THE SANITARY STATISTICS OF THE METROPOLIS FOR THE TEN YEARS, 1861-70.*

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My chief reason for bringing before you the facts contained in this paper is the belief which I have for very many years entertained, in common with most vital statisticians, that the death-rate of a district affords but one, although perhaps the chief, evidence as to its comparative salubrity. I have often pointed out in my reports that the death-rate of a district depends, amongst other causes, upon the number of persons to an acre, the possession or want of the necessaries and comforts of life, the relative proportions of young children and old people to those who are between ten and sixty years of age, and also upon its sanitary condition. It must not be supposed, because I put the good or bad sanitary condition of a district last amongst the causes influencing the death-rate, that I attribute comparatively little importance to it; but I do so because sanitary measures are almost the sole means placed at our disposal by which we can alter the death-rate, whilst the others are permanent, and therefore require in this paper more attentive consideration than the latter, so as to enable us to judge how far sanitary supervision has enabled us to modify the influences of the permanent factors of the death-rate.

When I first proposed writing this paper, I thought that a comparison of the average rateable value of the premises in each district would afford me a means of judging as to the comparative wealth of the inhabitants; but I found the differences so great, arising from the rateable value of railways, gas-works, theatres, markets, water-works, and other public buildings and works, as well as from warehouses, iron-works, and other large private premises, being included in the totals, as to necessitate some other standard of comparison being relied on. I therefore applied to Mr. Clode, the Secretary of the Census Office, for the number of domestic servants in each district, with which he kindly supplied me. I also obtained from the Reports of the Poor-law Board the number of poor receiving relief in each district on a given day in the year. By dividing the corrected number of inhabitants in 1866 (the middle of the period 1860-70) by the number of domestic servants employed and by the number of persons who received relief, I calculated the figures set out in the table before you.

I would mention here that the Superintendent Registrars' Districts do not correspond precisely with the districts into which the metropolis is divided for ordinary purposes. Thus Kensington includes Kensington, Paddington, and Fulham; St. George's includes St. George's, Hanover Square, and St. John's, Westminster; Westminster is made up of St. James's, Westminster, and St. Anne's, Soho; Strand, of the district under the control of the Strand Board of Works, less St. Anne's, Soho, but *plus* St. Martin's; and Holborn is made up of Holborn, Clerkenwell, and St. Luke's. London City includes the whole of the districts of the City of London. Under the name of St. Saviour's, we find St. Saviour's and St. George's, Southwark, as well as the whole of Newington. St. Olave's consists of St. Olave's, Bermondsey, and Rotherhithe; whilst Lewisham includes Lewisham, Sydenham, and Penge.

In order to obtain the true population of a district, I deducted the number of residents in the hospitals, and also of workhouses which did not belong to the districts in which they were situated; and then added the last to the population of the districts from which the residents in the workhouses came. In correcting the number of deaths for each district, I eliminated the deaths in hospitals altogether, deducted the deaths in extraneous workhouses, and restored them to their proper districts, which accounts for the great difference in some cases between my figures and those contained in the Registrar-General's Reports. Thus, for the City of London, I restored 2,876 deaths occurring in the City workhouses in Mile End, Poplar, and Hackney; and deducted above 6,000 deaths which happened in St. Bartholomew's and the City of London Lying-in Hospitals. Again, for Islington, I had to reduce the deaths for the ten years by nearly 7,000, as the Northern and West London Hospitals, as well as the Small-pox and Fever Hospitals, are situated in that district. Again, as regards Mile End, Poplar, and Hackney, the deaths in the City and other workhouses were eliminated from their registered numbers. In comparing the births with the deaths, the corrections were made for deaths in hospitals only, as the births were registered in the districts where they occurred, and cannot be distributed to the localities to which they belong. I make these explanations partly to show that due care has been taken to make the

figures as reliable as possible, and partly to account for the differences between my figures and those published by the Registrar-General in his Annual Summary of Births and Deaths in the Metropolis during 1872.

