

and death-rate affecting the permanent inhabitants of these two groups respectively, stand as follows:—

	Area in Statute Acres.	Population in 1861.	Persons to the Acre.	Deaths to 100 Births.	Deaths to 100 Poplatn.
<i>Southwark.</i> St. George .....	282	55,510	196.84	65.64	2.250
St. Saviour.....	419	55,226	131.80	70.81	2.431
St. Olave.....					

In a report published a few years ago (which I am unable at present to find, nor do I, to my regret, remember the author's name) on the relative healthfulness of occupations in London, it was stated that the Thames watermen enjoyed a very favourable measure of health and duration of life. It is not probable, therefore, that dampness, supposed to be charged with noxious effluvia, emitted from a stream which is perpetually renewed by rapid movement, can be a cause of insalubrity in these and similarly situated districts. It is much more likely that, in such instances at least as the preceding, the products of putrefactive fermentation in the large and terminal drains are doubtless the more mischievous agencies.

# RATE OF MORTALITY OF MANUFACTURING AND NON-MANUFACTURING TOWNS COMPARED.

In regard to rates of mortality affecting other large manufacturing towns in Lancashire, Cheshire, and the West Riding of Yorkshire, the results will be found to differ but slightly from those given for Manchester, although none of them will bear comparison with it in respect of density of population. The following list may serve to illustrate, approximately, the state of salubrity, as denoted by their respective death-rates, of 22 of the chief of these, ranged in the order of their occurrence in the Registrar-General's tables.

In compiling for these several items, it seemed probable that an additional means towards estimating the relative healthfulness of manufacturing and agricultural districts, as influenced by employment, might be afforded by placing, in juxtaposition with the results for each town, those also of the entire Unions, of which the respective towns form the centre. For, the suburban populations of growing manufacturing towns are, in most instances, largely engaged in the same branches of pursuits as the more central masses which they surround; while the populace situated immediately beyond the precincts of county towns (with three or four exceptions\*) are as largely so in agricultural and the collateral industries.

\* Norwich and Newcastle for instance, and in a less degree, Nottingham and Derby.

Table exhibiting the population, acreage-density, and average death-rate for the ten years ended 1860, of twenty-two manufacturing towns and of their respective Unions—including the fatalities in Workhouses, Hospitals, and Asylums in each instance:—

Towns.	Area in Statute Acres.	Population in 1861.	Persons to the Acre.	Deaths to 100 Births	Deaths to 100 Poplatn.
1. Stockport .....	{ Town ... 7,017	41,084	5.85	76.57	2.685
	{ Union... 30,709	94,360	3.07	73.23	2.505
2. Macclesfield ...	{ Town ... 2,410	27,475	11.40	76.86	2.963
	{ Union... 81,581	61,543	.75	73.37	2.518
3. Wigan .....	{ Town ... 2,161	37,558	17.42	69.53	2.852
	{ Union... 47,539	94,561	2.00	63.55	2.439
4. Warrington ...	{ Town ... 2,507	24,050	9.49	59.89	2.496
	{ Union... 29,981	43,875	1.47	58.48	2.183
5. Leigh .....	{ Town ... 3,331	9,449	2.84	64.15	2.486
	{ Union... 23,610	37,700	1.59	65.90	2.348
6. Bolton .....	{ Town ... 820	43,431	53.00	71.16	2.917
	{ Union... 43,896	130,269	2.96	64.29	2.527
7. Bury .....	{ Town ... 2,370	31,101	13.12	65.06	2.182
	{ Union... 32,990	101,135	3.06	64.05	2.173
8. Manchester ...	{ Town ... 4,770	413,037	86.60	76.50	2.785
	{ Union... 29,007	518,902	17.88	72.71	2.593
9. Ashton-under-Lyne	{ Town ... 9,300	41,229	4.43	81.12	2.833
	{ Union... 38,657	134,753	3.49	72.57	2.512
10. Oldham .....	{ Town ... 4,617	72,333	15.66	68.12	2.258
	{ Union... 16,872	111,276	6.59	65.88	2.358
11. Rochdale .....	{ Town ... ?	38,164	?	69.52	2.194
	{ Union... 40,340	91,754	2.27	66.60	2.121
12. Haslingden ...	{ Town ... 4,780	10,320	2.16	62.74	2.124
	{ Union... 26,681	69,781	2.61	61.20	1.933
13. Burnley .....	{ Town ... 21,448	42,702	2.00	66.84	2.164
	{ Union... 54,126	75,595	1.40	64.31	2.180
14. Blackburn .....	{ Town ... 3,610	63,126	17.48	69.80	2.512
	{ Union... 43,569	119,942	2.75	65.12	2.314

