.494	13	75
August .....	30.005	59.9	2.830	15	78
September .....	29.875	57.7	1.184	16	78
October .....	29.879	50.1	3.006	17	84
November .....	30.139	42.5	3.038	14	85
December .....	29.582	39.6	3.404	22	84

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE  
LAST 30 YEARS.

1901.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches.	Degrees.	Degrees.	Inches.	Inches.
January .....	0·043	...	...	0·7	...	0·338
February .....	0·135	...	...	4·0	...	0·417
March .....	...	0·139	...	2·3	0·011	...
April .....	...	0·110	0·5	...	...	0·035
May .....	0·135	...	2·1	...	...	0·918
June .....	0·036	...	...	0·7	...	0·157
July .....	0·076	...	3·1	...	...	0·272
August .....	0·090	...	...	0·5	...	0·137
September .....	...	0·062	1·5	...	...	1·823
October.....	0·008	...	0·5	...	...	0·561
November .....	0·245	...	...	0·6	0·344	...
December.....	...	0·280	...	0·3	0·735	...

OBSERVATIONS OF VELOCITY OF WIND.

1901.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date of Maximum Velocity.	Minimum Hourly Velocity.	Date of Minimum Velocity
	Miles per Hour.	Miles.		Miles.	
January .....	22·7	82	Jan. 27	3	Jan. 1, 3, 23.
February....	12·1	35	Feb. 24	0	Feb. 20.
March.....	17·6	52	March 5	1	Mar. 12, 13, 16, 17, 23.
April .....	17·0	50	April 8	0	April 24.
May .....	11·5	34	May 31	0	May 4.
June .....	16·3	47	June 13	1	June 3, 7, 9, 26, 27.
July .....	10·9	29	July 1	1	July 5, 6, 7, 8, 14, 17, 20, 24, 28, 29, 31.
August .....	16·5	54	August 26	1	August 21.
September..	14·1	50	Sept. 17	1	Sept. 12, 13, 30.
October.....	16·8	60	Oct. 9	1	Oct. 11, 12, 13, 20.
November...	17·9	60	Nov. 19	0	Nov. 5, 6.
December...	20·9	57	Dec. 9	1	Dec. 3, 4, 15, 19.



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SANITARY ADMINISTRATION.

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LIBRARY ADMINISTRATION

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## SANITARY ADMINISTRATION.

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For the purpose of carrying out the requirements of the various Sanitary Acts of Parliament and the Orders, Bye-laws, and Regulations made thereunder, the following staff of the Medical Officer of Health's Department has been employed during the year:—

*Chief Sanitary Inspector	...	...	...	...	1
*Deputy Chief Sanitary Inspector	...	...	...	...	1
*Prosecuting Sanitary Inspectors	...	...	...	...	7
*Inspectors for General Sanitary Purposes	...	...	...	...	30
*Female Inspectors for General Sanitary Purposes	...	...	...	...	8
§Inspectors of Meat and Animals	...	...	...	...	4
„ under the Diseases of Animals Act	...	...	...	...	2
** „ of Fish and Fruit	...	...	...	...	4
*** „ under the Sale of Food and Drugs Act...	...	...	...	...	3
* „ „ Workshop and Shop Hours Act.	...	...	...	...	3
† „ , Smoke	...	...	...	...	3
† „ , Ambulance	...	...	...	...	4
„ , Disinfecting and Wall Stripping Staff	...	...	...	...	25
Superintendents of Disinfecting Apparatus	...	...	...	...	2
*Chief Inspector of Common Lodging and Sub-let Houses	...	...	...	...	1
***Inspectors of Common Lodging and Sub-let Houses	...	...	...	...	12
*Inspector of Canal Boats	...	...	...	...	1
* „ Bakehouses	...	...	...	...	1
*Inspectors of Cowsheds and Milkshops	...	...	...	...	2
Notice Servers	...	...	...	...	3
Permanent Clerical Staff	...	...	...	...	22
Temporary Assistants	...	...	...	...	5

In every case Officers are selected for these positions, whose previous training and occupation have been such as to fit them for the special



duties they are called upon to discharge. Those marked \* are required to hold the Certificate of the Sanitary Institute of Great Britain or a Certificate equivalent thereto; those marked † have Marine Engineers' First Class Certificates, and the ‡ Superintendent Ambulance Inspector holds Sanitary Certificate, and also the Certificate of St. John's Ambulance Association. \*\* Fishmongers by trade. § Butchers by trade; candidates are submitted to practical examination upon the lines which have been indicated in the Report of the Royal Commission upon Tuberculosis. \*\*\*Several hold the Certificate of the Sanitary Institute, or an equivalent thereto.

The number of occasions upon which the advice and assistance of the Health Department have been sought has decreased during the year. These applications fluctuate slightly year by year; in 1896 they were 7,993, in 1897 they were 8,852, in 1898 they were 9,362, in 1899 they were 9,215, in 1900 they were 11,321, in 1901 9,657. As in former years, complaint in many cases was made to the Health Department only after repeated requests addressed to the persons causing or allowing the nuisance, or to agents or owners of property, had been ignored. Generally speaking, these complaints arise in connection with jerry-built property. A great deal of the time of the Inspectors was taken up by these special examinations.

Requests to examine important public buildings and offices, as well as highly-rented dwelling-houses, have been very numerous as usual, and the application of the smoke test has in many cases brought to light defects in the drainage system. Requests for the application of the smoke test are frequent.

A very large number of sanitary notices are served upon owners in respect to what is well known as "insanitary property."

Owners would do well to demolish property such as this, and erect suitable habitations in their place. By thus co-operating with the Housing Committee, they would rid themselves of the annoyance of receiving notices, and remove centres of disease and degradation from the city.

The following table shews the number of nuisances found by routine inspection or on complaints, and the character of the proceedings taken to abate the nuisances, and the results:—

			<u>1900.</u>	<u>1901.</u>
Number of Complaints made by Inhabitants ...	...	...	11,321	9,657
„ Nuisances discovered on above complaints...			22,184	19,195
„ „ „ house to house				
inspection ...			82,403	87,537
			<u>1900.</u>	<u>1901.</u>
„ Notices issued ...	{ Owners	47,301	47,853	48,860 50,436
	{ Occupiers	1,559	2,583	
„ Notes to complainants ...	...	...	4,464	3,872
„ „ sent to comply with notices ...	...	...	7,919	7,982
„ Nuisances re-inspected ...	...	...	133,186	144,213
„ „ abated on re-inspection ...			75,123	82,51
„ Drains repaired ...	...	...	32,215	34,372
„ Ashpits „ ...	...	...	2,565	2,840
„ Closets „ ...	...	...	31,723	32,274
„ Water Closet Conversions ...	...	...	12	9
„ Ashpits substituted by improved movable				
Sanitary Bins ...	...	...	144	2,069
„ Spouts fixed and repaired ...	...	...	1,019	1,458
„ Notices to remove animals ...	...	...	187	159
„ Premises from which offensive matter has				
been removed ...	...	...	50	25
Nuisances caused by Stagnant Water ...	...	...	335	433
„ „ Dilapidated Houses ...	...	...	23	26
Number of Premises found without water and supplied			6,848	8,846
„ Chimneys repaired to abate smoke nuisances			2	1
„ Railway Carriages inspected...	...	...	...	991
„ Premises under observation...	...	...	1,091	1,146
„ Informations laid ...	...	...	1,229	868
„ Fined ...	...	...	345	203
„ of Magistrates' Orders ...	...	...	457	379
„ Acquitted or Withdrawn ...	...	...	427	286
Amount of Fines and Costs ...			£387 16 0	£210 6 0



REFERENCES TO OTHER DEPARTMENTS.

A considerable number of conditions ascertained by the Sanitary Staff to be prejudicial to health were referred to other departments to be dealt with :—

			<u>1900.</u>	<u>1901.</u>
Referred to City Engineer ...	...	...	7,695	8,856
„ Building Surveyor ...	...	...	1,665	1,638
„ Water Engineer ...	...	...	7,704	5,726
„ School Board ...	...	...	16,607	27,997

The references to the Water Engineer comprise, mainly, defective fittings, resulting in waste of water; also cases in which the supply was insufficient, owing to various causes.

The references to the School Board chiefly relate to children from infected houses who are attending school, or who are suffering from ring-worm, ophthalmia, &c. (See page 118.) The increase is largely owing to the prevalence of measles and scarlatina.

REFERENCES FROM OTHER DEPARTMENTS.

			<u>1900.</u>	<u>1901.</u>
Received from the City Engineer ...	...	...	12,138	11,431
„ Water Engineer ...	...	...	4,538	4,024
„ Lodging-house Inspectors			6,998	6,174
„ School Board ...	...	...	7,905	12,934

The references from other Departments mainly comprise insanitary conditions discovered by officers belonging to those departments, but with which it is not within their province to deal. The City Engineer's Department continues to report defects in private drains brought to light during the process of systematic flushing.



HOUSE TO HOUSE VISITATION.

The following table indicates the results of the systematic house-to-house visitation by the District Male Staff:—

	<u>1900.</u>	<u>1901.</u>
Number of Inspections of Street Houses ... ..	20,833	22,284
„ Street Houses found Clean ... ..	17,749	19,319
„ „ „ „ Dirty ... ..	3,084	2,965
„ Apartments in Street Houses Examined	95,682	109,377
„ Inspections of Court Houses ... ..	4,012	2,138
„ Court Houses found Clean ... ..	3,190	1,680
„ „ „ „ Dirty ... ..	822	458
„ Apartments in Court Houses Examined	11,762	6,461
Total Number of Houses Examined and Re-inspected	27,752	30,034

DIRTY HOUSES.

	<u>1900.</u>	<u>1901.</u>
Number of Dirty Street Houses Inspected ... ..	3,084	2,965
„ „ Court „ ... ..	822	458
„ „ Cellars Inspected ... ..	797	791
„ „ Houses and Cellars Re-inspected...	2,906	2,647
„ Notices to Owners to Cleanse Dirty Houses ... ..	4,097	3,776
„ Notices to Occupiers to Whitewash Dirty Houses ... ..	472	398
„ Notices to Owners to Whitewash Exteriors of Courts ... ..	2,107	1,879
„ Informations ... ..	74	47
„ Fined ... ..	46	27
„ Acquitted or Withdrawn ... ..	28	20

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Amount of Fines and Costs ... .. £28 3s. 4d. | £24 3s. 0d.

COURT AND ALLEY EXAMINATIONS.

	<u>1900.</u>	<u>1901.</u>
Number of Visits to Courts and Alleys ... ..	64,068	58,715
„ Closets found Dirty, but Cleansed by Officer's Instruction	71,248	63,130
„ Informations ... ..	12	4
„ Fined ... ..	12	4
Amount of Fines and Costs ... ..	£1 4 0	£0 8 0

Special and systematic visits to courts and alleys are made with the object of ensuring the cleanliness of the domestic offices and the surface of the courts. The aim is to keep the courts and alleys uniformly clean throughout the week, and with this view the district inspectors are instructed that every tenant in each court is in turn to be held responsible for the cleanliness of the court for a period of one week; the inspector records in his visiting book whose turn it is, and duly informs that tenant. Failing compliance with his requirements, an information is laid under the following bye-law, made under the Liverpool Sanitary Act, 1846:—

“First. From and after the day on which these bye-laws shall come into operation, whenever tenants or occupiers of several houses in courts, alleys, streets, and other places within the Borough, have the right to use in common any middenstead or privy, the several persons having such right shall be, and they are hereby required to keep the internal walls, floors, seats, and fittings of such middenstead or privy thoroughly clean, so that the same is not a nuisance or annoyance to any inhabitant of the said Borough.

Second. That if any privy or middenstead so used in common, or the walls, floors, seats, or fittings thereof, or any of them, shall be in such a state or condition as to be a nuisance or annoyance to any inhabitant of the Borough, for want of proper cleansing thereof, as aforesaid, then the persons having the use thereof in common as aforesaid, shall severally be liable to a penalty not exceeding 40s., and a further penalty not exceeding 5s. for every day during which the same shall remain in such state or condition.”

But under the Public Health Acts Amendment Act, 1890, somewhat similar proceedings may be taken.



Section 21 of this Act runs as follows:—

“ With respect to any sanitary conveniences used in common by the occupiers of two or more separate dwelling-houses, or by other persons, the following provisions shall have effect:—

(1) If any person injures or improperly fouls any such sanitary convenience, or anything used in connection therewith, he shall for every such offence be liable to a penalty not exceeding ten shillings:

(2) If any sanitary convenience or the approaches thereto, or the walls, floors, seats, or fittings thereof is, or are, in the opinion of the urban authority or of the inspector of nuisances or medical officer of health of such authority in such a state or condition as to be a nuisance or annoyance to any inhabitant of the district for want of the proper cleansing thereof, such of the persons having the use thereof in common as aforesaid as may be in default, or in the absence of proof satisfactory to the court as to which of the persons having the use thereof in common is in default, each of those persons shall be liable to a penalty not exceeding ten shillings, and to a daily penalty not exceeding five shillings.”

The stipendiary magistrate has rendered great help to the department by imposing a small fine in those cases in which a prosecution became necessary. Improvement results up to a point, but the constant attention of the officer is very necessary, since the filthy habits of the people soon lead to a recurrence of the dirty conditions if the visits are lessened.

The courts and alleys continue to decrease in number, owing to the demolition of low-class property for the extension of business premises, or to the removal of insanitary property by the Housing Committee. The number of courts and alleys scheduled for inspection in 1890 was 2,165, in 1895 it had fallen to 1,660, in 1897 it had further fallen to 1,593, in 1898 the number was 1,466, in 1899 it was 1,432, in 1900 it was 1,195, and in 1901 it was 1,159, showing a diminution in eleven years of 1,006 courts.

During the year all courts and alleys having covered entrances were specially washed and hosed down by the scavengers. Under the Liverpool Sanitary Act the exteriors of all courts and alleys require to be limewashed as often as may be necessary. In 1901 it was deemed advisable to cause the limewashing to be done in the autumn as well as in the spring.



### COMMON LODGING-HOUSES.

The Common Lodging-Houses Act provides that any person opening any premises as a Common Lodging-House, or receiving lodgers therein, without making application to the Medical Officer of Health to have such premises registered, is liable to a penalty of 40s. for every such offence.

When premises have been approved and registered in accordance with the requirements of the Common Lodging-Houses Act, the following rules and instructions, together with suitable and permanent cards indicating the various requirements, are handed to the keeper, to place in a prominent position in each room.

In addition to the requirements mentioned in the following instructions, the cleanliness and suitability of the beds and bedding engage the attention of the inspector :—

#### RULES AND INSTRUCTIONS.

- 1.—No greater number than                      Lodgers are to be received or accommodated in this house at any one time.
- 2.—The windows of every sleeping-room in this house are to be opened, and kept open to their full width, from nine to ten o'clock every morning, and from two to three o'clock every afternoon (weather permitting), unless in case of sickness in any room requiring the windows to be closed.
- 3.—The floors of every room in this house shall be well swept every morning before the hour of ten, and shall be well washed during the morning of every Friday.
- 4.—This house shall be thoroughly cleansed, and the walls and ceiling of every room in this house shall be well and sufficiently lime-washed, and the blankets, rugs, and bed-clothes, and covers used in this house, shall be thoroughly cleansed and scoured in the first week of each of the months of April, August, and December.
- 5.—Upon any person in this house, whether a Lodger or one of the family, being affected with fever or any contagious or infectious disorder, the Keeper shall forthwith give notice thereof to the Medical Officer of Health, at his Office, Municipal Offices, Dale Street, and the Medical Officer will visit the house, and take such proceedings as he shall think proper in compliance with the Act.

6.—If any person in this house shall be affected with fever or any infectious or contagious disorder, the blankets and bed-clothes used by such person shall be thoroughly cleansed and scoured, and the bedding fumigated, immediately after the removal of such person, and where the bedding used consists of shavings or straw, the same shall be burned immediately after such removal.

7.—The Keeper of this house shall provide sufficient accommodation for washing, together with a sufficient supply of water for the use of the Lodgers herein.

8.—The Keeper of this house shall reduce the number of Lodgers, or shall cease to receive and accommodate Lodgers altogether, immediately upon receiving notice to that effect from the Medical Officer of Health.

9.—This ticket shall be placed and kept in such situation in this house as the Medical Officer of Health shall from time to time direct, and shall be produced and delivered to such Officer on demand.

N.B.—The keeper of any lodging-house defacing or removing this ticket or disobeying the above Rules and Instructions, will be liable to the several penalties in that behalf provided by the Bye-laws for regulating Lodging-houses, a copy whereof may be obtained on application at the Office of the Town Clerk, at the Municipal Offices, Dale Street.

By order of the Health Committee.

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At the end of 1900 there were on the register a total (including emigration houses) of 695 lodging houses, and at the end of 1901 the total number was 620, which furnished accommodation for 13,831 lodgers, besides 1,850 members of the keepers' families.

During the year 207 houses were given up and removed from the register, and 132 new houses added, leaving the number on the register 620. The diminution in the number of lodging-houses is due to several houses being closed, which were used for the accommodation of navvies, who left the town as the work on which they were engaged was completed.

Two applications were refused by the Health Committee on the ground that the houses were not suitable for the purpose of keeping lodgers.



In some of the better-class houses for men, separate cubicles are provided for each lodger, the price paid for them varying from 6d. to 1s. 6d. per night. These cubicles are much more appreciated than the ordinary accommodation provided.

The number of what are known as "model" lodging-houses, for men only, upon the register is 142, and these are registered to accommodate 6,279 lodgers, as well as 280 members of the keepers' families.

The term "model" appears now to be used as a trade designation to indicate premises used for the accommodation of one sex only.

There are also 24 registered model lodging-houses for the accommodation of women only. These have room for 635 lodgers, in addition to 24 members of the keepers' families.

The visits to lodging-houses are both by day and by night. The night visits are almost restricted to the lower districts and commoner class of house. The lodging and emigration houses of the better class, especially those provided only with single beds for each person, and with no more beds than are equivalent to the number of lodgers allowed, are only occasionally visited at night, unless special circumstances necessitate a closer supervision.

Houses which are not licensed either as lodging or sub-let houses are frequently visited by day when such a course is deemed expedient, in order to ascertain whether any grounds exist for putting these houses on the register.

There were 623 visits paid during the year to such houses, and in three of the cases, where suspicion was confirmed, night visits were also paid, and the tenants summoned and fined by the magistrate for taking lodgers without having the premises registered.

Persons harbouring lodgers in unlicensed premises receive a notice to apply to have the rooms measured and licensed. There were 47 such notices issued during the year, but in only 3 cases was it necessary to institute prosecutions.



The number of day visits paid during the year was 24,380, and the night visits 1,434. During the preceding year the day visits were 28,436, and the night visits 2,009.

Sixty-seven informations were laid against keepers of common lodging-houses during the year for the following offences:—

				1900.	1901.
Not sweeping floors	...	...	...	28	21
Not washing floors	...	...	...	43	17
Overcrowding	...	...	...	20	16
Receiving lodgers in unlicensed rooms	...			6	2
Not applying to register	...	...	...	2	3
Mixing sexes	...	...	...	—	4
Not limewashing	...	...	...	8	4
Total	...	...	...	107	67

Convictions followed in 66 cases, the total amount of fines amounting to £15 0s. 0d., and ranging from 1s. and costs to 20s. and costs. During the preceding year there were 104 convictions, and the fines amounted to £26 12s. 6d.

One case was withdrawn.

The number of lodging-houses found dirty was 70; in each case notices were served to limewash and cleanse.

The Bye-law requires that every case of infectious sickness in a lodging-house should be at once reported to the Medical Officer of Health. Thirty-seven cases of infectious sickness occurred in lodging-houses; 32 of the patients were at once sent to hospital; of the remaining five, three were members of the keeper's family, the other two were lodgers; one of these died before removal was possible, and the other recovered, the license being suspended until the recovery of the patient. In all cases the bedding was removed to the disinfecting apparatus, and the rooms purified and cleansed. There were 36 deaths from non-infectious diseases in lodging-houses, 21 of the deceased persons belonging to the keepers' families, and 15 were lodgers.

### SEAMEN'S LICENSED LODGING-HOUSES.

The Corporation have made bye-laws, with the sanction of the President of the Board of Trade, for the licensing of Seamen's Lodging-houses, under the Merchant Shipping (Fishing Boats) Act, 1883, Section 48.

These Bye-laws are as follows:—

1.—That from and after the 1st day of October, 1887, the Bye-laws as to Seamen's Licensed Lodging-houses, made by the Council of the City of Liverpool on the 6th day of December, 1882, shall be repealed.

2.—In these bye-laws the expression "Registered Common Lodging-House" means a common lodging-house registered as such pursuant to the enactments and bye-laws or regulations in force in that behalf in the City of Liverpool; and the expression "Registered Lodging-House" means a lodging-house registered as let in lodgings or occupied by members of more than one family, pursuant to the enactments and bye-laws or regulations in force in that behalf in the said City.

3.—On the written application of the keeper of any registered common lodging-house or registered lodging made in such form and stating such particulars as the Council require, the Council will (subject as hereinafter mentioned), if they see fit, grant to such keeper a license authorising him to designate his registered house a Seamen's Licensed Lodging-House.

A license may contain such conditions not being inconsistent with the laws, bye-laws, and regulations for the time being in force in the City, and being specified in the license as the Council see fit.

4.—Such license shall not be granted in respect of any house not being a registered common lodging-house or registered lodging-house; nor in respect of any house where intoxicating liquor is sold, nor in respect of any house occupied or used for the purpose of the business of a clothier, or outfitter, or slop dealer.



Such license shall not be granted to a person who holds a license for the sale of intoxicating liquor, or who is engaged or interested in the business of a clothier, outfitter, or slop dealer.

Provided always that each licensee may sell and supply to bona fide seamen boarders in his house, and to no other person or persons, clothes and slops upon the following conditions, viz. :—

(1) That the licensee submit to the Local Marine Board, annually, or oftener if required, a scale of charges for board, lodging, clothing, and portorage, to be made in or in connection with his house for the approval of the said Board.

(2) That the licensee shall at all times keep hung up in the dining or common room of his house, in a conspicuous position, where it may be seen by all the boarders, a certified copy of the scale of charges approved by the Board.

(3) That the licensee deposit a like certified copy of the scale of charges with the Superintendent of the Mercantile Marine Office of the Local Marine Board.

(4) The licensee shall not make a higher charge than is provided for by the scale, or any charge not provided by the scale on any pretence whatever.

(5) Any dispute respecting any item of account shall be referred to the Superintendent of the Mercantile Marine Office, whose decision shall be final.

5.—The Council shall cause to be kept a Register of all licenses granted under these bye-laws, and the suspension or revocation of any license shall be noted in that register.

6.—A license granted to any person under these bye-laws is not transferable to any other person, and any holder of a license who transfers or lends the same to any other person is deemed guilty of a breach of these bye-laws.

7.—A license granted under these bye-laws continues in force (subject to suspension or revocation, as in these bye-laws provided) for one year from the date of the grant thereof, but the Council may at their discretion refuse to renew any license.

8.—A license granted under these bye-laws may be suspended or revoked by the Council on breach of any of its conditions, or on the conviction of the holder of any felony, misdemeanour, or offence against any law, bye-law, or regulation for the time being in force in the City, or on the Council being satisfied that the holder has been guilty of a breach of the Merchant Shipping Act, 1854, or the Acts amending the same, or has kept a house in which drunkenness, gambling, or immoral or fraudulent practices prevail, or has been a party to such proceedings, or neglects to remove from the lodging-house any persons of known immoral character who may have entered therein.

Within seven days after suspension or revocation of a license the holder shall deliver his license to the Town Clerk; but at the expiration of a period of suspension the license shall be returned to the holder.

9.—Every keeper of a Seamen's Licensed Lodging-House, and every other person having or acting in the care or management thereof, shall at all times when required by the Medical Officer of Health, or Lodging-House Inspector, or Inspector of Nuisances of the District, the Chief Constable or any Inspector of the City Police Force, or any Detective officer specially authorised by the Chief Constable for the purpose, or any officer of the Board of Trade or Local Marine Board, give them, or any of them, free access to such house.

10.—Any person who, not being the holder of a license under these bye-laws, and any holder of a license who, during a period of suspension, uses or publishes any sign, notice, inscription, ticket, placard, advertisement, circular, letter, or other document stating or implying that his house is a Seamen's Licensed Lodging-House, is deemed guilty of a breach of these bye-laws. Every person guilty of a breach of these bye-laws shall be liable to a penalty not exceeding five pounds.

11.—Nothing in these bye-laws shall in any way prejudice or affect the operation of the enactments, bye-laws, or regulations applicable to any registered common lodging-house or registered lodging-house as such, or to any keeper of any such house.



The foregoing bye-laws must necessarily exercise a beneficial effect upon those houses which are licensed as Seamen's Licensed Lodging-Houses, but the great bulk of common lodging-houses, to which seamen commonly resort, are dealt with by regulations under the Common Lodging-Houses Act of 1851.

Applications from the keepers of Registered Common Lodging-Houses for licenses authorising the designation of such Registered Common Lodging-Houses as Seamen's Licensed Lodging-Houses, are infrequent, only twelve such licensed lodging-houses now being on the register; these provide accommodation for 213 seamen.

The number of licenses granted since the adoption of the Seamen's Licensed Lodging-House Bye-laws is 28. Sixteen have been given up, none withdrawn, and there are 12 at present on the register.

It has not been found necessary to institute proceedings under the bye-laws in question.

Some years ago the holders of licenses to keep Seamen's Lodging-Houses were authorised by the Board of Trade to board vessels and seek for lodgers, and while this privilege was granted there was an advantage in holding such a license, but that privilege being now withdrawn, it does not appear that there is any advantage to the keeper of a common lodging-house to have his premises registered as a Seamen's Lodging-House, and hence probably the small number upon the register.

### SUB-LET HOUSES.

These are houses, one or more rooms of which are let off in each case by the chief tenant or owner of the house to members of one or more other families. The Bye-laws provide for registration and inspection, in order to prevent overcrowding, and to ensure attention to cleanliness and sanitary requirements.

The number added to the register during 1901 was 953, making the total on the register on the 31st December, 18,917. The reasons for putting the houses on the register have arisen from various causes, some no doubt are owing to persons who have come from insanitary property which has been demolished. Many of the houses dealt with by the Housing Committee, as unfit for human habitation were on the sub-let register. The number of visits paid to sub-let houses during the

night was 17,863, and during the day 59,480, with the result of finding 1,810 rooms overcrowded. In addition to overcrowding, 493 cases of indecent occupation came under the notice of the inspectors, as against 551 last year. The character of the indecent occupation may be judged from the following facts:—In 227 instances one man and two women were found in the same bedroom; in 177 instances two men and one woman; in 42 instances two men and two women; in 20 instances one man and three women; in 15 instances three men and one woman; in 4 instances three men and two women; in 2 instances two men and three women; in 1 instance two men and four women; in 2 instances four men and one woman; in 1 instance eight men and one woman; and in 2 instances one man and four women. These cases appear to be the outcome of ignorance and indifference, and not of immoral intent. Under the new Bye-Laws a number of persons have been fined for mixing sexes, and a number, who cannot be reached under the bye-law, cautioned by the Inspectors.

Informations were laid against 1,853 chief tenants, “room-keepers,” for breach of the bye-laws, viz.:—

Overcrowding	...	...	...	...	1,351
Floors not washed	...	...	...	...	123
Floors not swept	...	...	...	...	286
Refusing admission	...	...	...	...	2
Not cleansing stairs, &c.	...	...	...	...	14
Mixing sexes	...	...	...	...	77
Total					1,853

As the result of proceedings before the Stipendiary Magistrate, fines were inflicted as follows:—1,225 fined 1s. and 1s. costs; 290 fined 1s. 6d. and 1s. 6d. costs; 129 fined 2s. and 2s. costs; 77 fined 2s. 6d. and 2s. 6d. costs; 4 fined 3s. and 3s. costs; 79 fined 5s. and 4s. 6d. costs; 1 fined 7s. and 4s. 6d. costs; 38 fined 10s. and 4s. 6d. costs; 9 fined 20s. and 4s. 6d. costs; making a total of fines levied during the year of £288 18s. 6d. There were 738 more inspections by night than in the preceding year; the day visits were 6,278 more.



The increase in the number of informations for over-crowding is due to the new bye-laws, which came into force this year, and provide that every person above the age of 10 shall have not less than 400 cubic feet of air space, and every person below 10 years of age shall have not less than 200 cubic feet, but if the room is used as a day-room as well as a bedroom, then every inmate must have at least 400 cubic feet.

In 1897, 856 chief tenants were proceeded against and fined for overcrowding, in 1898, 739 persons were similarly dealt with for this offence; in 1899 this number was reduced to 708, and in 1900 the number of informations for this offence had fallen still further to 635. It must be borne in mind that not unfrequently the same person is convicted several times for overcrowding, in fact there is no reason to doubt that there are persons who systematically sub-let and overcrowd, e.g. amongst the convictions alluded to there are three against one person who was convicted 4 times last year for a similar offence in different houses. In this particular, although it may not have any marked bearing upon the question, it is not without interest to note that the number of inmates per house in Liverpool has been steadily diminishing during the last 20 years. At the census of 1881, it was found to be 5·9 per house, in 1891 it was 5·6 per house, and in 1901 it was 5·5 per house.

The gradual diminution in overcrowding led the Health Committee to amend the bye-laws relating to sub-let houses, and the City Council, with the sanction of the Local Government Board and on the recommendation of the Health Committee adopted amended bye-laws, which amongst other important provisions contained clauses providing that every lodger above 10 years of age shall have not less than 400 cubic feet of air space, and every person below 10 years of age shall have not less than 200 cubic feet, but if the room is used as a day-room as well as a bedroom, then every inmate must have at least 400 cubic feet. Under the previous bye-law a space of 350 feet only was required, and two persons under twelve were regarded as one adult.

The new bye-laws came into operation on the 30th January, 1901. One result of these bye-laws—which required so relatively large an addition to the cubic space allowed for each lodger—was to put an entirely new definition upon the offence of overcrowding, and although the great majority of people quickly appreciated the effect of the new bye-laws,

yet there was necessarily a considerable increase in the number of persons proceeded against for overcrowding amongst those who neglected to comply with the altered provisions.

BYE-LAWS AS TO HOUSES LET IN LODGINGS, OR OCCUPIED BY  
MEMBERS OF MORE THAN ONE FAMILY.

The Council, on the 5th day of December, 1900, in pursuance of the powers vested in them, made the following Bye-laws:—

BYE-LAWS made by the Mayor, Aldermen and Citizens of the City of Liverpool, acting by the Council with respect to Houses let in lodgings or occupied by members of more than one family in the City of Liverpool.

For fixing the number of persons who may occupy a house or part of a house which is let in lodgings, or occupied by members of more than one family:

For the registration of houses so let or occupied:

For the inspection of such houses:

For enforcing the provision of privy accommodation for such houses, and for promoting the cleanliness and ventilation in such houses:

For the cleansing and lime-washing at stated times of the premises, and for the paving of the courts and courtyards thereof:

For the giving of notices and the taking of precautions in case of any infectious disease.

1. In these Bye-laws, unless the context otherwise requires, the following words and expressions have the meanings hereinafter respectively assigned to them, that is to say—"Council" means the Mayor, Aldermen and Citizens of the City of Liverpool acting by the Council—"Lodging House" means a house or part of a house which is let in lodgings or occupied by members of more than one family—"Landlord," in relation to a house or part of a house which is let in lodgings or occupied by members of more than one family, means the person (whatever may be the nature or extent of his interest in the premises) by whom or on whose behalf such house or part of a house is let in lodgings or for occupation by members of more than one family, or who, for the time being,



receives, or is entitled to receive, the profits arising from such letting—"Lodger," in relation to a house or part of a house which is let in lodgings or occupied by members of more than one family, means a person to whom any room or rooms in such house, or part of a house, may have been let as a lodging or for his use and occupation—"Medical Officer of Health" means the Medical Officer for the time being of the Council, or any person duly authorised by the Council to act as his Deputy.