Superintendent Registrar's District.	Population in 1866, corrected for hospitals and workhouses.	Deaths in ten years, 1861-70, corrected for hospitals and workhouses.	No. of deaths to each 1,000 inhabitants living, 1861-70, corrected.	No. of births to 1,000 deaths, corrected, for deaths in hospitals only.	No. of persons living to an acre.	Average rateable value of each premises.	No. of persons to a pauper, March 1868.	No. of persons to a domestic servant.
1. Kensington	233,945	45,594	19.5	148	37	£ s. d.		
2. Chelsea	66,109	15,782	23.9	138	83	3 3 0	33	12.3
3. St. George's, Hanover Square ..	155,745	33,133	21.3	140	76	136 12 0	19	17.4
4. Westminster	52,752	11,352	21.5	128	237	101 7 0	25	9.5
5. Marylebone	160,082	37,385	23.4	140	109	71 0 0	36	13.6
6. Hampstead	25,151	3,826	15.2	166	14	61 5 0	65	10.4
7. St. Pancras	209,827	47,038	22.4	156	83	43 4 0	33	22.4
8. Islington	183,803	37,753	20.5	177	69	37 14 0	37	20.2
9. Hackney	102,882	19,863	19.3	163	32	31 18 0	16	15.6
10. St. Giles's	53,693	14,656	27.3	125	219	66 3 0	23	16.8
11. Strand	44,452	9,085	20.5	144	95	139 5 0	13	16.3
12. Holborn	165,906	43,521	26.2	152	200	43 0 0	17	35.0
13. London (City)	95,763	23,565	24.6	125	104	270 15 0	12	33.3
14. Shoreditch	127,682	30,977	24.3	158	106	28 0 0	22	45.5
15. Bethnal Green ..	112,490	28,402	25.3	165	159	17 6 0	22	53.0
16. Whitechapel	77,185	21,725	28.2	124	190	38 2 7	16	32.0
17. St. George's, East ..	48,472	13,884	28.6	137	107	30 19 0	12	39.1
18. Stepney	57,664	15,246	26.4	136	104	32 6 0	11	36.3
19. Mile End (O. T.) ..	82,791	19,234	23.2	163	137	20 12 0	30	35.6
20. Poplar	97,307	23,869	24.5	157	44	28 1 0	11	39.1
21. St. Saviour's	174,224	42,233	24.2	154	150	28 0 0	17	35.3
22. St. Olave's	111,499	27,294	24.5	160	71	35 8 0	24	44.8
23. Lambeth	184,956	40,862	22.1	170	51	32 4 0	21	20.8
24. Wandsworth	97,726	12,024	19.5	169	11	37 0 0	24	21.2
25. Camberwell	91,397	19,578	21.4	162	25	22 4 0	24	20.9
26. Greenwich	92,173	22,157	24.0	158	29	21 12 0	13	23.8
27. Lewisham	41,758	6,705	16.2	197	5	49 8 0	28	15.6
28. Woolwich	74,427	15,404	20.7	187	10	30 7 0	50	38.1

Having premised very briefly the mode in which the figures have been calculated, I shall now proceed to discuss such of the columns as bear on the title of the paper. I do not propose using the column of average rateable value, as I think all persons acquainted with the metropolis will see that the figures are not at all comparable, and would therefore lead to erroneous results.

If we now examine the column containing the death-rates of the different districts, we perceive that it varied from 15.2 per 1,000 inhabitants to 28.6, or nearly double the lowest rate. If we divide the twenty-eight districts into fourteen of smallest and fourteen of highest death-rates, we find that in the former the range extended from 15.2 to 23.2 per 1,000 inhabitants, and in the latter from 23.4 to 28.6. The numbers for those districts which have not either hospitals or workhouses belonging to other districts situated in them, correspond with the death-rates published by the Registrar-General in the Annual Summary for 1872; but they differ considerably in those having hospitals or extraneous workhouses, or both. Thus the figures for Hampstead, Lewisham, Wandsworth, Woolwich, Lambeth, Camberwell, St. Giles's, and St. George's-in-the-East, are identical in all but Hampstead, in which the death-rate varies 0.1; but for the other districts the variation is rather considerable. Thus, in Hackney, there were 1,211 deaths in the East London Union, and 751 deaths in the German Hospital, during the ten years, or nearly 10 per cent. of the total mortality; so that, whilst the Registrar-General assigns 21.0 as the death-rate per 1,000 inhabitants, the corrected number is only 19.3. I have eliminated all deaths in hospitals, without redistributing them according to population, as the results would be nearly the same, and an additional element of doubt would have been introduced in the tables. As the number of persons in the hospitals has been deducted from the population in each case, I consider this to be the nearest approximation possible. On referring to the column showing the number of inhabitants to an acre, we cannot fail to be struck with the very great difference between the density of population in the least and in that of the most crowded districts. For instance, in Lewisham, which, as before stated, includes Sydenham and Penge, we find an average of only 5 persons to an acre; whilst in St. Giles's there are no fewer than 219, and in Westminster 237 persons to an acre. In Woolwich, there are only 10; in Wandsworth, 11; in Hampstead, 14; Camberwell, 25; Greenwich, 26; and Hackney, 32, to an acre; against 190 in Whitechapel, 196 in Shoreditch, 197 in St. George's-in-the-East, and

