

“Report on the Last Two Cholera-Epidemics of London, as Affected by the  
Consumption of Impure Water”<sup>1</sup>

addressed To

The Rt. Hon. The President Of The General Board Of Health [William  
Cowper],

By

The Medical Officer Of The Board [John Simon].

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To the Right Hon. William Cowper, M.P., [etc.]

General Board of Health,

13th May 1856.

Sir,

Having at your desire examined certain statistical materials, lately compiled in this Department, I now beg leave to report to you thereon; premising only a few words on what gave rise to that compilation.

You will probably remember that, during the late epidemic of cholera, Sir Benjamin Hall (then President of this Board) convened a Medical Council to advise him in relation to the public health; which Council deputed certain of their number, as a Committee for Scientific Purposes, to suggest the institution and review the result of such inquiries as might seem likely to elucidate the nature of the prevailing disease; and that the Committee thus originated (consisting of Dr. Arnott, Dr. Baly, Dr. Farr, Professor Owen, and myself) had the honour of presenting to Sir B. Hall, on the 14th July last, a final Report on investigations which were then concluded.

In one important particular this Report was of necessity incomplete. Our Committee had thought it of importance to inquire as fully as possible into the sanitary influence of different qualities of water-supply; especially into the power of unclean drinking-water to aggravate the epidemic ravages of cholera. With this view—under circumstances which offered peculiar opportunities of attaining a conclusive result—we had suggested a particular statistical inquiry. Copious details of information had been in consequence collected; but these could not be brought into an [3/4] available form against the time when our Report was made, and we were therefore reluctantly obliged to construct it without reference to them.

These are the materials, which—at length completed according to the intention of the Committee—you have done me the honour of referring for my Report. Accordingly I beg to lay before you the subjoined summary tables; which, as embodying their more important results, constitute the definite reply to a great sanitary question: and in proceeding to comment on these, I revert to that point of view in which the plan of investigation was first conceived.

As often as Asiatic cholera had been epidemic in London, it had been observed to prevail, with especial severity, in certain registration-districts

on the south side of the river; viz., in St. Saviour's, St. Olave's, and St. George's, South wark, in Bermondsey, Newington, Lambeth, Wandsworth, Camberwell, and Rotherhithe.

It is to these nine districts that the inquiry was addressed; and they suggested themselves as the best field for observation, not only because of their high epidemic mortality, but because in them, if anywhere in London, there was to be gathered conclusive evidence for a verdict on the matter at issue;—for a verdict, which should acquit or inculcate certain qualities of water-supply, as bearing on the local prevalence of cholera.

Commonly, in attempting such inferences, the inquirer is baffled by difficulties, which render exact conclusions impossible: for populations drinking different waters will often be living in different circumstances of wealth, comfort, occupation, cleanliness, soil, climate. But in the present case there was a singular freedom from such sources of embarrassment. Throughout the investigated districts masses of similar population were dwelling side by side; and the exterior influences which affected them were, with a single exception, apparently identical.

The one varying condition was the quality of water, as consumed in different households. For throughout those southern districts of London, two great competing water-companies had in past times canvassed house by house for customers; their rival mains were still branching within the same area, often running parallel in the same streets; and during the late invasion of cholera (though now happily the difference has ceased) these two systems of pipes were respectively charged with very different waters. [4/5]

If, during the epidemic prevalence of cholera, persons consuming pure water are less liable to suffer the disease than persons consuming foul water, surely there might be expected some striking difference between the death-rates of two populations respectively drinking from the Thames at Ditton and from the Thames at Battersea.

And such were the sources of supply of the two companies referred to; the Lambeth Company pumping from the higher part of the river, the Southwark and Vauxhall Company from the lower; the former furnishing as good a water as any distributed in London, while the latter was purveying perhaps the filthiest stuff ever drunk by a civilized community.

In the Report of the Committee for Scientific Inquiries, the contrast

of these waters was shown. Microscopical and chemical observations were adduced, as proving the almost incredible foulness of that supplied by the Southwark and Vauxhall Company; how it was not only brackish with the influence of each tide, but contaminated with the outscourings of the metropolis, swarming with infusorial life, and containing unmistakable molecules of excrement.