2. A lodging-house shall be exempt from the operation of the Bye-laws numbered 3, 4, and 7 to 17, all inclusive, until the landlord of such lodging-house shall have been required in pursuance of Bye-law 5 to furnish the particulars therein mentioned.
3. The landlord and a lodger as regards any room let to him in a lodging-house shall not, nor shall either of them, knowingly cause or suffer a greater number of persons than will admit of the provision of four hundred cubic feet of free air space for each person of an age exceeding ten years, and of two hundred cubic feet of free air space for each person of an age not exceeding ten years, to occupy, at any one time, as a sleeping apartment, a room which is used exclusively for that purpose, and which has been let in lodgings.
4. The landlord and a lodger as regards any room let to him in a lodging-house shall not, nor shall either of them, knowingly cause or suffer a greater number of persons than will admit of the provision of four hundred cubic feet of free air space for each person to occupy, at any one time, as a sleeping apartment, a room which is not used exclusively for that purpose, and which has been let in lodgings.
5. The landlord of a lodging-house forthwith after he shall have been required by a notice in writing, signed by the Medical Officer of Health, and duly served upon or delivered to such landlord, to supply the information necessary for the registration of such house by the Council shall himself or by his agent duly authorised in that behalf, sign and furnish to the Council a true statement of the following particulars with respect to such house: that is to say,

(a) The total number of rooms in the house:

- (b) The total number of rooms let in lodgings or occupied by members of more than one family :
  - (c) The manner of use of each room :
  - (d) The number, age and sex of the occupants of each room used for sleeping :
  - (e) The Christian name and surname of the lessee of each room ; and,
  - (f) The amount of rent or charge payable by each lessee.
6. The landlord of a lodging-house shall in the first week of the months of April and October in every year, and at such other times as may be necessary, cause every part of the premises to be thoroughly cleansed. He shall at the same time, and at such other times as may be necessary, except in such cases as are hereinafter specified, cause every area, the interior surface of every ceiling and wall of every water closet belonging to the premises, and the interior surface of every ceiling and wall of every room, staircase and passage in the house to be thoroughly washed with hot lime-wash.
- Provided that the foregoing requirement with respect to the lime-washing of the internal surface of the walls of the rooms, staircases, and passages shall not apply in any case where the internal surface of any such wall is painted, or where the material of, or with which such surface is constructed or covered is such as to render the lime-washing thereof unsuitable or inexpedient, and where such surface is thoroughly cleansed and the paint or other covering is renewed, if the renewal thereof be necessary for the purpose of keeping the premises in a cleanly and wholesome condition.
7. Every lodger in a lodging-house shall cause the floor of every room which has been let to him to be thoroughly swept once at least *every day* before the hour of eleven o'clock in the forenoon, and to be thoroughly washed once at least in *every week*, viz., on every Saturday, before the hour of eleven o'clock in the forenoon.
8. In every case where a lodger in a lodging-house is entitled to the exclusive use of any staircase, landing or passage in such house, such lodger shall cause every part of such staircase, landing or passage, to be thoroughly cleansed from time to time as often as may be requisite.



9. In every case where two or more lodgers in a lodging-house are entitled to the use in common of any staircase, landing or passage in such house the landlord shall cause every part of such staircase, landing or passage to be thoroughly cleansed from time to time as often as may be requisite.
10. Every lodger in a lodging-house shall, except in such cases as are hereinafter specified, cause every window of every room which has been let to him, and which is used as a sleeping apartment, to be opened to its full width, and to be kept fully open for *one hour* at least before eleven o'clock in the forenoon, and for *one hour* at least between eleven o'clock in the forenoon and four o'clock in the afternoon of every day.

Provided that such lodger shall not be required, in pursuance of this Bye-law, to cause any such window to be opened or to be kept open at any time when the state of the weather is such as to render it necessary that the window should be closed, or when any bed in any such room may be occupied by any person in consequence of sickness or of some other sufficient cause.

11. The landlord of a lodging-house, immediately after he shall have been informed, or shall have ascertained, that any person in such lodging-house is ill of an infectious disease, shall give written notice thereof to the Medical Officer of Health.
12. In every case where a lodger in a lodging-house has been informed, or has ascertained, or has reasonable grounds for believing that an occupant of any room which has been let to such lodger is ill of an infectious disease, such lodger shall forthwith give written notice thereof to the landlord, and to the Medical Officer of Health, and verbal or written notice thereof to every other lodger in such lodging-house.
13. In every case where, in pursuance of the statutory provision in that behalf, an order of a justice has been obtained for the removal from a lodging-house to a hospital, or other place for the reception of the sick, of a person who is suffering from any dangerous infectious disorder, and is without proper lodging or accommodation, or lodged in a room occupied by more than one family, the landlord of such lodging-house, and the lodger to

whom any room whereof such person may be an occupant has been let shall, on being informed of such order, forthwith take all such steps as may be requisite on the part of such landlord, and of such lodger, respectively, to secure the safe and prompt removal of such person in compliance with such order, and shall, in and about such removal, adopt all such precautions as, in accordance with any instructions which such landlord and such lodger respectively may receive from the Medical Officer of Health, may be most suitable for the circumstances of the case.

14. No lodger shall suffer any person above the age of twelve years to occupy as a sleeping apartment any room let to such lodger if the room is occupied by more than one person above that age and of the opposite sex.
15. In every case where the landlord of a lodging-house does not occupy or reside in any part of the premises or retain a general possession or control of the premises, every lodger who is entitled to have or to exercise the control of the outer door of the premises shall at all times when required by the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council, afford any such officer free access to the interior of the premises for the purpose of inspection.
16. Every lodger in a lodging-house shall, at all times when required by the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council, afford any such officer free access for the purpose of inspection to the interior of any room or rooms which may have been let to such lodger.
17. In every case where the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council has, for the purpose of inspection, obtained access to the interior of a lodging-house or to the interior of any room or rooms in such house, a person shall not wilfully obstruct any such officer in the inspection of any part of the premises, or, without reasonable excuse, neglect or refuse, when required by any such officer, to render him such assistance as may be reasonably necessary for the purpose of such inspection.



## PENALTIES.

18. Every person who shall offend against any of the foregoing Bye-laws shall be liable for every such offence to a penalty of forty shillings, and in the case of a continuing offence to a further penalty of ten shillings for each day after written notice of the offence from the Council.

Provided nevertheless that the justices or court before whom any complaint may be made or any proceedings may be taken in respect of any such offence may (if they think fit) adjudge the payment, as a penalty, of any sum less than the full amount of the penalty imposed by this Bye-law.

## REPEAL.

19. From and after the date of the confirmation of these Bye-laws, the Regulations and Bye-laws with respect to houses let in lodgings or occupied by members of more than one family, which were made by the Town Council of the City of Liverpool on the 10th day of March, 1869, and on the 7th day of October, 1885, respectively, and which were confirmed by one of Her Majesty's principal Secretaries of State and by the Local Government Board respectively, on the 23rd day of March, 1869, and on the 3rd day of December, 1885, shall so far as the same may be in force in the City of Liverpool be repealed.
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## EXAMINATION OF CELLAR DWELLINGS.

	1900.	1901.
Number of Street Cellars inspected ... ..	7,424	5,706
"        "        "        found empty ... ..	149	92
"        "        "        used for Lumber, &c. ...	2,899	1,930
"        "        "        found illegally occupied...	279	190
"        "        "        "        legally        "        ...	4,106	3,494
Notices issued to Owners... ..	425	218
"        "        "        Occupiers ... ..	276	164
Informations against Street Cellar Owners	14	5
Fined ... ..	6	4
of Informations against Street Cellar Occupiers ... ..	14	2
Fined ... ..	4	2
of Court Cellars inspected ... ..	1,043	500
"        "        "        found empty ... ..	79	23
"        "        "        used for Lumber, &c. ...	805	332
"        "        "        illegally occupied ...	8	5
"        "        "        legally        "        ...	151	140
"        "        and Street Cellars found dirty...	797	791
Informations against Court Cellar Owners	5	3
Fined ... ..	3	3
of Informations against Court Cellar Occupiers ... ..	1	4
Fined ... ..	—	1
Amount of Fines and Costs ...	£14 19 6	£9 18 0

The total number of cellars let as separate dwellings at present upon the register is 3,201, besides which there are 6,471 cellars used in conjunction with the dwelling-house above, but not let as separate dwellings.

The number of cellars filled in by the Health Committee, free of charge to the owners, during the year is 8 and the total filled in during the last ten years is 832.

About 9,400 people are at present housed in cellars.

Cellars occupied as dwellings must comply with certain requirements under the Liverpool Improvement Act of 1871, and the Public Health Act of 1875. The requirements of the Act specially relating to Liverpool may be summarised as follows, and any person who lets or suffers to be



occupied any cellar, in contravention of these requirements, is liable to a penalty not exceeding ten pounds:—

“For the purpose of this enactment, every room, the surface of the floor of which is more than four feet below the level of the nearest street, shall, if intended to be used as a separate dwelling, be deemed a cellar dwelling, and every cellar which any person shall at any time apparently inhabit or in which any person shall be found between the hours of eleven in the evening and five o'clock in the morning, shall be held and taken to be occupied as a separate dwelling.”

“Every cellar dwelling shall have a height from the floor to the ceiling in every part of such dwelling of not less than seven feet; no cellar dwelling shall have any part of its floor more than four feet below the surface of the footway of the adjoining street; every cellar dwelling shall have, both at the front and rear thereof, and for the full extent thereof, respectively, an area not less than two feet six inches wide in every part thereof, from six inches below the floor of the cellar to the surface of the ground adjoining the front and rear thereof respectively; if the cellar dwelling consists of two cellars back-to-back, it shall suffice if there be one area in front and one behind such two cellars; every area shall be protected by railings or gratings to the satisfaction of the Corporation; the steps for access to the cellar dwelling may be in the area, but shall not be opposite to the window of the cellar; the steps or access to the house above the cellar door may be across or over but not in such area, and shall not be over or opposite the window of the cellar; save as aforesaid the areas in the front and rear, respectively, shall be open and free from obstruction; every cellar or room in any cellar dwelling shall have an open fire-place, with a proper flue therefrom; every cellar dwelling shall have a water-closet, or other like convenience, and (if required by the Corporation) an ash pit or dust bin, to be built or placed in such situation as the Corporation think fit, and to their satisfaction; every cellar dwelling shall have at least one window in an outer wall, and not less than three feet square or nine square feet clear of the sash frame, and if such cellar dwelling consists of two or more cellars, each of such cellars shall have one such window; every such window shall either be a casement window, opening on hinges or pivots, or a sash window with double sashes opening at the top and bottom.”

The Building Surveyor has kindly supplied the following table:—

NUMBER OF HOUSES ERECTED AND TAKEN DOWN DURING THE YEAR ENDING  
31st DECEMBER, 1901.

DISTRICTS.							Number erected.	Number takedown
Scotland	...	...	...	...	...	...	183	41
Exchange	...	...	...	...	...	...	98	221
Abercromby	...	...	...	..	...	...	2	151
Everton ..	...	...	...	...	...	...	23	14
Kirkdale	...	...	...	...	...	...	6	3
West Derby (West)	...	...	...	...	..	...	—	7
Toxteth ...	...	...	...	...	...	...	4	14
Walton ..	...	...	..	...	...	...	391	6
West Derby (East)	..	...	...	..	...	...	584	6
Wavertree	...	...	...	...	...	...	475	1
Sefton Park	...	...	...	...	...	...	197	—
Total ... ..							1,963	464

The City Engineer has kindly supplied the following:—

Number of cellars filled in during 1901	...	...	...	...	...	8
“ “ “ the last 10 years	...	...	...	...	...	832

#### SEWER VENTILATION TO END OF 1901.

Number of 9-inch by 6-inch, 9-inch, 6-inch, 6-inch by 4-in, 4-inch by 4-inch, 4-inch, and 3-inch Iron Pipe Ventilating Shafts	...	...	1,161
Number of Street Ventilating Manhole Covers and Gratings	...	...	6,671



## CANAL BOATS.

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The Leeds and Liverpool Canal Company are the proprietors of the only canal having direct communication with Liverpool, and the length of the waterway within the City, exclusive of the locks which lead to the docks, is about 3 miles.

The number of inspections of canal boats during the year was 4,701, and the condition of the boats and their occupants, as regards matters dealt with in the Acts and Regulations, is indicated by the following information:—

Twelve boats, not registered by their present owners, were found to be used as dwellings. Written notices were sent to the owners in each case. The notices were complied with in ten cases, one boat ceased to be used as a dwelling, and one has not been seen in the district since the notice was served.

Fifty-seven boats were found without certificates on board. Notices were sent to the owners in each case, and 44 were complied with. Eleven have not been seen in the district since, and two are not now used as dwellings.

Twenty-four boats were found without the registered number painted on both sides of the boat. Notices were sent to the owners in each case, and the omission was rectified in 17 cases. Six have not been seen in the district since, and one is not now used as a dwelling.

In 13 cases defective second bulkheads were reported. Notices were sent in each case, and 11 were complied with. One boat has not been seen in the district since, and 1 is not now used as a dwelling.

In 18 boats the cabins required re-painting. Notices were sent to the owners in each case, and 15 were complied with. One boat has not been seen in the district since, and 2 are not now used as dwellings.

Dirty cabins were reported in 16 cases. In 6 cases verbal notice was given to the masters, and in the others written notices were sent to the owners. In 6 cases the notices were complied with, and 7 not being complied with, informations were laid against the masters, and small fines inflicted, the master of one boat being twice fined. The cabins were subsequently cleaned. Two of the boats are not now used as dwellings, and 1 has not been seen in the district since.

Besides the foregoing, there were 103 instances of infringements of the Acts and Regulations, caused by leaky decks (43), general leaky condition of boats (7), no doors to lockers (6), broken scuttle covers (3), defective ventilation (3), broken floors (8), no water casks on board (26), defective stoves (6), no pump (1). In each case notices were sent to the owners. Eighty-three of the notices were complied with, and 14 have not been re-inspected. Six of the boats are not now used as dwellings.

Informations were laid in 11 cases, viz., non-separation of sexes (1), overcrowding (1), dirty cabins (7), and not being registered (2). In all cases fines were inflicted, varying from 1s. and 1s. costs, to 10s. and 4s. 6d. costs. The total amount of fines was £3 6s. 0d.

Two cases of scarlet fever occurred on a boat: the patients were removed to hospital, and the cabin, and bedding on board the boat, was disinfected. Information was received that 2 cases of scarlet fever had been removed from a boat outside this district, and that disinfection had not been carried out. This boat was also disinfected. The usual certificates of disinfection were given to the masters in each case.

The entire number of the infringements of the Acts and Regulations referred to in the Report occurred on 136 boats, in several instances the offence being repeated on the same boat.

Twenty-nine notices were sent to the School Board of children living on canal boats, and not attending any school.



The number of boats on the register is 615. Two boats have been removed from the register, as it was ascertained that one had been broken up, and the other one, being disused, was removed from the register at the request of the owner. It is probable that other boats have been broken up or have left the district, but in the absence of definite evidence of this the boats remain on the register.

During the year 10 new boats were registered, 17 re-registered on account of changes of owners, 5 re-registered on account of structural alterations. All boats re-registered in consequence of a change of owners, or the name of the boat being changed, or on account of structural alterations, retain their original numbers.

Copies of the registration certificate were issued to the owners of 9 boats, owing to the original ones being worn out.

The Liverpool and Leeds Canal Company during the year 1901 cancelled the names of all their boats, and gave to each boat a number. One hundred and seventy-three certificates of registration were altered, and the necessary change made on the register.

There were 93 changes of masters reported, and the fact duly recorded on the register.

In 1898 the Canal Boat Inspectors were appointed as Port Sanitary Inspectors, an appointment which authorised them to inspect all classes of boats, as a difficulty arose in regard to certain boats plying upon the canal which were not registered under the Canal Boats Act, but which had been registered by the Board of Trade under the Merchant Shipping Act. Twenty-three visits were made to boats of this class, and all were found correct except one, in which the cabin was found to be in a dirty condition. A verbal notice was given to the owner and master, and the cabin was cleansed.

### BAKEHOUSES.

The sanitary control of Bakehouses is dealt with under the Factory and Workshop Act and Public Health Acts, which prescribe the following regulations:—

Every bakehouse must have the whole of the interior walls and ceilings, and all passages and staircases of the bakehouse, painted, varnished, or lime-washed; if painted or varnished they must be washed with hot water and soap at least once in every six months, and the paint or varnish renewed once at least in every seven years; if the walls, &c., are lime-washed, the lime-washing must be renewed once at least in every six months.

No sleeping-place shall be permitted on the same level as a bakehouse, and forming part of the same building, unless it is effectually separated from the bakehouse by a partition extending from floor to ceiling, and unless ventilated by an external glazed window of at least nine superficial feet in area, of which area at least one-half may be fully opened for ventilation.

No water-closet or ashpit shall be within or communicate directly with the bakehouse. The cistern for supplying water to the bakehouse shall be separate and distinct from any cistern for supplying water to a water-closet. No drain shall have an opening within the bakehouse.



No place underground may be used as a bakehouse unless it was so used at the commencement of the Factory and Workshop Act, 1895.

All bakehouses must be kept in a cleanly state, free from effluvia arising from any drain, water-closet, or other nuisance; they must be properly ventilated, and possess at least 250 cubic feet of space for each person during ordinary working hours, and 400 cubic feet during overtime. A reasonable temperature must be maintained, and suitable sanitary conveniences provided for those employed in the bakehouse.

By Section 133 of the Workshop Act, 1901, if any child, young person, or woman is employed in a bakehouse, the Medical Officer shall, on becoming aware thereof, give a written notice to His Majesty's Inspector of Factories.

Where any room or place used as a bakehouse is in such a state as to be, on sanitary grounds, unfit for use as a bakehouse, the occupier is liable on summary conviction to a fine not exceeding forty shillings.

Fifty-five bakehouses were added to the Register during 1901; about one-third of these are bread-bakers and confectioners, the remaining two-thirds are small pie and cake shops, which require supervision.

During the year three cellar and four ground-floor bakehouses have ceased to be used for baking purposes, the ovens demolished, and the premises reconstructed for other purposes.

Number of Bakehouses on Register, 31st December, 1901 ..	...	1,075
„ Bakehouses added to Register during 1901 ...	...	55
„ Bakehouses struck off Register during 1901 ...	...	20
„ Visits paid to bakehouses ...	...	4,437
„ Bakehouses found dirty (walls and ceilings) ...	...	479
„ Notices issued for lime-washing ...	...	321
„ Bakehouses lime-washed without notice... ..	...	158
„ Notices issued for defective ventilation... ..	...	24
„ „ „ to cease to use bakehouses for the purpose of domestic washing ...	...	3
„ „ „ to repair defective drains and waste pipes ...	...	15
„ „ „ to discontinue using bedrooms opening directly into bakehouses ...	...	6
„ „ „ to take drains out of bakehouses ...	...	3
„ „ „ to repair defective floors and walls ...	...	7
„ „ „ to repair defective ceilings ...	...	15
„ „ „ to provide suitable water-closet accommodation ...	...	2
„ „ „ to remove and cease to keep animals in bakehouse ...	...	1
„ „ „ to cease to use bakehouses unfit owing to insanitary conditions ...	...	3
„ „ „ to cleanse floors, windows, areas, tables and troughs ...	...	56
„ „ „ to cease to use as bakehouses places underground not in conformity with Act, 1895 ...	...	7
„ „ „ to remove accumulations of foul water		1
„ „ „ „ „ trade refuse		15
„ „ „ to repair defective chimney ...	...	1
„ „ „ to remove water closet from being in direct communication with bakehouse		1
Number of References to Government Factory Inspector...	...	33

*All the above notices were complied with by the owners or occupiers.*



### SHOP HOURS ACT, 1892—5.

The object of the Act is to prevent the employment of young persons for such an excessive number of hours as will prejudice the health of these employés.

During 1901, under the above Act, there have been 3,889 visits paid to shops during the day, and 2,529 visits made after six o'clock; in 5,813 instances the shops were found to be correct, and 605 incorrect.

The persons concerned have generally evinced readiness to comply with the requirements of the Act, and have thus lessened the difficulties in its administration. The number of occasions in which it was necessary to take police proceedings during the last three years is small.

	<u>1899.</u>	<u>1900.</u>	<u>1901.</u>
Number of Shops visited (day) ... ..	4,670	3,418	3,889
„ „ found incorrect ... ..	395	331	347
„ „ visited after 6 p.m. ... ..	2,635	2,527	2,529
„ „ „ found incorrect ... ..	252	227	258
„ copies of Act distributed by the Inspectors ... ..	174	158	127
„ Informations for excessive hours ... ..	1	0	4
„ Convictions ... ..	1	0	3
„ Informations for not exhibiting Notice of Act and Require- ments as to hours of work ... ..	3	6	3
„ Convictions ... ..	3	6	3
Total number of Informations ... ..	4	6	7
„ „ Convictions ... ..	4	6	6
<hr/>			
Total Amount of Fines and Costs...	£2 15s. 6d.	£8 7s. 0d.	£7 15s. 0d.

### SEATS FOR SHOP ASSISTANTS ACT, 1899.

The object of the Act is to provide seats for female shop assistants.

	<u>1900.</u>	<u>1901.</u>
Visits for the purposes of the Act ... ..	247	379
Found correct ... ..	231	344
Seats being provided ... ..	16	35

The above table relates to special visits for the purposes of the Act, but in administering the Shop Hours Act notice is also taken of the provision of seats for female shop assistants.

# FACTORY AND WORKSHOPS ACT, 1878—95.

The Inspectors appointed under the above Acts for sanitary purposes have visited a large number of Workshops, the summary of which is appended:—

## SUMMARY OF VISITS PAID TO WORKSHOPS.

Bamboo Workers.....	18	Metal Polish Makers .....	10
Basket Makers .....	20	Milliners .....	143
Block Makers .....	5	Mineral Water Manufacturers .....	9
Blue Manufacturers .....	10	Packers .....	7
Bootmakers .....	165	Paint and Varnish Manufacturers..	5
Bottlers .....	36	Paper Cutters, &c. ....	14
Box Makers .....	14	Paper Sorters .....	13
Brassfinishers, &c. ....	7	Perfume Manufacturers.....	5
Brick Makers .....	24	Photographers .....	24
Brush Makers .....	23	Pickle and Sauce Manufacturers ...	109
Cabinet Makers and Joiners .....	471	Picture Framers .....	13
Canned Goods .....	26	Pipe Mounters .....	9
Carvers and Gilders.....	47	Plumbers .....	46
Chair Makers .....	9	Rubber Goods Manufacturers .....	9
Chemists' Sundries Manufacturers	14	Sack and Bag Makers.....	76
Clog Makers .....	6	Saddlers .....	70
Coach Builders.....	20	Sailmakers .....	15
Confectioners .....	147	Sculptors .....	7
Coopers .....	46	Sign Writers.....	15
Cork Cutters.....	18	Slipper Makers.....	13
Cotton Sorters .....	57	Smiths .....	96
Cycle and Bassinette Makers .....	31	Soap Boilers .....	12
Dentists .....	7	Stay and Corset Makers.....	12
Dressmakers .....	562	Tailors .....	1,380
Drysalters .....	7	Tarpaulin Makers .....	17
Enamellers .....	11	Tinsmiths .....	16
Engravers... ..	6	Trunk and Portmanteau Makers ...	7
Fancy Goods.. ..	6	Umbrella Makers ... ..	11
Firewood Manufacturers .....	8	Underclothing Makers .....	105
Fish Curers .....	23	Upholsterers .....	55
French Polishers .....	31	Ventilating Engineers .....	8
Furriers .....	9	Watchmakers and Jewellers .....	56
Galvanisers .....	16	Wheelwrights .....	61
Knitters .....	7	Wig Makers .....	8
Lath Cleavers .....	6	Wireworkers .....	15
Laundries .....	467	Various .....	130
Marble Masons.....	11		
Marine Stores .....	800	Total.....	5,828
Mattress and Bed Makers .....	38		



The number of visits paid to workshops, &c., the number and character of the Sanitary defects found, and the action taken, are indicated in the following table:—

	1900.		1901.
Visits to Workshops ... ..	6,130	...	5,828
Workshops found incorrect ... ..	1,907	...	1,746
Number of Workrooms, dirty walls ... ..	573	...	568
"          "          " ceilings ..	578	...	572
"          "          " floors ... ..	18	...	22
"          "          " urinals... ..	36	...	3
"          "          " water-closets ...	119	...	77
"          "          " lavatories ...	13	...	3
"          "          insufficiently ventila- ted, arising from structural defects or from want of attention ... ..	120	...	106
"          "          found overcrowded...	12	...	6
"    Defective Drains and Water- closets; also insufficient water- closet accommodation, and other nuisances... ..	487	...	465
"    Notices issued {upon Owners ...	247	608	174
{upon Occupiers ...	361		
"          "    not complied with ...	0	...	0
"    Informations ... ..	14	...	19
"    Fined ... ..	9	...	7
"    of References to Government Factory Inspector... ..	59	...	51
"          "    to Building Surveyor	7	...	1
"    of References to City Engineer ...	6	...	3
"          "    Water Engineer ...	24	...	0
"    Workshops inspected, protected...	149	177	123
"          "    " non-protected	28		
"    Workrooms measured ... ..	133	...	119
"    Workrooms closed owing to insani- tary conditions ... ..	6	...	4
Amount of Fines and Costs ...	£7 15 0		£13 15 0
Separate closet accommodation provided for females in workshops where both sexes are employed ... ..	21	...	34
W.C. accommodation provided for males ...	10	...	18
Total ... ..	31		52

## SMOKE NUISANCES.

Proceedings for the abatement of Nuisances caused by the emission of excessive smoke from factory chimneys or from steamers, were taken under the Liverpool Sanitary Amendment Act, 1854, sections 24 and 25, and the Liverpool Improvement Act, 1882, section 77, with the following results:—

	1900.	1901
Number of reports of excessive smoke from Manufactories ...	416	421
"                    "                    "                    Steamers in river	371	382
"                    "                    "                    "                    dock	50	55
	<hr/>	<hr/>
Total	837	858

Admonished by the Health Committee or written to in respect to nuisances caused by the emission of excessive smoke:—

Manufacturers	...	...	...	...	...	6	5
Steamers	...	...	...	...	...	6	7
						<hr/>	<hr/>
	Total	...	...	...	...	12	12

				<u>1900.</u>		<u>1901.</u>	
Chief Inspector and Assistants gave	M'facturers	537	Cautions	528	Cautions		
„	„	„	Steamers	77	„	57	„
				<hr/>		<hr/>	
	Total...	...		614	„	585	„
				<hr/>		<hr/>	

Number of enquiries respecting Owners	356	277
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					<u>1900.</u>	<u>1901.</u>
Informations against Manufactories	..	...	...	...	410	416
„ „ Steamers in river...		...	...	...	315	306
„ „ „ dock...		...	...	...	50	55
					<u>      </u>	<u>      </u>
Total	...	...	...	...	775	777

Acquitted or withdrawn, Manufactories	...	...	...	2	1
"      "      Steamer cases	...	...	...	10	13
				<hr/>	<hr/>
Total ...	...	...	...	12	14



						1900.	1901.
Fined, Manufactories	...	...	...	...	...	408	415
„ Steamers	...	...	...	...	...	356	348
Total	...	...	...	...	...	764	763

						1900.	1901.
Amount of Fines, Manufactories	...	£626	17	6	£532	16	0
„ „ Steamers	...	458	7	9	480	7	9
Total	...	£1,085	5	3	£1,013	3	9

Nuisances arising from domestic chimneys are controlled by the Police.

#### SMOKE INSPECTION.

It is gratifying to note that the falling off in the number of reports relating to excessive smoke from manufactories still continues.

This is accounted for chiefly by the greater care exercised by the owners of furnaces.

It is also owing to the fact that the system of concentrating the work in one large building, with all the newest appliances for smoke prevention, instead of having it carried on in a number of small factories scattered over the City, has been further adopted by manufacturers during the year.

Out of 382 cases of excessive smoke from Steamers in the river which were observed, 65 vessels were bound to foreign ports or passing through this port, the owners of 2 Steamers could not be traced, and in 2 cases the Steamers were towing other vessels in emergency, and consequently no proceedings were taken.

						1900.	1901.
Complaints received of smoke from defective house flues, and from low chimneys	...	...	...	...	...	135	131
Visits relating thereto...	...	...	...	...	...	781	719
Chimneys raised in consequence of complaints	...	...	...	...	...	30	44
Flues altered and repaired	...	...	...	...	...	37	25
Attention promised	...	...	...	...	...	56	57
Referred to other departments	...	...	...	...	...	4	1
Frivolous complaints	...	...	...	...	...	8	4
Total complaints dealt with...	...	...	...	...	...	135	131

From careful observations during the course of inspections, it has been found that the nuisance caused by the emission of excessive smoke from chimneys is due to the following causes:—

1. Improper construction of the furnaces, and the want of sufficient boiler room.
2. Inferior quality of the fuel used.
3. Improper firing and want of attention on the part of the stokers.

These causes are usually associated; even an improperly constructed furnace, if fed with a good quality of fuel and attended to by a careful and skilful man, can be so used as to avoid making unnecessary smoke, and, at the same time, the utmost amount of work of which it is capable can be obtained from it. A furnace of the best construction and fitted with the most approved appliances for preventing smoke, may, on the other hand, give rise to the greatest nuisance owing to improper attention and the use of poor fuel.

Mechanical stokers, many forms of which are now used by manufacturers, when properly used, effect a saving of 11 to 20 per cent. in the cost of the coal used, together with a considerable diminution of the quantity of smoke emitted from the chimney.

#### OFFENSIVE TRADES.

Applications for permission to carry on the following offensive trades were made during the year, and a report by the Medical Officer of Health on each application was submitted to the Health Committee:—

Premises.	Business.	Granted.	Refused.	Date, 1901.
106 to 110, Upper Mann Street	Abstracting Palm Oil from Dunnage wood .....	1	—	14th March.
141, Vauxhall Road.....	Dry Soap Manufactory .....	1	—	9th May.
46, Park Street .....	Tripe Boiling .....	—	1	4th July.
67, Warwick Street .....	Cleansing Palm Oil Kernels .....	—	1	8th August.
2 and 4, Cavendish Road	Tripe Dressing .....	—	1	5th Sept.
80 and 82, Grafton Street	Cleansing Palm Oil Kernels, &c. ....	1	—	14th Nov.
86, Melrose Road .....	Tripe Boiling .....	1	—	14th Nov.

In cases in which permission is granted, conditions are imposed requiring that the premises be put in proper order to the satisfaction of the City Engineer and the Medical Officer of Health, that no public nor private nuisance be caused, and that the business be discontinued whenever the Council shall so require.

The number of inspections of premises where offensive trades are carried on was 1,268 as against 1,041 in 1900.



Total No. of Visits to Bone Boilers...	...	...	...	...	89
„ Fell Mongers	...	...	...	...	38
„ Soap Boilers	...	...	...	...	217
„ Fat and Tallow Melters	...	...	...	...	277
„ Tripe Boilers	...	...	...	...	240
„ Gut Scrapers	...	...	...	...	117
„ Fish Skin Dressers...	...	...	...	...	16
„ Tanneries	...	...	...	...	81
„ Knackers' Yards	...	...	...	...	125
„ Paint and Resin Works	...	...	...	...	18
„ Stearine Works	...	...	...	...	18
„ Palm Oil Works	...	...	...	...	30
„ Manure Manufacturers	...	...	...	...	2

KNACKERS' YARD RETURNS.

	Horses Destroyed.	Horses taken in Dead.	Asses Destroyed.	Cows Destroyed.	Other Beasts.
Holme Street ...	428	1,278	35	31	1

MARINE STORES.

	1900.	1901.
Number of Visits ...	889	929

MANURE YARDS AND WHARVES.

	1900.	1901.
Number of Visits ...	520	517

## STABLES

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The number of visits was 6,211. Conditions prejudicial to health arise from stables on account of defective construction, or of improper situation, or from neglect of lighting, ventilation and cleansing of the stables. Under existing legal powers, great difficulty is experienced in dealing with stables, and complaints are very frequent of nuisances occasioned by the causes indicated, the most frequent, perhaps, being neglect of cleanliness.

A large number of stables are either so defective, or so little care is taken of them, that the visits of the inspectors are necessary almost every day, in order that they may be under practically constant observation.

The Health Committee have endeavoured to procure adequate powers to enable them to make bye-laws to deal with stables (*a*) for regulating the lighting, ventilation, cleansing and draining of stables, whether erected before or after the passing of this Act; (*b*) for regulating the situation and mode of construction of stables to be erected within the City. At present there are no such bye-laws.

