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.

GLASGOW:

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1871.

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

		GLASGOW.								LONDON.						LIVERPOOL.												
Y1425.	Papulation.	Betha Geglatered.	Birth Rate per 1000 of Population.	Довфи Ггот вП Свинов.	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.
1855	959,865	13,348	37.1	10,655	29.6	5,285	49.6	472	4.4	203	85,532	ri.	61,942	24.3											-			
1856	994,000	15,248	41.5	10,298	28.4	5,897	52.4	473	4.6	127	87,430	tained.	57,274	22.0											1			
1957	365,791	15,807	45.5	11,375	30.8	6,105	53.6	566	4.9	399	89,577	scert	59,103	22.4		No relia	ble data	for thes	Years	in the I	Returns	of the 1	Registra	r-Genera	l at th	Sanita	TT Office	
1858	875,577	15.887	41.5	11,472	30.5	6,163	53.7	513	4.4	113	89,012	ot as	64,093	23.9	28,472	44.4	1.865	2.9	242					Gobore	1	Danita	y Office	'. [
1859	882,217	15,947	41-0	10,832	28.3	5,544	51.1	395	3•6	201	92,999	n noj	61,860	22.6	26,226	42.4	1,789		1,158									
1860	288.857	15,958	40.2	12,436	31.9	6,283	50.5	421	3.3	347	93,414	Population	62,309	22.4	26,939	43.2	1,392	2.2	898									
1861	895,503	16,537	41.8	10,936	27.5	5,430	49.6	486	4.4	131	97,064	Pop	62,251	23.1	29,090	45.1	1,770	2.8	217									
1862	403,803	16,897	46.7	11,565	28.6	5,644	48.2	538	4.6	27	97,850	ated	67,371	23.5	28,625	42·õ	3,598	5.3	866									
1883	410,443	16,988	41.5	13,529	32.4	6,963	52.2	680	5.1	349	102,119	stim	71,060	24.4	31,216	43.9	2,808		1.996									
1864	417,083	17,484	41.9	13,674	32.7	6,403	46.8	1,147	8.3	300	102,625	A	78,238	26.5	33,247	43.8	3,703	4.7	547									
1865	428,728	17,956	42.3	13,914	32.8	6,428	46.2	1,540	11.0	26	106,803	35.1	73,531	24.3	31,615	43.0	3,213	4.3	640	18,709	39.2	17,282	36-4	7,766	44.8	2,338	12.4	459
1866	432,265	18,288	42.3	12,829	29.6	5,858	45.6	788	6.1	104	108,665	35.6	80,453	26.2	34,565	42.9	2,688		1.391	19,180	39.6	20,198	41.8	9,776	48.4	1,523	7.5	102
1867	440,979	18,347	41%	12,578	28.5	5,797	46-0	748	5.9	32	112,691	36.6	70,923	23.0	30,341	42.7	2,184		1,845	19,561	39.8	14,513	29.5	7,133	49.1	656	4.5	22
1868	449,808	18,609	41-3	13,832	30.7	6,890	49.8	658	4.7	3	113,937	36.6	73,798	23.6	32,780	44.4	2,468	3.3	597	19,720	38.7	14,583	29.1	7,406	50.8	841	5.7	18
1869	,	18,490			34.0	7,539	48.2	1,231	7.8	7	111,930	35.4	77,933	24.5	35,276	45.2	2,414	3.0	273	18,674	36.8	14,744	29.0	7,319	49.6	783	5.8	20
18:0	468,183	19,859	41.3	13,952	29.8	6,115	43.8	851	6.0	26	113,499	35.3	77,278	24:0	33,160	42.9	2,053	2.6	958	19,146	36.9	16,099	31.1	8,148	50.6	927		174

Note.—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 1869-70, which are derived from Lis "Empplements 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 1865 till 1870 inclusive, the Population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of the population as given by the English Registrar-General is referred in the control of th

The Beath Rates of Glasgon and Liverpool are made up from the Annual Reports published by the English Registrar-General.

The Returns for London and Liverpool are made up from the Reports of Dr Straug published in 1854.