Towns.	Area in Statute Acres.	Population in 1861.	Persons to the Acre.	Deaths to 100 Births.	Deaths to 100 Poplatn.
15. Chorley .....	{ Town ... 10,859	18,027	1.70	61.94	2.251
	{ Union... 52,213	41,678	.80	59.78	2.057
16. Preston .....	{ Town ... 2,753	82,985	30.12	72.88	2.737
	{ Union... 68,035	110,526	1.62	71.80	2.545
17. Huddersfield	{ Town ... 3,950	34,877	8.83	66.61	2.295
	{ Union... 66,560	131,336	1.97	58.95	2.133
18. Halifax .....	{ Town ... 2,330	36,437	13.63	74.41	2.461
	{ Union... 51,758	128,673	2.48	64.87	2.285
19. Bradford .....	{ Town ... 1,680	91,724	54.59	69.83	2.625
	{ Union... 40,334	196,475	4.87	66.28	2.474
20. Leeds .....	{ Town ... 2,100	117,556	56.00	73.28	2.581
	{ Union... 42,021	227,514	5.41	67.24	2.383
21. Dewsbury .....	{ Town ... 1,392	18,148	13.04	64.17	2.490
	{ Union... 24,456	92,883	3.80	59.57	2.180
22. Sheffield .....	{ Town ... 3,120	68,981	22.11	73.15	3.097
	{ Union... 10,590	128,951	12.14	67.02	2.566

The results presented in the next table, exhibiting corresponding conditions for forty county and cathedral towns, stand in contrast with those of the preceding table, as not containing (with a few exceptions) any large manufacturing industries, and are therefore not incommoded by dense masses of poor people, or the atmospheric impurities arising from manufacturing processes. Fourteen of them, marked with asterisks (\*), have no extensive suburban unions, each, or most of them, being complete within its own little county privileges of antique date. In each of these groups, as in those of the preceding table, the births and deaths within Workhouses, Hospitals, and Asylums are included.

Towns.	Area in Statute Acres.	Population in 1861.	Persons to the Acre.	Deaths to 100 Births.	Deaths to 100 Poplatn.
1. Guildford .....	{ Town ... 5,329 Union... 65,592	9,443 29,330	1.80 .45	72.17 63.14	2.105 1.773
2. Canterbury	* 3,121	16,643	5.36	88.35	2.113
3. Maidstone.....	{ Town ... 4,042 Union... 38,082	23,016 38,670	5.70 1.02	77.23 72.05	2.276 2.189
4. Chichester ...	{ Town ... 1,830 Union... 21,054	8,884 14,775	4.85 .70	93.09 89.10	2.276 2.161
5. Winchester ...	{ Town ... 3,861 Union... 78,676	14,930 26,607	3.86 .34	96.11 77.32	2.286 1.994
6. Hertford .....	{ Town ... 18,277 Union... 34,410	11,163 15,301	.61 .44	67.51 63.11	1.899 1.836
7. Abingdon .....	{ Town ... 12,983 Union... 56,445	8,672 20,861	.66 .37	68.56 70.76	2.466 2.357
8. Buckingham...	{ Town ... 14,983 Union... 52,419	5,987 13,756	.40 .26	78.14 69.49	2.458 2.268
9. Northampton	{ Town ... 11,358 Union... 20,903	37,710 41,160	3.32 1.97	68.22 67.00	2.271 2.243
10. Oxford .....	* 2,930	20,037	6.84	66.34	2.077
11. Huntingdon...	{ Town ... 20,607 Union... 77,180	9,368 20,518	.45 .27	62.56 57.67	3.136 1.986
12. Bedford.....	{ Town ... 36,727 Union... 97,320	23,655 38,072	.64 .39	64.07 61.52	3.037 1.943
13. Cambridge ...	* 3,470	26,361	7.59	71.39	2.088
14. Chelmsford ...	{ Town ... 3,533 Union... 83,906	8,664 32,765	2.45 .39	80.62 64.20	2.912 1.913
15. Ipswich.....	* 8,395	37,881	4.51	66.02	2.076
16. Norwich .....	* 4,325	74,440	17.21	75.57	3.388
17. Salisbury .....	* 480	9,039	18.83	74.21	2.353
18. Dorchester ...	{ Town ... 9,830 Union.. 115,339	7,709 24,773	.78 .21	75.51 66.34	3.178 2.113
19. Exeter .....	* 1,800	33,774	18.68	90.37	2.350
20. Bodmin .....	{ Town ... 16,347 Union... 88,981	6,524 19,691	.40 .22	75.64 63.04	3.134 2.044