					<u>1900.</u>	<u>1901.</u>
Number of Visits to stables	...	...	...	...	5,931	6,211



## FEMALE SANITARY STAFF.

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The work of the female sanitary staff has been carried out upon the lines previously described, the greater portion of the time and attention of the female inspectors being devoted to house-to-house visitation, more especially to the homes of those of irregular and dirty habits, whilst considerable attention has been paid to the aged and infirm inmates of the poorer class of dwellings.

Many instances are reported in which improvement is attributed to the compulsory removal of families from insanitary dwellings which have been dealt with by the Housing Committee.

A large number of special investigations have been made into cases of fatal infantile diarrhoea, measles, whooping-cough, bronchitis and pneumonia, and instructions have been given to parents upon these matters.

The staff have also been usefully employed during the hot weather in watching the effect of the use of the sterilized humanised milk prepared for infants whose mothers are unable to suckle them. (See page 149.)

Workshops in which women are employed are inspected systematically and upon complaint.

STATISTICS OF WORK OF FEMALE SANITARY STAFF.

						<u>1900.</u>	<u>1901.</u>
Number of Street Houses examined ...	...	...	...	...	...	17,190	13,872
„ Court „ „ ...	...	...	...	...	...	8,724	6,746
„ Cellars ...	...	...	...	...	...	1,435	1,772
„ Families found dirty ...	...	...	...	...	...	2,375	1,487
„ Re-visits to Families ...	...	...	...	...	...	27,119	12,800
„ Houses found dirty ...	...	...	...	...	...	6,133	5,651
„ Cellars „ „ ...	...	...	...	...	...	389	435
„ Notices issued to cleanse dirty premises ...						375	351
„ „ „ floors and woodwork }						131	104
„ References to Sanitary Inspectors ..						3,585	4,457
„ „ „ Lodging-house Inspectors...						87	69
„ „ „ Workshop Inspectors ...						24	9
„ „ „ Veterinary Department ...						—	4
„ „ „ City Engineer ...	...	...				68	287
„ „ „ Water Engineer ...	...	...				574	412
„ „ „ Building Surveyor ...	...	...				—	—
„ „ „ School Board ...	...	...				7	7
„ „ „ The Shelter, Islington ...	...	...				85	59
„ „ „ Relieving Officer ...	...	...				1	—
„ Enquiry Visits ...	...	...	...	...	...	1,493	4,069
„ Sterilised Milk Depôt Visits ..	...	...				—	320
„ Visits to Workshops ...	...	...	...	...	...	—	146
„ Workshops found incorrect ...	...	...				—	41
„ Workshop Notices ...	...	...	...	...	...	—	1

The falling off in the number of visits paid to dwellings in routine course is counter-balanced by special visits made with the specific objects alluded to.



## BATHS AND WASH-HOUSES.

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The Report of the Superintendent Engineer of the Corporation Baths and Wash-houses furnishes ample evidence of the extent to which the advantages offered by these establishments are availed of by the public, more especially perhaps by those sections of it who have not washing facilities in their homes.

As regards the washing-baths, arrangements are in progress by which free tickets shall be distributed by the Female Sanitary Staff, to be made use of by the poorer classes, both for themselves and for their children. Cases in which the practice has been resorted to have been very successful, the washing-bath being far more effectual than anything which can be adapted in the poorer classes of dwelling.

It would appear that there is a wide scope for the use of baths of this character by women and children in the lower districts of the City.

## INFECTIOUS DISEASE IN SCHOOLS.

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It is of the utmost importance, in order to prevent the extension of infectious disease in schools, that, when sickness exists at the homes of the scholars, the earliest possible information shall be given to the Head Master, the Head Mistress, or Principal.

Usually the first intimation of such sickness is received by the Medical Officer, under the terms of the Notification Act, which, however, does not include measles and whooping-cough, both of which are liable to spread extensively amongst children of school age. These cases are notified by the school attendance officers, by inspectors, by parents, by doctors, and others. It is part of the duty of the district inspector to forthwith warn the parents, or those in charge, that the children must be kept from school until fourteen days after the necessary disinfection has been carried out. The inspector leaves a postcard at the house, addressed to the Medical Officer of Health, to be filled up and forwarded by the parent or other responsible person, as soon as the doctor in attendance states that the disinfection may be proceeded with.

The information obtained by the inspector is duly entered in a permanent register, and also sent by postcard the same day to the Head Master of the school the children attend if it is a Board School, or to the Principal in the case of a Private School.

When the source of infection is removed (either by removal of the patient to hospital, or by the recovery or death of the patient), the house and bedding are disinfected by the officers of the Public Health Department.

At the expiration of a fortnight from the date of disinfection, the school visitor is notified to visit the house, and if no sickness of any kind has occurred in the interval intimation is sent to the Head Teacher of the school to re-admit the children.

In the case of measles and chicken-pox, disinfection is carried out with the consent of the occupier of the house; the children are not allowed to return to school until a fortnight after the sickness has ceased to exist.



In cases of whooping-cough, ringworm, &c., only the affected child is kept from school. Ringworm, scabies, and ophthalmia may last indefinitely unless properly dealt with, and no child with any trace of these diseases should be admitted to school.

The notices sent to the schools for the purpose of notifying the existence of infectious disease at the home of a pupil are accepted by the Government Education Department, also by the Liverpool Council of Education, as a valid reason for the non-attendance of the children at school, and qualify them to receive any benefits which regular attendance would have entitled them to.

When necessary, a certificate is furnished to the school authorities, stating that the pupil was absent on account of infectious sickness at home.

It must be borne in mind that the methods now described are directed to the suppression of infectious disease, and although the child may be free from infection, and therefore, so far as the risk of infection is concerned, may with perfect safety return to school, yet it must be remembered that the child may not be sufficiently recovered physically to undertake at once the full work and discipline which attendance at school entails.

The permission of the Health Department to return to school, therefore, implies nothing further than freedom from infection.

It may be regarded as a rule, that all children suffering from an infectious disorder should be excluded from school so long as they are likely to retain any infection; this condition is one which may involve exclusion for some time after the patient is apparently convalescent.

It is equally necessary that children coming from houses, any inmate of which is suffering from infectious sickness, should also be excluded, because in the great majority of instances, if not in all of them, it is impossible to effectually isolate a case of infectious sickness in an ordinary household, especially within the homes of children of the class who attend the public elementary schools.

Hardship really is minimised by a careful application of the powers to exclude individual scholars, because unless this is attended to it is quite possible that disease may rapidly spread to an extent which would render it necessary to close the school altogether.

It is extremely difficult, if not impossible, to lay down absolute rules as to when, and for how long a time, schools should be closed. The nature of the disease, its character, the numbers of the pupils affected, will all be factors in determining the point, as well as the nature of proof that the sources of infection are actually at the school.

It is plain, for example, that if 10 per cent. of the children attending a school are absent on account of typhus fever, the aspect is more grave than if the same number of children are absent from measles, and the more formidable character of the one form of disease would call for more stringent action than in the case of the other; yet in either case it would be necessary to adopt as rigorous means as possible to exclude scholars from infected houses in the first instance, and it would probably be found in that way that the disease would be checked without resorting to closure of the school.

Much depends upon the amount and the promptness of the information which the Medical Officer of Health is able to gain in regard to the circumstances of the school children and their homes: and the promptness with which action can be taken.

The existence of infectious disease in a locality is by no means *per se* to be looked upon as a ground for closing the schools, and again still less is the existence of isolated cases of sickness amongst the pupils.

What applies to public elementary schools (Board Schools and Denominational Schools) also applies to Sunday Schools and private schools. Although these latter establishments are not subject to the same regulation by the Sanitary Authority as the others, yet the Public Health Act does make certain provisions which are applicable to schools of every kind, and the managers of these establishments are as a rule perfectly willing to act upon the suggestions which the Sanitary Authority may find it necessary to offer.

When it does become expedient to close schools it is desirable that the time specified should be a minimum, because if it appears necessary a notice extending the period can be given before the expiration of the time originally stated.



As regards the influence of school closure upon the prevalence of sickness, as indicated by the numbers of cases reported to the Medical Officer of Health, it is interesting to note the experience of four years in Liverpool in regard to Measles among children attending elementary schools. The subjoined table indicates the number of cases reported during one month *before* the holidays, and one month *after* the holidays, precisely the same machinery for notification being in force in each period. It would also appear that the longer the holidays the greater the effect in lessening the prevalence of the sickness.

Summer holidays.	DURING—	Cases of measles reported.	Winter holidays.	DURING—	Cases of measles reported
1896.	One month before the holidays ...	283	1896.	One month before the holidays ...	143
	One month after the holidays ...	35		One month after the holidays ...	115
1897.	One month before the holidays ...	991	1897.	One month before the holidays ...	403
	One month after the holidays ...	131		One month after the holidays ...	171
1898.	One month before the holidays ...	452	1898.	One month before the holidays ...	205
	One month after the holidays ...	137		One month after the holidays ...	75
1899.	One month before the holidays ...	1325	1899.	One month before the holidays ...	501
	One month after the holidays ...	182		One month after the holidays ...	217
<i>Average of 4 years.</i>					
	One month before the holidays .	763		One month before the holidays ...	313
	One month after the holidays ...	121		One month after the holidays ...	144

The summer holidays extend to about five weeks; the winter holidays from a fortnight to three weeks.

Measles became very prevalent towards the close of 1900. On the re-opening of the schools in January after the Christmas holidays, 4045 cases were reported in 10 weeks.

The disease first became prevalent in the North end of the City. It then spread to the East, where it became especially prevalent, and afterwards extended into the centre of the City, and to the South.

From the 1st January to the 9th March, 1901, all the departments in 13 schools, and the infants' departments of 25 schools, during one period or another, were closed owing to infectious sickness.

On the 9th March all departments of 5 schools and the infants' departments of 124 schools were closed, until after the Easter Holidays, owing to the same cause.

The effect of closure of schools in checking the spread of measles was again marked :—

No. of cases in month preceding notice to close referred to above...	2,075
No. of cases in month after Easter holidays ... ..	616

#### NOTICES TO MASTERS OF SCHOOLS AND LIBRARIANS.

The arrangements have been continued with the School Board that postcards shall be sent to the Board and to the Head Masters of the various schools informing them when children from infected houses attend their schools. . 9,965 cards were sent last year, as against 6,533 in the preceding year.

Books borrowed from Lending Libraries which have been found in infected houses have been taken to the Disinfecting Station, and either destroyed or disinfected and returned. In the case of books which have been destroyed, compensation has been paid under the Public Health Act.

#### PUBLIC ELEMENTARY SCHOOLS.

##### VISITS MADE BY SANITARY INSPECTORS.

	1900.	1901.
No. of Visits to Schools ... ..	2,969	3,216
„ Waterclosets and Latrines found dirty or defective	150	173
„ Notices issued for defects .. ..	82	70
„ „ „ dirty closets ... ..	32	28



THE AMBULANCE AND DISINFECTING STAFF.

The following table shews the number of patients removed by Officers of the Ambulance Staff, and the Hospitals to which they were taken :—

City Hospital North, Netherfield Road.	City Hospital South, Grafton Street.	City Hospital, Park Hill.	Brownlow Hill.	City Hospital East, Mill Lane.	City Hospital, Priory Road.	David Lewis Northern Hospital.	Royal Infirmiry.	Smithdown Road.	Southern Hospital.	Stanley Hospital.	Children's Infirmiry.	City Hospital, Fazakerley.	Total.
857	602	944	148	223	54	23	38	34	41	2	2	74	3,042

For the removal of patients to hospital, and for the removal of infected bedding, and its return after disinfection, an adequate ambulance staff is maintained.

Four ambulance carriages are in use for the different forms of infectious disease. Bedding and clothing, after disinfection, are returned home by a staff and conveyance entirely distinct from that which removed them in the infected state. In all cases where it is found desirable to destroy infected articles full compensation is paid.

All cases of Smallpox and all cases of Typhus Fever, with very rare exceptions, are removed to Hospital, and a special Inspector revisits the house from whence the patient was removed to ascertain whether any further sickness has developed. These inquiries are made daily for 14 days and at intervals of a day or two during the following fortnight, and any case of sickness, however trifling it may appear to be, is at once reported and visited by a medical man. Friends of the patient, and others who are known to have been directly or indirectly in contact with him are also visited at their homes. By these inquiries, persons who may be incubating the disease are discovered and removed to the hospital at the earliest possible stage, and often before any

serious risk of infection has arisen. Without these inquiries, which have occasioned no inconvenience to anyone, the patients would have remained at home for a longer period, constituting centres of infection to the neighbourhood, and it is largely to systematic inquiry and supervision, and the promptness of action taken upon available information, that the City owes the continued immunity from formidable kinds of infectious disease. The absence of friction indicates the care and intelligence exercised by the Inspectors in carrying out this system.

The collection, removal, disinfection and return of infected bedding has been carried on as hitherto by the Ambulance Staff.

It has been found that in many instances in which compensation for clothing had been given in money to the poorer classes of people, that the money was spent in drink, and the people left without clothing. As a consequence of this, an arrangement was made with a firm of repute, to supply articles equivalent in value to those which had been destroyed, thus preventing an improper use of the money. There were difficulties incidental to this method, and the present plan is to keep at the dépôt a stock of mattresses, bedding, &c., and to give it out to suitable applicants, whose clothing or bedding have been destroyed on account of infection, under the Public Health Act.

Owing to the delays and difficulties which arose from time to time in causing compliance with notices served upon owners to strip the wall-paper from the walls of infected rooms, this work has been undertaken by the Disinfecting Staff.

As soon as the infected wall-paper has been stripped, and the house ready for re-papering or other work, an intimation of the fact is sent to the owner.

In all cases of infectious disease the houses were disinfected by a trained staff, free of cost, with sulphurous gas; but whenever there was sickness in any room of the house, disinfectants were given to the tenants for use in the sick room until the sulphurous gas could be used safely. No house is considered properly disinfected until sulphurous gas has been used, and the wall-paper, previously sprayed with solution of perchloride of mercury, stripped. The wall-paper is conveyed in sacks, specially



provided for the purpose, to the refuse-destroyer and burnt. The existence of infectious sickness necessitates many visits by the persons in charge of disinfection, as the householder frequently omits to send information when the premises are ready. There were in all 13,458 visits paid during the year to houses for the purpose of disinfection, the number of houses completely disinfected being 4,954.

### INFECTED HOUSES.

		<u>1900.</u>	<u>1901.</u>
Number of Infected Street Houses Inspected	...	3,063	4,366
„ „ Court „ „	...	146	306
„ „ Cellars „	...	26	43
„ Notes to Owners after stripping and cleansing	... ..	2,807	3,834
„ Notices to Occupiers of premises of £30 rental and over	... ..	204	202
„ „ Houses Re-inspected	...	180	202
„ Enquiries	... ..	19,131	19,855

There is an increase of 1,480, compared with the preceding year, in the number of houses requiring to be dealt with on account of infection, also an increase of 724 enquiries relating to same.

INFECTED PREMISES CLEANSED BY DISINFECTING STAFF.

								<u>1900.</u>	<u>1901.</u>
Houses	...	...	...	...	..	...	...	5,152	6,771
Rooms	...	..	...	...	...	...	...	12,646	15,400

There is an increase of 1,619 rooms stripped by the Disinfecting Staff, as compared with the previous year, due mainly to increased prevalence of scarlet fever, and to the action taken in regard to phthisis.

THE DISINFECTING APPARATUS.

The number of articles disinfected at the various Apparatus during the year amounted to 162,204.

DATE. 1901.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding.	No. of Pieces of Wearing Apparel, &c.	Total Number of Articles.
January ... ..	358	172	2,626	3,440	6,596
February ... ..	410	161	2,944	6,744	10,259
March ... ..	468	160	3,486	8,684	12,798
April ... ..	236	117	1,475	1,169	2,997
May ... ..	336	160	2,239	694	3,429
June ... ..	630	208	9,535	14,885	25,258
July ... ..	381	194	2,506	1,601	4,682
August ... ..	489	185	2,902	2,752	6,328
September ... ..	499	198	3,609	3,730	8,036
October ... ..	611	220	6,564	8,123	15,518
November ... ..	842	316	6,969	6,427	14,554
December ... ..	765	226	14,642	36,116	51,749
Totals ... ..	6,025	2,317	59,497	94,365	162,204

The number of articles destroyed at the various Apparatus during the year amounted to 611, compensation being paid in conformity with the provisions of the Public Health Act.

DATE. 1901.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding	No. of Pieces of Wearing Apparel, &c.	Total Number of Articles.
January ... ..	5	10	5	16	26
February ... ..	11	12	9	41	48
March ... ..	8	12	2	9	22
April ... ..	8	12	6	21	26
May ... ..	10	18	7	17	35
June ... ..	23	13	18	88	96
July ... ..	13	43	16	100	111
August ... ..	14	32	5	39	51
September ... ..	9	14	7	17	30
October ... ..	14	23	16	41	54
November ... ..	19	30	25	64	82
December ... ..	7	14	9	18	30
Totals ... ..	141	233	125	471	611



PRINCE'S DOCK MORTUARY.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed, &c., and upon which the Coroner desires to hold inquests. Bodies are taken to this Mortuary by the police, and when it may be necessary to make post-mortem examinations, any medical gentleman may have the assistance of an inspector on sending a communication to the Ambulance Superintendent, 54, Gascoyne Street.

BODIES REMOVED TO THE PRINCE'S DOCK MORTUARY.	
Number from River.	Number from City.
3	172

FORD STREET MORTUARY AND DISTRICT MORTUARIES.

BODIES REMOVED TO MORTUARIES.					
Green Lane.	Lark Lane.	Wavertree.	Ford Street.	Park Hill.	TOTAL.
5	8	2	215	...	230

The Mortuary in Ford Street is provided for the reception of bodies, which cannot be kept at the homes in which death had taken place, without injury to the health of the inmates. The address of the caretaker is 65, Gascoyne Street.

The District Mortuaries, it will be seen, are seldom used. For the convenience of juries, as well as for other reasons, it is preferable that bodies should be conveyed to the Central Mortuaries.

CREMATORIUM.

The Crematorium in Anfield Cemetery is availed of by an increasing number of persons as a means of reverent disposal of the dead by cremation, but the system has not yet found the favour which it does in many important centres of population throughout Europe. The building is of attractive appearance, and the surroundings are appropriate.

PROCEEDINGS UNDER THE DISEASES OF ANIMALS ACT, 1894.

The duties of the Inspectors under the Diseases of Animals Act, 1894, are to visit cattle steamers, both foreign and cross-channel, for the purpose of seeing that the provisions of the Foreign Animals Order, 1895, and the Animals Transit Order, 1895, are carried out.

Cattle steamers are examined as to fittings, ventilation, &c., and supervision is exercised in regard to cleansing and disinfection after animals are landed. Overcrowding or injury to animals is reported.

Cattle trucks and horse boxes are examined at railway stations, as to fittings, cleansing and disinfection, and the railway pens supervised.

Lairages and sale yards are visited to ascertain that they are cleansed and disinfected in accordance with the regulations of the City Council.

The Diseases of Animals Act relates in the main to certain diseases communicable amongst cattle, sheep and swine, and provides for the separation of diseased animals from healthy ones, for the disinfection and cleansing of vessels, trucks, &c., in which animals have been carried, and it defines the action to be taken to limit and prevent the extension of disease. It also deals with certain forms of disease communicable by animals to man.

The Board of Agriculture, under the powers of this Act, issue orders from time to time dealing with diseases of animals, or with their protection during transit. The Board also prescribes the manner under which animals may be imported or moved from place to place.

The Swine Fever Order, dated 28th August, 1901, made provision for the cleansing and disinfection of pig dealers' premises, and vehicles used by pig dealers for the conveyance of swine from steamers through the City to pig dealers' premises. The Order came into force on 14th October, 1901, and due notice was given of the date on which the Order would take effect. In only one case was there a departure from the provisions of the Order, and in that case an information was laid and a small fine inflicted.

The accompanying table gives the statistics of the proceedings taken under the Act or under the Orders of the Board of Agriculture:—

Number of Visits to Railway Stations, including inspec-				1900.	1901.
	tions made on Sundays	...	...	2,755	2,620
„	Inspections of pens	...	...	97,721	103,716
„	found clean	...	...	73,060	78,963
„	„ dirty and cleansed before being used.	...	...	24,661	24,753
„	Inspections of Trucks...	...	...	40,627	46,640



	1900.	1901.
Number of found clean ... ..	36,348	41,699
„ „ dirty and cleansed before being used, or leaving the City dirty ... ..	4,279	4,941
„ Inspections of Horse Boxes ... ..	1,250	1,188
„ found clean ... ..	840	800
„ „ dirty and cleansed before being used, or leaving the City dirty ... ..	410	388
„ Inspections of Vessels... ..	8,678	8,892
„ found clean ... ..	3,570	3,960
„ „ dirty and cleansed before being used, or going to Sea without cattle or cargo ... ..	5,108	4,932
„ Informations for dirty vessels used before being cleansed ... ..	—	1
Number of Inspections of Gangways ... ..	8,910	9,908
„ found clean ... ..	7,411	7,545
„ „ dirty and cleansed before being used	1,499	2,363
„ Inspections of Lairage and Sale Yards ...	4,830	5,578
„ found clean ... ..	3,598	3,877
„ „ dirty and cleansed before being used	1,232	2,701
„ Informations for landing broken fodder and dung ... ..	—	1
„ „ „ not cleansing trucks before being used ... ..	5	—
„ „ „ not providing battens on footholds for pens on vessel	1	—
„ „ „ neglecting to cleanse Cart after conveying Swine ... ..	—	1
Total Number of Informations ... ..	6	3
„ Fined ... ..	6	3
Amount of Fines and Costs ... ..	£5 9s. 6d.	£7 9s. 0d.

INSPECTION OF SLAUGHTER-HOUSES, &c. 1900. 1901.

Number of Visits to Slaughter-houses made by Meat Inspectors ... ..	9,256	9,566
Number of Visits to Butchers' Shops made by Meat Inspectors ... ..	68,884	67,393
Number of Visits to Fish and Fruit Shops made by Fish Inspectors ... ..	51,313	54,542
Number of Visits to Fruit Shops made by Fruit Inspector ... ..	16,356	15,763
Number of Visits to Poultry Depôts made by Fish Inspectors ... ..	310	365

FISH PLATFORMS.

	1900.	1901.
Number of Visits .. ...	23	130

RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER-HOUSES,  
AND OF MEAT IMPORTED FOR SALE.

As compared with the numbers in the preceding year, which showed some considerable rise, there is a decrease of 1,702 in the number of cattle slaughtered in the city abattoirs and slaughter houses in 1901, and there is an increase of 3,047 in the number of carcasses imported for sale.

With regard to sheep, there is a decrease from the preceding year of 6,156 in the number killed in the city, and a decrease of 14,999 in the number of carcasses imported for sale.

These numbers usually fluctuate in an inverse relationship; a falling off in imports probably resulting in a greater demand and better price for home produce. Many butchers purchase direct from the abattoirs at Woodside, and this circumstance also goes to explain decreasing quantity of importations into Liverpool.

In regard to pigs the increase of imported pigs in 1900 was excessive, and 1901 showed a decrease of over 16,129 in the number slaughtered within the city, as compared with the year 1900, and a further increase of 11,500 in the carcasses imported for sale.

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves
Abattoir.	4351	172211	—	14260	34942	50010	374317	40852	1647
Back Butler Street ...	82	364	63	12	...	...	...	...	...
Back Castle Street ...	616	76	13	266	1	4	...	...	...
Back Mount Vernon Green...	356	3155	...	16	...	...	...	...	...
Cotter Street ...	97	1	...	33	236	...	...	...	...
Corlett Street ...	5	1221	434	...	...	...	...	...	...
Crown Street ...	17	142	...	3	13	...	...	...	...
Darnley Street ...	...	...	...	...	1359	...	...	...	...
Edgeware Street ...	...	...	...	...	...	...	...	...	...
Foley Street ...	...	...	...	...	8298	...	...	...	...
Peel Street ...	53	696	158	2	42	...	...	...	...
Bevington Hill ...	830	95	2	648	2	3	...	...	...
Carried forward ...	2056	5750	670	980	9951	7	...	...	...



**RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER HOUSES**  
**AND OF MEAT IMPORTED FOR SALE—Continued.**

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves.
Brought forward ...	2056	5750	670	980	9951	7	...	...	...
Byrom Street ...	...	...	...	...	5	...	...	...	...
Bolton Street ...	6	2496	503	3	...	...	...	...	...
Back Commutation Row .....	232	1319	300	...	...	...	...	...	...
Copperas Hill .....	...	...	...	...	9568	...	...	...	...
Finch Place .....	11	279	191	1	...	...	...	...	...
Frederick Street .....	9	4	36	1	14	...	...	...	...
Norman Street .....	...	...	...	...	1666	...	...	...	...
Norfolk Street .....	7	200	98	...	21	...	...	...	...
Soho Street .....	...	...	...	...	1452	...	...	...	...
Upper Milk Street .....	...	...	...	...	5405	...	...	...	...
West Derby Road, Tue Brook	86	1426	310	2	38	...	...	...	...
Prescot Road, Knotty Ash ...	8	544	115	22	45	...	...	...	...
101, High Street, Wavertree..	...	...	...	...	...	...	...	...	...
105, „ „	38	296	38	8	7	...	...	...	...
Sandown Lane „	3	555	136	2	13	...	...	...	...
Derby Lane, Old Swan .....	17	743	164	...	...	...	...	...	...
Allerton Road, Wavertree ...	671	5096	...	76	102	...	...	...	...
Total in Private Slaughter-houses .....	3144	18708	2561	1095	28287	7	...	...	...
Total in the City .....	7495	190919	2561	15373	63208	50017	374317	40852	1647

**PRECEDING YEAR.**

Total in Private Slaughter-houses .....	3839	20197	2249	1540	31060	65	...	...	...
Total in the City .....	9197	197075	2249	14993	79337	46970	389316	29362	1156

## UNWHOLESOME MEAT, FISH, &amp;c., SEIZED AND DESTROYED.

DATE.—1901.		Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell fish.	Oysters.	Miscellaneous.
		Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags		
MARKETS.	St. John's .....	12885	200	683	468	673	814	110926	69	1000	1380 lbs Oranges 760 " Toma- toes 20 " Black Currants 3248 " Carrots 5030 " Parsnips 3300 " Turnips
	St. Martin's .....	1673	...	105	705	...	...	...	...	...	...
SLAUGHTER-HOUSES.	Abattoir .....	127349	8289	14398	37607	...	...	...	...	...	...
	Back Castle Street ...	50105	2829	...	...	...	...	...	...	...	...
	Bevington Hill .....	20620	1594	213	...	...	...	...	...	...	...
	Copperas Hill .....	...	...	...	2019	...	...	...	...	...	...
	Norman Street .....	...	...	...	1910	...	...	...	...	...	...
	Soho Street .....	72	...	22	28	...	...	...	...	...	...
	County Road.....	200	...	...	500	...	...	...	...	...	...
	Edge Hill Station.....	112	...	10	106	...	...	...	...	...	66 lbs. Toma- toes 28 " Plums 50 " Apples 64 " Grapes 115 " Banan- as 5 " Cheese 2880 Eggs 45 lbs. Mush- rooms 224 " Pears 3524 " Cher- ries 400 " Pota- toes 280 " Black Currants 4800 " Peas 70 cases Con- densed Milk
	Finch Place .....	14	...	...	...	...	...	...	...	...	...
	Foley Street .....	...	...	...	497	...	...	...	...	...	...
	Frederick Street .....	...	...	70	...	...	...	...	...	...	...
	Great Charlotte Street	...	...	...	...	...	...	2895	...	...	1704 lbs. Cher- ries 6 " Rasp- berries 288 " Black Currants
Carried forward...		213030	12912	15501	43840	673	814	113821	69	1000	



UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.—*Continued.*

DATE. — 1901.	Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares	Fish.	Shell fish.	Oysters.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags		
Brought forward ...	213030	12912	15501	48840	673	814	113821	69	1000	...
Great Homer Street ..	550	...	334	16	...	...	...	...	...	225 lbs. Goose-berries
London Road.....	...	...	...	521	...	...	...	...	...	...
Lime Street Station...	...	...	...	53	...	...	370	...	...	...
Moor Place.....	20	...	...	...	...	...	...	...	...	...
North Haymarket ...	...	...	...	...	...	...	...	...	...	9150 lbs. Oranges 28300 " Onions 6920 " Apples 3210 " Bananas 8400 " Carrots 2240 " Parsnips 4504 " Turnips 4819 " Cherries 817 " Tomatoes 1249 " Goose-berries 504 " Straw-berries 4276 " Black Currants 570 " Red Currants 216 " Bilberries 1416 " Plums 3292 " Grapes 4104 " Pears 27600 " Lemons 11648 " Potatoes 96 " Black-berries 956 " Damsons 1502 " Water-cress
Park Road.....	516	...	...	...	...	...	...	...	...	...
Queen's Square .....	...	...	...	...	...	200	...	...	...	1380 lbs. Bananas 600 " Onions 2006 " Cherries 455 " Raspberries 3056 " Plums 1328 " Pears 35 " Grapes 1686 " Damsons 160 " Cran-berries
Roe Street .....	...	...	...	...	...	...	...	...	...	768 lbs. Cherries
Rose Street .....	...	...	...	...	50	79	37079	19	...	...
Russell Street .....	...	...	270	...	...	...	...	...	...	...
Scotland Road .....	487	...	340	130	...	...	...	...	...	1100 Eggs 20 lbs. Goose-berries
Carried forward...	214603	12912	16445	44560	723	1093	151270	88	1000	

UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.—*Continued.*

DATE.—1901.	Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Oysters.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags		
Brought forward...	214603	12912	16445	44560	723	1093	151270	88	1000	
Wavertree Road .....	...	...	50	...	...	...	...	...	...	...
Darnley Street .....	...	...	...	786	...	...	...	...	...	...
Brownlow Hill .....	117	...	...	...	107	...	...	...	...	...
Dale Street .....	112	...	...	...	...	...	...	...	...	30 lbs. Venison
Victoria Street .....	...	...	...	...	...	...	...	...	...	876 lbs. Pears
Alexandra Dock .....	...	...	...	672	...	...	...	...	...	...
West Derby Road.....	30	...	...	...	...	...	...	...	...	...
Rose Place.....	...	...	...	...	...	...	...	...	...	672 Oranges
St. James Place .....	113	...	22	...	...	...	...	...	...	...
Fairclough Lane .....	6	...	...	...	...	...	...	...	...	...
Crown Street.....	650	...	...	...	...	...	...	...	...	...
St. James Street .....	20	...	...	16	...	...	...	...	...	...
Bronte Street .....	1730	...	26	...	...	...	...	...	...	...
Pembroke Place .....	...	...	40	...	...	...	...	...	...	...
Warwick Street .....	20	...	18	...	...	...	...	...	...	...
Albert Dock .....	...	...	...	...	148	...	...	...	...	...
Christian Street .....	...	...	...	312	...	...	...	...	...	...
Cotter Street.....	520	...	...	...	...	...	...	...	...	...
Pall Mall .....	224	...	...	...	...	...	...	...	...	...
Walton Road.....	...	...	78	...	...	...	...	...	...	...
Chisenhale Street .....	...	...	...	...	...	...	...	...	...	2 tins Condensed Milk
Cazneau Street .....	...	...	...	...	...	...	...	...	...	216 lbs. Currants 100 „ Pears
Limekiln Lane.....	...	...	...	...	...	...	...	...	...	13 „ Cherries
Carried forward...	218145	12912	16679	46346	978	1093	151270	88	1000	



UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.—*Continued.*

DATE.—1901.	Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Oysters.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags.		
Brought forward...	218145	12912	16679	46346	978	1093	151270	88	1000	
Peach Street .....	...	...	...	...	...	...	...	...	...	50lbs. Bananas
Back Peach Street ...	...	...	...	...	...	...	...	...	...	40 „ Bananas
St. John's Lane .....	200	...	...	...	...	...	...	...	...	...
Leece Street .....	...	...	...	...	...	...	205	...	...	...
Cockspur Street .....	...	...	...	...	...	...	2200	...	...	...
Waterloo Station .....	...	...	...	...	...	...	...	...	...	5700 Eggs
Naylor Street .....	...	...	...	...	...	...	2464	...	...	...
Carlton Street .....	1098	...	...	...	...	...	...	...	...	...
William Henry Street	300	...	400	...	...	...	30	...	...	...
Williamson Square ...	...	...	...	...	...	2538	...	...	...	...
Total .....	219743	12912	17079	46346	978	3631	156169	88	1000	

The total amount of Meat and Fish found to be unfit for human food is equivalent to—

			Tons.	Cwts.	Qrs.	Lbs.
Meat	...	...	132	3	2	8
Fish	...	...	69	14	1	13

and this does not include Fish removed as refuse by Officers of the Cleansing and Scavenging Department under the City Engineer.