Tables No. III. and 1V. are prepared from the Fortuightly Reports of Dr Gairdner presented to the Health Committee of the Police Board, and refers to the Deaths registered in the ten Registration Districts above referred to.

II.—RETURN OF DEATHS

Under 5 Years, with the Population under that Age estimated to the middle of each year, and tho Deathrate 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 cen of Population under 5 Years.
	1855	44,461	5,285	11.8
	1856	46,844	5,397	11.5
	1857	49,276	6,105	12.3
	1858	50,653	6,163	12.1
	1859	52,071	5,544	10.6
	1860	53,489	6,283	11.7
	1861	55,143	5,430	9.8
	1862	56,063	5,644	10.0
	1863	56,983	6,963	12.2
	1864	57,904	6,403	11.5
	1865	58,824	6,428	10.9
	1866	59,746	5,858	9.8
	1867	60,665	5,797	9-5
	1868	61,587	6,890	11.1
	1869	62,589	7,539	12.0
	1870	63,512	6,115	9.6
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III.—TABLE

Showing the Mortality of Glasgow from 1841 to 1847, with Rate per 1000 of estimated Population.

YEARS.	Total Deaths.	Rate per 1,000 of Population.
1841	8,886	31.6
1842	7,359	25.6
1843	9,459	29.2 922:
1844	7,367	24.5
1845	7,509	24-4
1846	10,854	34.6
1847	18,081	56.4

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 5 Ye
1848	12,475	38.6	4,3
1849	12,883	38.6	5,4
1850	9,477	27.8	4,74
1851	10,746	30.9	5,46
1852	10,675	30.1	5,01
1853	14,312	39.7	7,04
1854	16,356	44.6	6,67

V.—TABLE

Showing the Mortality of Ten largo Towns in Gr density of Population-1870.

Towns.	Births.	Deaths.	Annua 1000 of
London,	113,488	77,278	35·3
	6,247	5,123	36·4
	12,921	7,804	34·9
	13,721	10,429	36·5
	10,445	7,325	40·2
	5,093	3,209	38·1
	4,411	2,850	33·7
Edinburgh,Glasgow,Liverpool,	6,729	4,706	37·5
	19,359	13,952	41·3
	19,146	16,099	36·9

VI.-TABLE

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

Towns.	Total Deaths.	Deaths of Infan.s.
Liverpool,		8,143
Glasgow,	13,952	6,115

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

ZZLZT	EASS Total Deaths.		Deaths under 5 Years.	Rate per cent. to Total Deaths
1848	12,475	38. 6	4,30	35.1
1849	12,883	38∙6	5,41	42.0
1850	9,477	27.8	4,74	50.0
1851	10,746	30.9	5,46	50.8
1852	10,675	30.1	5,01	47.0
1558	14,312	39.7	7,0	49.2
1854	16,356	44.6	6.67	40.8

V.—TABLE

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. to 1547,

er 1,000 of

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31-6 25-6 44-2-7 24-5 24-4 34-6 56-4 Showing the Mortality of Ten large Towns in Great Britain, with density of Population-1870.

Towns.	Births.	Deaths.		Rate of pulation.	Popula- tion on
10433			Births	Deaths.	Acre.
Lendon,	113,488	77,278	85·3	24.0	41.2
Bristol,	6,247	5,123	36.4	29-9	36.6
Birmingham,	12,921	7,804	34.9	21.1	47.2
Manchester,	13,721	10,429	36.5	27.8	83.6
Leeds,	10,445	7,325	40.2	28.2	12.0
Newcastle-on-Tyne,	5,093	3,209	38.1	24.0	25.0
Eull,	4,411	2,850	33.7	21.7	26.7
Edinburgh,		4,706	37.5	26.2	40.4
Glasgow,		13,952	41.3	29.8	93.0
Liverpool,		16,099	36.9	31.1	101.3

VI.-TABLE

Showing the Mortality in Infants below Five Years in Liverpool and Glasgow during the Year 1870.