Towns.	Area in Statute Acres.	Population in 1861.	Persons to the Acre.	Deaths to 100 Births.	Deaths to 100 Poplatn.
21. Ely .....	{ Town ... 35,884 Union... 79,894	11,944 21,910	.33 .28	65.92 60.38	3.350 2.179
22. Taunton .....	{ Town ... 3,926 Union... 70,452	10,283 35,601	2.62 .56	73.67 66.84	2.855 1.949
23. Gloucester ...	{ Town ... 680 Union... 32,222	15,214 34,950	22.37 1.09	70.20 66.31	3.461 2.132
24. Hereford .....	{ Town ... 2,417 Union.. 144,991	14,065 39,287	5.82 .27	87.62 76.20	2.625 1.988
25. Shrewsbury...	* 18,032	25,784	1.43	87.53	2.387
26. Stafford.....	{ Town ... 17,581 Union... 52,022	14,739 24,474	.84 .47	83.39 73.78	3.003 2.150
27. Worcester.....	* 6,699	30,969	4.62	77.84	2.189
28. Warwick .....	{ Town ... 5,410 Union... 66,639	10,589 44,047	2.00 .66	76.94 72.20	3.272 2.014
29. Leicester .....	* 3,960	63,190	17.22	68.20	2.400
30. Oakham .....	* 55,030	11,112	.22	61.54	1.909
31. Lincoln.....	{ Town ... 29,614 Union.. 158,920	24,907 47,063	.84 .29	66.46 60.72	3.190 1.935
32. Nottingham...	* 1,870	75,765	40.52	75.80	2.413
33. Derby .....	* 2,970	51,049	17.20	64.32	2.234
34. Chester.....	{ Town ... 25,222 (Cathedral) Union.. 107,555	19,762 58,501	.78 .54	81.88 73.57	2.948 2.115
35. Lancaster.....	{ Town ... 13,280 Union.. 138,746	18,347 35,297	1.38 .25	81.00 68.53	2.697 2.259
36. York .....	{ Town ... 26,456 Union... 83,430	50,906 59,968	1.92 .72	74.00 70.71	2.364 2.288
37. Durham .....	{ Town ... 27,720 Union... 98,368	18,714 70,274	.67 .71	69.32 55.68	3.017 2.027
38. Newcastle.....	* 7,102	110,968	15.62	76.75	2.468
39. Carlisle .....	{ Town ... 11,782 Union... 70,810	31,775 44,820	2.70 .63	69.41 68.03	3.454 2.228
40. Appleby .....	{ Town ... 55,873 Union.. 177,910	5,529 15,411	.10 .09	58.28 62.62	2.711 1.714

In the first of these two tables, it will be seen that the death-rate per births and that per population bear relations very similar to each other throughout; that is to say, when the death-rate by one process is high, it is so also by the other, and *vice versa*. This, however, is not the case with those of the second table. The highest death-rate per population among the manufacturing towns is that for No. 22 (Sheffield), namely, 3·077; while, for the other group, there are eight county towns for which it stands higher, namely: Nos. 11, 18, 20, 21, 23, 28, 31, 39, and for some of them considerably so. On the other hand, there are none so low among the manufacturing as among the cathedral and county unions. The lowest among the former is No. 12 (Haslinden Union), which stands at 1·933, while of the latter, five unions have a lower estimate: Nos. 1, 6, 14, 30, 40.