The great bulk of this meat was not exposed for sale, and did not require a Justices' order for its destruction.

The quantity of fish seized includes both fresh fish and salt fish which had become tainted during transit or storage, a regrettable waste of food.

ANIMALS SMOTHERED AND INJURED IN TRANSIT ON BOARD SHIP.

Beasts.	Sheep.	Pigs.	Number found good.	Number found bad.	Weight of bad in pounds.
60	81	182	221	102	37,704

The Animals (Transit and General) Order compels the master of the vessel to slaughter all seriously-injured animals forthwith. Such animals are slaughtered on board the vessel, and the carcasses removed to the abattoirs.

Police proceedings in respect to meat and fish and fruit were as follows :—

	<u>1900.</u>	<u>1901.</u>
Number of informations in respect to Diseased Meat	8	9
"                    "                    "                    Fish, &c.	1	5
"                    "                    "                    Fruit	13	12
" Fined ... ..	20	26
" Sent to Gaol ... ..	—	—
Amount of Fines and Costs ... ..	£90 8 9	£171 0 0

	<u>1900.</u>	<u>1901.</u>
Number of carcasses seized during the year by Medical Officer of Health and Inspectors under section 116 of the Public Health Act, 1875 ...	909	917
	{ 266 Cattle 202 Calves 342 Sheep 97 Pigs 2 Goats	{ 289 Cattle 176 Calves 253 Sheep 189 Pigs. 10 Goats
* Number of such carcasses condemned by Justices under section 117 of the Public Health Act, 1875 ... ..	2	5
Number of carcasses so seized in consequence of the animal having suffered from Tuberculosis ... ..	139	136
Amount of Fines and Costs ...	£16 7 0 —	£90 8 6

\*The remainder were dealt with under a Local Act, which does not require a Justices' Order.



## GLANDERS AND FARCY.

The Diseases of Animals Acts and the Order and Regulations made thereunder have been referred by the Health Committee to the Medical Officer of Health to carry out, in conjunction with the Veterinary Inspector and Sanitary Staff.

Prior to the passing of the Diseases of Animals Act, and the Glanders and Farcy Order of 1894, the record of the number of cases of glanders occurring in the city is wholly unreliable. The number of cases reported during each of the three years preceding the Order is as follows:—

1893	...	2 cases.
1894	...	3 „
1895	...	1 case.

Early in 1896, under the principal Act, and the Glanders and Farcy Order, the Health Committee made regulations which were circulated amongst horsekeepers, together with a notice indicating general precautions against glanders.

The number of cases of glanders which were brought to light during each of the six years, 1896, 7, 8, 9, 1900, and 1901, is as follows:—

CASES.				
1896	...	40	...	5 brought into the city from outside.
1897	...	18	...	2 „ „ „
1898	...	9	...	1 „ „ „
1899	...	20	...	4 „ „ „
1900	...	5	...	1 „ „ „
1901	...	5	..	—

In giving effect to the Act the following procedure is usually adopted:—

Information of actual or suspected disease is usually received, under the terms of the Order

(A) from the owner;

(B) from the Police;

(C) from the proprietor of the registered knacker's yard.

(There is only one in the city.)

Immediately upon receipt of such information, or as speedily thereafter as possible, the Veterinary Inspector examines the animal, and if he finds it to be infected with glanders he certifies accordingly. The horse is slaughtered on the premises where it is found, and the carcase, head-stall, clothing, &c., removed in the knacker's cart in charge of an inspector appointed under the Act, a member of the staff of the Medical Officer of Health, to the knacker's yard, Holme Street, where a post-mortem examination is made.

The inspector attends to see that the carcase is destroyed. Carbolic acid is poured over the carcase, which is subsequently placed in a digester, with a certain amount of carbolic acid, and destroyed by boiling. The knacker's cart is thoroughly washed and cleansed in the inspector's presence.

In the meantime, another inspector, also similarly appointed, visits the premises, immediately notice is received of the existence of glanders in any place in the city, for the purpose of supervising the disinfection and cleansing of the stables and manure. All fodder and litter that have been in contact with the diseased animal, or in the stall adjoining, are removed and placed in the middenstead, and a quantity of quick-lime is thrown over the manure, after which a quantity of carbolic acid and water is thrown over the lime.

A certificate is then signed in accordance with Article 12 of the Glanders Order, for the removal of the manure. The parts of the stable from which the horse has been removed are washed with hot water, and disinfected by hot limewashing, with limewash mixed with carbolic acid. The Veterinary Inspector, after this has been done, gives a certificate certifying that the stable has been thoroughly cleansed and disinfected in accordance with the requirements of Article 10, Regulation C. The remaining animals on the premises from which the diseased animal has been removed are inspected weekly for some time, until it is certain that the disease has disappeared.

Powers are wanted in regard to the detention and supervision of animals which have been in contact with diseased animals, and it is most desirable that the owners of animals which have been so exposed should be prohibited from parting with them or selling them, excepting under such conditions as would enable them to be traced and kept under observation.

It is most necessary that the notification of glanders by Veterinary Surgeons should be made compulsory.



The Board of Agriculture, on account of the prevalence of glanders throughout the country, and also to insure that horses imported from the North American Continent were free from the disease, requested the Local Authority in 1896 to cause these imported horses to be subjected to veterinary examination. This inspection has been continued since.

For the year 1901 the following table shows the numbers which have been examined, principally at the Canadian Horse Repository, Stanley, but also at various other depôts throughout the City and elsewhere.

Horses Examined.	Horses found affected with			
	Glanders.	Pneumonia.	Strangles.	Pink Eye.
3,229	—	251	81	—

In addition to those referred to in the foregoing table, 9,402 horses, some of which were landed beyond the city boundaries, have been examined and re-examined at the various sale yards, with a view to the maintenance of the general health of the animals in the city.

The imported animals were on the whole in a very good condition, and the mortality small; and no evidence of contagious disease was found.

The number of cases of Glanders detected in 1901 shows that the disease is not by any means exterminated. Glanders and Farcy have been found to exist on 5 premises, numerous reports of suspicious cases were received, and 115 animals were examined. Of these 4 were condemned and destroyed as being affected with Glanders and Farcy, and 1 died of the disease. Compensation was paid to the owners of 4 animals destroyed by order of the Local Authority.

Animals Examined.	Affected.	Suspicious.	Not Affected.
115	5	—	110

Total Number of Animals in Stables, &c., where the Disease occurred.	SLAUGHTERED.		Died.
	By Order of Owner.	By Order of Local Authority.	
36	...	4	*1

\* The carcase of this animal was found at the Knacker's Yard.

LUNGS OF HORSES EXAMINED AT KNACKER'S YARD, HOLME STREET,  
SANDHILLS.

During the year 1901 the Veterinary Superintendent has caused the lungs of all horses sent to the above premises to be examined. In every instance where there was evidence of the disease manifested in the lungs, the owners of the animals were notified, and if within the city boundaries, the remainder of their studs were subjected to veterinary examination. In cases where the existence of Glanders or Farcy is capable of detection during the life of the animal, proceedings are taken against the responsible persons.

If the carcase of the animal was brought from outside the City Boundaries, and the disease was thought to have been discernible during the life of the animal, notice is given to the necessary Local Authority, and the persons dealt with as the Act directs.

A case of anthrax was also detected.

Lungs Examined.	Glandered.	Not Affected.
1,743	1	1,742



ANTHRAX.

There were four cases of Anthrax reported during the year. In three of the cases the carcasses were found at the Abattoir, and in the other at the knackers. A portion of the spleen was in each case submitted to Professor Boyce, University College, who certified that the animals from which they were taken were affected with Anthrax. The usual disinfection was carried out in each case.

Date. 1901.	Total number of Animals on Premises where disease occurred.	Locality.	Died.
Mar. 14th...	27	Church Road, Wavertree .....	1
Apl. 22nd ...	12	Prescot Street.....	1
Sept. 21st...	1	Kew Street .....	1
Nov. 30th...	37	Prescot Road, Fairfield.....	1

PLEURO-PNEUMONIA.

There was no case reported during the year.

RABIES.

In conformity with the requirements of the Board of Agriculture, reports were sent to the Board in respect to 15 suspected cases of rabies. Bacteriological examination was made in all the cases, and *post mortem* examinations were made by the Veterinary Inspectors. There were no signs that any of the animals had been affected with rabies.

Three live dogs were examined at the request of the owners; they were found free from Rabies.

SHEEP SCAB.

No trace of this disease has been discovered during the year by the Veterinary Inspector at Stanley Cattle Market, or at any place within the City boundaries.

### SWINE FEVER.

The following table shows the number of animals affected with swine fever and the number in the herds slaughtered under the Swine Fever Order.

Total Number in Herds.	HEALTHY.		DISEASED.		Died.	Locality.	Remarks.
	Slaughtered.		Slaughtered.				
	By Order of Owner	By Order of Board of Agriculture.	By Order of Owner.	By Order of Board of Agriculture.			
32	23	...	...	7	2	Otterspool .....	
23	...	4	...	7	2	Mossley Hill .....	10 remaining healthy when ultimately declared free.
51	5	...	...	...	3	Priory Road, Anfield.....	43 do. do.
128	113	...	...	7	8	Walton Workhouse .....	
6	...	...	...	...	1	Derby Lane, Old Swan.....	5 remaining healthy when ultimately declared free.
17	15	...	2	...	...	Abattoir, St. Andrew Street (from Ireland).	



<u>PIGGERIES.</u>						<u>1900.</u>	<u>1901.</u>
Number of applications to keep pigs	...	...	...	...	...	15	22
„ „ granted	...	...	...	...	...	9	21
„ „ refused	...	...	...	...	...	4	1
„ „ in abeyance	...	...	...	...	...	2	Nil.
Pigs applied for	...	...	...	...	...	497	495
„ granted	...	...	...	...	...	186	309
Total number of licensed piggeries...	...	...	...	...	...	40	54
„ pigs	...	...	...	...	...	670	757
Number of visits to piggeries	...	...	...	...	...	169	225
„ Informations	...	...	...	...	...	1	2
„ Fined	...	...	...	...	...	1	2
Amount of Fines and Costs	...	...	...	...	...	£2 4 6	£10 9 0

### DAIRIES, COWSHEDS AND MILKSHOPS.

There has been no change during 1901 in the method of procedure respecting the licensing of cowsheds and the registration of dairies, milkshops and milkstores.

#### STATISTICS RESPECTING COWSHEDS.

						<u>1901.</u>
Number of applications to keep cows on premises not previously						
licensed	..	...	...	...	...	6
„ „ granted	...	...	...	...	...	6
„ cows applied for on above applications	...	...	...	...	...	85
„ granted	...	...	...	...	...	76

Number of applications standing over from 1900	...	...	...	9
„ „ now granted	...	...	...	9
„ applications for transfer to fresh tenants of cowsheds previously licensed	...	...	...	51
„ „ now granted	...	...	...	50
„ „ in abeyance	...	...	...	1
„ applications to keep more cows than the number for which the license was originally granted	...	...	...	7
„ „ granted	...	...	...	7
„ additional cows applied for	.	...	...	28
„ „ granted	...	...	...	21
„ Cowsheds existing within the City during 1900			...	437
„ „ now existing	...	...	...	443
Number of cows licensed to be kept within the city area	...	...	5,909	

#### COWSHED INSPECTION.

The improvement in the manner in which these premises are kept is being steadily maintained.

			<u>1900.</u>	<u>1901.</u>
Number of Inspections of Cowsheds	...	...	4,415	4,389
„ found Incorrect	.	...	148	110
„ Informations	...	...	9	8
„ Fined	...	...	7	6
Amount of Fines and Costs	...	...	£11 19 0   £10 7 0	

Eighty-two notices have been issued to occupiers directing their attention to contraventions of the regulations,



Number of cowsheds in the city during the years 1892 to 1901 inclusive, together with the number of cows licensed to be kept, and the number of applications for new cowsheds, is as follows:—

	Cowsheds.		Cows.		Applications.	
1892	...	337	...	4,539	...	6
1893	...	344	...	4,634	...	4
1894	...	304	...	4,005	...	2
1895	...	325	...	4,311	...	20
1896	...	404	...	5,393	...	129
1897	...	453	...	5,650	...	33
1898	...	435	...	5,695	...	13
1899	...	434	...	5,851	...	2
1900	...	437	...	5,905	...	5
1901	...	443	...	5,909	...	6

#### MILKSHOPS.

Number of Applications for registration	...	...	...	...	192
of which transfers were	...	...	...	...	161
„ above Applications granted	...	...	...	...	189
„ „ „ in abeyance	...	...	...	...	1
„ „ „ refused	...	...	...	...	2

Nine applications standing over from 1900 have been granted.

Number of Milkshops on the register at the end of 1897	...	...	988
„ „ „ „ 1898	...	...	892
„ „ „ „ 1899	...	...	830
„ „ „ „ 1900	...	...	869
„ „ „ „ 1901	...	...	898

DAIRIES AND MILKSHOPS INSPECTION.

	<u>1900.</u>	<u>1901.</u>
Number of Inspections of Dairies and Milkshops	6,368	6,207
„ found incorrect ... ..	194	190
„ of Informations ... ..	8	7
„ Fined ... ..	8	7
Amount of Fines and Costs ... ..	£16 16 0	£17 13 6

Sixty caution notices have been issued to occupiers of milkshops for contravention of the Regulations.

LEAVELOOKERS' VISITS TO SHIPPONS FOR THE PURPOSE OF  
EXAMINING COWS.

No. of Visits.	No. of Examinations of Cows.	No. found Healthy.	No. found ill and referred to the Veterinary Inspector.
2,052	24,040	24,014	26

ICE CREAM MAKERS AND VENDORS.

The makers and vendors of ice cream and the premises utilised by them for its manufacture have received the usual attention.

Inspections have been made systematically during the day, and surprise visits at other times.

The dwellings occupied by the street traders have been kept under close observation, and, with the exception of two occasions, have not been found to be utilised for the purpose of making ice cream. On these two occasions informations were laid and convictions obtained.



					<u>1900.</u>	<u>1901.</u>
Number of premises under Inspection	...	...	...	...	459	435
„ visits made	...	...	...	...	2,375	2,310
„ caution notices issued	...	...	...	...	51	23
„ Informations	...	...	...	...	5	5
„ Fined	...	...	...	...	5	5
<hr/>						
Amount of Fines and Costs	...	...	...	...	£8 2 6	£8 12 6

### MILK SUPPLY AND TUBERCULOSIS.

The routine examination of cows in City Cowsheds is carried out by the Meat Inspectors, who report all cases of sickness amongst them.

Under the Liverpool Corporation Act, 1900, the Medical Officer of Health has requested the Veterinary Superintendent to visit and specially examine various animals suspected of being affected with Tuberculosis of the udder both in town and country shippens supplying the city with milk. The examinations made within the city boundary involved special visits to 40 shippens and a careful examination of 59 animals. Where an animal is suspected of being affected with Tuberculosis of the udder, she is either at once sent out for slaughter, or is isolated pending the application of the Tuberculin test, and her milk is thrown away. Animals re-acting to the test and having lesions of the udder are, with the consent of the owner, slaughtered. Forty animals were dealt with in this way. Of 27 animals submitted to the Tuberculin test, 23 re-acted and 15 were condemned. The carcasses of the remainder were suitable for food.

#### MILK SUPPLIED FROM OUTSIDE THE CITY BOUNDARIES.

The Inspectors visit the various railway stations and take samples of milk forwarded from cows outside the City boundary. (See page 163.) The samples are submitted to bacteriological analysis, and if found contaminated with Tuberculosis, the Veterinary Superintendent visits the cowsheds and examines the whole of the cattle contained therein, after obtaining the necessary authority as prescribed by the Act.

The majority of the cowsheds visited are situated in the county of Cheshire; there are also some in Wales, Shropshire and other counties. The cowsheds, taken as a whole, are not in a satisfactory condition, and fall very far short (from a sanitary point of view) of those within the City. The animals are not up to the standard of City cattle, nor are they kept as well groomed. The proceedings adopted with suspected or affected animals are much the same as with those within the City. Samples of milk are taken from suspected animals, and forwarded to the Medical Officer of Health. Pending the result of the bacteriological examination, the animal is isolated, and the milk from the particular cow or cows is not allowed to be sent into the City. In many cases of suspected animals, definite information was lacking, owing to the animals being slaughtered by their owner.

Eighteen cowsheds were visited, and 351 cattle examined, seven being obviously suffering from tuberculosis and 20 presenting suspicious features. Twenty cows were isolated, and were ultimately disposed of by their owners.

The Health Committee have made four Orders prohibiting the sale of milk within the City from four country cowsheds, owing to the insanitary state of the cowsheds and the diseased condition of the cows.

There can be no doubt that the operations of the Liverpool Corporation Act, 1900, is tending to improve the condition of cowsheds in various parts of the country from which milk is sent into Liverpool; the applications of the Act, however, in country districts are defective and expensive, and involve a considerable amount of the time of Liverpool officials. So far as Liverpool itself is concerned, the milk clauses of the Act unquestionably result in giving a measure of protection to the City, but there is nothing whatever to prevent a milk dealer who is prohibited from sending diseased milk to Liverpool sending it to another part of the country which is less adequately protected.

There are grounds for thinking that Sanitary Authorities in country districts are, owing to the action of the Liverpool Corporation, beginning to realise the necessity for putting into operation available powers to insure the sanitation of country cowsheds, and there is no reason to doubt that cowkeepers themselves, when the matter has been pointed out to them by officers of the corporation, are beginning to realise that



advantages will accrue from keeping the cowsheds in a sanitary condition, and from keeping the animals clean.

It is most discreditable to country Sanitary Authorities and cow-keepers, that cities, in self defence, should be obliged to apply to Parliament for special powers to prevent dealers from sending milk of diseased cows into the City, when the obligation of removing the causes of disease rests with the country Sanitary Authority, and the remedy admits of an easy application.

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### STERILIZED MILK DEPÔTS.

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During the year the question of the provision of humanised sterilized milk for the use of infants whose mothers are from one cause or another unable to suckle them, has received careful attention. The reasons briefly which have induced the Health Committee to establish these depôts are—

- (1) The excessive mortality amongst infants in certain districts of the City, notably during the third quarter of the year.
- (2) The fact, which is established beyond dispute, that this destruction and waste of life is very largely due to improper feeding, decomposing food-stuffs being responsible for most of it.

Although there is no doubt that ignorance and carelessness on the part of the mothers are amongst the factors which conduce to excessive infantile mortality, yet ample evidence is furnished of the general desire on the part of mothers to do what they can for their infants. It is felt that if mothers can be induced to substitute pure and suitable food for the foul and decomposing contents so commonly found in ordinary feeding bottles, a great saving of life will be effected. The experiment so far has been satisfactory.

During the third quarter of the year the Depôt at Netherfield Road was taxed to its utmost capacity, and during the hot weather a maximum of nearly 3,000 bottles per day of the milk specially prepared for infants was sold. This circumstance encouraged the Committee to establish another depôt for the preparation of the milk, and to open another branch establishment for its sale.

Unfortunately, manufacturers in this country are wholly unfamiliar with the apparatus required. No firm has so far been able to render any assistance to the Committee, and indeed the objects of the Committee have been very imperfectly appreciated by the makers of the necessary apparatus. The Committee have, therefore, been confronted with difficulties at every step, and very disappointing delays have arisen owing to the circumstances indicated. It is worth noting, however, that other places besides Liverpool are taking up the question of providing humanised sterilised milk, and if the experiments undertaken in this City should prove successful, there can be no doubt that both in England and abroad the process will be very largely followed, and it is hoped that milk traders generally will adopt this as an ordinary branch of their trade, should the expectations of the system be realised. On a small scale the experiment has been tried in several French towns, and in this country it was first introduced at St. Helens.

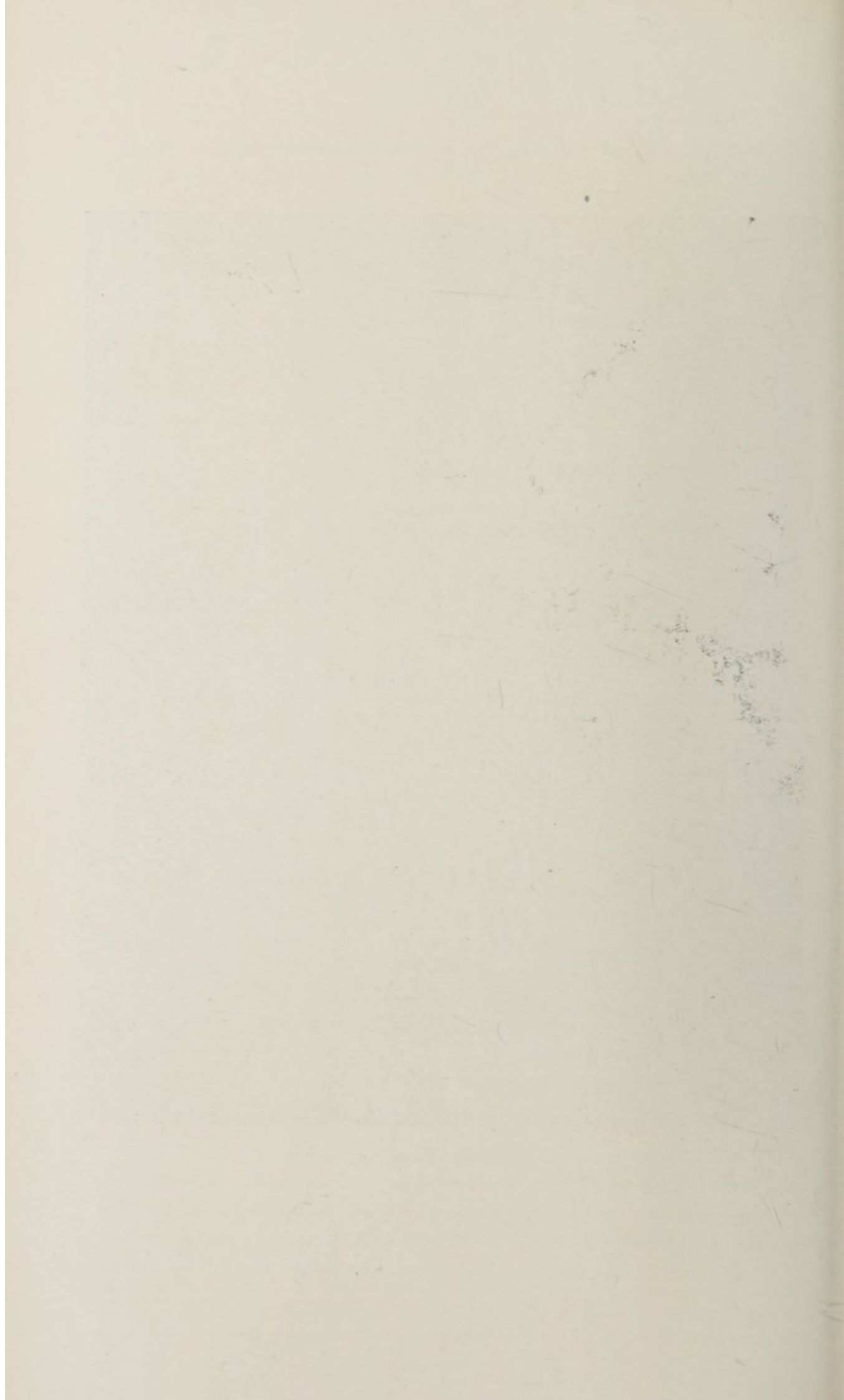
The following are the regulations which control the sale of the milk, and cards giving the necessary information have been circulated in suitable localities—

1. The milk will be supplied in 9 bottles in a basket, each bottle containing sufficient milk for one feed according to the age of the child.
2. When all the milk in one bottle is not used, the remainder must not be warmed up again for the infant, but a fresh bottle opened for its next meal. This milk will be found to be quite sufficient if given regularly.
3. The person using the milk must guarantee to continue its use regularly during the needs of the child, and to send for it at the stated hours.
4. Should the milk not be agreeing with the child, the matter should be reported at once.
5. Every person using the milk will be supplied with two teats, which must be kept clean and brought to the Dépôt for inspection, at least once a week. Extra teats will be charged for at the rate of 3d. each.
6. Just before using, each bottle should be placed unopened in a basin or jug of hot water, and warmed to the proper temperature. The bottle should then be opened and the teat inserted. It is recommended that, at first, the infant should be fed every two hours during the day, and every four hours during the night.





52, EARLE ROAD.



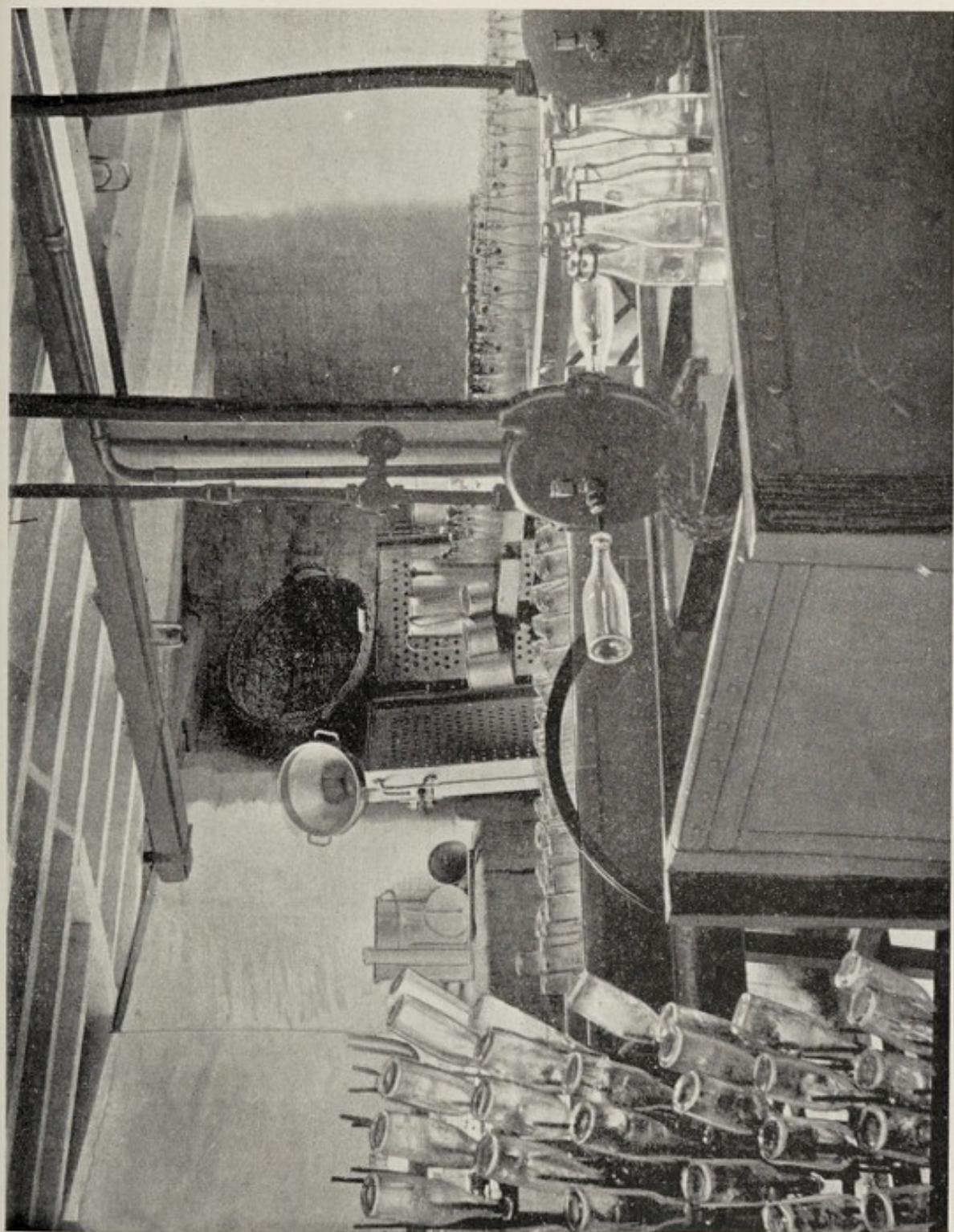




52, EARLE ROAD,  
Corner of interior of Shop showing Milk-baskets, Stoppers, &c.  
Basket for Weighing Infants.



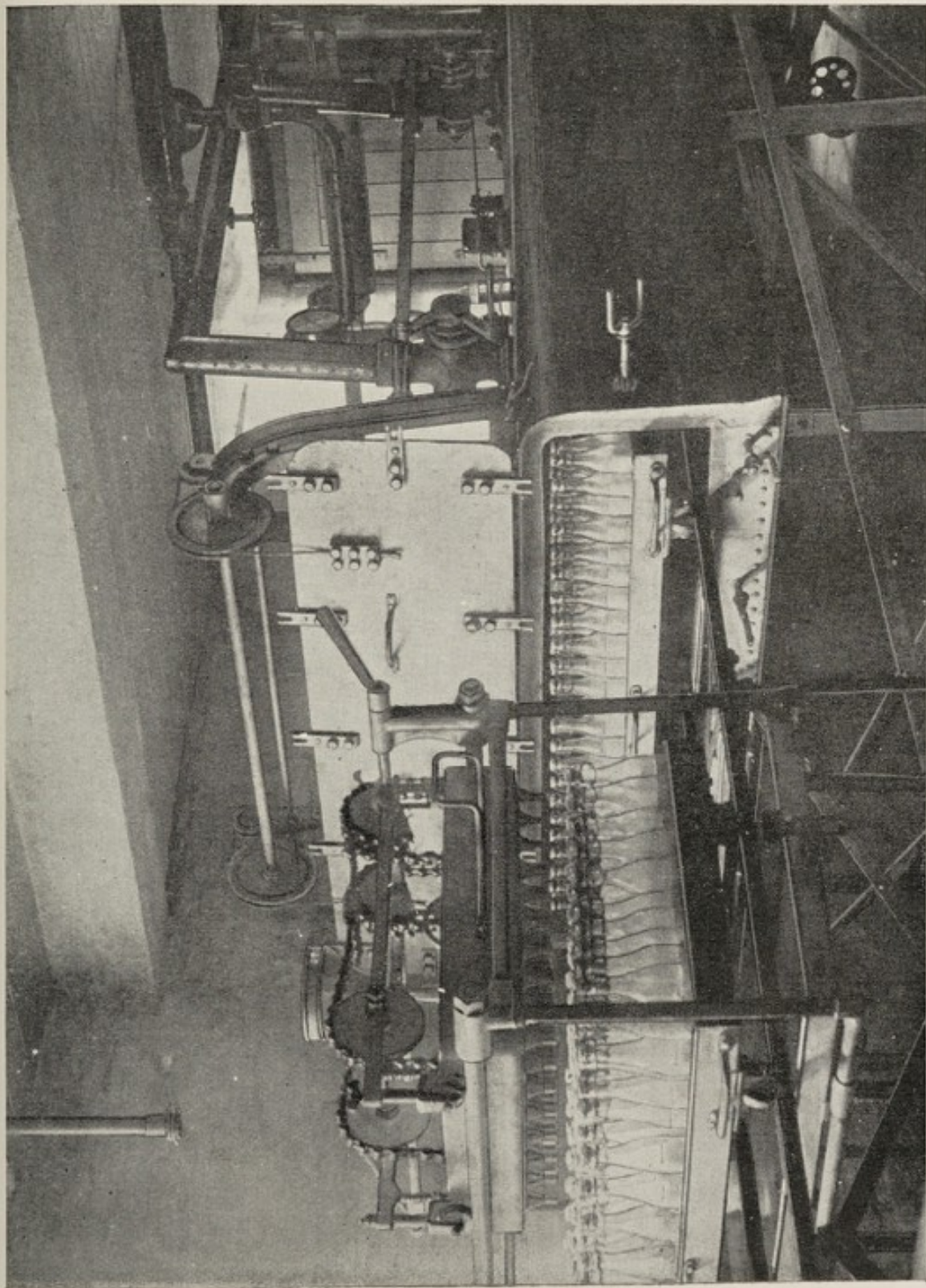




BOTTLE WASHERS AND STRAINERS.







