

Statistical tables submitted to the board of police on Monday, 19th June, 1871 ; shewing the sanitary state of Glasgow, London and Liverpool, from 1855 to 1870, &c.; ; with remarks by the medical officer.

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STATISTICAL TABLES

SUBMITTED TO

THE BOARD OF POLICE

On MONDAY, 19th JUNE, 1871;

SHEWING THE SANITARY STATE OF GLASGOW, LONDON
AND LIVERPOOL, FROM 1855 to 1870, &c.;

WITH

REMARKS BY THE MEDICAL OFFICER.

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ANNUAL RATE OF MORTALITY IN GLASGOW, LONDON, AND LIVERPOOL.

YEAR.	GLASGOW.										LONDON.										LIVERPOOL.									
	Population.	Deaths Registered.	Birth Rate per 1000 of Population.	Deaths from all Causes.	Mortality per 1000 of Population.	Deaths under 5 Years.	Rate per cent. to Total Deaths.	Fever Deaths.	Rate per cent. to all Causes.	Smallpox Deaths.	Births Registered.	Birth Rate per 1000 of Population.	Deaths from all Causes.	Mortality per 1000 of Population.	Deaths under 5 Years.	Rate per cent. to Total Deaths.	Fever Deaths.	Rate per cent. to all Causes.	Smallpox Deaths.	Births Registered.	Birth Rate per 1000 of Population.	Deaths from all Causes.	Mortality per 1000 of Population.	Deaths under 5 Years.	Rate per cent. to Total Deaths.	Fever Deaths.	Rate per cent. to all Causes.	Smallpox Deaths.		
1859	320,385	13,368	27.1	10,655	29.6	5,285	49.6	472	4.4	293	85,532	61,942	24.3																	
1860	364,080	13,243	42.5	10,298	28.4	5,397	52.4	473	4.6	127	87,430	57,274	22.9																	
1861	368,731	13,867	42.2	11,275	29.8	6,105	53.6	506	4.9	269	89,377	59,143	22.4																	
1862	375,377	13,997	41.0	11,472	30.5	6,163	53.7	513	4.4	118	89,912	64,955	23.9	25,472	44.4	1,865	2.9	212												
1863	382,217	13,947	43.9	10,832	28.3	5,544	51.1	395	3.6	101	92,399	61,860	22.6	25,226	42.4	1,789	2.8	1,158												
1864	388,532	13,953	49.2	12,436	31.9	6,253	50.5	421	3.3	347	93,414	67,310	22.6	25,303	43.2	1,302	2.2	308												
1865	393,502	14,387	42.9	10,596	27.5	5,430	49.6	496	4.4	131	97,064	62,221	23.4	23,991	45.1	1,770	2.8	217												
1866	403,863	14,797	46.7	11,565	28.6	5,644	48.2	538	4.6	37	97,850	67,371	23.5	25,625	47.6	3,098	3.3	306												
1867	413,443	15,088	41.6	13,329	32.4	6,763	52.2	680	5.1	349	101,119	71,000	24.4	31,216	43.9	2,808	3.9	1,496												
1868	417,383	15,434	41.9	13,674	32.7	6,603	48.9	1,147	8.3	300	102,025	78,328	26.3	33,237	43.8	3,703	4.7	547												
1869	425,723	15,556	42.9	10,914	25.8	6,428	60.2	1,549	11.0	26	106,803	73,531	24.3	33,613	43.0	3,213	4.3	549												
1870	432,265	15,789	42.8	12,839	29.6	5,838	45.6	788	6.1	104	108,565	86,453	29.2	34,595	42.9	2,688	3.0	1,331												
1871	440,979	15,847	42.6	12,578	28.5	5,797	46.0	748	5.9	32	112,691	79,923	23.0	36,341	42.7	2,184	2.9	1,215												
1872	448,806	16,609	43.2	13,640	30.7	6,909	49.8	638	4.7	3	113,037	73,738	23.6	32,780	44.4	2,668	3.6	497												
1873	454,572	16,601	40.2	15,640	34.0	7,539	48.2	1,231	7.8	7	115,328	77,583	24.5	35,276	45.2	2,414	3.0	173												
1874	463,140	16,539	42.3	13,982	29.8	6,115	43.8	801	6.0	26	118,459	77,778	24.0	33,160	42.9	2,053	2.6	938												

No reliable data for these Years in the Returns of the Registrar-General at the Sanitary Office.