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200 in Holborn. It is quite evident that these districts must vary in their death-rates even if everything else were equal, as epidemic diseases must spread more rapidly amongst a crowded than a sparse population. It is also well known that there must be good supply of air at all times to carry off or oxidise the excrementitious matters given off from the lungs and skin. The statistics of hospitals show that patients recover much more quickly, and die after operations or parturition much more seldom, when the cubic capacity of the ward exceeds 800 feet per patient. Now, as it is well known to medical officers of health and others that in a crowded neighbourhood it is almost impossible to obtain 400 cubic feet of air for an adult, and 200 for a child under ten years of age, it is evident that overcrowding, especially when continued for the whole year, must increase the death-rate. I say when continued for the whole year, because the most crowded district in the metropolis—viz., Westminster—has a very low death-rate. Here we have to deal with a very exceptional state of things. In the first place, the census is taken at a time when Westminster contains many wealthy people and their servants, who reside there for only a short time during the year; so that part of the death-rate of Westminster is really transferred to country districts. Again, it is very evident that, except amongst the poor, servants and workpeople, overcrowding in the sense above described—viz., a want of sufficient breathing space in the living and sleeping rooms—does not obtain in this district. These remarks apply with perhaps greater force to St. George's, Hanover Square, where the houses generally are larger and the summer exodus probably greater even than in Westminster. There are, however, according to the returns I have seen, a greater number of persons receiving Poor-law relief in St. George's than in Westminster.

In order to ascertain the value of overcrowding as a factor in increasing the death-rate, I would ask you to carefully examine the column showing the number of persons to an acre, when we shall see that, although the relation between death-rate and the density of population is not by any means uniform, yet there is an intimate relationship between the two. For instance, amongst the fourteen least crowded districts, no fewer than eleven have a death-rate of 23.2 per 1,000 and under; whilst amongst the fourteen most densely peopled districts, the same number—eleven—have a mortality in excess of 23.2. A close comparison of the numbers shows, however, that other causes of an increased death-rate must be in operation in some of the least as well as of the most crowded localities. Thus, in Greenwich, with only 26 persons to an acre, the death-rate was 24.0; in Poplar, with 44 to the acre, it was 25.4; in St. Olave's, Southwark, with 71 to the acre, it was 24.5; whilst in the Strand district, with 95 to the acre, it was only 20.5; in Mile End, with 137 persons to an acre, it was 23.2; and in Westminster, as previously stated, with 237 to an acre, it was only 21.5.

On adding together the sums for the least and most densely peopled districts, we obtain the following results: first, that in the former class there are, on an average, only 40 persons to an acre, with a mean death-rate of only 20.9 per 1,000 inhabitants; whilst in the latter, with an average of 155 persons to an acre, the mean death-rate is no less than 24.8 per 1,000 persons, or nearly 20 per cent. greater. I think we are, therefore, justified in concluding that overcrowding is a powerful means of increasing the mortality of a district.

I now propose considering the relation between the percentage of servants in, and the death-rate of, a given population; and for this purpose I have divided the twenty-eight districts into two sets of fourteen each, in one of which the number of servants was above, and the other in which it was below, the average. This proportion varies enormously in different districts, there being 10 servants in each 93 persons, or 10.7 per cent., in St. George's, Hanover Square, and only 10 in each 530 persons, or 1.9 per cent. of the total population, in Bethnal Green. In Hampstead, there were 10 servants in each 96 residents; in Westminster, 10 in 151; in Camberwell, 10 in 209; in Whitechapel, 10 in 320; in London City, 10 in 333; in Poplar and St. George's, East, 10 in 391; and in Shoreditch, 10 in 455. Now, when we consider that servants are generally in the prime of life, and therefore have a comparatively small death-rate amongst them, and further, that, when taken ill, they are sent either to their parents' homes or to a hospital, and so do not rate on the mortality of the district if death should occur, we see that a large proportion of servants in a population must alter the death-rate. But when we further consider that having one servant or more as a rule signifies the possession of the necessities, if not most of the comforts of life, it is evident that the districts in which there is the largest proportion of servants should be those in which the death-rates are less than the average. A glance at the table shows this to be correct, and that the relationship between these is a little closer than between the death-rate and overcrowding; as, although the exceptions are the same in number in those districts