STERILIZING APPARATUS.





7. After using, the bottle should be thoroughly rinsed in cold water.
8. If children are sent for the milk, they must be warned not to tamper with the stoppers of the bottles.
9. All bottles, stoppers, baskets, and rubber rings not returned to the Dépôt, will be charged full value.
10. The cost of the full weekly supply of Humanised Milk for Infants is 1s. 3d., payable in advance.

NOTE.—The Dépôts are open daily (Sundays and Bank Holidays excepted) from 11 a.m. till 6 p.m. Sundays and Bank Holidays 11 a.m. till 1 p.m.

Dépôts for the Sale of Milk for use for Infants are situated at—

251, Netherfield Road North.

47, Cazneau Street.

52, Earle Road.

37B, Park Road.

As regards details, it may be stated that a mixture is prepared consisting of cows' milk, water, cream, and sugar in such quantities as to make the liquid practically the same as human milk; a sufficient amount for one feed for an infant of stated age is put into each bottle, and the bottle and contents are then sterilized. Nine such bottles, each containing one feed, are given out for use during the succeeding 24 hours. The bottle, after a single use, is thoroughly cleansed before being refilled and sterilized. The method of use is carefully explained verbally to the person having charge of the infant, and from time to time visits are paid to see that the milk is being used intelligently and in a proper manner.

The accompanying photograph indicates the form of bottle, with the stopper, which, after many experiments, is found to be the most satisfactory; and it also shows the basket in which the milk is sent out. The interior and exterior of the Earle Road Dépôt is also seen on the accompanying photographs.

PROCEEDINGS UNDER THE FOOD AND DRUGS  
AND MARGARINE ACTS.

All samples of food or drugs are taken either by, or under the superintendence of Inspectors of the Health Department. It is of the greatest consequence that trained and practised persons should be employed for this purpose. It is necessary from time to time to employ women or young lads as agents, to go into the shop to ask for the articles, and as soon as the agent receives them, the Inspector enters the shop and completes the formalities which the Act requires. The following is a list of the

SAMPLES TAKEN FOR CHEMICAL ANALYSIS.

No of Samples purchased.	Description of Samples.	Adulterated.	Informations.
1	Apple Wine ... ..	...	...
6	Arrowroot ... ..	...	...
13	Baking Powder ... ..	...	...
5	Barley, Pearl... ..	...	...
161	Beer ... ..	2	2
4	„ Lager ... ..	...	...
56	Bitter Beer ... ..	1	1
1	Boiled Rabbit ... ..	...	...
1	Brawn... ..	...	...
22	Bread ... ..	...	...
94	Butter... ..	18	11
1	„ Milk ... ..	...	...
1	„ Vegetable ... ..	1	...
1	Camphorated Oil ... ..	1	...
1	Cakeoma ... ..	...	...
3	Carbonate of Soda ... ..	...	...
2	Carraway Seeds ... ..	1	...



SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Sample-s.	Adulterated.	Informations.
1	Cassia ... ..	1	...
1	Cherry and Cider ... ..	...	...
21	Cheese... ..	...	...
1	Cinnamon ... ..	...	...
1	Cloves ... ..	...	...
11	Cocoa ... ..	1	...
1	Cod Liver Oil ... ..	...	...
29	Coffee ... ..	...	...
2	Coffee and Chicory ... ..	...	...
1	Corned Beef ... ..	...	...
6	Cornflour ... ..	...	...
14	Cream... ..	5	...
1	„ Salad ... ..	...	...
15	Cream of Tartar ... ..	...	...
1	Custard Powder ... ..	...	...
1	Dandelion and Burdock Stout ... ..	...	...
2	Dandelion Beer ... ..	...	...
9	Flour ... ..	...	...
9	Flour, Self-raising ... ..	...	...
4	Gin ... ..	...	...
5	Ginger Ale ... ..	1	...
2	„ Beer ... ..	...	...
31	„ (Ground and Whole) ... ..	2	1
1	„ Marmalade ... ..	1	...
2	Ginger Wine ... ..	...	...
1	Glycerine ... ..	...	...
1	Gravy Salt ... ..	...	...
1	Herrings and Tomatoes ... ..	...	...
4	Honey... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
26	Jams ... ..	1	...
4	Jellies ... ..	1	...
29	Lard ... ..	...	...
3	Lemonade ... ..	...	...
1	Lemon Squash ... ..	...	...
1	Macaroni ... ..	...	...
1	Mace ... ..	...	...
26	Margarine ... ..	...	...
1	„ Cheese ... ..	...	...
7	Marmalade ... ..	1	...
853	Milk (new) ... ..	90	78
59	„ (skimmed) ... ..	4	4
9	„ (Machine Skimmed) ... ..	1	...
22	„ (condensed) ... ..	...	...
1	Mince Meat ... ..	...	...
18	Mixed Spice ... ..	1	1
4	Mustard ... ..	...	...
1	Mutton Essence ... ..	...	...
7	Oatmeal ... ..	...	...
4	Olive Oil ... ..	...	...
4	Pepper, cayenne ... ..	...	...
2	„ black ... ..	...	...
43	„ white ... ..	3	3
4	Piccalilli ... ..	...	...
9	Pickles ... ..	...	...
1	Pickled Walnuts ... ..	...	...
8	Porter... ..	...	...
4	Port Wine ... ..	2	...
1	Potted Beef ... ..	...	...



SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No of Samples purchased.	Description of Samples.	Adulterated.	Informations.
1	Potted Beef and Tongue ... ..	...	...
7	Preserved Apricots ... ..	...	...
1	„ Cherries ... ..	...	...
1	„ „ and Plums ... ..	...	...
1	„ Gooseberries ... ..	...	...
6	„ Peaches ... ..	...	...
7	„ Pears ... ..	...	...
9	„ Peas ... ..	8	6
5	„ Pineapple ... ..	...	...
1	„ Raspberry and Apple ... ..	...	...
1	„ „ „ Red ... ..	...	...
	Currant		
1	„ Rhubarb... ..	...	...
5	„ Tomatoes ... ..	...	...
1	Raspberry Champagne ... ..	...	...
1	„ in Syrup ... ..	...	...
1	„ Vinegar ... ..	...	...
1	Raspberry Wine ... ..	1	...
1	Rice, ground ... ..	...	...
1	Roast Mutton ... ..	...	...
1	Roast Beef ... ..	...	...
5	Rum ... ..	...	...
1	Sarsaparilla ... ..	...	...
2	Sausage ... ..	...	...
1	Semolina ... ..	...	...
10	Shrimps, Potted ... ..	5	1
1	„ Picked ... ..	...	...
7	Soda Water ... ..	...	...
1	Stout ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
17	Sugar ... ..	...	...
1	Sweet Corn ... ..	...	...
30	Sweetmeats ... ..	1	...
10	Syrup, golden ... ..	...	...
5	Tartaric Acid ... ..	...	...
18	Tea ... ..	...	...
1	Vermicelli ... ..	...	...
9	Vinegar ... ..	...	...
5	Whisky, Irish ... ..	...	...
3	„ Scotch ... ..	...	...
4	Yeast ... ..	...	...
Total 1889		154 <i>Adulterated.</i>	108
2025	preceding year.	245 preceding year.	129

		<u>1900.</u>	<u>1901.</u>
Number of Informations ... ..	...	129	108
„ Fined ... ..	...	107	103
Acquitted or Withdrawn ... ..	...	22	5
Amount of Fines and Costs ... ..	...	£375 13 6	£333 10 2

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

		<u>1900.</u>	<u>1901.</u>
Number of Samples purchased on Week-days in Town..		420	454
„ Informations ... ..	...	60	42
Number of Samples taken at Railway Stations on Week-days ... ..	...	121	129
„ Informations ... ..	...	3	3
Number of Samples purchased on Sundays in Town ...	...	152	173
„ Informations ... ..	...	23	31
Number of Samples taken at Railway Stations on Sundays		151	108
„ Informations ... ..	...	1	3
„ Samples taken at City Hospitals ... ..	...	60	85
„ Informations ... ..	...	1	3



The amount of fines for offences under the Sale of Food and Drugs Act has slightly decreased during the past twelve months as compared with the preceding twelve months, but the number of samples taken also shows a slight decrease.

<u>MARGARINE ACT.</u>						<u>1900.</u>	<u>1901.</u>
Number of Visits to Wholesale Dealers in Margarine						437	361
„	Visits to Shops	...	..	...	...	6011	6335
„	Samples obtained	...	...	...	...	2	1
„	„	Analysed	...	...	...	—	1
„	Informations	...	...	...	...	2	1
„	Fined	...	...	...	...	2	1
Amount of Fines and Costs						... £2 15s. 6d.	£1 7s.

### ARSENIC IN BEER.

Some of the serious consequences which had arisen towards the close of the year 1900, from the sale of beer containing arsenic in poisonous quantities, continued into the beginning of the year 1901. Although there was no reason to suppose that any arsenical beer had been sold in Liverpool since the discovery was made of the fact of contamination, yet the deaths of three persons who had been poisoned during the preceding October and November occurred at the beginning of the year, and were certified to have been caused by drinking beer which had been contaminated with arsenic. Several other cases were reported where persons were suffering from the effects of arsenical poisoning, but so far as can be ascertained these persons recovered from their illness.

As the result of protracted inquiry at an inquest, a verdict was returned of "death from arsenic poisoning, caused by drinking beer."

FOOD ADULTERATION AND PRESERVATIVES.

In previous Reports the Medical Officer has referred to the frequency of the improper and injurious use of colouring matters and preservatives in food. This subject is of wide interest and great importance, and has led to the appointment by the President of the Local Government Board of a Departmental Committee to inquire—

- (1) Whether the use of such materials, or any of them, for the preservation and colouring of food in certain quantities is injurious to health, and if so, in what proportion does their use become injurious;
- (2) To what extent, and in what amount, are they so used at the present time.

The conclusions to which this Committee have come, and which are contained in the Report they have recently issued, are based upon a careful and prolonged inquiry, in the course of which 78 experts witnesses have been examined.

The chemical preservatives most frequently in use are —

Boron preservatives, that is, preparations of borax and boracic acid, which are largely used for dairy purposes, especially milk, butter, and cream, for curing hams, bacon, sausages, and preserved meats generally, and to a much smaller extent in beverages.

Salicylic acid is employed chiefly in beverages, wines, beer, cider and temperance drinks, and in foods derived from fruit, as jams and jellies.

Formalin is of comparatively recent introduction, and even when comparatively dilute has a marked effect in hardening animal tissues.

Abundant evidence is adduced to show that use of chemical preservatives is made with unnecessary frequency as well as in unnecessary quantities. The amount of salicylic acid used, for example, in lime juice cordial varying from 20 grains up to 108 grains per gallon, and in black currant wine quantities have been found varying from 47 to 140 grains per gallon.

The samples taken from different parts of the country showed the widest divergence in the proportions which contained preservatives, as well as in the quantity of preservatives found in individual samples; thus, in one part, 18 per cent. of the samples of milk examined contained



boric compounds of some kind. This contrasts very markedly with Liverpool samples in which borates were met with only 4 times in 964 samples. Further local evidence confirmed the view that the milk supply was conducted practically without the use of preservatives, only 10 out of 1,181 samples of new milk contained formalin. With regard to samples of cream from various parts of the country the proportions containing boric acid were considerable; in one great centre as many as 4 out of 5 samples containing it, often in unnecessary quantities.

Bottled beer, lager beer, and sherry also furnished samples containing from 4 to 11 grains of salicylic acid to the gallon.

The Commission infer from the varying quantities of preservatives used in different parts of the country that the use of preservatives depends largely upon the attitude of the Local Authority. Prosecutions for the unnecessary use of preservatives have been the means of checking it.

The Commission consider that the use of boracic acid preservative corresponding to  $\frac{1}{2}$  grain per cent. in butter is not likely to lead to injurious results, and as all imported butter, excepting that from Denmark, frequently contains boracic acid, they do not consider that there are any reasons to interfere with its use to the moderate extent indicated.

With regard to new milk the Commission consider the evidence conclusive that as the nutrition of infants and young children depends greatly upon the purity and the abundance of the milk supply, it is of the utmost consequence that it should not be the vehicle of any unsuspected agent. These and various other considerations lead to the conclusion that no preservative whatever should be used in milk. Evidence was forthcoming that the Aylesbury Dairy Company used no preservatives whatever either in milk, cream or butter; with regard to cream, in general a certain amount of preservative was regarded by the Departmental Committee as admissible, but the recommendation is made that the obligation should be laid on the vendor of notifying the presence, nature and quantity of preservative.

One of the great objections to the use of preservatives has been the random and careless uses made of them, one sample perhaps containing upwards of 500 per cent. more preservative than another sample of the same article. The defence put forward from time to time in the Liverpool Police Courts has been that the preservative has certain medicinal merits,

and medical men have even been called in support of this extraordinary contention, as if apparently to show that the consumer would derive some advantage from the casual and surreptitious administration of a dose of physic with his food. This evidence has frequently been given for the defence, when prosecutions have arisen on account of the excessive use of salicylates.

The final recommendations of the Commission may be summarised as follows:—

(a) That the use of formalin or formaldehyde be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food, and that in all cases its presence be declared.

(b) That the use of any preservative or colouring matter whatever in milk be constituted an offence under the Sale of Food and Drugs Act.

(c) That the only preservatives to be allowed in cream be boric acid or borax, in amount not exceeding  $\frac{1}{4}$  of a grain per cent. expressed as boric acid, the amount to be notified by a label upon the vessel.

(d) The only preservative to be used in butter and margarine to be the same as in the preceding, in proportions not exceeding  $\frac{1}{2}$  per cent.

(e) That in the case of dietetic preparations intended for the use of invalids or infants, chemical preservatives of all kinds be prohibited.

(f) That the use of copper salts in the so-called "greening" of preserved foods be prohibited.

(g) The Commission also recommend that means be provided for more direct supervision over the use of preservatives and colouring matters in foods.

The recommendations of the Commission form a valuable guide as to the procedure, and will be an undoubted help to those desiring to protect the food supply from impurities.

The Report of the Commission not only confirms the equity of the action taken by the Health Committee, but the Report, if acted upon by manufacturers and dealers, will remove altogether the necessity of legal proceedings.



## BACTERIOLOGICAL EXAMINATIONS AND ANALYSES.

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The work of the Bacteriologist comprises :—

- (a) Examination of food stuffs of various kinds.
- (b) Regular examination of water supplied to the City.
- (c) Examinations into suspected cases of rabies, anthrax, glanders, &c.
- (d) Examination for diagnostic purposes in suspected cases of diphtheria, typhoid fever, tubercular sputum, &c.
- (e) Special investigations.

Every food-stuff and every sample of water is analysed for the presence of (1) *Bacillus coli* ; (2) *Bacillus enteritidis sporogenes*.

Every sample of milk is, in addition, examined for the presence of the *Bacillus tuberculosis* by inoculation.

In every sample of water the number of bacteria present in the cubic centimetre is also noted.

To facilitate these operations special apparatus has been constructed in the laboratory, and many of the operations have been simplified by their use.

With regard to (a) the total number of samples of food-stuffs taken for bacteriological examinations during the year 1901 were as follows :—

1,055 Foods.

107 Samples of Water.

183 Miscellaneous examinations.

In addition a very large number of bacteriological examinations were made of suspected Tubercular, Typhoid, and Diphtheria cases, for the medical practitioners of the district. Typhoid and Diphtheria examinations amounted to 650.

The following is a list of the food-stuffs examined:—

SAMPLE.	No.	SAMPLE.	No.
Anchovy Paste ... ..	1	Oysters ... ..	57
Bovril ... ..	2	Potted Shrimps ... ..	1
Beef Suet ... ..	1	Polony ... ..	2
Bloater Paste... ..	6	Pork Pie ... ..	7
Butter ... ..	13	Pork and Beans ... ..	4
Beefine ... ..	1	Periwinkles... ..	18
Coffee and Chicory Essence...	2	Potted Ham... ..	4
Coffee and Milk ... ..	1	„ Beef ... ..	4
Cockles ... ..	33	„ Tongue ... ..	2
Cheeses ... ..	30	Preserved Pineapple ... ..	4
Chicken and Tongue... ..	2	„ Tomatoes ... ..	1
Camp Pie ... ..	1	„ Peaches ... ..	1
Condensed Milk ... ..	33	Sauces ... ..	16
Corned Beef ... ..	1	Sausages ... ..	6
Creams ... ..	9	Spice Balls ... ..	2
Fluid Beef ... ..	1	Sardines (Tinned) ... ..	23
Fried Fish ... ..	1	Salmon (Tinned) ... ..	17
French Capers ... ..	1	Soups, Tomato ... ..	1
Honey ... ..	3	„ Celery ... ..	1
Ham and Tongue ... ..	3	„ Kidney ... ..	1
Ham and Chicken ... ..	4	Turkey and Tongue... ..	4
Jellies ... ..	20	„ „ Paste ... ..	1
Jams ... ..	24	Veal and Ham ... ..	1
Ice Creams ... ..	11	Vegetable Butter ... ..	2
Lobster ... ..	15	Whelks ... ..	4
Lunch Tongue ... ..	1	Walnuts (Pickled) ... ..	1
Lemon Cheese ... ..	1	Water (Special) ... ..	1
Margarine ... ..	27		
Mussels ... ..	35		1055
Milks, New ... ..	566	Water .. ..	107
„ Humanized ... ..	2	Typhoid, Diphtheria, &c. ...	650
„ Sterilized ... ..	4	Miscellaneous ... ..	183
Marmalade ... ..	13		
Mutton, Roast ... ..	1	TOTAL .. ..	1995



### MILK ANALYSES FOR THE YEAR.

The total number of milks examined was 566. These were examined for the presence of

1. The *Bacillus tuberculosis*.
2. The *Bacillus coli*.
3. The *Bacillus enteritidis sporogenes*.
4. Other bacteria.

The *Bacillus tuberculosis* indicates that the animal from which the milk was taken was tubercular, or that the pails into which the milk was received, or the hands of the milker were infected from previous contact with a diseased cow.

The *Bacillus coli* indicates contamination with dirt, of an intestinal origin, or possibly that the cow was suffering from inflammation of the udder.

The *Bacillus enteritidis sporogenes* indicates dust or intestinal contamination.

#### Presence of the Tubercular *Bacillus*.

Of the 566 samples examined for tubercle 58 guinea pigs died before the tubercular test was completed, leaving 508 samples for the completion of the investigation. *Of this number 22 proved tubercular*, 20 were found in *railway borne milks*, and 2 in *town milks*.

The greater frequency of tubercle in railway borne milks was also noted last year. It is a very serious matter that tubercle is still so widespread in milk. When it is remembered that one tubercular cow may be the means of infecting the milking utensils, the hands of the milker, and even the teats of the other healthy animals, regulations to deal with infected animals cannot be too stringent.

**Presence of the *Bacillus Enteritidis Sporogenes* and the  
*Bacillus Coli*.**

The *Bacillus enteritidis sporogenes* was found 5 times in a total of 246 railway borne samples of milk, and 4 times in a total of 254 town samples.

The *Bacillus coli* was present 178 times in 246 railway borne milks, and 111 times in 254 town milks.

This is an exceedingly interesting and important result, for it shows that less care is taken in handling the country milk, and therefore that contamination much more frequently occurs.

With regard to the relationship of the *Bacillus coli* to the *Bacillus enteritidis sporogenes*, it has been found that very frequently the two organisms do not occur together. The significance of this is important as throwing light upon the significance of the *Bacillus enteritidis sporogenes* as an index of pollution. Where the *Bacillus coli* and *Bacillus enteritidis sporogenes* occur together this would be strong evidence that the *Bacillus enteritidis sporogenes* was of recent intestinal origin.

Table showing the frequency with which the *Bacillus coli* and *Bacillus enteritidis sporogenes* occur alone and together in 566 samples of milk analysed.

Date.	No. of Samples.	<i>Bacillus coli</i> alone.	<i>Bacillus enteritidis</i> alone.	Together.
Jan.	43	12	1	2
Feb.	41	8	2	—
Mar.	49	18	—	—
April	40	12	—	—
May	53	35	1	—
June	48	34	1	2
July	50	37	1	1
Aug.	60	47	—	—
Sept.	44	39	—	—
Oct.	59	42	—	1
Nov.	53	29	—	—
Dec.	26	12	—	1



TABLE SHOWING THE TOTAL NUMBER OF MILKS WHICH WERE EXAMINED DURING 1901  
FOR *BACILLUS COLI COMMUNIS*, *BACILLUS ENTERITIDIS SPOROGENES*,  
AND TUBERCLE BACILLI.

Month.	Rail.	Bac. Coli Com.	Bac. Ent. Spor.	Town.	Bac. Coli Com.	Bac. Ent. Spor.	Hos- pital.	Bac. Coli Com.	Bac. Ent. Spor.	Total No.	Tubercular.		Number of Negative Results.
											Town.	Rail.	
January ...	19	12	3	20	1	—	4	1	—	43	—	3	4
February...	16	6	1	20	1	—	5	1	1	41	—	2	4
March ...	23	9	—	20	4	—	6	5	—	49	—	2	4
April ...	17	7	—	19	4	—	4	1	—	40	1	—	3
May ...	19	15	—	28	16	—	6	4	1	53	1	—	6
June ...	19	14	1	23	18	2	6	4	—	48	—	1	7
July ...	23	20	—	22	13	1	5	5	1	50	—	—	7
August ...	33	29	—	20	12	—	7	6	—	60	—	2	7
September	19	18	—	20	16	—	5	5	—	44	—	5	7
October ...	25	18	—	31	22	1	3	3	—	59	—	—	5
November	24	21	—	20	2	—	9	6	—	53	—	3	3
December	9	9	—	11	2	—	6	2	1	26	—	2	1
Total...	246	178	5	254	111	4	66	43	4	566	2	20	58

## RESULTS OF ANALYSES OF BUTTER, CREAM, STERILIZED MILKS, HUMANIZED MILKS, CHEESE AND MARGARINE.

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**Butter.**—Thirteen samples were analysed, *Bacillus coli* was present in 8 samples, and the *Bacillus enteritidis sporogenes* was absent in all of the samples.

**Creams.**—Nine samples of cream were examined; *Bacillus enteritidis sporogenes* being absent in all cases, and *Bacillus coli* present in five samples.

**Sterilised and Humanized Milks.**—Four samples of Sterilized and two of Humanized milk were examined, and were found to be sterile.

**Condensed Milks.**—Thirty-three samples were examined and the great majority were not sterile. There is no doubt that condensed milk is a most unsatisfactory product. Bacteria are usually present, and the milk, which was originally condensed, might have contained various products of the decomposition of bacteria. These products are masked subsequently by the large quantity of sugar present, but their irritant properties are not destroyed.

**Cheese.**—Thirty samples were examined. *Bacillus coli* was present in 20 samples and *Bacillus enteritidis* in only one sample.

**Margarine.**—*Bacillus coli* was present in 8 of 27 samples of Margarine examined, while *Bacillus enteritidis* was absent in all of the samples.

**Bacteria present in Shell Fish.**—As in the case of milk and milk products, some kinds of shell fish are for the most part eaten uncooked; they are in consequence liable to convey infection if they become contaminated with pathogenic bacteria. Contamination may occur in the transit and storing of the shellfish, but more especially in the collecting grounds. It is not uncommon to find that sewage has access to oyster, mussel and cockle beds. 147 samples were examined for evidence of the *Bacillus coli* and *Bacillus enteritidis sporogenes*. The *Bacillus coli* was present 97 times, the *Bacillus enteritidis* 11 times. The *Bacillus coli* was more frequently present in oysters and mussels, the *Bacillus enteritidis* in periwinkles and cockles. Thus again, as in the case of the milks, there is little



uniformity between the occurrence of these two bacilli. It is fortunate that *Bacillus coli* is not more abundant in shellfish in Liverpool, but no efforts must be spared to make the collecting grounds above suspicion of sewage contamination. In the case of cockles and mussels, this is difficult, as they are often taken from the mouths of estuaries where pollution unfortunately occurs to a great extent owing to the discharge of crude sewage.

**Sausages.**—As in the case of sterilized milk, condensed milk, and raw foods generally so in the case of sausages, it is all important that the ingredients should be pure, otherwise the spice simply masks the bacterial changes, and does not destroy the ptomaines or indeed injurious bacteria. Six samples were examined and the *Bacillus coli* obtained in all of the samples and the *Bacillus enteritidis sporogenes* in 4 samples.

**Tinned Meats, Fruits and Vegetables.**—Ninety-three samples were examined and *Bacillus coli* was obtained in two samples; *Bacillus enteritidis* being absent in all cases.

**Pastes and Potted Meats.**—In only one case out of the sixteen samples examined was *Bacillus coli* found. Eleven out of sixteen were not sterile.

**Preserves.**—These have shown a freedom from dangerous or danger indicating bacteria. Twelve out of the thirty-seven samples examined were sterile. Those which are not sterile only contain a few bacteria. There is no doubt that the greatest care must be used in the boiling and subsequent distribution of the jam into the pots to ensure sterility and keeping properties.

**Distribution of Tuberculosis.**—In the Report of the Medical Officer for last year it was mentioned that Dr. Elliott,\* working in the Thompson Yates Laboratories, had made an investigation into the distribution of Tuberculosis in Liverpool, and of the infectivity of houses in which tubercular patients had resided. During the present year Dr. Annett† has carried out a most important research upon the extent of tubercular expectorations in our principal thoroughfares. During one

\* Thompson Yates Reports, Volume III., pt. i.  
† Do. do. do. Volume IV., pt. ii.

hour, 10 a.m. to 11 a.m., on March 1st, 1902, he counted the following numbers of recent muco-purulent or purulent expectorations:—

Brownlow Hill: part between University College and				
Lime Street – sunny side only	...	...	...	72
Ranelagh Street – shaded side	...	...	...	14
Church Street – sunny side	...	...	...	10
Lord Street	„	...	...	11
Castle Street	„	...	...	7
Dale Street—shaded side	...	...	...	30
William Brown Street—sunny side	...	...	...	5
London Road—shaded side	...	...	...	18
Pembroke Place	„	...	...	16

These figures give only a very faint idea of the extent of the expectoration which is going on each hour in streets, and consequently of the extent to which pedestrians are subjected to infection by tubercle bacilli.

Besides the possibility of the expectorated masses drying in a few hours and of the bacilli being carried and thrown about in the dust of the air, sputum also soils the boots of passers by, but more particularly the trailing edges of ladies' skirts; tubercle bacilli becoming freely distributed into offices, shops, dwelling-houses, &c., by this means.

Out of a total of one hundred and five sputa collected, five were proved to contain virulent tubercle bacilli, a percentage of 4.76.

**Pseudo-Actinomyces of the Udder of the Cow.**—The Bacteriologist was asked to inspect a cow suspected to be suffering from tubercle of the udder, but which failed to react to the tuberculin test. Mr. Eaton Jones, from the external examination of the udder, shared Professor Boyce's view that tubercle was present. However, after the animal was slaughtered numerous hard nodules were found scattered throughout the udder, and from these inoculations and microscopical preparations were made. No evidence of tubercle was found, but instead, in the centre of the nodule small ray-like masses which closely resembled Actinomyces. Further examination showed, however, that the actinomycotic-like appearance was apparently due to some crystalline formations, and that the case was not one of Ray fungus disease.



**Plague Observations and Rats.**—During the year a careful watch has been kept over the rats in the ships entering the Port, and over those found in warehouses, stables, dwellings, &c. This has been done because of the known fact that rats suffer from Plague, and that they very probably assist to spread the disease. By the systematic bacteriological examination of these rats we may be put in a position to forestall cases of Plague.

The total number of rats which were examined from October to December was 150. In no case was any rat found to be infected with plague.

**Typhoid Fever.**—A very important investigation has been carried out by Dr. Hume showing that bacilli other than the *Bacillus typhosus* may give rise in man to all the clinical symptoms of typhoid fever. He describes a new pathogenic bacillus which produces these symptoms.

**Relation of Bacteria to Sewage Disposal.**—Experiments continue to be made at West Derby and Fazakerley, and careful examinations of the bacteria which are found in septic tanks, and which lead to the formation of black sludge, are still in progress.

#### RABIES.

During the year 15 dogs were examined for rabies, but fortunately in no case was rabies shown to be present.

Sample No.	Date 1901.	Result of Examination.
43 ...	February 20th...	Not rabies.
47 ...	March 20th...	Negative.
48 ...	March 25th...	Negative.
49 ...	April 12th...	Not rabies.
50 ...	April 12th...	Not rabies.
51 ...	April 24th...	Negative.
53 ...	April 24th...	Dog's head putrid, not inoculated.
54 ...	April 30th...	Not rabies.
58 ...	July 3rd...	Negative.
61 ...	July 15th...	Dog's head putrid, not inoculated.
63 ...	July 30th...	do. do.
64 ...	July 30th...	do. do.
70 ...	October 1st...	do. do.
76 ...	November 30th...	Negative.
78 ...	December 3rd...	Negative.

BACTERIOLOGICAL ANALYSES OF CASES OF TYPHOID AND  
DIPHTHERIA IN THE CITY FEVER HOSPITALS.

During the year the Fever Hospitals have availed themselves of the facilities of the Municipal Bacteriological Department, and 650 specimens have been examined.

The following is a summary of the results:—381 cases of Diphtheria, 267 Typhoid and 2 Special examinations.

**Diphtheria.**

Positive	...	...	...	...	...	...	145
Negative	...	...	...	...	...	...	157
Staphylococci present	...	...	...	...	...	...	21
Streptococci present	...	...	...	...	...	...	11
Yeast present in	...	...	...	...	...	...	3
Suspicious	...	...	...	...	...	...	6
No growth	...	...	...	...	...	...	38
Total							<hr/> 381 <hr/>

**Typhoid.**

Positive	...	...	...	...	...	...	124
Negative	...	...	...	...	...	...	126
Suspicious	...	...	...	...	...	...	10
Not examined	...	...	...	...	...	...	7
Total							<hr/> 267 <hr/>
Special	...	...	...	...	...	...	2

*Total Number examined* ... 650.



The following is a list of the special examinations made during the year, chiefly to ascertain the presence of the tubercle or anthrax bacillus in various organs :—

### Special Examinations.

Sample No.	Date.	Sample.	Result.
44 ...	March 9th...	Mammary Gland	Normal.
45 ...	March 9th...	Lymphatic Gland	Tubercular.
46 ...	March 14th...	Spleen ...	B. Anthracis present.
52 ...	April 24th...	Spleen ...	B. Anthracis present.
55 ...	May 18th...	Spleen ...	No B. Anthracis seen.
56 ...	June 7th...	Cow's Udder ...	Tubercular.
57 ...	June 13th...	do. ...	do.
59 ...	July 4th...	do. ...	do.
60 ...	July 12th...	do. ...	do.
62 ...	July 19th ..	do. ...	Negative.
65 ...	August 20th...	do. ...	Non-tubercular.
66 ...	August 22nd...	do. ...	Tubercular.
67 ...	August 23rd...	Gland ...	Tubercular.
68 ...	August 23rd...	Lungs ...	Not definitely tubercular, Broncho-pneumonia.
68a ...	August 23rd...	Udder ...	Tubercular.
68b ...	August 23rd...	Glands ...	Tubercular.
69 ...	September 9th...	Udder ...	Non-tubercular.
71 ...	October 30th...	Beef ...	Not in a fit state for examination.
72 ...	October 30th...	Rats ...	No. B. Pestis.
73 ...	November 2nd...	Udder ...	Non-tubercular.
74 ...	November 7th...	Spleen ...	No B Anthracis present.
75a ...	November 19th...	Lungs ...	Tubercular.
75b ...	November 19th...	Udder ...	Tubercular.
77 ...	November 30th...	Spleen ...	B. Anthracis present.
79 ...	December 11th...	Spleen ...	Non-tubercular.
80 ...	December 11th...	Lungs ...	Negative.
81 ...	December 12th...	Udder ...	Tubercular.
82 ...	December 14th...	Spleen ...	No B. Anthracis.

## WATER ANALYSES.

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All the samples of water have been systematically examined for the presence of the *Bacillus coli* and the *Bacillus enteritidis sporogenes* as well as for the total number of bacteria. The quantity of water used for each analysis has been 1 cubic centimetre.