II.—RETURN OF DEATHS
Under 5 Years, with the Population under that Age estimated to the middle of each year, and the Death-rate per 100 of said Population for the Years 1855, 1860, 1870.

GLASGOW.			
YEARS.	Estimated Population in Middle of each Year under 5 Years.	Deaths under 5 Years.	Rate per cent. of Population under 5 Years.
1855	44,461	5,285	11.9
1860	46,844	5,397	11.5
1867	49,276	6,163	12.3
1868	50,633	6,163	12.1
1869	52,071	5,544	10.6
1870	53,489	6,283	11.7
1871	55,113	5,430	9.8
1872	56,963	5,644	10.0
1873	58,983	6,913	11.7
1874	57,964	6,603	11.5
1875	59,824	6,428	10.9
1876	59,746	5,838	9.8
1877	60,655	5,797	9.5
1878	61,587	6,800	11.1
1879	62,589	7,539	12.0
1870	63,512	6,115	9.6

III.—TABLE
Showing the Mortality of Glasgow from 1841 to 1867, with Rate per 1000 of estimated Population.

YEARS.	Total Deaths.	Rate per 1000 of Population.
1841	8,895	31.6
1842	7,359	25.6
1843	9,459	29.2
1844	7,367	28.5
1845	7,509	24.4
1846	10,851	26.6
1847	10,081	26.4

IV.—TABLE
Showing the Mortality of Glasgow at all Ages, Years, from 1848 to 1854.

YEARS.	Total Deaths.	Rate per 1000 of Estimated Population.	Deaths per 1000 of Population.
1848	12,475	38.6	4.3
1849	12,883	39.6	4.8
1850	9,477	27.6	4.7
1851	10,746	30.9	4.8
1852	10,675	30.1	5.0
1853	14,312	39.7	7.0
1854	16,336	44.6	6.0

V.—TABLE
Showing the Mortality of Ten large Towns in 1870, density of Population—1870.

TOWNS.	Deaths.	Rate per 1000 of Population.
London,	113,688	77,378
Bristol,	6,947	5,123
Birmingham,	12,921	7,804
Manchester,	13,721	10,425
Leeds,	10,645	7,325
Newcastle-on-Tyne,	5,093	3,209
Hull,	4,411	2,809
Edinburgh,	6,729	4,706
Glasgow,	19,539	13,932
Liverpool,	19,146	16,099

VI.—TABLE
Showing the Mortality in Infants below Five Years and Glasgow during the Year 1870.

TOWNS.	Total Deaths.	Deaths in Infants.
Liverpool,	16,099	8,140
Glasgow,	13,932	6,115

Notes.—Tables Nos. I. and II. The Deaths registered for the City of Glasgow are taken from the Annual Reports by the Registrar-General, excepting those recorded for the years 1853-59, which are derived from the "Supplement to the Monthly Returns," and the whole refer to the ten Registration Districts.
The Death Rates of Glasgow are based upon the Population estimated by the Scotch Registrar-General, but for the years 1862 till 1870 inclusive, the Population as given by the English Registrar General is taken.
The Returns for London and Liverpool are made up from the Annual Reports published by the English Registrar-General.
Tables Nos. III. and IV. are prepared from the Reports of Dr. Stung published in 1864.
Table V. is compiled from the Fortnightly Reports of Dr. Gieseler presented to the Health Committee of the Police Board, and refers to the Deaths registered in the ten Registration Districts shown therein.

VII.—FORTNIGHTLY SUMMARY OF DEATHS FROM ALL CAUSES AND FROM FEVER AND SMALL-POX IN GLASGOW, LONDON, AND LIVERPOOL.