In reference to the comparison which had to be made, it is especially important to observe, that the tenancies, of these two great companies were not set on different parts of the South London area, each isolated from the other. On the contrary, the two populations were, so to speak, mutually interfused. Of 31 sub-districts into which the large space is divided, only 8 were monopolised by a single water company; while of the remaining 23 each was supplied, sometimes in equal proportion, by one company and the other.

It likewise deserves notice, that the materials for comparison were not on a small scale. It was not village against village. The investigated districts comprise about a fifth of the entire population of London. They contained in 1849 about 466,000 persons, and in 1854 about 511,000.

When, at the latter period (after the termination of the cholera-epidemic) the water-supply was investigated, nearly 25,000 houses could be shown to derive their water-supply from the Lambeth Company; nearly 40,000 from the Southwark and Vauxhall Company; while regarding the remainder (many supplied by pumps and wells) no certain information could be got. [5/6]

Such were the materials of comparison, so like—except for the one unlikeness of water-supply—and at the same time, so ample, as to promise unique facility for determining the matter at issue; and the very decisive results which have been obtained justify the hope with which this laborious inquiry was commenced.

In the 24,854 houses supplied by the Lambeth Company, comprising a population of about 166,906 persons, there occurred 611 cholera deaths, being at the rate of 37 to every 10,000 living. In the 39,726 houses supplied by the Southwark and Vauxhall Company, comprising a population of about 268,171 persons, there occurred 3,476 deaths, being at the rate of 130 to every 10,000 living.

*The population drinking dirty water accordingly appears to have suffered  $3\frac{1}{2}$  times as much mortality as the population drinking other water.*

I am not aware of any fallacy which can much affect this comparison; and I am the more persuaded of its substantial justice, as I find on detailed examination that the same general results are represented (see Tables II. and III.) in almost every separate line of the figures.

Further, if the number be reduced, by omitting from the comparison 11 sub-districts which are almost monopolised by the Southwark and Vauxhall Company; so that there remain (see Table, No. IV.) 20 sub-districts, with a population of more than 365,000 persons, almost equally supplied by the two companies; it is still found, nearly as before, *that the consumers of the cleaner water suffered not a third as much as their neighbours*. Perhaps the real significance of these totals is best shown by an examination of the details embodied in them; and, for a convenient instance of this kind, there has been prepared a table (No. V.) which illustrates, in respect of 45 streets, the method and materials of comparison. In every one of these streets, the mains of the rival companies run side by side, each supplying its own proportion of houses; so that, although in any one street the number of houses may be unequally divided between the companies, the respective totals are equal—1,517 houses supplied by the Lambeth, 1,517 by the Southwark and Vauxhall Company. [6/7]

Here then are 3,034 houses, with about 20,000 inmates: divisible, as it were, into two populations, each the exact counterpart of the other, except in the one particular of water-supply. *One of these populations lost 57 persons by cholera; the other lost 164*. Hitherto it has been shown only that in the epidemic of 1853-4, a very large population drinking foul water suffered from cholera more than three-fold as much as a similar population drinking cleanly water.

But this evidence is only a part of the case. It admits of being greatly strengthened by a second group of facts, which the statistical tables exhibit. For the death-registers have been analysed with a view not only to the epidemic visitation of 1853-4, but also to that of 1848-9. It was thought proper to see how far any discoverable influence of foul water had been constant to both occasions; and this comparison is of singular interest for our purpose, because the Lambeth Company, which in 1854 gave the superior water, was in 1848-9 purveying even a worse supply than that of the Southwark and Vauxhall Company.

It has already appeared that the tenantry of the Lambeth Company (a

population of 166,906, comprised in 24,854 houses) lost by the epidemic of 1853-4, 611 persons. By the epidemic of 1848-9, in the same houses (or rather, in as many of them as then existed) the deaths were 1,925.

The earlier figures showed that this population suffered in 1853-4 not a third as much as its neighbours: the present figures give the further fact—*that it suffered also not a third as much as at the time of its unreformed water-supply*. On the other hand, the Southwark and Vauxhall Company, which pumped an impure water in 1848-9, pumped even a worse water in 1853-4; worse, because the larger population and more extended drainage of London had given it a denser infusion of sewage, and a more revolting unfitness for drink.