The following are the sources which have been examined:—

*Fortnightly Examinations—*

Ashton Hall Tap.

*Monthly Examinations—*

PRESCOT —	{	Lake Vyrnwy Water. Rivington Water. The Mixed Water.
WELLS —	{	Green Lane Well. Windsor Well. Dudlow Lane Well.

The results show that the *Bacillus coli* has not been found present in any sample in the 1 cubic centimetre used.

The average number of Bacteria present in:—

1.—Ashton Hall Water	...	...	...	...	= 22 in 1 c.c.
2.—Vyrnwy Aqueduct	...	...	...	...	= 12 „
3.—Rivington Aqueduct	...	...	...	...	= 18 „
4.—Green Lane Wells	...	...	...	...	= 63 „
5.—Windsor Well	...	...	...	...	= 56 „
6.—Dudlow Lane Well	...	...	...	...	= 25 „

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**CLEANSING AND SCAVENGING.**

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CLIPPING AND EDITION

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## CLEANSING AND SCAVENGING.

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The benefit resulting from the continuance and extension of the practice of street washing was marked; the objections urged against this cleanly and salutary work have been entirely overcome. During the hot weather of last year, the extended street washing was continued; 250 streets were washed once a week, 105 streets twice a week, 12 streets three times a week, and all tunnel entrances to courts were washed three times a week. Also all cab stands were washed twice a week. The substitution of electric cars for horse cars and omnibuses has removed one of the greatest causes of street contamination. Improvements in the details of the methods of cleansing and scavenging the streets have been effected with corresponding advantages to the health and comfort of the inhabitants. Owing to the difficulties arising from bad planning of many of the streets of smaller houses, and the absence of adequate back passages, many obstacles have yet to be overcome before the collection and removal of domestic refuse can be regarded as satisfactory; but a most important advance has been made by the action of the Health Committee in giving facilities for the substitution of sanitary ashbins for the old insanitary ashpits. Down to the end of 1901, 1,849 Improved Fixed Sanitary Ashbins have been placed in properties assessed at £10 per year and under, and 3,608 in premises assessed at over £10 per year. The number of brick ashpits in the City has been reduced from 65,000 to 62,470 approximately. Contemplated amendments in the bye-laws will avert any extension of the mischief which result from defective ashpits.

At present the objectionable practice of depositing the contents of ashpits upon the street surface, awaiting the arrival of the cart, has still occasionally to be resorted to, with the result that refuse and dust are blown about by the winds or scattered by traffic, or left where children play with them.

The value of heavy rainfall in street washing, drain flushing, and so forth is very great. As has been shown in previous reports, it is an almost invariable experience that the choleraic disease of the summer and autumn months is highest when rainfall is low, and declines to its minimum when frequent, sudden and heavy, rather than continuous, rainfall occurs. The explanation is that in a fine warm summer, the accumulations of dust and dirt, largely unavoidable unless removed by washing, give rise to a filth-laden atmosphere, and the mischief which follows from such a condition. Consequently the full benefit of rain will only be experienced when the fall is heavy enough to exert a cleansing power.

The cleansing effects of heavy falls of rain were, as is always the case in the summer months, markedly beneficial. Attention to the cleansing of courts and alleys requires to be incessant, since the least relaxation in the efforts of the officers of the committee results at once in the grossest filthiness on the part of the occupants, most of whom are indifferent, and very many drunken.

The improvements in the condition not only of the main streets, but side streets and back streets also, in regard to cleansing and scavenging during the past year have been further marked.

All private, domestic, and office drains are flushed by the City Engineer's staff twice a year, and there can be no question that a more frequent and very thorough flushing would be attended with great advantage.

The connection between cleanliness and health is indicated by the table showing the association of rainfall with diminished mortality from choleraic diarrhoea, during the last twenty years, six of which were



average wet summers, with relatively low mortality, and fourteen were average dry summers, with considerably higher mortality; the extremes being 1891 and 1895:—

Period.	Average Annual Rainfall, June to September.			Annual Average of Deaths from Zymotic Diarrhœa during the Third Quarter of the year.			
Six years	...	13·8 inches	...	{ Average wet Summers }	...	373	
Fourteen years		10·9 inches	...	{ Average dry Summers }	...	573	
Extreme years.	{ Year 1891	...	16 inches	...	{ Wet Summer }	...	203
	{ Year 1895	...	7·7 inches	...	{ Dry Summer }	...	819
Year 1901	...	8·4 inches	...	{ Dry Summer }	...	1067	

The difference in rainfall in the two years 1891 and 1895 means that upwards of 900 millions of gallons of water were distributed to the then city in the season of low mortality, which were absent in the year of high mortality.

It may be necessary to explain that public cleanliness is only one factor in the prevention of this form of disease, but at the same time it is one of the most important, and it is easy to see the benefits which must result when Nature applies an additional 900 million gallons of water to cleansing purposes.

The City Engineer has kindly supplied the following tables, which indicate the magnitude of the operations carried out by that portion of the staff under his control:—

**TABLE No. 1.**  
**NIGHT SERVICE**  
**FOR EMPTYING COURT, &c., ASHPITS, AND MIDDENS.**

Middens have been practically abolished in the Old City, and consequently the operations of the night service are now limited to the removal of domestic and office refuse from the neighbourhood of the Exchange, where it would be impracticable to perform the work during the business hours of the day.

Towards the end of the year 1900 an Improved Court Ashbin was introduced, and up to the 31st December, 1901, the number of these Bins fixed amounted to 1,003.

Notices Received.	Total Number of Collec- tions from Ashpits, etc.	Total Number of Loads of Ashes, etc., Collected.	Depots at which Refuse was Deposited.			Average Working Staff per night.				Analysis of Work.		Average quantity removed from each Ashpit at each collection.
			Chisen- hale Street.	Sandhills.	Queen's Half-tide Dock.	Ashpit Men.	Wharf Men.	Carts.	Horses.	Loads per Man per Night.	Loads per Cart per Night.	Cart Loads.
873	3407	3693	3693	...	...	6.3	1.	2.52	2.52	1.9	4.7	1.08



TABLE No. 2.

### SERVICE FOR THE COLLECTION AND REMOVAL OF DRY ASPHIT ASHES.

It will be observed that the number of notices received to empty ashpits is only .5 per cent. of the total collections. The number of brick ashpits within the Old City and Added Areas is approximately 62,470. From the year 1898 to the 31st December, 1901, 1,849 Improved Fixed Sanitary Ashbins have been placed in properties of £10 assessment and under, and 3,608 in premises of over £10 assessment. During this period the number of brick ashpits has been reduced from approximately, 65,000 to 62,470. The figures show that on the average each ashpit was emptied during the twelve months 8.8 times. From the 62,470 pits 97,337 loads were removed, or an average at each time of emptying of 1.8 of a load.





TABLE No. 4.

## SERVICE FOR FLUSHING AND CLEANSING TROUGH WATER CLOSETS, &amp;c.

The frequent flushing of trough water closets is essentially a sanitary measure, this form of closet being provided principally in the more densely-populated portions of the City.

A large number of the public urinals and trough water closets are cleansed and disinfected twice daily in the Summer months, and once daily during the remaining part of the year.

Underground Urinals.	Overground Urinals.	Trough Water Closets.	Average Working Staff.	
			Trough W. C. Men.	Urinal Men.
No.	No.	No.	No.	No.
24—189 Stalls	188—516 Stalls	1,764	30.5	15

TABLE No. 5.

## SERVICE FOR THE CLEANSING OF STREETS, COURTS, AND PASSAGES, AND THE COLLECTION OF REFUSE

## THEREFROM, &amp;c.

During the year 1901, 75,123 loads of sweepings were collected. This quantity includes a proportion of ashpit and domestic refuse deposited on the surface of streets by occupiers of abutting premises, notwithstanding that special Lay Stalls and Galvanized Bins for the reception of this description of refuse were provided.

Total Quantity of Refuse Removed.	Depôts at which the Refuse was Deposited.						Average Daily Staff.				Average Number of Loads Removed Daily per Cart.
	Chisenhole Street.	Sandhills.	Waverley.	Queen's Half-tide Dock.	Rubbish Tips.	Destructors.	Street Sweeping Machines per day.	Average Number of Men Employed per day.	Carts.	Horses.	
Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.					
75,123	35,061	6,985	2,914	12,613	17,322	228	7.4	470.87	68.2	68.2	3.5



TABLE No. 6.

## CLEANSING AND REMOVAL OF REFUSE FROM STREETS, COURTS, AND PASSAGES ON SUNDAYS.

On Sunday mornings a number of the principal streets in the central parts of the City are cleansed, and, as a sanitary measure, the domestic refuse in certain districts of the City is collected.

Street Sweepings.														Average Daily Staff.	
Removed.			Depots at which Refuse was Deposited.												
Saleable Refuse.	Unsaleable Refuse.	Total.	Chisenhale Street.		Sandhills.		Queen's Half-tide Dock.		Wavertree	Tips.		Men.	Horses.		
			Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.		Saleable Refuse.	Unsaleable Refuse.				
Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	No.	No.		
1,787	2,251	4,038	1,517	475	224	492	18	880	24	4	404	212·7	36·7		

TABLE No. 7.

SERVICE FOR STREET WATERING.

A great quantity of water is spread upon the streets during the summer months, a small proportion of the total quantity being used for street washing under certain conditions of the weather.

It may be taken that upwards of 57 million gallons of water were distributed during the season

Number of Days on which Carts were out during year.	Quantity of Water Distributed.		Average Daily Staff employed during the Season.		Average No. of Loads distributed Daily per Cart.
	Large Loads.	Small Loads.	Watermen.	Carts and Horses.	
135	187,333	23,032	26	40.8	33.9



TABLE No. 8.

REMOVAL OF GARBAGE FROM ABATTOIR.

Loads Removed during year.	Where Deposited.		
	Chisenhale Street.	Sandhills.	Queen's Half-Tide Dock.
1,542	1,518	24	—





TABLE No. 10.

## DESPATCHES OF MANURE AND REFUSE.

DEPÔTS.	Quantity of Saleable Refuse.			Quantity of Unsaleable Refuse.						Grand Total in Tons.	Average Daily Staff.	
	Street Sweepings	Mixture.	Total.	Con-tractors	Farmers.	Depôts.	Sea.	Des-tractors.	Sundry Tips.	Total.	Inspectors and Foremen.	Labourers
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.		
Chisenhale St., by Flats...	48	3,440	3,488	1,152	34,848	4,128	...	...	...	40,128	1	16
Sandhills by Rail ...	288	96	384	...	8,096	...	...	...	...	8,096	...	1.5
Wavertree do. ...	2,176	...	2,176	...	...	...	...	...	...	...	...	...
Chisenhale Street and Sandhills, <i>via</i> Stanley D'k	...	...	...	...	...	...	...	...	...	...	...	...
per "Alpha" .....	...	...	...	...	...	...	47,200	...	...	47,200	...	2.2
per "Beta" .....	...	...	...	...	...	...	...	...	...	...	...	...
Queen's Half-tide Dock	...	...	...	...	...	...	...	...	...	...	...	...
per "Alpha" .....	...	...	...	...	...	...	47,647	...	...	47,647	1	41.8
per "Beta" .....	...	...	...	...	...	...	15,185	...	...	15,185	...	...
Charters Street Destructor.	...	...	...	...	...	...	...	41,889	...	41,889	...	...
Rathbone Road " .....	...	...	...	...	...	...	...	15,335	...	15,335	...	...
Smithdown Road " .....	...	...	...	...	...	...	...	16,399	...	16,399	...	...
St. Domingo " .....	...	...	...	...	...	...	...	32,386	...	32,386	...	...
Sundry Tips " .....	...	...	...	...	...	...	...	...	57,594	57,594	...	...
	2,512	3,536	6,048	1,152	42,944	4,128	110,032	106,009	57,594	321,859	2	61.5

The foregoing Table shows that in all not less than 327,907 tons of Town's refuse have been disposed of by the various means available for the purpose. Large as the total is, it does not represent the actual quantity collected and carted to the Wharves, as during the Winter months a large proportion of the street sweepings is in a liquified condition, and drains away before the refuse is despatched from the Wharves.

TABLE No. 11.

HORSES.

DAILY AVERAGE NUMBER EMPLOYED ON THE WORK OF THE CLEANSING DEPARTMENT.

Night Ashes Removal.	2.5	Dry Ashes Removal.	70.9	Bell Ashes Removal.	25.7	Street Scavenging.	68.2	Sweeping Machines.	7.4	Wharves.	.4	Markets.	1.42	Watering.	16.8	Abattoir.	1.16	Cannals.	2.17	Smithdown Road and Rathbone Road Destructors.	1.21	Total.	197.86
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TABLE No. 12.

## AVERAGE DAILY STAFF OF MEN EMPLOYED.

Dealing with the number of men actually employed upon the different services, it will be noted that there is a total of 775 men constantly employed. There are 1,764 trough closets in the City cleansed once daily in Winter, and in a large number of cases two or three times daily in Summer, 30 men being employed on this work.

126 men are specially engaged in connection with the collection of ashpit refuse, and have proved sufficient to keep the 62,470 ashpits at the present time existing in the City in a thoroughly cleanly condition, the average collection being 8·8 times during the year for each ashpit.

In connection with the disposal of the refuse 67 wharf labourers are employed in addition to 31·8 men engaged upon the steam hopper and canal barges.

General.	Night Service.				Day Service.														Wharves, Depots, &c.						Grand Total													
	Inspectors.	Timekeepers.	Clerks.	Office Boy.	Total.	Inspector.	Midden Men.	Wharf Men.	Total.	Inspector.	District Storekeepers.	Watermen.	Barrow Men.	Sweepers.	Cart Followers.	Passage Men.	Washing.	Gully Men	Washing Courts.	Trough Closet Men.	Casual.	Ash Men.	Boat Men.	Crews Hopper Barges.	Orderly Boys.	Total.	Inspector.	Labourers.	Chisenhale St. and Sandhills.	Inspector.	Labourers.	Queen's Half-tide Dock.	Foreman.	Labourer.	Foremen & Labourers.	Various Tips.	Foremen & Labourers.	Stanley Dock.
9	6	4	1	1	17	22	7	11·8	33	200	93·9	37	21·3	6·2	1·97	39·5	5·7	126·57	10·8	21	44	681·74	·	16	1	41·8	1	1·25	4·1	2·2	67·33	775·39						





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INSANITARY PROPERTY.

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## INSANITARY PROPERTY.

## SEVENTEENTH PRESENTMENT.

A further presentment of insanitary property (the 17th Presentment) was made on 17th July, 1901, by the Grand Jury on the Report of the Medical Officer, dated 21st May, 1901.

The property is in all respects similar to that dealt with in other presentments, particulars of which have been recorded in previous Annual Reports.

Details of the number of houses, population, and deaths during the three years 1898-1900 are set forth in the following table:—

Groups.	No. of Houses.	Popula- tion.	Death-rate.			
			1898.	1899.	1900.	Average, 3 years.
Baptist Street .....	75	271	18·4	44·2	48·0	36·9
Circus Street.....						
Downe Street .....						
Kilin Street .....						
Westmoreland Street .....	73	283	67·1	56·5	46·0	56·5
Smithfield Street .....						
Highfield Street .....						
Cockspur Street .....						
Cheapside .....	82	260	73·0	65·4	57·7	65·4
Clement Street.....						
Eccles Street.....						
Eldon Street .....						
Back Eldon Street .....	49	225	62·2	48·8	32·0	47·7
Cross Eldon Street .....						
Whitley Street .....	72	327	24·4	21·4	52·0	32·6
*Upper Frederick Street .....						
Pitt Street.....						
Norfolk Street .....						
Greenland Street .....	18	80	37·5	75·0	37·5	50·0
Wolfe Street .....						
	369	1446	47·0	47·7	47·0	47·2

\* The death rate of the Upper Frederick Street houses taken alone in 1900 was 71 per 1,000.

The houses included in the Seventeenth Presentment are as follows:—

The court known as No. 1 court in BAPTIST STREET, in the City of Liverpool.

The dwelling-houses numbered 1 and 2 in the said No. 1 court.

The dwelling-houses numbered 27 and 29, BAPTIST STREET aforesaid, contiguous to No. 1 court in the said street.

The court known as No. 3 court in BAPTIST STREET aforesaid.

The dwelling-house numbered 2 in the said No. 3 court.

The dwelling-house numbered 33 in BAPTIST STREET aforesaid, contiguous to No. 3 court in the said street.

The court known as No. 5 court in BAPTIST STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 5 court.

The dwelling-houses numbered 35 and 37 in BAPTIST STREET aforesaid, contiguous to No. 5 court in the said street.

The court known as No. 7 court in BAPTIST STREET aforesaid.

The dwelling-house numbered 1 in the said No. 7 court.

The dwelling-house numbered 73 in BAPTIST STREET aforesaid, contiguous to No. 7 court in the said street.

The Court known as No. 2 court in BAPTIST STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 2 court.

The dwelling-houses numbered 32 and 34 in BAPTIST STREET aforesaid, contiguous to No. 2 court in the said street.

The court known as No. 8 court in BAPTIST STREET aforesaid.

The dwelling-house numbered 1 in the said No. 8 court.

The dwelling-house numbered 52 in BAPTIST STREET aforesaid, contiguous to No. 8 court in the said street.

The court known as No. 10 court in BAPTIST STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 10 court.

The dwelling-houses numbered 56 and 58 in BAPTIST STREET aforesaid, contiguous to No. 10 court in the said street.



The court known as No. 12 court in BAPTIST STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 12 court.

The dwelling-houses numbered 60 and 62 in BAPTIST STREET aforesaid, contiguous to No. 12 court in the said street.

The court known as No. 14 court in BAPTIST STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 14 court.

The dwelling-houses numbered 64 and 66 in BAPTIST STREET aforesaid, contiguous to No. 14 court in the said street.

The court known as No. 1 court in CIRCUS STREET, in the City of Liverpool.

The dwelling-houses numbered 1 and 2 in the said No. 1 court.

The court known as No. 5 court in CIRCUS STREET aforesaid.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 5 court.

The dwelling-houses numbered 17 and 19 in CIRCUS STREET aforesaid, contiguous to No. 5 court in the said street.

The court known as No. 2 court in CIRCUS STREET aforesaid.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 2 court.

The dwelling-houses numbered 20 and 22 in CIRCUS STREET aforesaid, contiguous to No. 2 court in the said street.

The dwelling-houses numbered 15 and 17 in BAPTIST STREET, in the City of Liverpool, contiguous to No. 2 court in CIRCUS STREET.

The court known as No. 6 court in CIRCUS STREET aforesaid.

The dwelling-house numbered 1 in the said No. 6 court.

The dwelling-house numbered 43 in BAPTIST STREET, in the City of Liverpool, contiguous to No. 6 court in CIRCUS STREET.

The dwelling-houses numbered 77, 79 and 81 in BAPTIST STREET, in the said City.

The court known as No. 1 court in COCKSPUR STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, and 3 in the said No. 1 court.

The court known as No. 2 court in COCKSPUR STREET aforesaid.

The dwelling-houses numbered 2, 3, 4, 5, 6, 7 and 8 in the said No. 2 court.

The dwelling-house numbered 6 in COCKSPUR STREET aforesaid, contiguous to No. 2 court in the said street.

The dwelling-houses numbered 24 and 26 in SMITHFIELD STREET, in the City of Liverpool, contiguous to No. 2 court in COCKSPUR STREET.

The court known as No. 1 court in WESTMORELAND STREET, in the City of Liverpool.

The dwelling-house numbered 2 in the said No. 1 court.

The dwelling-house numbered 23 in WESTMORELAND STREET aforesaid, contiguous to No. 1 court in the said street.

The court known as No. 3 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 3 court.

The dwelling-houses numbered 25 and 27 in WESTMORELAND STREET aforesaid, contiguous to No. 3 court in the said street.

The court known as No. 7 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1, 2 and 4 in the said No. 9 court.

The dwelling-houses numbered 37 and 39 in WESTMORELAND STREET aforesaid, contiguous to No. 7 court in the said street.

The court known as No. 9 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 9 court.

The dwelling-houses numbered 41 and 43 in WESTMORELAND STREET aforesaid, contiguous to No. 9 court in the said street.

The court known as No. 11 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 11 court.

The dwelling-houses numbered 45 and 47 in WESTMORELAND STREET aforesaid, contiguous to No. 11 court in the said street.



The court known as No. 2 court in WESTMORELAND STREET aforesaid.

The dwelling-house numbered 1 and 3 in the said No. 2 court.

The dwelling-house numbered 6 in WESTMORELAND STREET aforesaid, contiguous to No. 2 court in the said street.

The court known as No. 4 court in WESTMORELAND STREET aforesaid.

The dwelling-house numbered 1 in the said No. 4 court.

The dwelling-house numbered 26 in WESTMORELAND STREET aforesaid, contiguous to No. 4 court in the said street.

The court known as No. 6 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 6 court.

The dwelling-houses numbered 28 and 30 in WESTMORELAND STREET aforesaid, contiguous to No. 6 court in the said street.

The court known as No. 8 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in the said No. 8 court.

The dwelling-houses numbered 32 and 34 in WESTMORELAND STREET aforesaid, contiguous to No. 8 court in the said street.

The court known as No. 10 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in No. 10 court.

The dwelling-houses numbered 38 and 40 in WESTMORELAND STREET aforesaid, contiguous to No. 10 court in the said street.

The court known as No. 12 court in WESTMORELAND STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 12 court.

The dwelling-houses numbered 42 and 44 in WESTMORELAND STREET aforesaid, contiguous to No. 12 court in the said street.

The court known as No. 9 court in SMITHFIELD STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2 and 3 in the said No. 9 court.

The dwelling-house numbered 15 in SMITHFIELD STREET aforesaid, contiguous to No. 9 court in the said street.

The court known as No. 2 court in HIGHFIELD STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5 and 6 in the said No. 2 court.

The dwelling-houses numbered 40 and 42 in HIGHFIELD STREET aforesaid, contiguous to No. 2 court in the said street.

The court known as No. 6 court in CLEMENT STREET, in the City of Liverpool.

The dwelling-house numbered 1 in the said No. 6 court.

The dwelling-house numbered 18 in CLEMENT STREET aforesaid, contiguous to No. 6 court in the said street.

The court known as No. 8 court in CLEMENT STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 8 court.

The dwelling-houses numbered 20 and 22 in CLEMENT STREET aforesaid, contiguous to No. 8 court in the said street.

The court known as No. 10 court in CLEMENT STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4 and 5 in the said No. 10 court.

The dwelling-houses numbered 24 and 26 in CLEMENT STREET aforesaid, contiguous to No. 10 court in the said street.

The court known as No. 12 court in CLEMENT STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 in the said No. 12 court.

The court known as No. 1 court in ECCLES STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2 and 3 in the said No. 1 court.

The dwelling-house numbered 7 in ECCLES STREET aforesaid, contiguous to No. 1 court in the said street.

The court known as No. 3 court in ECCLES STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 3 court.

The dwelling-houses numbered 9 and 11 in ECCLES STREET aforesaid, contiguous to No. 3 court in the said street.



The court known as No. 5 court in ECCLES STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5 and 6 in the said No. 5 court.

The court known as No. 7 court in ECCLES STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 in the said No. 7 court.

The dwelling-houses numbered 23, 25, 27 and 29 in ECCLES STREET aforesaid, contiguous to No. 7 court in the said street.

The court known as No. 2 court in ELDON STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7 and 8 in the said No. 2 court.

The dwelling-houses numbered 8, 10 and 12 in ELDON STREET aforesaid, contiguous to No. 2 court in the said street.

The dwelling-houses numbered 2, 4, 6 and 8 in CROSS ELDON STREET in the City of Liverpool, contiguous to No. 2 court in ELDON STREET.

The court known as No. 4 court in ELDON STREET aforesaid.

The dwelling-houses numbered 2, 4, 6 and 8 in the said No. 4 court.

The dwelling-house numbered 14 in ELDON STREET aforesaid, contiguous to No. 4 court in the said street.

The court known as No. 1 court in BACK ELDON STREET, in the City of Liverpool.

The dwelling-house numbered 1 in the said No. 1 court.

The dwelling-house numbered 7 in BACK ELDON STREET aforesaid, contiguous to No. 1 court in the said street.

The dwelling-houses numbered 1, 3, 5 and 7 in CROSS ELDON STREET, in the City of Liverpool, contiguous to No. 1 court in BACK ELDON STREET.

The dwelling-houses numbered 4 and 6 in ELDON STREET, in the City of Liverpool, contiguous to No. 1 court in BACK ELDON STREET.

The court known as No. 2 court in WHITLEY STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6 and 7 in the said No. 2 court.

The dwelling-houses numbered 4 and 6 in WHITLEY STREET aforesaid, contiguous to No. 2 court in the said street.

The court known as No. 4 court in WHITLEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 in the said No. 4 court.

The dwelling-houses numbered 8 and 10 in WHITLEY STREET aforesaid, contiguous to No. 4 court in the said street.

The court known as No. 6 court in WHITLEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 in the said No. 6 court.

The dwelling-houses numbered 12 and 14 in WHITLEY STREET aforesaid, contiguous to No. 6 court in the said street.

The court known as No. 8 court in WHITLEY STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 in the said No. 8 court.

The dwelling-houses numbered 16 and 18 in WHITLEY STREET aforesaid, contiguous to No. 8 court in the said street.

The court known as No. 2 court in CHEAPSIDE, in the City of Liverpool.

The dwelling-houses numbered 2, 3, 4 and 5 in the said No. 2 court.

The court known as No. 3 court in UPPER FREDERICK STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 3 court.

The dwelling-houses numbered 45 and 47 in UPPER FREDERICK STREET aforesaid, contiguous to No. 3 court in the said street.



The court known as No. 5 court in UPPER FREDERICK STREET aforesaid.

The dwelling-houses numbered 1 and 2 in the said No. 5 court.

The dwelling-house numbered 49 in UPPER FREDERICK STREET aforesaid, contiguous to No. 5 court in the said street.

The court known as No. 7 court in UPPER FREDERICK STREET aforesaid.

The dwelling-house numbered 1 in the said No. 7 court.

The dwelling-house numbered 51 in UPPER FREDERICK STREET aforesaid, contiguous to No. 7 court in the said street.

The dwelling-house numbered 55, 55A and 55B in UPPER FREDERICK STREET aforesaid.

The court known as No. 11 court in UPPER FREDERICK STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4 and 5 in the said No. 11 court.

The dwelling-houses numbered 57, 59, 61, 63 and 65 in UPPER FREDERICK STREET aforesaid, contiguous to No. 11 court in the said court.

The court known as No. 13 court in UPPER FREDERICK STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in the said No. 13 court.

The dwelling-houses numbered 67 and 69 in UPPER FREDERICK STREET aforesaid, contiguous to No. 13 court in the said street.

The court known as No. 10 court in UPPER FREDERICK STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in the said No. 10 court.

The dwelling-house numbered 90 in UPPER FREDERICK STREET aforesaid, contiguous to No. 10 court in the said street.

The court known as No. 12 court in UPPER FREDERICK STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in the said No. 12 court.

The dwelling-house numbered 92 in UPPER FREDERICK STREET aforesaid, contiguous to No. 12 court in the said street.

The court known as No. 6 court in PITT STREET in the City of Liverpool.

The dwelling-houses numbered 1, 2 and 3 in the said No. 6 court.

The court known as No. 1 court in NORFOLK STREET in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3, 4, 5, and 6 in the said No. 1 court.

The court known as No. 3 court in NORFOLK STREET aforesaid.

The dwelling-houses numbered 1, 2, 3, 4, 5 and 6 in the said No. 3 court.

The court known as No. 5 court in NORFOLK STREET aforesaid.

The dwelling-houses numbered 2, 4, 6, 8, 10, 12 and 14 in the said No. 5 court.

The court known as No. 2 court in NORFOLK STREET aforesaid.

The dwelling-houses numbered 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 in the said No. 2 court.

The court known as No. 2 court in GREENLAND STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2 and 3 in the said No. 2 court.

The court known as No. 1 court in WOLFE STREET, in the City of Liverpool.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 1 court.

The dwelling-houses numbered 133 and 135 in WOLFE STREET aforesaid, contiguous to No. 1 court in the said street.

The court known as No. 3 court in WOLFE STREET aforesaid.

The dwelling-houses numbered 1, 2, 3 and 4 in the said No. 3 court.

The dwelling-houses numbered 137, 139 and 141 in WOLFE STREET aforesaid, contiguous to No. 3 court in the said street,



The court known as No. 11 court in WOLFE STREET aforesaid.

The dwelling-houses numbered 1, 2 and 3 in the said No. 11 court

The dwelling-houses numbered 177 and 179 in WOLFE STREET aforesaid, contiguous to No. 11 court in the said Street.

The dwelling-houses numbered 1, 3 and 5 in KILIN STREET, in the City of Liverpool.

The dwelling-houses numbered 16, 18 and 20 in DOWNE STREET, in the City of Liverpool.

The premises used as a Coal Shed, &c., and numbered 6 in MARSHALL PLACE, in the City of Liverpool.

In addition to the foregoing dealt with by presentment, the Medical Officer of Health certified that the following premises were unfit for human habitation and ought to be demolished. These reports were laid before the Council, and referred to the Insanitary Property Committee, who purchased the property, and caused it to be demolished:—

The court known as No. 4 court in WAKEFIELD STREET in the said City.

The dwelling-house numbered 19 and 20 in the said No. 4 court.

The dwelling-house numbered 17 in TORBOCK STREET in the said City, contiguous to No. 4 court in WAKEFIELD STREET.

A relatively small number of houses was included in the 17th presentment, but after carefully considering the many circumstances involved, the Housing Committee visited several unhealthy areas to which their attention had been called by the Reports of the Medical Officer, and it was ultimately decided to deal under the Housing of the Working Classes Act with two of the insanitary areas.

A very large proportion of the insanitary property in the City of Liverpool was erected in circumscribed areas, which contained very few buildings of any other character than the closely packed back-to-back insanitary dwellings. It is owing to this circumstance that so much of this class of property has been satisfactorily dealt with under the Liverpool Sanitary Amendment Act. There still remain, however, several

areas which, although the buildings erected upon them consist in the main of back-to-back insanitary houses, yet there are interspersed amongst them a few dwelling-houses not in themselves absolutely insanitary, and also a few erections other than dwelling-houses, together with here and there vacant plots which represent the sites of insanitary dwellings which formerly existed.

The overwhelming majority, in these areas, of dwellings which are insanitary owing to their construction, bad arrangement, and sanitary defectiveness, make the areas suitable ones for the application of the Housing of the Working Classes Act of 1890.

On 19th July, 1901, the Medical Officer made a representation under the terms of the Act that two areas, namely, one in the north part of the City, and approximately bounded on the north by Tatlock Street and Tenterden Street, on the south by Green Street on the east by Scotland Road, and on the west by the lower ends of Hornby Street and Tatlock Street; also another area on the south side of the City, being part of Upper Mann Street, together with the houses fronting Northumberland Street, were insanitary areas. The exact boundaries of each are set forth in the following Official Representation and Schedule.

The same general description applies to both areas, and the dwellings are occupied mainly by casual labourers and their families. Each house consists of three rooms placed one above the other, the staircase leading direct from one room to the other, although 3 per cent. of the houses had only two rooms, one above the other. The houses are arranged in courts, each court containing from 8 to 12 dwellings, the dwellings being placed back-to-back as well as side-by-side with each other, and have, as a rule, no yard space nor means of through ventilation. Even when yard space exists, it is so close and confined as to be of no sanitary advantage, and in many instances the upper rooms are still without through ventilation. The trough-closet accommodation, and receptacle for domestic refuse are, in most cases, used in common by the occupants of the houses in the courts, and also by those on the front street. One outcome of this is the difficulty which the occupants, who have a joint right to the use of the trough-closet, experience in gaining access in bad weather; hence the retention, in times of sickness and inclement weather, of offensive matter within the dwelling which contributes to the noisomeness of the atmosphere. Those houses with even tiny yards escape this source of mischief. Evidences of the faulty construction and lack of ventilation



are obvious on entering the houses; the foul, close smell, the saturation of absorbent plaster with exhalations from the skin and lungs has sufficiently long continued to actually stain the ceilings and the plaster.

Both of the areas in question are unhealthy areas, they are both of them characterised by the unusual prevalence of sickness of all kinds, and their rates of sickness and mortality, as compared with that of the rest of the City, are excessive.