Towns.	Total Deaths.	Deaths of Infan s.	Rate per cent
Liverpool,	10.050	8,14 ³ 6,115	50.6

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

]	1870.						
	G	LASGOW.			LONDON.		L	IVERPOOL.		
FORTNIGHT ENDING	Deaths at all Ages.	Fever Deaths.	Small-pox Deaths.	Deaths at all Ages.	Fever Deaths.	Small-pox Deaths.	Deaths at all Ages.	Fever Deaths.	Small-pox Deaths.	
turday, 15th January,	736	57	2	3,361	85	20	557	15	-	S
_ 29th "	683	57		3,265	74	13	531	15	-	
- 12th February,	640	50	_	3,396	68	15	628	18	_	
— 26th "	648	38	1	3,577	71	21	609	17	-	
_ 12th March,	629	52	1	3,172	68	14	545	19	-	
_ 26th "	629	38	1	3,010	65	8	532	15	-	
9th April,	616	48	-	3,256	67	16	558	15	-	
_ 23rd "	539	22	1	2,962	68	12	506	19	_	
_ 7th May,	52 5	24	1	2,709	70	12	479	12		
_ 21st "	469	20	_	2 739	- 66	25	481	18	_	
- 4th June,	472	26	_	2,471	66	23	450	15		
18th "	506	20	_	2,565	73	15	400	18	_	
_ 2nd July,	45.5	27		2,641	61	23	480	13	_	
16th "	410	21	_	2,995	80	24	481	17	_	
— 30th "	500	26	_	3,454	77	26	66 1	26	1 1	
- 13th August,	510	16	-	3,142	87	26	819	13	_	
— 27th "	510	14	1	2,791	86	21	758	33	2	
- 10th September,	448	23	_	2,748	79	21	732	39	3	
- 24th "		17	_	2 409	90	26	629	56	3	
- 8th October,	394	17	1	2,556	100	30	632	59	1	
- 22nd "		30	2	2,750	88	30	682	70	1 1	
5th November	426	25	2	2,609	82	44	685	55	9	
— 19th " .	530	38	3	3,107	87	85	743	75	8	
- 3rd December	546	42	3	3,134	92	101	774	87	29	
+m/1 (f	582	30	. 1	3,323	101	105	824	65	42	
07 / "	621	45	6	3,137	102	192	923	76	74	
									14	

1871.

	Fortnight Ending				GLASGOW.			LONDON.		LIVERPOOL.			
FORTNI	Gut End	OING		Deaths at all Ages.	Fever Deaths.	Small-pox Deaths.	Deaths at all Ages.	Fever Deaths.	Small-pox Deaths,	Deaths at all Ages.	Fever Deaths.	Small-po Deaths	
Saturday,	14th Jai	nuary,		686	38	4	3,724	75	214	1,007	70	85	
_	28th	44	•••	661	45	7	3,478	64	345	974	76	116	
	11 th Fe	bruary	7,	740	49	11	3,432	82	407	925	54	176	
_	25th	"		634	42	14	3 .2 58	69	445	890	42	234	
_	11th M	larch,		663	42	11	3,192	63	407	777	31	178	
_	25th	41		746	34	13	3,241	75	390	789	26	290	
-	8th A	pril,		622	18	10	3.057	60	406	743	28	150	
_	22nd	i i		723	30	14	3,300	64	541	743	24	142	
_	6th M	lay,		638	42	6	2,991	71	549	681	54	129	
_	20th	ét	•••	630	24	8	2,827	58	499	615	30	102	
,				6,746	364	98	32,500	681	4,203	8,144	118	1,512	

Note.—It will be observed that the average of ten fortnights in 1871 is as follows:—In Glasgow, Peaths at all ages amounted to 674; of these, 36 were from Fever, and 9.8—say 10—from Smallpox. In London, the average Deaths at all ages amounted to 3250; of these, 68 were from Fever, and 420 from Smallpox. In Liverpool, the average Deaths at all ages were 814; and of these 41 were from Fever, and 151 from Smallpox.

The Deaths from Smallpox in Glasgow were at the rate of 1½ per cent. to the Deaths at all ages. In London. they were at the rate of 12.9 per cent. In Liverpool, at the rate of 18.5 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 diel: 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 sauitary 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 illventilated 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 bathingplace 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.