Accordingly, in 1853-4, their tenantry suffered 3,476 deaths, against 2,880 registered in 1848-9 for as many of the same houses as were then existing. In this large increase, half would probably be the utmost proportion for which new houses could account; so that on this assumption, although the general metropolitan pressure of the epidemic in 1853-4 was considerably lighter than in 1848-9, the [7/8] houses supplied by the Southwark and Vauxhall Company in the late epidemic *suffered probably 10 per cent higher mortality than the same houses in 1848-9*. In short (corrected, as far as possible, for difference of time) the comparison of the two populations in the two epidemics stands thus:— the one population (notwithstanding a generally lighter invasion of the disease) *the cholera death-rate rose from 118 to 130: in the other it fell from 125 to 37*.

*And what was the only discoverable difference of condition between these two populations? The one had improved its water-supply to comparative excellence; the other drank from even a filthier source than before.*

To these facts may be added others not yet adverted to. In collecting the materials for tabulation, it was thought necessary to extract from the register, not only the entries of death by cholera, but likewise those of death by diarrha; and the latter information has been tabulated in precisely the same manner as the former.

Reference to Tables VI. and VII. will show that the results obtained in this branch of the investigation repeat on a smaller scale<sup>1</sup> the conclusions already suggested.

In houses supplied in 1854 with water by the Lambeth Company, the

death-rate from diarrhæa per 10,000 of the population was 21; in houses supplied by the Southwark and Vauxhall Company, it was 33. Or, *the population drinking foul water suffered 57 per cent more diarrhæal mortality than the population drinking other water.*

And in comparing, with every possible correction, the respective sufferings of these two populations in the two epidemics, we find that on the second occasion diarrhœa, like cholera, pressed more heavily on the one population, though much more lightly on the other. Among the tenantry of the Lambeth Company *the diarrhœal death-rate, which in 1853-4 was 21, had in 1848-9 been 29: among the tenantry of the Southwark and Vauxhall Company this rate, which in 1853-4 was 33, had in 1848-9 been only 27.* [8/9]

In some elements of these comparisons there may be trifling sources of error; but none, I believe, which can modify—much less vitiate—the general result.

Scarcely under any circumstances, indeed, are the physiological sciences susceptible of greater certainty, than that which seems here to be justified.

An experiment, at which mankind would have shuddered if its full meaning could have been prefigured to them, has been conducted during two epidemics of cholera on 500,000 human beings. One half of this multitude was doomed in both epidemics to drink the same fecalized water, and on both occasions to illustrate its fatal results; while another section—freed in the second epidemic from that influence which had so aggravated the first, was happily enabled to evince by a double contrast the comparative immunity which a cleaner beverage could give.

By this experiment, it is rendered in the highest degree probable, that, *of the 3,476 tenants of the Southwark and Vauxhall Company who died of cholera in 1853-4, two-thirds would have escaped if their water-supply had been like their neighbours'; and that, of the much larger number—tenants of both companies—who died in 1848-9, also two-thirds would have escaped, if the Metropolis Water Act of 1852 had but been enacted a few years earlier.*

The above conclusions rest on so large a basis of facts, that I venture to believe they will be accepted as the final solution of any existing uncertainty as to the dangerousness of putrefiable drinking-water during visitations of epidemic cholera; and pathologists will probably admit that the definite proof of hurtfulness, thus established in respect of that one disease, may in principle

be extended to the doctrine of other kindred affections.

To many it may appear that such proof needs not to have been sought; for that no reasonable person could ever seriously have doubted as to the hurtful tendency of the water lately distributed by the Southwark and Vauxhall Company. Such reliance on existing convictions would, however, have been misplaced. Not long ago, when there was last a public hearing of this company, its Directors declared the water to be "unexceptionably good;" its Chairman, contending that the works were capable of distributing from the Thames at Battersea a supply [9/10] "inferior in no appreciable degree to the stream in any part of its course," remonstrated against any change of source, as "a wholly uncalled-for expenditure of capital;" and gentlemen of deserved eminence as chemists (though perhaps not entitled to speak with equal authority on the causation of disease) were found willing to express opinions both that this water, nourishing a population of animalcules, would "not be noxious" to health, and that "we cannot" in any part of the world connect the ravages of cholera "with the quality of the water" consumed.<sup>2</sup>