During the three years 1898-1900 the average annual death-rate in the Hornby Street area has been 40·4 per 1,000, and during the same period the average annual death-rate of the Upper Mann Street area has been 49·3 per 1,000, a very large proportion indeed, namely, 52 per cent., consisting of deaths of children below 5 years of age. This high rate of mortality prevailed notwithstanding the large amount of attention bestowed on the districts by the inspectorial staff, both male and female. Infectious disease of one kind or another is rarely absent, and also, as might be expected, diseases associated with foul air and want of sunlight, notably diseases of the lungs, are never absent.

The population, ascertained early in July, was found to be in the Hornby Street Area 2,508 (2,431 being of the labouring classes), this population being distributed in 476 houses, 55 houses being unoccupied, and there were three lock-up shops. In the Upper Mann Street Area the population was found to be 743, distributed in 154 houses, 20 similar houses being unoccupied, and 1 lock-up shop. The total population in the two areas was therefore 3,251; the total number of houses being 709, including 2 or 3 lock-up shops. That part of the property which consisted of dwelling-houses was, as a whole, in a neglected and dilapidated condition. The owners appeared to realise its hopelessly insanitary condition, and appeared to be loth to spend money even to remedy urgent and obvious nuisances and sanitary defects, such as defective and choked drains, absence of water to closets or houses, dilapidations and structural defects, &c. With regard to the Hornby Street area the Nuisance Inspectors during the year 1900 made special reports in the course of their routine work of 384 nuisances, and in the Upper Mann Street Area of 128. In the two areas it became necessary to serve notices upon the owners no less than 201 times to remedy defects more or less gross.

There was an outbreak of typhus fever in the Upper Mann Street area during 1900. There have been outbreaks of whooping-cough and measles in both areas during the last two or three years.

The statistics in regard to the population, number of houses, death-rate, &c., were set forth as follows:—  
**HORNBY STREET AND UPPER MANN STREET AREAS.**

	Year.	Population (1901).	No. of Houses (Labouring Classes.)		No. of other Houses, Business Premises and Lock-up Shops.	Total Houses and Premises.	No. of Deaths.	Rate per 1,000.
			Occupied.	Unoccupied.				
Hornby Street Area	1898	2,508	459	55	20	534	102	40.6
	1899	—	—	—	—	—	101	40.2
	1900	—	—	—	—	—	102	40.6
					Average death rate — 3 years		...	40.4
Upper Mann Street Area...	1898	743	154	20	1	175	31	41.7
	1899	—	—	—	—	—	40	53.8
	1900	—	—	—	—	—	39	52.5
					Average death rate — 3 years		...	49.3

#### DEATH RATE.

The Two Areas	...	1898	...	40.9 per 1,000
	...	1899	...	43.3
	...	1900	...	43.3
			Average	41.9

\* Of this number 2431 are of the Labouring Classes. Over 52% of the deaths were of children below 5 years of age.  
 Average death rate of Victoria Square and Juvenile Buildings for 3 years 1898—1900.....21.6  
 Do. City ... .. for 3 years 1898—1900.....23.0



The " Official Representation " is worded as follows :—

To the Urban Sanitary Authority  
of the City of Liverpool.

I, Edward William Hope, Medical Officer of Health for the City of Liverpool, do hereby represent that in my opinion, within certain areas in the district of the Urban Sanitary Authority of the City of Liverpool, described in the Schedule hereto, there are (*a*) certain houses, courts, and alleys, which are unfit for human habitation, and that (*b*) the narrowness, closeness and bad arrangements and bad condition of the streets and houses, and groups of houses, within such areas, and the want of light, air, ventilation and proper conveniences, and other sanitary defects, or one or more of such causes are dangerous or injurious to the health of the inhabitants, either of the buildings in the said areas, or of the neighbouring buildings, and that the evils connected with such houses, courts, and alleys, and the sanitary defects in such areas, cannot be effectually remedied otherwise than by an Improvement Scheme for the re-arrangement and re-construction of the streets and houses within such areas, or of some of such streets and houses.

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**The Schedule referred to in the above Representation.**

**1.—HORNBY STREET AREA.**

An area on the South side of Tatlock Street beginning with and including the premises, No. 22, Tatlock Street, and thence running eastwardly along the South side of Tatlock Street to Vescock Street, thence running southwardly along Vescock Street to and along the southern boundary of No. 12, Vescock Street, Messrs. Freeman, Lloyd & Co.'s Sugar Refinery, and the licensed premises, No. 119, Limekiln Lane, to Limekiln Lane, thence running southwardly along Limekiln Lane to

Hornby Street, thence running eastwardly along Hornby Street to and including No. 107, Hornby Street, thence turning at an angle and running northwardly along the easterly boundary of Messrs. Thomas Brothers' Foundry to the passage on the North side of the said foundry, thence running eastwardly along the said passage to the back of and including No. 51 Court, Hornby Street, thence running southwardly along the eastern boundary of No. 51 Court, Hornby Street aforesaid, and across Hornby Street to and including the premises, No. 150, Hornby Street, and thence running southwardly along property recently purchased by Messrs. Crane & Co. to the back of and including the premises in No. 48 Court, Hornby Street, thence running westwardly along the backs of and including the Courts numbered 38, 40, 42, 44 and 46, Hornby Street, thence to the southerly side of and including the premises, No. 94, Limekiln Lane, thence across Limekiln Lane and along Green Street to the rear of and including the premises, No. 34 and 36, Hornby Street, thence turning at a right angle and running northwardly along the western boundary of the said premises to Hornby Street, thence running eastwardly along Hornby Street to Titchfield Street, and thence northerly along Titchfield Street to Raymond Street, thence turning westwardly and running along Raymond Street to and including the premises, No. 23, Raymond Street, thence turning northwardly and running from No. 23, Raymond Street to No. 22, Tatlock Street aforesaid, excepting the premises numbered 88 to 116 (even numbers), Raymond Street.

## 2.—UPPER MANN STREET AREA.

An area on the South side of Northumberland Street between Beaufort Street and Upper Mann Street, bounded on the North by Northumberland Street, and from thence running along Upper Mann Street to and including No. 83 Court, Upper Mann Street, thence running eastwardly along the back of the public-house and the adjoining premises fronting Park Street to the back of the premises fronting Beaufort Street, thence turning northwardly and running along the backs of the premises fronting Beaufort Street to and including No. 234, Beaufort Street, thence running northwardly along Beaufort Street to Northumberland Street aforesaid, excepting thereout the public-house at the corner of Northumberland Street and Upper Mann Street.



The Corporation Surveyor has kindly supplied the following table:—

### INSANITARY PROPERTY.

#### INSANITARY PROPERTY PURCHASED, 1901—

Number of houses included in 16th Presentment	...	...	113
Number of houses purchased by Housing Committee included in Reports referred by Council to Committee	...	..	16
Total	...	...	<u>129</u>

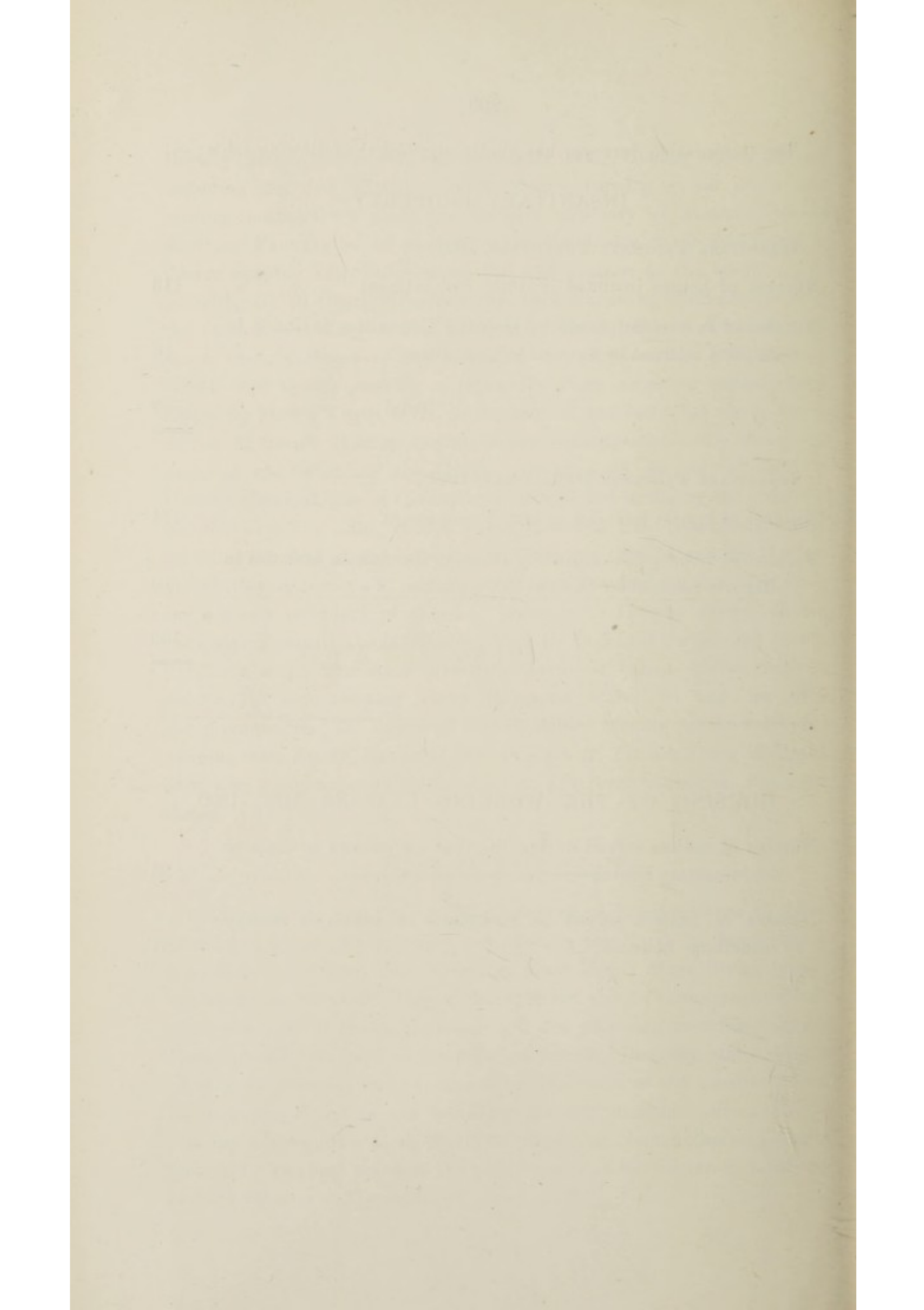
#### INSANITARY PROPERTY DEMOLISHED, 1901—

Number of houses included in 16th Presentment	...	...	174
Number of houses demolished by Housing Committee included in Reports referred by Council to Committee	...	...	19
Total	...	...	<u>190</u>

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### HOUSING OF THE WORKING CLASSES ACT, 1890.

Number of notices served during the year on owners to cease to let insanitary houses .....	36
Number of notices served on occupiers to cease to occupy insanitary houses .....	81





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CITY HOSPITALS.

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CITY HOSPITALS

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## HOSPITAL ACCOMMODATION.

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It is now some 16 or 17 years since the necessity for the provision by the City Council of adequate hospital accommodation came into prominence. At that time, however, in Liverpool as elsewhere, public opinion was somewhat unformed, owing to the absence of any experience of the advantages resulting from hospitals, other than workhouse hospitals, for the treatment of infectious sickness, and there was then but little public support in promoting the work; indeed there was a general reluctance, more especially on the part of those who were least able to isolate or nurse the infected sick at home, to allowing the patients to be removed to hospital. However, as more beds became available and the advantages of hospital treatment became apparent, not only in promoting recovery, but what is of even greater importance, in checking the extension of disease, the public soon began to realise the advantages of these institutions, and at the present time seek as a favour or demand as a right that means shall be provided by which persons may be taken care of when suffering from infectious sickness.

Prior to 1883 the workhouses were the only places in Liverpool to which patients could be taken, excepting a small paying institution in Netherfield Road. In 1883 the Netherfield Road Hospital was taken over by the Corporation, and in later years was extended to accommodate three times the number of patients contemplated in its original construction.

In 1884 a site at Parkhill was rented from the Dock Board, and upon it erections were constructed to accommodate 150 patients. During the same year the Grafton Street Hospital was provided, a small but model institution of its kind, containing 84 beds. From time to time additions were made at Parkhill, the most recent having been made during 1901.

From time to time during many years the question of providing a suitable site for a permanent hospital has been considered by the City Council. In 1898 such a site came into the market, the Harbreck



Estate at Fazakerley being then offered for sale. This site, comprising 120 acres, was purchased with the sanction of the Local Government Board in 1898, the objects of its purchase being the provision of one hospital containing 180 beds for smallpox (temporarily allocated to other purposes), and a permanent hospital to contain some 300 beds for the other forms of infectious disease. This scheme, forecasted in 1898, received the approval of the Local Government Board. At present only the smallpox section has been completed, and plans for the larger and more important section are being elaborated.

Prior, however, to the offer of the Fazakerley site the City boundaries had been extended in 1895, some of the incorporated districts had already taken steps towards meeting the requirements for the isolation of the infected sick, but upon incorporation it was found necessary largely to extend the small hospital at Mill Lane, and very considerable additions have been made to this establishment, which now has beds for 95 patients, and very shortly will have accommodation for 130 patients, and an adequate administrative section.

Several circumstances combined during the year to tax very considerably the existing hospital accommodation. Very serious inconvenience was experienced on account of the inability to provide accommodation in hospital for considerable numbers of patients who needed such accommodation. This was notably the case with scarlet fever. The annual cleaning of some of the wards during the early part of the year, deprived the City of the means of isolating cases of scarlet fever which needed hospital accommodation. These cases had to be left at home, with the inevitable consequence that infection was spread from them as centres, and the disease extended to a very considerable amount.

Equally unfortunate results were threatened also in the case of typhoid fever, but arrangements were made with the managers of the general hospitals by which a certain number of cases of typhoid fever were isolated in wards connected with the various hospitals. Had not this course been adopted there is no doubt that considerable extension of this serious form of disease would have followed.

At a time when the great and unexceptional demands were made upon the hospital beds by the ordinary forms of infectious disease, it became absolutely necessary to set aside adequate wards for the reception and isolation of cases of plague, and of suspected plague, as well as for the accommodation of persons who had been in intimate and close contact



with such cases. It will be seen therefore that throughout the whole year the inadequacy of hospital accommodation was a source of grave inconvenience and anxiety. Fortunately the excellent site at Fazakerley was available for an extension, and 3 pavilions containing 56 beds were erected there to meet emergencies, while at the same time the extension of the City Hospital East, which had already been decided upon, was pushed on with all possible speed, whilst the scheme for an adequate and complete hospital was put into form for the consideration of the City Council and of the Local Government Board.

Two temporary pavilions at Parkhill, which had been erected in 1884, were taken down, the intention being to replace them with new structures.

The number of beds available at the beginning of the year was 554, and the number available at the end of the year was 727, showing a net gain of 173 beds.

When the scheme of hospital accommodation for the City, which has already been decided upon, has been completed, great advantages to the inhabitants will accrue. At the present time the number of beds available is as follows:—

City Hospital North	...	...	...	140	beds
„ South	...	...	...	88	„
„ East	...	...	...	95	„
„ Parkhill	...	...	...	217	„
„ Priory Road	...	...	...	37	„
„ Fazakerley	...	...	...	150	„
				<hr/> 727	„

The approximate apportionment of beds is as follows:—

Smallpox ...	...	...	...	...	37	beds
Typhus Fever	...	...	...	...	20	„
Typhoid Fever	...	...	...	...	75	„
Scarlet Fever	...	...	...	...	473	„
Diphtheria	...	...	...	...	62	„
Isolation ...	...	...	...	...	60	„
					<hr/>	
					727	„

## INFECTIOUS DISEASE.

The following table shows the number and nature of cases of Infectious Disease coming under the notice of the Medical Officer of Health during 1901, including those reported under the Notification Act.

YEAR—1901.	FEVER.				Small Pox.	Scarlatina.	Measles.	Diphtheria.	Membranous Group.	Puerperal Fever.	Erysipelas.	TOTAL.
	Typhus.	Typhoid.	Simple.	Relapsing.								
January .....	...	48	1	...	...	208	1,054	68	3	6	106	1,494
February ...	...	41	1	...	5	145	1,748	60	4	4	91	2,099
March.....	5	43	...	...	2	113	1,574	74	6	5	92	1,914
April .....	4	26	3	...	3	112	466	40	4	3	102	763
May.....	3	52	3	...	4	195	582	57	3	2	77	978
June .....	13	39	...	...	7	218	671	70	2	1	85	1,106
July .....	12	31	...	...	2	228	237	82	2	2	63	659
August .....	9	104	1	...	1	247	132	41	3	6	81	625
September...	1	141	3	...	...	349	92	69	4	6	83	748
October .....	2	150	...	...	1	506	97	93	4	5	85	943
November ...	5	110	1	...	...	455	74	90	5	13	90	843
December ...	1	79	2	...	12	534	39	79	7	7	101	861
TOTAL.....	55	864	15	...	37	3,310	6,766	823	47	60	1,056	13,032
Removed to hospital...	54	567	3	...	37	1,814	185	461	6	18	214	3,359

The number of patients removed to hospital includes those taken to general hospitals, as well as those taken to the City Hospitals. (See page 123).



# THE INFECTIOUS DISEASE (NOTIFICATION) ACT.

The numbers of notifications received by the Medical Officer under the above Act, during the past five years, were as follows:—

	<u>1897.</u>	<u>1898.</u>	<u>1899.</u>	<u>1900.</u>	<u>1901.</u>
January ...	560	445	617	464	482
February ...	461	363	475	344	355
March ...	538	407	459	364	360
April ...	414	397	446	382	304
May ...	414	451	471	436	435
June ...	380	389	495	369	477
July ...	392	347	414	322	459
August ...	559	383	348	313	507
September ...	626	458	482	456	713
October ...	742	578	562	573	905
November ...	629	588	513	519	820
December ...	519	564	460	525	841
	<u>6,234</u>	<u>5,370</u>	<u>5,742</u>	<u>5,067</u>	<u>6,658</u>

The diseases were specified as follows:—

	<u>1897.</u>	<u>1898.</u>	<u>1899.</u>	<u>1900.</u>	<u>1901.</u>
Smallpox ...	7	16	17	167	26
Scarlet Fever ...	3,042	2,422	2,451	2,008	3,376
Typhoid Fever ...	1,112	955	1,064	828	1,016
Typhus Fever ..	110	96	52	27	66
Continued Fever .	80	62	84	54	33
Remittent Fever..	—	—	—	—	1
Relapsing Fever .	1	2	—	2	—
Fever ...	18	14	19	2	1
Puerperal Fever..	64	47	57	54	73
Diphtheria ...	394	527	798	710	872
Membranous Croup.	69	62	53	51	61
Erysipelas ...	1,337	1,167	1,145	1,163	1,132
Anthrax ...	—	—	2	—	—
Choleraic Diarrhœa	—	—	—	1	—
	<u>6,234</u>	<u>5,370</u>	<u>5,742</u>	<u>5,067</u>	<u>6,658</u>

## NUMBER OF CASES REPORTED AND NUMBER REMOVED TO HOSPITALS, 1889-1901.

	SMALLPOX.		SCARLET FEVER.		TYPHOID.		TYPHUS.		MEASLES	
	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.
1889 ..	9	8	1,832	533	670	302	158	124	3,175	104
1890 ...	2	2	3,520	938	506	296	103	87	4,013	152
1891 ..	21	21	1,176	448	588	350	175	156	2,262	160
1892 ..	177	177	1,554	603	699	345	73	70	3,376	150
1893 ...	75	73	3,538	1,380	1,396	728	183	168	2,316	94
1894 ...	229	226	3,963	1,415	1,350	745	325	312	2,494	122
1895 ...	130	127	2,710	1,039	1,306	662	162	158	3,462	93
1896 ...	8	8	3,584	1,589	1,063	539	305	298	2,930	138
1897 ..	6	6	3,001	1,641	991	559	158	156	4,389	94
1898 ..	17	16	2,424	1,467	863	585	92	84	2,458	105
1899 ...	10	10	2,416	1,537	988	668	70	64	5,107	140
1900 ...	156	154	1,968	1,198	731	450	42	41	2,372	108
1901 ...	37	37	3,310	1,814	864	567	55	54	6,766	185



The following tables, prepared by the Medical Staff of each Hospital, show the number of patients, the nature of the illness, and the results, at each of the six City Hospitals during the year 1901:—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

*Visiting Physician, Dr. R. I. RICHARDSON.*

*Resident Physician, Dr. F. ROBINSON.*

DISEASES.	Remaining Dec. 31st, 1900.	Admitted during 1901.	Total under Treatment, 1901.	Transferred to Fazakerley Convalescent.	Transferred to other City Hospitals.	Discharged to Homes or Public Institutions.	Remaining Dec. 31st, 1901.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever .....	71	471	542	237	—	191	78	9	36	7·6
Enteric Fever.....	21	139	160	—	1	107	32	2	20	14·3
Typhus Fever .....	—	18	18	—	3	12	1	—	2	11·1
Diphtheria .....	20	115	135	—	6	101	—	3	28	24·3
Plague .....	—	5	5	2	—	—	—	—	3	60·0
Other Diseases ...	2	131	133	—	6	103	5	3	19	14·5
Totals .....	114	879	993	239	16	514	116	17	108	12·2

SCARLET FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases .....	146	206	91	22	3	3	—	471
No. of Deaths .....	21	11	4	—	—	—	—	36
Percentage of Deaths	14·3	5·3	4·3	—	—	—	—	7·6

## ENTERIC FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases .....	11	37	34	36	16	5	—	139
No. of Deaths .....	—	3	5	7	4	1	—	20
Percentage of Deaths	—	8·1	14·7	19·4	25·0	20·0	—	14·3

## TYPHUS FEVER.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases.....	—	2	6	1	6	3	—	18
No. of Deaths .....	—	—	—	—	1	1	—	2
Percentage of Deaths	—	—	—	—	16·6	33·3	—	11·1

## DIPHTHERIA.

	AGE PERIODS.							Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	
No. of Cases.....	52	40	16	6	1	—	—	115
No. of Deaths.....	19	7	2	—	—	—	—	28
Percentage of Deaths	36·5	17·5	12·8	—	—	—	—	24·3



## OTHER DISEASES.

Disease.	Admitted.	Died.
Erysipelas .....	1 .....	—
Measles .....	3 .....	1
Influenza .....	3 .....	—
Tubercular Diseases .....	10 .....	5
Follicular Tonsillitis .....	7 .....	—
Croupous Pneumonia .....	34 .....	7
Catarrhal Pneumonia .....	1 .....	—
Tonsillitis .....	3 .....	—
Laryngitis .....	1 .....	—
Meningitis .....	7 .....	4
Diseases of Digestive System.....	9 .....	—
„ Cutaneous „ .....	5 .....	—
Pelvic Cellulitis .....	1 .....	—
Nephritis .....	1 .....	—
Adenitis .....	3 .....	—
Acute Rheumatism .....	1 .....	—
Phagedænic Ulcer .....	1 .....	1
Alcoholism.....	4 .....	1
Febricula .....	6 .....	—
Plague Contacts .....	4 .....	—
Unclassified .....	26 .....	—
	<u>131</u>	<u>19</u>
		=14·5% mortality.

CITY HOSPITAL SOUTH, GRAFTON STREET.*Visiting Physician, Dr. N. E. ROBERTS.**Resident Physician, Dr. A. W. TUXFORD.*

DISEASE.	In Hospital 31st Dec., 1900.	Admissions, 1901.	Total under Treatment 1901.	Recoveries.	Transfers to City Hospital, Fazakerley	Transfers to City Hospital, Parkhill	Transfers to City Hospital East	Transfers to Port Sanitary Hospital	Transfers to other Hospitals	Deaths	Mortality per cent. of Admissions	In Hospital 31st Dec., 1901.
Scarlet Fever ...	61	397	458	105	223	8	5	24	—	30	7·55	63
Enteric Fever...	9	111	120	93	—	—	—	—	—	14	12·61	13
Typhus Fever...	1	15	16	10	—	3	—	—	—	3	20	—
Measles.....	—	11	11	5	—	1	—	—	2	1	9·09	2
Diphtheria .....	—	5	5	3	—	2	—	—	—	—	Nil	—
Other Diseases...	6	93	99	74	5	—	—	—	6	7	7·52	7
Totals.....	77	632	709	290	228	14	5	24	8	55	8·7	85

## SCARLET FEVER.

	AGE PERIODS.						Totals.
	0—5	5—10	10—20	20—30	30—40	40—50	
No. of Cases .....	136	180	61	15	4	1	397
No. of Deaths .....	21	7	2	—	—	—	30
Mortality Per Cent.....	15·4	3·9	3·3	—	—	—	7·55

## ENTERIC FEVER.

	AGE PERIODS.							Total.
	0—5	5—10	10—20	20—30	30—40	40—50	50—60	
No. of Cases .....	5	16	36	31	15	6	2	111
No. of Deaths.....	—	1	2	7	2	2	—	14
Mortality Per Cent.....	—	6·2	5·5	22·5	13·3	33·3	—	12·61

## TYPHUS FEVER.

	AGE PERIODS.					Totals.
	5—10	10—20	20—30	30—40	40—50	
No. of Cases .....	2	8	2	2	1	15
No. of Deaths .....	—	1	—	1	1	3
Mortality Per Cent.....	—	12·5	—	50	100	20·0



## OTHER DISEASES.

	Cases.	Deaths.
Pulmonary Congestion .....	1	1
Lobar Pneumonia .....	19	6
Broncho-pneumonia .....	5	—
Bronchitis .....	5	—
Pleurisy .....	2	—
Empyema .....	1	—
Tonsillitis .....	12	—
Whooping Cough .....	1	—
Chicken-pox .....	1	—
Dysentery .....	1	—
Enteritis .....	2	—
Appendicitis .....	1	—
Catarrhal Jaundice .....	2	—
Syphilis .....	1	—
Tubercular Diseases.....	3	—
Pyæmia .....	1	—
Otitis Media .....	1	—
Malaise .....	22	—
Unclassified .....	12	—
	<u>93</u>	<u>7</u>

CITY HOSPITAL, PARK HILL.*Visiting Physician, Dr. N. E. ROBERTS.**Resident Physician, Dr. C. J. LINTON PALMER.*

DISEASES.	Remaining in Hospital on December 31st, 1900.	Patients admitted during 1901.			Total number under treat- ment during 1901.	Discharged Cured.	Transferred to City Hospital South.	Transferred to City Hospital North.	Transferred to City Hospital, Fazakerley.	Fatal Acute Cases.		Remaining in Hospital on December 31st, 1901.
		Acute Cases.	Transferred from City Hospital South.	Transferred from City Hospital North.						Number.	Percentage.	
Scarlet Fever .....	110	596	8	—	714	526	—	—	39	40	6·7	109
Diphtheria .....	25	271	3	6	305	233	—	—	—	46	17·0	46
Typhus Fever .....	1	20	2	—	23	15	—	2	—	6	30·0	—
Enteric Fever.....	2	9	—	1	12	7	4	—	—	1	11·0	—
Other Diseases .....	2	87	1	1	91	62	11	—	2	10	11·5	6
Totals .....	140	983	14	8	1145	823	15	2	41	103	10·4	161

One fatal case of Diphtheria admitted from City Hospital South.

## ACUTE SCARLET FEVER.

	AGE PERIODS.					
	Under 5	5—10	10—20	20—30	upwards.	Total.
No. of cases .....	143	269	149	30	5	596
No. of deaths .....	27	11	2	—	—	40*
Percentage of deaths .....	11·1	4·09	1·4	—	—	6·7

\* Two of these cases admitted during 1900.

## ACUTE DIPHTHERIA.

	AGE PERIODS.					
	Under 5	5—10	10—20	20—30	upwards.	Totals.
No. of cases .....	84	103	53	18	13	271
No. of deaths .....	25	14	6	1	—	46*
Percentage of deaths.....	29·7	13·6	11·3	5·5	—	17

\* Two of these cases admitted during 1900.

Eleven deaths occurred within 36 hours of admission.

## OBSERVATION CASES AND OTHER DISEASES.

Diseases.	Cases.	Deaths.
Measles.....	12	4
Varicella .....	3	—
Pertussis and Croup .....	5	1
Mixed Infection .....	11	5
Tonsillitis .....	40	—
Observation.....	16	—



# CITY HOSPITAL EAST, MILL LANE.

Visiting Physician, Dr. H. A. CLARKE.

DISEASES.	Remaining in Hospital Dec. 31st, 1900.	Admitted into Hospital during 1901.	Transferred from Grafton Street.	Total under Treatment during 1901.	Died.	Discharged to homes.	Transferred to Fazakerley (Convalescent).	Remaining in Hospital, Dec. 31st, 1901.	Percentage of Mortality of Admissions.
Scarlet Fever .....	27	229	5	261	10	184	19	48	4.4
Enteric Fever.....	7	—	—	7	—	7	—	—	—
Other Diseases .....	1	2	—	3	—	3	—	—	—
Totals .....	35	231	5	271	10	194	19	48	—

## SCARLET FEVER.

	AGE PERIODS.				
	Under 5	5—10	10—20	20—30	30—40
No. of Cases.....	72	103	54	4	1
No. of Deaths .....	5	5	—	—	—
Percentage of deaths.....	6.9	4.9	—	—	—

One patient died 30 hours after admission. Two patients, who were on admission suffering from Scarlet Fever, developed Enteric within a few days of admission and died. These two deaths are included in those recorded under Scarlet Fever.

One patient was admitted with Influenza, and one with Adenitis.

# CITY HOSPITAL, PRIORY ROAD.

Visiting Physician, DR. R. S. ARCHER.

DISEASE.	Remaining in Hospital, December, 1900	Admitted Acute Cases during 1901.	Total Number under treatment, 1901	Discharged to Homes 1901.	Died in Hospital, 1901.	Percentage of Deaths.	Remaining in Hospital, Dec. 31, 1901.
Smallpox .....	—	37	37	25	6	16·2	6
Other Diseases .....	—	18	18	14	4	22·2	—
Isolation and Observation } .....	2	28	30	30	—	—	—
TOTALS .....	2	83	85	69	10	12·0	6

## SMALLPOX.

	AGE PERIODS.								Total.
	Under 5	5—10	10—20	20—30	30—40	40—50	50—60	Over 60	
No. of cases .....	—	—	3	15	10	8	1	—	37
No. of Deaths .....	—	—	0	2	3	1	—	—	6

Four of the persons who died were unvaccinated. One had 1 faint mark, and one 2 faint marks.

One was dying on admission, two died 12 hours after admission, one 4 days after admission, and two died on the 9th day of disease.