where the proportion of servants is greatest, yet they are less in those where the percentage was below the average, being 2 against 3. The mean death-rate for the fourteen districts in which there was the largest percentage of servants was only 20.8 per 1,000 inhabitants, against 24.9 in the districts where the percentage was smallest. The chief exceptions to the rule are the district of St. Giles on the one side and of Woolwich on the other; but this might have been expected as regards Woolwich, which has only 2.6 per cent. of its population for servants, but in which there are only 10 persons to an acre. As to St. Giles's, the frightful overcrowding, amounting to 219 persons to the acre, and the poverty of many of the inhabitants, will fully account for the large death-rate (27.3 per 1,000 residents), even after allowance has been made for the proportion of servants amongst the better classes of the district.

FOURTEEN DISTRICTS HAVING THE LARGEST PROPORTION OF SERVANTS TO THE POPULATION.				FOURTEEN DISTRICTS HAVING THE SMALLEST PROPORTION OF SERVANTS TO THE POPULATION.			
Percentage of Servants to Population.	Districts arranged in order of number of Servants.	Death-rate per 1,000 inhabitants.	Percentage of Servants to Population.	Districts arranged in order of number of Servants.	Death-rate per 1,000 inhabitants.	Percentage of Servants to Population.	Death-rate per 1,000 inhabitants.
10.7	St. George's, Hanover Sq.	21.3	4.5	St. Pancras	22.4	10.7	22.4
9.6	Hampstead	15.2	4.2	Greenwich	24.0	9.6	24.0
7.9	Kensington	19.5	3.1	Whitechapel	28.2	7.9	28.2
7.6	Marylebone	21.4	3.0	London (city)	24.6	7.6	24.6
7.3	Lewisham	16.2	2.9	Holborn	26.2	7.3	26.2
7.2	St. Giles	27.3	2.8	St. Saviour's	24.2	7.2	24.2
6.6	Westminster	21.5	2.8	Stepney	26.4	6.6	26.4
6.4	Hackney	19.3	2.7	Mile End	23.2	6.4	23.2
6.1	Strand	20.5	2.6	Woolwich	20.7	6.1	20.7
5.8	Chelsea	23.9	2.5	Poplar	25.4	5.8	25.4
5.0	Islington	20.5	2.5	St. George's, East	28.6	5.0	28.6
4.8	Lambeth	22.1	2.2	St. Olave's	24.5	4.8	24.5
4.8	Camberwell	21.4	2.2	Shoreditch	24.5	4.8	24.5
4.7	Wandsworth	19.5	1.9	Bethnal Green	25.3	4.7	25.3
6.7	Means	20.8	2.8	Means	24.9	6.7	24.9

By forming a table with three columns out of the two previously considered, the first column containing those districts which are amongst the fourteen least crowded, and which are also to be found amongst the fourteen having the largest percentage of servants; and the second, in which are to be found the largest proportion of inhabitants to an acre, as well as the fewest servants; and the third, in which the density of population is less than the mean, or the number of servants larger than the average,—we obtain far more striking results than those just worked out. In the first column, we find the districts of Hampstead, Lewisham, Hackney, Kensington, Wandsworth, Islington, St. George's West, Camberwell, and Lambeth. The lowest rate, that of Hampstead, is only 15.2; and the highest, that of Lambeth, being 22.1. In the second column, we find Mile End, with a death-rate of 23.2, as the lowest; and St. Saviour's, Shoreditch, London City, Bethnal Green, Holborn, Stepney, Whitechapel, and St. George's East, with a death-rate of 28.6. It is particularly worthy of observation, that the highest death-rate in the first column is considerably below the lowest in the second column, and also that the second column contains all the districts in which the mortality is in excess of 25 per 1,000, except Poplar and St. Giles's. In the third column, which the heading shows to be a mixed one, we find some districts which have a low mortality, as Strand and Woolwich; whilst there are two with a decidedly high rate—viz., Poplar and St. Giles's. The means of the three columns are, I think, quite conclusive in the matter, as that of the first column is only 19.5; of the second, no less than 25.7, or about 32 per cent. greater than the first; whilst that of the third, which partakes of the peculiarities of both, is intermediate between the two—viz., 23.4.