Even last year when our Committee for Scientific Inquiries had the honour of reporting on the materials then collected, we felt bound to express ourselves with some reserve;<sup>3</sup> not because our opinions were divided as to the probable danger of drinking such water as that in question, but because, from the absence of circumstantial proof, we were unable to speak of the danger as an evil demonstrated and measured. [10/11]

Nor have later publications hitherto rendered our knowledge more precise. An interesting contribution has indeed been made in the results of a local inquiry, conducted with much care and ability by a Committee of the Vestry of St. James's, Westminster, into the circumstances of that remarkable outbreak of cholera which happened in the neighbourhood of Wardour Street<sup>4</sup>; and the conclusion which that Committee reported was to the effect, that, in their unanimous opinion, "the sudden, severe, and concentrated outbreak was in some manner attributable to the use of the impure water of the well in Broad Street." While, however, it cannot be doubted that the evidence collected by that Committee strongly tends to justify their opinion, other and obvious facts give to the imputed operation at least an exceptional character. Bad as was the produce of the Broad Street well,—containing the results of organic decomposition filtered through but scanty thickness of surrounding soil—this quality of water was not peculiar to it. Generally through London,

such must be the condition of superficial well-waters; everywhere filtering from a dangerous proximity to cesspools and sewers; everywhere loaded with nitrates or ammonia; everywhere containing evidence that they represent the drainage of a great manure-bed; and everywhere liable at any moment to contain excremental matter only imperfectly oxidised. In London no comprehensive inquiry could be made into the influence of these well-waters; but almost at the same time that the above investigations were in progress about Soho, others riot less elaborate were proceeding at Munich, as part of a general inquiry under direction of the Bavarian Government. The circumstances of the two cases are so far similar, that the water-supply of that capital, as of London, is of various qualities—part brought from a distance, part derived from intramural wells which are liable in no common degree to the impregnations just adverted to; yet in comparing the cholera mortality of populations thus differently supplied, the distinguished Professor who conducted the inquiry found himself unable to attribute to the well-waters any causative relation to the epidemic which had so severely prevailed in the town.<sup>5</sup> [11/12]

But while, on the above showing, it must be conceded that for scientific purposes the definite information embodied in the following tables is of no superfluous kind, it may perhaps be objected that the practical application is less obvious, and that the inquiry has been instigated in a matter of past interest. For, since the epidemic of 1853-4, the Southwark and Vauxhall Company, in obedience to the Metropolis Water Act, has abandoned its former very objectionable source of supply, and for the last few months has been distributing a water, nearly or quite identical in quality with that here spoken of as furnished by the Lambeth Company.

This is, indeed, a very satisfactory fact; which, if the final purpose of the investigation had related only to persons suffering from that particular supply, would have superseded all necessity for the present Report.

But the question is of larger scope. Whether water can securely be drunk from rivers polluted by urban drainage, interests more or less every part of the country; and whatever facts can terminate this doubt, bear upon every plan for the water-supply of a population, and upon every plan for the drainage of a town.

Not even London can in this respect afford to consider itself safe against the danger which seems to have been removed from it. Lower than Tedding-

ton Lock, indeed, the Thames may not be used as a source of supply; but above that point there dwell beside the river or its tributaries very considerable urban populations; and hitherto the Legislature has not provided against any pollution of refuse which these communities may drain into the stream. At present, perhaps, the mischief is not great; the population is scattered; the drainage incomplete; the admixture, as compared with the volume of the river, almost insignificant. But whatever at this moment may be the amount of the evil, undoubtedly it tends day by day to increase; and that reform, which the Act of 1852 purported to accomplish, remains but imperfect and precarious while those river-side populations exercise a right of sewerage into the drinking-water of London.

It is, indeed, indispensable for the healthiness of towns, that house-drainage should be universally adopted, and that its currents should rapidly discharge themselves beyond the inhabited area. But the advantages thus to be gained [12/13] will suffer a serious counterpoise, if they can be purchased only at the cost of making the sewerage-outfall into rivers; if the change must be, from an unwholesome house to a polluted water-source; if that which would have been poison to inhale is to return as poison to drink.