## OTHER DISEASES.

Measles .....	1
Chickenpox .....	5
Papular Eruption .....	1
Syphilis .....	2
Typhus .....	6
Typhoid .....	3
Total.....	<u>18</u>



# CITY HOSPITAL, FAZAKERLEY.

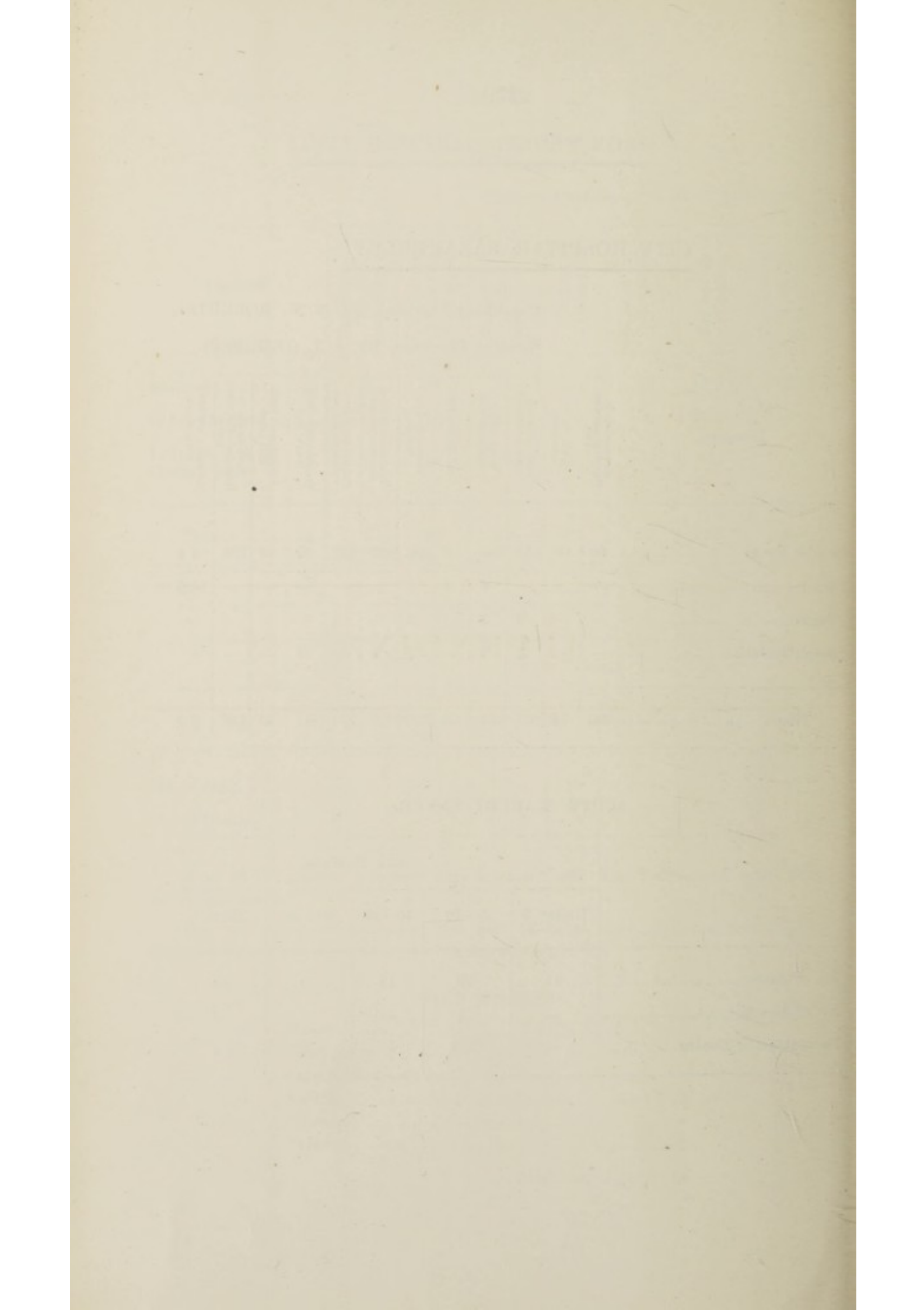
*Consulting Physician, DR. N. E. ROBERTS.*

*Resident Physician, DR. J. T. GRIERSON.*

Diseases.	Remaining in Hospital 31st Dec. 1901.	Acute cases admitted.	Convalescent Cases admitted.	Total under Treatment, 1901.	Died during 1901.	Discharged to homes.	Transferred from Grafton Street.	Transferred from Netherfield Road.	Transferred from Park Hill.	Transferred from Mill Lane.	Remaining in Hospital 31st Dec., 1901.	Mortality per cent. on Acute cases.
Scarlet Fever .....	60	68	518	646	3	506	223	237	39	19	136	4.4
Measles .....	—	6	—	6	1	5	—	—	—	—	—	16.6
Plague .....	—	—	2	2	—	2	—	2	—	—	—	—
Simple Isolation .....	—	—	7	7	—	7	5	—	2	—	—	—
Totals .....	60	74	627	661	4	520	228	239	41	19	136	5.4

## ACUTE SCARLET FEVER.

	AGE PERIODS.				
	Under 5	5—10	10—20	20—30	Total.
No. of cases.....	21	29	15	3	68
No. of Deaths .....	—	3	—	—	3
Percentage of Deaths.....	—	10.3	—	—	4.4





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## APPENDIX.

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APPENDIX

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The following tables I, II, III, IV, and marked also A, B, C, D, are prepared pursuant to an instruction of the Local Government Board.

TABLE I.

YEAR.	Population estimated to Middle of each year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of non-residents registered in Public Institutions in the district.	Deaths of residents registered in Public Institutions beyond the district.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age.		At all ages.					Number.	Rate.*
				Number.	Rate per 1000 Births regist'd.	Number.	Rate.*					
1	2	3	4	5		7	8	9	10	11	12	13
1891.....	518302	17832	34.4	3361	188	13911	26.8	2287	317	233	13827	26.6
1892.....	519590	17758	34.2	3209	181	12671	24.4	2130	283	214	12602	24.2
1893.....	520882	18328	35.2	3863	210	13919	26.7	2723	427	247	13739	26.3
1894.....	522178	17893	34.3	3210	179	12073	23.1	2663	434	250	11889	22.7
†1895.....	525223	22006	33.7	4441	202	16624	25.5	3441	409	...	16215	24.8
1896.....	558050	21943	33.3	3833	175	14476	22.0	3457	416	...	14060	21.4
1897.....	663633	22280	33.6	4488	201	15590	23.5	3604	473	...	15117	22.8
1898.....	669243	22227	33.2	4111	184	15380	23.0	3812	527	...	14853	22.2
1899.....	674912	22488	33.3	4481	199	16861	25.0	4278	592	7	16276	24.1
1900.....	680628	22762	33.4	4247	186	16393	24.0	4257	616	8	15785	23.1
Averages for years 1891-1900.	607994	20551	33.8	3924	190	14789	24.4	3265	449	95	14436	23.8
1901.....	686332	21980	32.2	4138	188	15493	22.5	4231	618	4	14879	21.6

\* Rates in Columns 4, 8, and 13 calculated per 1000 of estimated population. † City Boundaries extended.

NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums.

Area of District in acres  
(exclusive of area covered by water). } 13,236.

Total population at all ages.....684,958  
Number of inhabited houses .....123,469  
Average number of persons per house .....5.5 } At Census of 1901.

TABLE II.

NAMES OF LOCALITIES.	1.—Scotland District.				2.—Exchange District.				3.—Abercromby District.				4.—Everton District.			
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1891.....	53698	1984	1993	467	47585	1385	1803	292	55450	1627	1438	239	110796	4006	2770	764
1892.....	53626	2057	1898	445	46980	1303	1701	300	55131	1596	1266	217	111610	4074	2440	712
1893.....	53553	2027	1834	471	46382	1387	1688	325	54814	1631	1384	267	112672	4105	2957	910
1894.....	53481	2041	1628	452	45792	1302	1495	298	54499	1671	1102	205	113673	4233	2410	690
1895.....	53409	2144	1836	506	45209	1325	1670	314	54186	1676	1381	251	114074	4287	3059	858
1896.....	53336	2053	1609	417	44634	1433	1451	291	53874	1740	1127	203	114964	4335	2697	778
1897.....	53264	2122	1711	475	44065	1381	1495	348	53564	1711	1216	233	116534	4441	2875	902
1898.....	53192	2111	1825	460	43505	1310	1557	316	53256	1633	1242	245	117647	4304	2729	807
1899.....	53121	2125	1865	509	42951	1278	1634	314	52950	1695	1258	229	118940	4328	3143	880
1900.....	53049	2166	1830	521	42405	1332	1549	347	52645	1633	1303	252	120904	4442	2896	846
Averages of Years 1891 to 1900.	53372	2083	1796	472	44950	1343	1604	314	54036	1667	1271	234	115181	4255	2797	814
1901.....	52934	2044	1694	455	41831	1180	1299	285	52301	1565	1099	245	121953	4216	2902	819

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.



TABLE II.—*continued.*

NAMES OF LOCALITIES.	5.—Kirkdale District.				6.—West Derby (West) District.				7.—Toxteth District.			
	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 Year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1891 .....	66210	2446	1537	426	77200	2689	1657	432	107309	3695	2467	627
1892 .....	66529	2340	1330	351	78124	2829	1549	423	107178	3559	2339	622
1893 .....	66849	2479	1579	465	79059	2852	1791	566	107047	3787	2345	701
1894 .....	67170	2308	1317	391	80005	2894	1569	412	103916	3444	2118	602
1895 .....	67493	2411	1657	487	80207	2858	1918	536	103786	3746	2652	746
1896 .....	67818	2359	1333	400	81311	2950	1698	486	103655	3522	2231	550
1897 .....	68144	2423	1509	457	82434	3040	1827	557	103525	3527	2456	712
1898 .....	68472	2377	1368	408	83670	3099	1783	538	103396	3493	2308	626
1899 .....	68801	2361	1578	434	84907	3086	1841	566	103268	3545	2678	711
1900 .....	69132	2408	1552	470	85924	3019	1836	507	103393	3429	2496	681
Averages of Years 1891 to 1900.	67661	2391	1476	428	81284	2931	1746	502	106747	3574	2409	657
1901 .....	69410	2292	1438	448	86882	2921	1736	522	105922	3356	2349	632

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

B—*Continued.*

TABLE II.—continued.

NAMES OF LOCALITIES.	8.—Walton District.				9.—West Derby (East) District.				10.—Wavertree District.				11.—Sefton Park District (late Toxteth Rural).			
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1890.....	Statistics not available															
1891.....																
1892.....																
1893.....																
1894.....																
1895.....		45856	1439	821	258	39431	1099	681	141	17830	405	245	63	24532	616	295
1896.....		47270	1542	704	200	40166	951	685	162	18949	460	226	63	25433	598	299
1897.....		48728	1552	756	230	40914	991	677	180	20138	451	259	77	26367	641	336
1898.....		50230	1639	736	200	41677	1024	684	139	21402	588	297	97	27336	649	324
1899.....		51779	1686	873	273	42454	1035	697	169	22746	704	372	114	28340	645	330
1900.....		53376	1754	855	245	43245	1161	749	155	24174	820	396	115	29381	598	315
Averages of Years 1895 to 1900.	49539	1602	790	234	41314	1043	695	157	20873	571	299	88	26898	624	316	77
1901.....	54977	1742	824	270	44016	1162	763	192	25670	888	411	147	30436	614	364	74

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.



# CITY OF LIVERPOOL

Area 13,236 acres (exclusive of half of River Mersey).

SCALE OF ONE MILE.

The Map is divided into half-mile squares.



## DISTRICTS.

1. DODDLE
2. EXCHANGE
3. ABERCROMBY
4. EVERTON
5. KIRKDALE
6. WEST DERBY - WEST
7. TOXTETH
8. WALTON
9. WEST DERBY - EAST
10. HAVERTREE
11. SEFTON PARK

LATE 19TH CENTURY

GEORGE PHILIP & SON, PUBLISHERS, LIVERPOOL.

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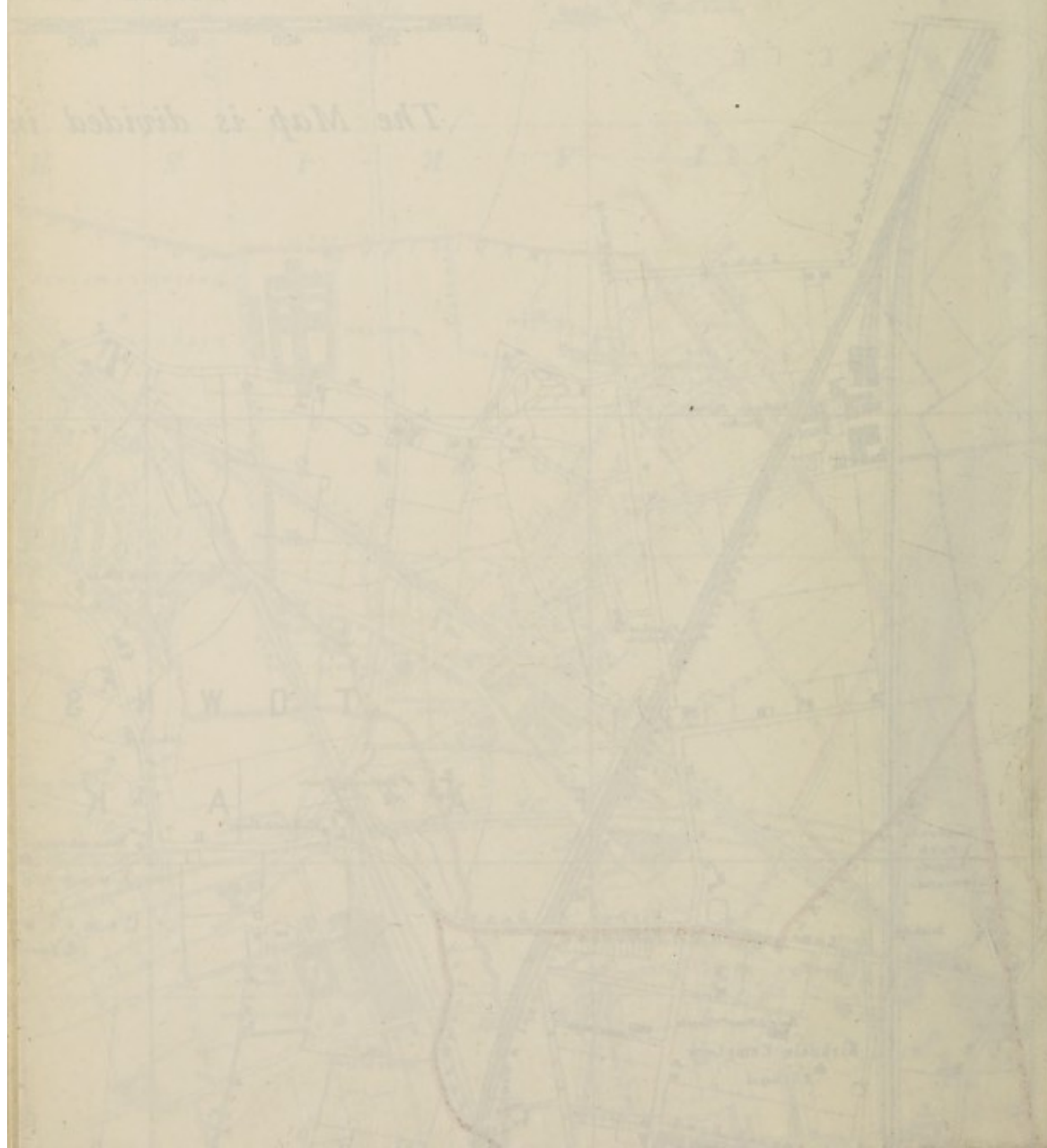
# CITY OF

Area 13,230 acres (exclusive)

SCALE OF



The Map is divided into



T. D. W. N. S.

A. K.



TABLE III.  
Cases of Infectious Disease notified during the Year 1901.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.														NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.														Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.
	At all Ages.	At Ages—Years.						Scotland.	Exchange.	Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Road).	Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.	Scotland.	Exchange.	Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Road).						
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.																														
Small-pox .....	37	...	...	2	14	21	...	...	7	...	5	...	2	1	4	1	...	...	...	17	...	7	...	5	...	2	1	4	1	...	...	...	17				
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Diphtheria .....	823	10	360	324	79	50	...	30	26	45	218	70	115	80	138	38	17	31	11	4	20	19	28	119	34	64	48	80	16	8	12	9	4				
Membranous croup	47	2	39	5	1	...	...	7	1	5	12	8	6	4	3	1	...	...	...	...	...	2	1	1	1	...	1	...	...	...	...	...	...				
Erysipelas .....	1056	15	59	96	186	665	35	100	107	68	232	103	110	186	60	35	20	16	15	4	...	...	...	...	...	...	...	...	...	...	...	...	...				
Scarlet fever .....	3310	28	1415	1625	183	59	...	179	112	199	619	276	447	580	367	162	88	168	105	8	103	54	127	311	143	269	354	161	68	56	62	98	8				
Typhus fever.....	55	...	1	7	23	24	...	39	8	...	...	2	...	4	1	...	...	...	1	...	38	8	...	...	2	...	4	...	1	...	...	1	...				
Enteric fever.....	864	...	69	257	250	286	2	110	84	76	138	72	128	90	50	34	20	22	18	22	50	15	20	45	21	41	33	12	7	5	2	8	11				
Relapsing fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Continued fever ...	15	...	4	7	2	2	...	1	1	...	4	2	3	3	...	1	...	...	...	...	...	...	1	...	1	2	...	...	...	...	...	...	...				
Puerperal fever.....	60	...	...	...	22	38	...	3	4	2	19	9	7	4	2	2	6	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Plague .....	5	...	...	4	...	1	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...				
Totals .....	6272	55	1947	2327	760	1146	37	469	350	395	1252	542	818	952	625	274	151	238	151	55	221	103	177	487	201	378	442	258	...	69	76	116	40				

(H) The localities in which the Isolation Hospitals are situated. There is also an Isolation Hospital at Fazakerley, outside the District.

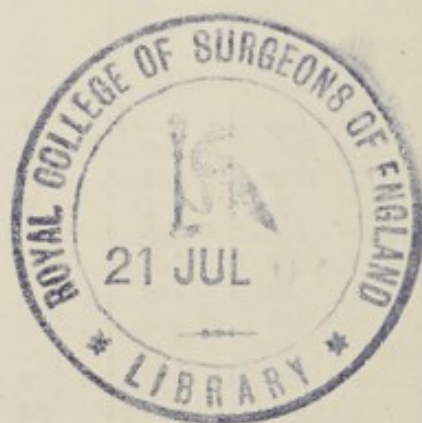
Census of the City of New York, 1850									
Ward 1, Manhattan									
Household	Male	Female	Children	Foreign Born	Colored	Irish	German	Other	Total
1	1	1	0	0	0	0	0	0	2
2	2	2	0	0	0	0	0	0	4
3	3	3	0	0	0	0	0	0	6
4	4	4	0	0	0	0	0	0	8
5	5	5	0	0	0	0	0	0	10
6	6	6	0	0	0	0	0	0	12
7	7	7	0	0	0	0	0	0	14
8	8	8	0	0	0	0	0	0	16
9	9	9	0	0	0	0	0	0	18
10	10	10	0	0	0	0	0	0	20
11	11	11	0	0	0	0	0	0	22
12	12	12	0	0	0	0	0	0	24
13	13	13	0	0	0	0	0	0	26
14	14	14	0	0	0	0	0	0	28
15	15	15	0	0	0	0	0	0	30
16	16	16	0	0	0	0	0	0	32
17	17	17	0	0	0	0	0	0	34
18	18	18	0	0	0	0	0	0	36
19	19	19	0	0	0	0	0	0	38
20	20	20	0	0	0	0	0	0	40
21	21	21	0	0	0	0	0	0	42
22	22	22	0	0	0	0	0	0	44
23	23	23	0	0	0	0	0	0	46
24	24	24	0	0	0	0	0	0	48
25	25	25	0	0	0	0	0	0	50
26	26	26	0	0	0	0	0	0	52
27	27	27	0	0	0	0	0	0	54
28	28	28	0	0	0	0	0	0	56
29	29	29	0	0	0	0	0	0	58
30	30	30	0	0	0	0	0	0	60
31	31	31	0	0	0	0	0	0	62
32	32	32	0	0	0	0	0	0	64
33	33	33	0	0	0	0	0	0	66
34	34	34	0	0	0	0	0	0	68
35	35	35	0	0	0	0	0	0	70
36	36	36	0	0	0	0	0	0	72
37	37	37	0	0	0	0	0	0	74
38	38	38	0	0	0	0	0	0	76
39	39	39	0	0	0	0	0	0	78
40	40	40	0	0	0	0	0	0	80
41	41	41	0	0	0	0	0	0	82
42	42	42	0	0	0	0	0	0	84
43	43	43	0	0	0	0	0	0	86
44	44	44	0	0	0	0	0	0	88
45	45	45	0	0	0	0	0	0	90
46	46	46	0	0	0	0	0	0	92
47	47	47	0	0	0	0	0	0	94
48	48	48	0	0	0	0	0	0	96
49	49	49	0	0	0	0	0	0	98
50	50	50	0	0	0	0	0	0	100



TABLE IV.  
Causes of, and ages at, Death during Year 1901.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN OR BELONGING TO LOCALITIES (AT ALL AGES).											TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.	Scotland	Ex-change.	Aber-cromby.	Ever-ton.	Kirkdale	West Derby, (West).	Toxteth.	Walton.	West Derby, (East).	Waver-tree.	Sefton Park.	
Small-pox .....	2	...	...	...	...	2	...	...	1	...	...	...	...	...	1	...	...	...	6
Measles .....	468	117	327	22	...	2	...	66	66	20	111	18	72	...	13	12	8	2	50
Scarlet fever .....	189	4	116	64	3	2	...	14	6	11	37	29	11	39	20	12	4	6	118
Whooping-cough .....	165	62	95	8	...	...	...	30	15	2	48	9	12	21	15	6	2	5	4
Diphtheria and membranous croup .....	182	9	114	48	7	3	1	12	6	4	56	18	20	23	23	8	3	9	84
Croup .....	26	6	16	4	...	...	...	2	...	2	7	2	2	7	1	3	...	...	...
(Typhus .....	14	...	...	...	4	10	...	11	2	...	...	1	...	...	...	...	...	...	13
Fever    Enteric .....	140	1	3	26	35	73	2	22	18	10	21	16	14	20	5	7	4	3	97
Other continued .....	3	...	2	...	...	1	...	...	...	...	1	...	...	1	...	1	...	...	...
Epidemic influenza .....	73	6	3	1	7	26	30	1	3	12	13	1	12	17	3	6	2	3	3
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	3	...	...	3	...	...	...	...	...	...	3	...	...	...	...	...	...	...	3
Diarrhoea .....	1294	906	316	10	1	22	39	186	70	62	280	174	168	161	89	59	30	15	44
Enteritis .....	282	198	46	8	1	16	13	30	20	18	66	28	37	30	19	14	16	4	26
Puerperal fever.....	21	...	...	...	5	16	...	1	1	1	4	2	3	2	1	...	6	...	7
Erysipelas .....	23	6	...	1	2	10	4	2	3	1	3	1	2	2	1	3	3	2	9
Other septic diseases .....	11	2	...	3	6	...	...	1	2	...	2	...	2	1	...	2	1	...	6
Phthisis .....	1242	4	27	43	160	946	62	137	151	102	231	94	169	182	70	55	21	30	596
Other tubercular diseases .....	445	121	159	85	33	43	4	43	42	26	107	40	61	33	33	26	13	21	102
Cancer, malignant disease .....	536	...	2	...	6	320	208	33	35	46	107	54	68	88	36	32	13	24	233
Bronchitis .....	1587	336	163	18	12	413	645	232	142	145	321	151	151	251	59	72	36	27	382
Pneumonia .....	1158	211	318	61	43	353	172	135	125	97	185	121	139	202	63	36	31	24	287
Other diseases of Respiratory organs .....	59	1	8	2	5	30	13	12	9	4	7	1	8	13	1	1	...	3	26
Pleurisy .....	166	25	40	12	2	54	33	19	10	13	33	24	22	20	7	6	5	7	17
Alcoholism and Cirrhosis of liver.....	251	...	...	...	4	207	40	41	31	16	51	21	21	27	15	14	10	4	103
Veneral diseases .....	61	49	8	...	...	4	...	11	5	3	12	4	8	10	4	2	2	...	17
Premature birth .....	451	451	...	...	...	...	...	52	41	32	83	49	58	65	26	20	20	5	28
Diseases and accidents of parturition .....	43	...	...	...	2	41	...	2	2	3	5	5	9	9	4	2	1	1	9
Heart diseases .....	923	2	7	44	56	486	328	101	104	89	151	89	88	157	40	55	18	31	347
Accidents .....	519	89	83	55	34	179	79	76	69	39	81	60	40	93	22	18	13	8	291
Suicides .....	54	...	...	...	6	38	10	6	4	5	7	7	5	5	3	5	3	4	20
All other causes .....	4488	1483	460	153	124	1019	1249	416	316	336	869	419	534	790	250	286	146	126	1303
All causes .....	14,879	4089	2313	671	558	4316	2932	1694	1299	1099	2902	1438	1736	2349	824	763	411	364	4231

NOTE.—The deaths of residents occurring in Public Institutions beyond the limits of the City have been included in this table, and deaths of non-residents occurring in Public Institutions in the City have been excluded. This note does not apply to the column of deaths in Public Institutions.





# CITY OF LIVERPOOL

Diagram showing Birth Rate (Blue)... } Per 1000  
 " " Death Rate (black)... } of the  
 " " Number of Deaths of Infants under one year } estimated  
 " " out of every 1000 born (green) } Population.  
 " " estimated Population per acre, excluding } in each of the  
 " " Docks, Quays, &c (Red) } Districts of the  
 " " City during 1901



Diagram showing Birth Rate (Blue)  
 Death Rate (black)  
 Number of Deaths of Infants under one year  
 out of every 1000 born (green)  
 estimated Population per acre, excluding  
 Docks, Quays, &c. (Red)

WEST DERBY TEST

26.4  
 17.3  
 165  
 14.7

WALTON

31.6  
 14.9  
 152  
 28.8

WEST DERBY TEST

33.8  
 19.9  
 178  
 28.9

34.5  
 23.8  
 191  
 27.0

EXCHANGE COMPIRES

VAUXHALL WARD

EXCHANGE

ST ANNE'S

ABERCROMBY COMPIRES

CATTLE STREET WARD

ST PETERS

GREAT GEORGE

ABERCROMBY

KIRKDALE

33.0  
 20.7  
 192  
 28.3

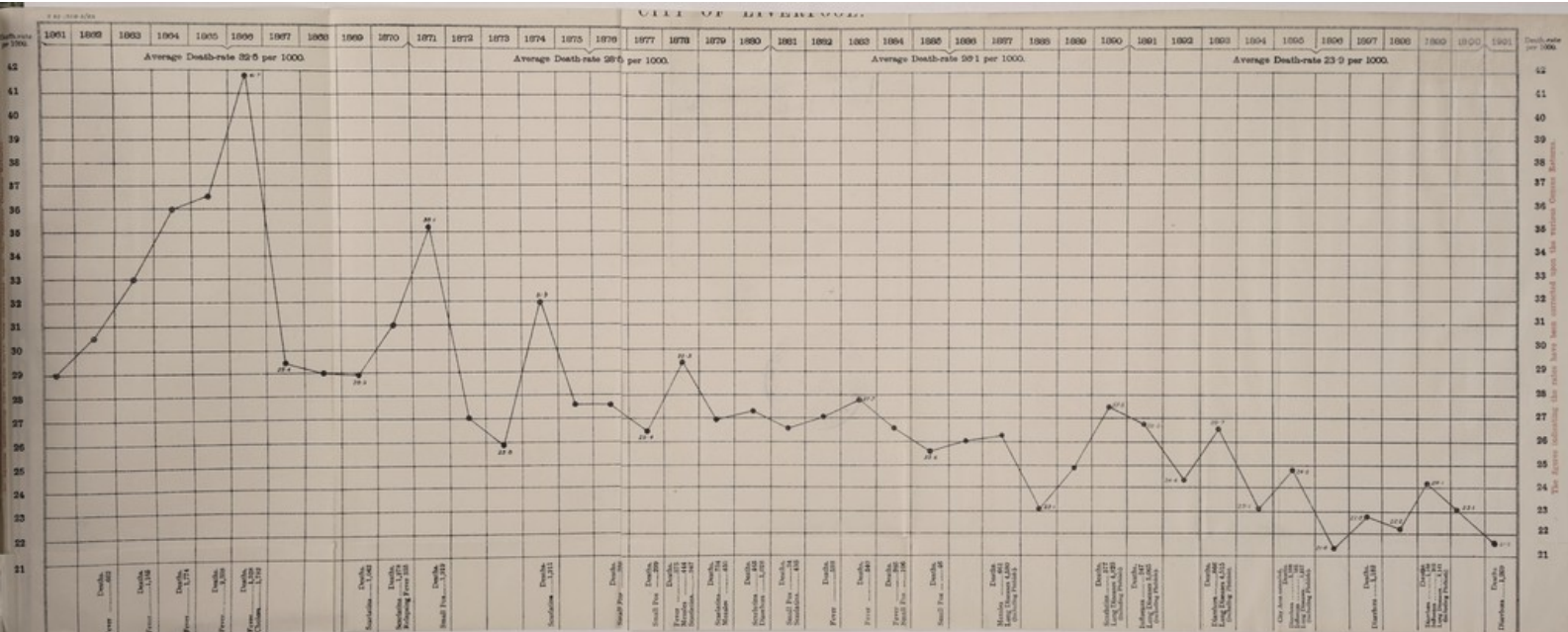
SCOTLAND

38.6  
 32.0  
 222  
 135.4

EXCHANGE

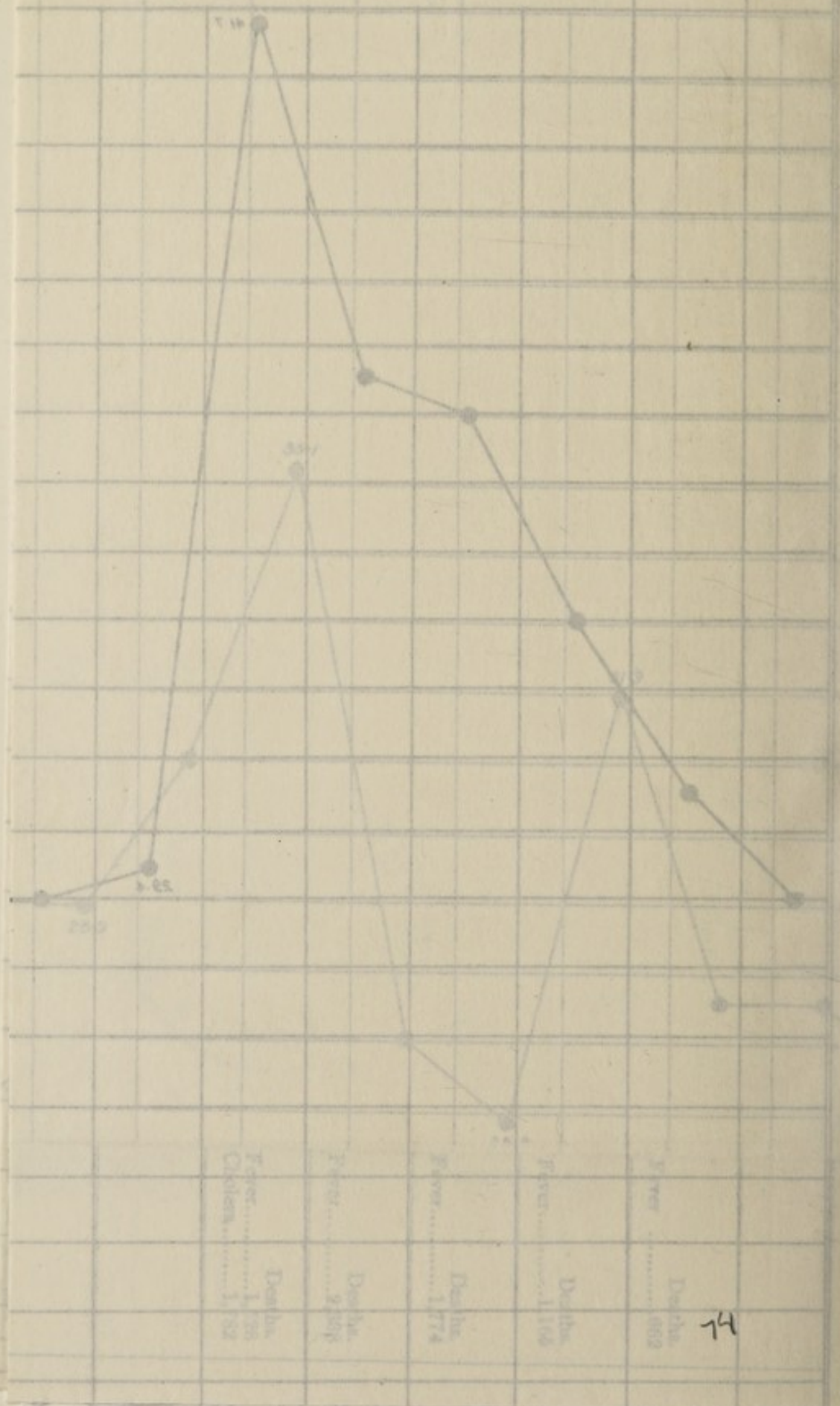
28.2  
 31.0  
 241  
 29.8





1891 1892 1893 1894 1895 1896 1897 1898

Average Death-rate 32.5 per 1000.



Deaths 1774  
 Fever 1774  
 Deaths 2126  
 Fever 2126  
 Deaths 1774  
 Fever 1774  
 Deaths 1774  
 Fever 1774

74

VERME