Contrasting the average death-rate per population of the 22 towns comprised in the first table with that of the 40 towns in the second, the result is in favour of the former, as below:—

	Average death-rate per population.
22 Manufacturing towns .....	2·549 per cent.
40 County and cathedral towns.....	2·595 „

The death-rates per births show a still wider disparity, and this I deem to be the more faithful representation, namely:—

	Average death-rate per births.
22 Manufacturing towns .....	69·64 per cent.
40 County and cathedral towns .....	75·54 „

But the sum of inhabitants of the 22 manufacturing towns is 1,320,716, and their density 18·88 persons to the acre; against 998,439 inhabitants, occupying the 40 county and cathedral towns, with a density of only 5·97 persons to the acre. These circumstances taken into consideration, the sanitary condition of the one and the other must be looked upon as still more decidedly in favour of the manufacturing towns.

The entire Unions of the two groups respectively present, as might be expected, results which have a tendency in the contrary direction, as represented per population at least—the death-rate for the second group being ·134 per cent lower than that of the first. Thus:—

	Average death-rate per population.
22 Manufacturing unions .....	2·393 per cent.
40 County and cathedral unions .....	2·199 „

The death-rate per births, however, which, for reasons already stated, is probably more correct, is as follows:—

	Average death-rate per births.
22 Manufacturing unions .....	65·76 per cent.
40 County and cathedral towns .....	67·48 „

The number of inhabitants comprised in the 22 manufacturing unions is 2,743,482, and the density 3·74 persons to the acre; while the aggregate population of the 40 county and cathedral unions, is little more than one-half, *i. e.*, 1,459,834, and the occupancy only ·65 to the acre. So that it is questionable if the manufacturing unions even,



should be considered less favourably circumstanced by either process in comparison with those of the county and cathedral unions in a sanitary point of view, seeing that their density is nearly six times greater, and their reputed higher death-rate (per population) so fractionally small, while per births it is 1.72 per cent more favourable.

Respecting certain anomalies which appear among the results of the second table, such for instance as the want of correspondence noticeable between the death-rate per births and that per population, a few remarks, by way of explanation, may not be out of place, although the question has already been discussed in the preface. A notable example, however, may be adduced of the uncertainty and inconstancy of the death-rate estimate per population, by contrasting the results of two cathedral towns, both similarly circumstanced as regards the absence of cotton manufactories.

The population of Exeter amounted, in 1851, to 32,823, and in 1861 to 33,742, having experienced an *increase* in 10 years of 919.

The population of Ely in 1851 was 22,896, and ten years later 21,910, having experienced a *decrease* in 10 years of 986.

The number of births in Exeter amounted, in the decennium, to 8,776, and the number of deaths to 7,931, showing that only 845, equal to 9.628 per cent of those born had been reared; while in Ely the number of births was 7,907, and of deaths only

4,775, showing that 3,134, being 39.618 per cent of those born, had been brought to maturity. Yet the death-rate per population for Ely, notwithstanding this large disparity is, according to the Registrar-General's figures, only a trifle, *i. e.*, .171 per cent, lower than that for Exeter, a result altogether disproportionate and fallacious.

For, if the sum of natural increase, with the addition of those who must have left the town in the ten years (*i. e.*, 3134+986), be added to the *average* population of Ely; and if the difference between the actual and natural increase (*i. e.* 74) be deducted from the *average* population of Exeter, elevating the first and reducing the second, each to its normal value, the disparity will be much wider in the contrary direction, and doubtless nearer the truth. Thus:—

	Death-rate per population.
Ely .....	1.629 per cent.
Exeter .....	2.388 „

These proportions correspond very nearly with those afforded by the process per births:

	Deaths per births.
Ely.....	60.33 per cent.
Exeter .....	90.37 „

#### NOTE ON DEATHS FROM TYPHUS.

The total number of deaths from Typhus registered in England during the ten years ended 1860, amounted to 167,762, being at the rate of 1 to 1,132