Between these alternatives, it is greatly to be feared, lies the present choice of many considerable populations. Town drainage has been executed of late years, with too little recognition that its accomplishment, however successful, represents only part of a great problem. From it there results the production, as it were, of a novel commodity; valuable, if at the right time it can be at the right place, but otherwise valueless and baneful; for in default of that market which only good organization can create, the nearest water-course has to be fouled with what might enrich the fields. Even apart from such new pollution, it rarely happens that rivers are first-rate sources of supply: but they are often the easiest of application; and communities living along their course will generally overlook the worse quality for the sake of the cheaper price. Often therefore as town-drainage extends, successive populations adown the stream get worse and worse water to drink; till the evil at length attains those large and dangerous dimensions which, in respect of a single water-supply, it has been the object of this investigation to trace.

From the sanitary dilemma which these considerations suggest, the only possible escape seems to lie in the organization of means for the systematic agricultural employment of sewage.

Hence it is greatly to be hoped that the engineering genius and commercial enterprise of the country may render such means available and lucrative for all urban populations. But, provisionally, it seems important to determine, whether convenient appliances, exist for the so-called disinfection of sewage; and whether it would be expedient to enforce their adoption, as a restraint on the otherwise universal tendency towards draining putrefiable refuse into the drinking-waters of the country.

In conclusion, I beg to guard this Report against the misapprehension to which so fragmentary a scientific discussion is liable. The inquiry has of necessity been restricted. It did not pretend to determine whether putrefiable drinking-water is a stronger or a weaker morbid influence than impure air or [13/14] defective nourishment. Simply, it asked whether in certain large populations, breathing the same atmosphere, comprehending the same classes, and averaging the same habits of life, the fatal disease had been more prevalent among the drinkers of foul water than among the drinkers of clean water.

The answer has been affirmative. The cholera-mortality of the former class was more than three-fold that of the latter.

The value of this result rests, of course, on the assumption that other influences of disease (whatever they may have been) were equal in the populations compared. For aught that appears to the contrary, it may be true that in every individual case of the 15,212 deaths inquired into, the sanitary arrangements of the house (apart from the quality of its water-supply) were defective. But this would not affect the argument of the Report: for there is no reason to suppose that such defects would be on the average unequally distributed between the two great totals of intermixed population respectively supplied by the two Companies: nor, especially, is it within the limits of reasonable supposition that throughout a continuous urban plan of seventy thousand houses, the removal of sanitary defects during five years should have been effected exclusively, as it were, on alternate houses and alternate streets, according to the accident of their water-supply.

So, too, among the sufferers there may have been a large proportion of poverty, with its attendant defects of nourishment; but this influence also must be supposed to have been impartially distributed between the tenancies of the two water-companies.

The present contribution therefore aims only at giving a more exact

knowledge of one cause, not at gainsaying the existence of other causes. "The doctrine of epidemic cholera which has gained almost universal acceptance, does not affect to explain what may be that power—the exciting cause of the epidemic manifestation—which at intervals of time has forayed from place to place about our globe, sometimes vaguely spreading over a widened area, sometimes seeming to move in more defined procession, and which now for the third time has shed its fatal influence on our land. But with this mystery still unsolved, there has grown more and more into shape a doctrine which is both intelligible and practical; that the undiscovered power in its wanderings acts after the manner [14/15] of a ferment, that it therefore takes effect only amid congenial circumstances, and that the stuff out of which it brews poison must be air or water abounding with organic impurity."<sup>6</sup>

It is only to a part of the above doctrine that the preceding pages immediately refer: but to this part they give a new proof, and to the remainder an indirect confirmation.

It entirely consists with the facts here set forth to maintain that, under the specific influence which determines an epidemic period, fecalised drinking-water and fecalised air equally may breed and convey the poison; and that this, whether in one vehicle or the other, may be expected to prevail most forcibly against the feeble and ill-nourished parts of a population.

I have the honour to be, Sir,

Your obedient humble Servant,

John Simon.

### Endnotes

1. It must be remembered that diarrhoea, unlike cholera, is always present in this country, and that some proportion (hitherto undetermined) of its total amount is irrespective of local sanitary conditions. If air and water were ever so pure, there would still be occurring a certain mortality from diarrhoea, due to tubercular and other irritations of the intestinal canal.

2. See Minutes of Evidence taken before the Select Committee on the Metropolitan Water Bill, August 1851; Return to Inquiries of Metropolitan Sanitary Commissioners, 1850; and Remarks on the Water-Supply of London by Sir W. Clay, Bart., M.P., Chairman of the Grand Junction and Southwark

and Vauxhall Companies, December 1849.