Districts least crowded, and having the largest percentage of servants.	Death-rate.	Districts most crowded, & having the smallest percentage of servants.	Death-rate.	Districts least crowded, or having fewest servants.	Death-rate.
Hampstead	15.2	Mile End	23.2	Strand	20.5
Lewisham	16.2	St. Saviour's	24.2	Woolwich	20.7
Hackney	19.3	Shoreditch	24.3	Westminster	21.5
Kensington	19.5	London (city)	24.6	St. Pancras	22.4
Wandsworth	19.5	Bethnal Green	25.3	Marylebone	23.4
Islington	20.5	Holborn	26.2	Chelsea	23.9
St. George's, West	21.3	Stepney	26.4	Greenwich	24.0
Camberwell	21.4	Whitechapel	28.2	St. Olave's	24.5
Lambeth	22.1	St. George's, East	28.6	Poplar	25.4
				St. Giles	27.3
Mean	19.5	Mean	25.7	Mean	23.4

I do not propose bestowing much attention on the column showing the number of persons receiving relief in proportion to the whole population of the district, because the figures were obtained from the return for one year only. Still they are valuable, as showing the enormous disproportion of poor persons in one district, as compared with another. Had time allowed, I would have worked out the returns for the ten years 1861-70; but I began my paper only a short time since, on finding that the sanitary statistics of the metropolis would not otherwise be considered at this meeting. I propose, however, using the figures to eliminate from column No. 1 in the table just considered all those districts in which the proportion of persons receiving relief was about 1 out of each 23 inhabitants. We thus obtain six districts in which concur the three most favourable conditions—viz., least crowding, the largest percentage of servants, and the smallest proportion of persons receiving Poor-law relief. These districts are, Hampstead, with a death-rate of 15.2; Lewisham, 16.2; Wandsworth, with 19.5; Kensington, 19.5; Islington, 20.5; and Camberwell, 21.4. These give the exceedingly low mean death-rate of 18.7 per 1,000 inhabitants during the ten years 1861-70; whilst the mean rate for all London during the same period, excluding, as before stated, all the deaths in hospitals, was 22.8 per 1,000. I think, from this examination, we may fairly conclude that the death-rate of a place is not alone to be taken as the index of its sanitary condition; but that, before drawing definite conclusions adverse to a locality from the death-returns only, we ought to examine the conditions under which its inhabitants are placed as regards the possession of comforts and the amount of overcrowding. I shall very briefly allude to other circumstances which increase the death-rate of a place. It may be said that these results are well known; but, as the following occurs in the speech of a leading member of the Metropolitan Board of Works published a few days since, they cannot have obtained general circulation amongst the public. The extracts are as follows. "The average death-rates were annually, for London, 23.7; Leeds, 27.6; Glasgow, 31.1; Manchester, 30.9; and Liverpool, 29.3. These facts were sufficient to show the denizens of the metropolis the great superiority of the sanitary condition of London, which had been mainly brought about by the Metropolitan Board of Works." We here have a paragraph asserting the drainage system to have been the chief cause of the low death-rates of the metropolis; whereas sanitary improvements in the houses of the poor, a general rise in wages and the consequent possession of greater comforts, fewer hours of labour, and, it may be, better oversight of young children by the mothers, have undoubtedly assisted the main drainage in producing any improvement which has taken place in the mortality of the metropolis. I do not by any means undervalue the power of properly directed sanitary measures in reducing mortality; but I assert that at present we are not able to state statistically their precise value; and that, by overstating the case in favour of sanitary efforts, we run a very great risk of having an adverse reaction in the public mind at some future period.

The last column which I propose discussing is that which shows the proportion of births to deaths. The figures are corrected for deaths in hospitals only, as it was not possible to obtain the number of births in workhouses, so as to eliminate them from the returns of the districts to which they do not belong. As, however, the deaths in the workhouses are included in the districts where the births are registered, no material change is made relatively in the numbers. As the figures do not indicate the absolute number of births, but the ratio of births to deaths, we shall find that the largest birth-rates belong to districts with the lowest death-rates, and *vice versa*. The greatest proportion was registered in Lewisham, where there were 197 births to each 100 deaths in the ten years 1861-70; whilst in Whitechapel there were only 124. The total for the five highest is 892, and for the five lowest 776, against 500 deaths. This is very satisfactory, and furnishes additional proof of the good sanitary condition of the metropolis. Indeed, if I were asked for any one statistical evidence as to the good or bad sanitary state of a large district, I should select either the rate of births to deaths, or the proportion of children under one year old who die, as compared with the number born. It is true that in districts such as St. George's, Hanover Square, where servants form more than 10 per cent. of the population, the birth-rate cannot be so high as in Bethnal Green, where they are less than 2 per cent., because the proportion of married to unmarried must be very much greater in the latter; but then I should expect to find the larger proportion of deaths of children under one year old in Bethnal Green. This excess of births in certain districts, in proportion to the population, must affect the death-rate, as a very large percentage of the deaths at all ages occur under one year old; so that the greater the number of children under one year, the larger the death-rate will be, except in districts where the parents can give the greatest attention to the newly born. The five districts in which the largest birth-