Years.	Total Deaths.	Rate per 1000 of Estimated Population.	Deaths under Five Years.	Rate per cent of Total Deaths.
1848	12,473	38.6	4,379	35.1
1849	12,893	38.6	5,041	39.0
1850	9,477	27.8	4,771	50.0
1851	10,746	30.9	5,401	50.8
1852	10,675	30.1	5,511	51.7
1853	10,312	29.7	7,018	68.2
1854	10,356	49.6	6,673	64.5

Towns.	Births.	Deaths.	Rate of Increase or Decrease.	Population per Acre.
London.	132,448	77,778	54.6	412
Bristol.	4,947	4,113	26.4	364
Birmingham.	12,921	7,804	29.4	313
Manchester.	13,721	10,429	26.0	278
Leeds.	10,445	7,255	29.7	328
Newcastle-on-Tyne.	5,093	3,299	36.1	264
Hull.	4,411	2,850	35.9	255
Nottingham.	5,729	4,716	20.2	404
Glasgow.	19,559	13,552	41.0	298
Liverpool.	19,166	10,609	36.0	311

Towns.	Total Deaths.	Deaths of Infants.	Rate per 1000.
Liverpool,	16,069	8,144	50.6
Glasgow,	13,932	6,115	43.9

[illegible]

NOTE.—It will be observed that the average of ten fortnights in 1871 is as follows:—In Glasgow, Deaths at all ages amounted to 674; of these, 36 were from Fever, and 26—say 16—from Smallpox. In London, the average Deaths at all ages amounted to 3259; of these, 68 were from Fever, and 420 from Smallpox. In Liverpool, the average Deaths at all ages were 814; of these 41 were from Fever, and 151 from Smallpox.

The Deaths from Smallpox in Glasgow were at the rate of $1\frac{1}{2}$ per cent. to the Deaths at all ages. In London they were at the rate of 129 per cent. In Liverpool, at the rate of 183 per cent.

If the Deaths from Smallpox had been in Glasgow the same percentage as in London, instead of 10 dying in the fortnight 87 would have died; and if the same as Liverpool, 132.

REMARKS BY THE MEDICAL OFFICER.

THE numerical statements herewith presented have been drawn up in obedience to an instruction of the Committee of Health, with a view to obtain, if possible, materials for an estimate of the sanitary state of Glasgow, and the progress of improvement now, or in the future. It seems necessary to remark, however, that all estimates founded on the general death-rate are open to fallacious inferences, unless guarded by very accurate information as to details. The presence or absence of epidemics in any particular year may cause a town to appear higher or lower than what might be termed its natural, or at least usual, place in the scale of death-rates. *E.g.*, the town of Bristol, specially notable a few years ago on account of its comparatively low death-rate, was, in the year 1870, a marked example of a high death-rate, and compared unfavourably, not only with London and Birmingham, but also with Manchester, Leeds, Newcastle, Hull, Edinburgh, and almost with Glasgow. Moreover, the kind of population inhabiting a town; the density of the population; the proportion of infants and old persons as compared with the intermediate ages; the proportion of the labouring and more or less destitute classes as compared with the comfortable and

well-to-do; the proportion of families inhabiting single apartments; the number and character of the tenement-houses, and generally, the character of the house accommodation, and its amount at a given time in relation to the demand for it, are all circumstances requiring to be held in view in such inquiries as those suggested by these Tables. It is not proposed at present to do more than point out a few of these considerations arising directly from the Tables themselves.

As is only too well known, the death-rate of Glasgow has been for many years almost constantly among the highest in the kingdom; and the great liability of the city to epidemic disease, especially to typhus fever, has also obtained for us an unenviable repute. It is not intended here to palliate or explain away these facts, or even to discuss them at large; but it may be safely affirmed that many persons who have been accustomed to take note of them, and who justly look upon the figures presented from week to week as a reproach to our civilisation, have failed at the same to appreciate the true bearing of some of the following considerations:—

1. Glasgow has a population of 93 persons to an acre; *i.e.*, much more than double the density of the population of London or Edinburgh; more than three times the density of Newcastle, and nearly eight times the density of Leeds; Liverpool alone exceeding Glasgow in this respect. (See Table 5.)