3. "We do, however, attach very great importance to the fact, that nearly all the waters consumed in London show a remarkable aptitude to develop low forms of animal and vegetable life; but this importance belongs, in our judgment, not to any direct influence exerted by such organisms on our own, but to the indications which their development affords that the waters wherein they grow are fraught with dead organic impurities.

"The admixture of decomposing organic matter in the water-supply of the Metropolis being attested equally by chemical analysis and by the microscopical evidence just adduced, we do not hesitate to speak of this contamination as one that may have exercised great influence on the spread of cholera among the population. The general history of this disease establishes its infinite preference for localities that are ftid with organic impurity; and it is impossible to conceive either any specific chemical changes arising in the air of a district, or any morbid action excitable by it in the living body—such changes or such action being due to its contamination by dead organic admixture—without recognizing that the water of the district likewise—great solvent of air as it is—must, if similarly polluted, be liable to undergo the same alteration, and to originate the same effects, as the atmosphere around it.

"The present state of scientific knowledge does not justify dogmatic assertions on this subject; but there are reasons for believing, in respect not only of cholera, but of many kindred diseases, that the means and agencies of morbid infection stand in intimate relation to decaying animal products within and without the body; and the slightest taint of organic decomposition within the drinking-water of a large population therefore constitutes a danger which we cannot but regard with as much alarm as disgust."—Report of the Committee for Scientific Inquiries; pp. 47, 48.

4. Report on the Cholera Outbreak in the Parish of St. James, Westminster, during the Autumn of 1854; presented to the Vestry by the Cholera Inquiry Committee, July 1855.

5. Untersuchungen und Beobachtungen ber die Verbreitungsart der Cholera; von Dr. Max Pettenkofer, Mnchen, 1855.

6. Report of the Committee for Scientific Inquiries in relation to the Cholera Epidemic of 1853-4; p. 48.

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**List of Tables**, illustrating the London Cholera Epidemics of 1848-9 and 1853-4, in their relation to the Quality of Water-Supply.

I. Synopsis of Results – p. 19.

II. Houses, Population, Water-Supply, and Cholera-Deaths in the nine Surrey Districts of London – p. 20.

III. The same information, analysed according to the thirty-one Sub-districts included – p. 22.

IV. So much of the same information as relates to five Districts (or twenty Sub-districts) supplied in almost equal proportions by the two Water-Companies in question – p. 26.

V. Cholera-Deaths in 3,034 Houses, supplied by the two Water-Companies in equal proportion – p. 28.

VI. Houses, Population, Water-Supply, and Diarrha-Deaths in the nine Surrey Districts of London – p. 30.

VII. The same information, analysed according to the thirty-one Sub-districts included – p. 32.

[17/18]

**Note.** In the Surrey districts of London the *aggregate population* of 1853-4 probably exceeded that of 1848-9 by about a tenth part. In the absence of precise information it may be assumed as nearly true, that *the number of houses there had increased in the same proportion, the average population per house remaining constant at 6.7*; and that this increase had told *equally on each of the three classes of houses* distinguished in the Tables; viz., that of the houses and population supplied in 1853-4 by the Lambeth Company, about one eleventh part was non-existent in 1848-9; that similarly, of the houses and population supplied in 1853-4 by the Southwark and Vauxhall Company, about one eleventh part was non-existent in 1848-9; that similarly, of the houses and population supplied in 1853-4 from "unknown sources," about one eleventh part was non-existent in 1848-9.

Independently of this increase of population, the two companies increased their tenantry between the two epidemics. Their opposition had ceased, and

they did not exchange customers; but many houses which in 1853-4 were returned as supplied by the Lambeth Company, or by the Southwark and Vauxhall Company, were in 1848-9 dependent on "unknown sources."

There are not materials for making with perfect accuracy a second distribution of the population according to its water-consumption in 1848-9; and, therefore, the argument of the Report has been so constructed as to avoid this somewhat speculative ground.