rates in proportion to deaths were registered, include four in which the death-rates were low; and the exception, Bethnal Green, furnishes precisely an example of the kind mentioned, where poverty induces neglect of very young children. There can be no doubt that the excessive death-rate of Glasgow, Leeds, Manchester, and other large manufacturing towns, depends to a very considerable extent on the waste of infant life, from the mothers going out to work, and leaving their offspring at home. Good sanitary supervision will reduce a death-rate arising from the artificial conditions under which residents of large cities live, but it cannot lessen a death-rate arising from carelessness or neglect.

NOTES ON THE ACTION OF MEDICINES, OLD AND NEW.

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I CONTINUE my clinical notes on the Action of Medicines, drawing my illustrations and comments from the events of everyday practice, and relating the seeming effects of medicines without conscious bias or partiality. It is certain that a great amount of valuable material is lost to the profession, owing to the want of leisure which hinders general practitioners from recording their experience; nor are the failures of medicine less instructive than its successes. It is part of the imperfection of human science and art to fail; but it is necessary to distinguish that sort of failure which comes from our own ignorance, and that which arises from the natural shortcomings of the instruments which we use. It is sad to think that the latter is often made an apology for the former.

The concluding paragraph of my former paper referred to the nearly continuous use of *Bromide of Potassium* for a long time in the treatment of epilepsy. Dr. Sydney Ringer recommends that the medicine should be suspended at times for a few weeks; otherwise the system becomes accustomed to its presence, and it loses its power over the disease. But it is doubtful whether this be quite wise. It is more safe to discontinue the medicine for one week now and then, or to let the patient have only a single dose daily for two or three weeks; and with this reasonable precaution, the bromide scarcely ever ceases to hold its sway. Nor has it been my misfortune to see any of the so-called toxic effects of the long administration of the salt, save possibly a transient erythema or acne. In most cases, it may be given in liberal doses (one to two scruples) three or four times a day; and a very brilliant characteristic of the drug is, that these quantities often produce an immediate lessening or mitigation of the epileptic paroxysms. It must be confessed, however, that this favourable change is now and then of short duration, and the disease asserts its old supremacy, incapable of being checked by any medicine whatever.

It is an interesting matter for inquiry, why bromide of potassium should have been so long in winning its way with the profession; so that, more than ten years after its introduction as a remedy for epilepsy, it still required the earnest recommendation of our leading therapeutists to secure the general use of the medicine. Contrast this with the rapture which greeted the discovery of chloral, and its eager application to all sorts of even contrary maladies. The probable reason is not far to seek. Bromide of potassium was long known to us as a great deal more than a mere chemical curiosity; but its therapeutic virtues were so ill-defined, that no one seemed to know what to do with it; and uncertainty about a medicine is almost worse than suspicion and distrust. Hence, when an attempt was made to fix its value, scepticism was long in yielding to knowledge, and its use was for a long time quite random and wild. The doses in which it was administered were utterly insufficient to produce positive results; and the repute of a medicine suffers greatly when it is prescribed in inadequate doses. But chloral sprang into the world fully armed (thanks to the previous physiological experiments of the discoverer), and we knew almost directly the full extent of its powers.

I am not going to illustrate further the almost exhausted subject of chloral. This medicine has unfairly been made to eclipse the merits of several old and trusted medicines; bromide of potassium among the number. A solicitor engaged in a large and troublesome practice could get no sleep, even when he entirely abandoned work and travelled about the country for pleasure. Opium was inadmissible for many reasons; chloral was most disappointing and uncertain; and now the bromide salt stepped in and produced exactly what was needed—continuous and refreshing sleep. Less collateral disturbance is commonly produced by this drug than by chloral. I may here refer to an interesting paper by Dr. Begbie in the *Edinburgh Medical Journal* (December, 1866), in