2. Glasgow has an enormously high birth-rate, usually from 40 to 42, or more, in 1000 of the population; while London, the largest and most rapidly extending population in the world, has a birth-rate of only 35 to 36.6 in 1000 of living population; and Liverpool, which in so many unfavourable particulars resembles Glasgow, has a birth-rate varying from 36.8 to 39.8 in 1000 of living population. In other words, the proportion of infant

population *living at risk*, so to speak; the proportion of persons specially liable to die in the largest numbers, is at all times much greater in Glasgow than in London, and greater even than in Liverpool. (See Table 1, column 4.)

3. Taking these two facts together, as presented merely statistically, viz., that Glasgow, upon a relatively smaller acreage than any excepting two of the most unhealthy cities of the kingdom, is breeding up, from year to year, a much larger proportion of young lives than any of these cities; the inference clearly is, that the sanitary state of Glasgow is in some way or other connected with its intense productiveness, and its too small superficial area. And any one who is familiar with the high, dark, warrens of closely packed tenement-houses in this city; its narrow ill-ventilated closes; its many miles of such streets and closes without an open space, without a blade of grass, without a tree or a shrub to be seen; its swarms of children pouring forth from such utterly wretched dwellings through dark passages and narrow lanes, with no playground but the street, no bathing-place but the gutter, can be at no loss to apply the moral of the tale which these numbers unfold.

Leaving this general question, and returning to Table 1, in order to compare Glasgow present with Glasgow past:—In the year 1870 the death-rate of Glasgow was 29.8, which, as compared with the two preceding years (when typhus was epidemic), gives a very considerable proportionate reduction of mortality. Compared with the mean death-rate of the whole sixteen years during which a registration of deaths has been kept, 1870 is still a year of comparatively moderate losses by death; inasmuch as the mean death-rate of the sixteen years, 1855-70, is 30.4, while the death-rate of 1870 alone is 29.8. But the most striking feature of the year 1870, as presented in the columns of

Table 1, is the relatively low proportion of the deaths which occurred among children under five years. For if any one will look down the column of Table 1 which displays, as regards Glasgow, the rate per cent. of infantile as compared with total deaths, he will find that while in more than one preceding year the proportion of infantile deaths exceeded 53 per cent. of the deaths at all ages, in no year, with the exception of 1870, was it nearly so low as 43.8 per cent. The special character of the year 1870, therefore, was a mortality rather lower than the average on the whole, and in its special distribution as regards age, bearing much less in proportion upon the infantile than upon the other periods of life. In this respect, Glasgow is remarkably contrasted with Liverpool, where, notwithstanding (as we have already seen) a lower proportion of infantile life actually *at risk* than in Glasgow, the per centage of infantile deaths was as high as 50.6 in 1870, against 43.8 per cent. in Glasgow.

It may, however, fairly be maintained that this mode of presenting the infantile deaths, although the one usually adopted by the Registrar-General of Scotland, is open to various kinds of fallacious inferences. It is certainly a better plan to calculate the infantile death-rate upon the same principle as the death-rate of all ages, viz., as against 1000 estimated living persons under five years of age. Table 2, accordingly, gives the infantile death-rate per 1000 living in Glasgow for each of the years 1856-70; and it will be seen that in only one of the preceding fifteen years was the death-rate lower, and in only two others nearly as low, as in the year 1870.

The Medical Officer has never allowed himself to use expressions calculated to beget false expectations, nor has he ever consciously exaggerated any actual or presumable result of sanitary progress; but he thinks that these considerations, although not conclusive as to any great and general improvement during the past year, may fairly be taken as hopeful signs for the

future; inasmuch as, in the very midst of an epidemic which furnished 851 fever deaths, which rapidly filled all our hospital accommodation to overflowing, and left large numbers of poor and destitute sick to struggle with debilitating disease, or to perish in their miserable homes, from a want during several months of adequate shelter and protection, we have been able to maintain a death-rate lower than the average of the last sixteen years, and especially low for the infantile population.

W. T. G.