The following is all which admits of being definitely stated with respect to the population supplied with water from "unknown sources." In the epidemic of 1853-4, over and above the 64,580 houses verified as supplied by the two great water-companies, there were certain other houses (of uncertain number) which furnished 1,436 cholera deaths. In the epidemic of 1848-9 in these same houses, or rather in the about 10-11ths of them probably then existing, there were 1,760 such deaths; so that, treating this population like the more definite populations spoken of in the Report, we find its percentage of cholera mortality, in 1853-4, fully a fourth lighter than in 1848-9. This difference nearly corresponds to that which has been calculated for the Metropolis generally, and which has been ascribed to a milder visitation of the epidemic cause. From it, of course, no conclusion can be drawn relatively to the populations itself. Nearly all may have been drinkers of well-water; or many may have been unacknowledged debtors to the supply of the Lambeth Company. But whatever may have been the cause of their lessened suffering, it contributes, by contrast, to expose that opposite influence which was operating within the same districts on the tenants of the Southwark and Vauxhall Company.

( 19 )

I.—SYNOPSIS OF RESULTS.

Death-Rates <i>per</i> 1,000 of living Population in Two Epidemic Periods.	In Houses enumerated in 1854 as receiving their Water-supply—		
	from the LAMBETH Company.	from the SOUTHWARK and VAUXHALL Company.	
CHOLERA .....	1848-9..	12.5	11.8
	1853-4..	3.7	13.0
DIARRHŒA .....	1848-9..	2.9	2.7
	1853-4..	2.1	3.3

*N.B.—Between the two Epidemic Periods, the Lambeth Water Company had changed its source of supply.*



( 22 )

III.—HOUSES, POPULATION, WATER-SUPPLY, AND CHOLERA.

Registration District.	Registration Sub-District.	I		II		Estimated constant Population per House.
		Number of inhabited Houses in 1851.	Estimated Population in 1849.	1851.	Estimated Population in 1854.	
26. ST. SAVOY'S } SOUTHWALK.	1 Christchurch	1,887	15,730	16,622	16,470	8.5
	2 St. Saviour's (with Hospital)	3,713	19,432	19,709	20,133	7.3
	Houses supplied in streets where no death occurred.	—	—	—	—	7.8
27. ST OLAVE	1 St. Olave (with Hospital)	880	8,013	8,013	8,013	9.1
	2 St. John	1,480	11,100	11,200	11,000	7.7
	Houses supplied in streets where no death occurred.	—	—	—	—	8.2
28. BETHNORSEY	1 St. James	2,883	17,288	18,830	19,134	6.9
	2 St. Mary Magdalen	1,865	12,902	13,334	13,442	7.5
	3 Leathermarket	2,279	14,734	15,205	14,744	6.7
29. St. GEORGE'S } SOUTHWALK.	1 Kent-road	2,358	17,016	18,138	18,033	7.1
	2 Doro-road	2,060	13,625	15,822	16,528	7.7
	3 London-road	2,265	17,480	17,836	18,388	7.5
30. NEWINGTON	1 Trinity	3,224	20,021	20,022	21,235	6.5
	2 St. Peter, Watworth	4,925	28,282	29,801	30,060	6.1
	3 St. Mary	2,909	18,623	18,033	18,010	6.1
31. LAMBETH	Houses supplied in streets in which no death occurred.	—	—	—	—	6.2
	1 Waterloo, &c.	1,720	13,807	14,688	14,221	8.1
	2 Do. and	2,101	18,137	18,248	18,628	8.4
32. ST. MARTIN'S	*3 Lambeth Church, &c.	2,451	18,469	18,469	18,469	7.5
	4 Do. do. and	3,840	25,095	25,784	28,002	7.0
	5 Kensington, &c.	3,977	22,028	24,231	27,401	6.1
33. ST. ANDREW'S	6 Do. and	3,388	17,774	18,848	20,583	6.7
	7 Brixton	2,882	13,800	14,610	16,285	6.1
	8 Norwood	600	3,740	3,977	4,345	6.6
Houses supplied in streets in which no death occurred.		—	—	—	—	6.3

\* In this Sub-district between the two periods of Census, the number of Houses was lessened for the about the same as in 1850.

( 23 )

DEATHS, in the Thirty-one Surrey Sub-districts of London.

No. of Houses.	Estimated Population.	III.		IV.					
		Number of Houses and estimated Number of Persons supplied with Water as under—	by the Lambeth Company.	by the Southwark and Vauxhall Company.	by the London Company.	by the Southwark and Vauxhall Company.	by the London Company.	from unknown sources.	
1,257	13,234	313	2,915	215	84	31	30	19	13
125	808	4,238	16,337	21	19	241	280	25	25
9	69	20	385	0	0	0	0	0	0
0	0	561	8,745	0	0	144	175	34	10
0	0	1,170	9,260	0	0	163	194	38	34
0	0	62	328	0	0	0	0	0	0
105	693	3,211	23,173	4	6	216	338	41	44
0	0	2,901	17,258	0	0	200	204	10	11
163	1,062	2,000	14,003	11	5	222	252	9	3
0	0	260	3,450	0	0	0	0	0	0
203	3,607	1,779	12,630	65	16	173	174	49	29
878	6,672	1,176	8,987	78	44	190	210	22	47
1,233	11,467	383	2,572	171	35	46	42	44	27
200	1,246	81	610	0	0	0	0	0	0
1,272	8,570	1,661	10,132	134	39	154	130	27	46
1,728	10,724	2,340	14,274	128	55	169	213	123	121
809	3,684	469	2,983	50	35	21	29	40	55
1,444	8,033	734	4,501	0	0	0	0	0	0
1,474	11,030	438	3,448	147	27	21	26	32	9
1,110	12,433	864	7,171	153	42	53	62	43	24
2,117	15,878	415	3,113	133	25	25	16	28	21
2,280	16,023	1,124	7,908	200	112	74	70	88	33
444	2,708	2,285	9,775	20	16	138	200	29	105
988	5,520	1,206	7,874	14	12	8	60	133	76
1,400	9,525	310	1,922	32	16	13	13	27	27
100	1,008	0	0	1	1	0	0	1	9
1,274	8,603	1,134	7,711	0	0	0	0	0	0

construction of the railway termini; and the population may be fairly estimated to have been in 1851

( 24 )

III.—HOUSES, POPULATION, WATER-SUPPLY, and CHOLERA-DEATHS

Registration District.	Registration Sub-District.	I.		II.		Estimated constant Population per House.
		Number of inhabited Houses in 1851.	Estimated Population in 1840.	Population. 1851.	Estimated Population in 1854.	
32. WANDSWORTH	1. Clapham	2,657	16,622	16,290	17,208	6.1
	2. Battersea	1,720	9,613	10,250	12,120	6.0
	3. Wandsworth	1,222	9,173	9,611	10,206	6.3
	4. Putney	913	5,125	5,280	5,473	5.7
	5. Streatham	1,410	8,985	9,023	9,681	6.4
Houses supplied in streets in which no death occurred.		—	—	—	—	6.1
33. CAMBERWELL.	1. Dulwich	220	1,622	1,623	1,623	6.3
	2. Camberwell	2,821	16,682	17,742	18,924	6.2
	3. Peckham	3,427	17,200	19,444	22,128	5.6
	4. St. George	2,845	14,478	15,840	17,128	5.6
Houses supplied in streets where no death occurred.		—	—	—	—	5.8
34. ROTTERHEATH	Rothenhithe	2,722	16,240	17,205	19,171	6.4
	Houses supplied in streets where no death occurred.	—	—	—	—	6.4
Not identified		—	—	—	—	6.6
Totals		72,244	463,008	482,433	508,024	—

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in the Thirty-one Surrey Sub-Districts of London—continued.

No. of Houses.	III.		IV.								
	By the "London Waterworks Company."	Estimated Population.	By the "Southwark and Vauxhall Company."	Estimated Population.	Number of Deaths from Cholera in Houses which in 1854 were supplied with Water as under:—	1849-50.	1853-4.	1849-50.	1853-4.	1849-50.	1853-4.
22	134	1,106	6,747	2	0	84	95	34	83	—	—
46	276	1,666	6,276	0	0	22	82	68	69	—	—
15	94	144	607	0	0	0	1	163	62	—	—
0	0	13	74	0	0	0	0	8	9	—	—
215	3,244	0	0	0	0	0	0	154	16	—	—
20	122	719	4,286	0	0	0	0	0	0	—	—
4	25	0	0	1	0	0	0	0	0	—	—
108	680	1,474	9,130	1	1	144	181	116	74	—	—
70	282	971	5,638	0	1	26	67	20	110	—	—
971	5,437	727	4,205	20	17	72	20	20	62	—	—
687	3,684	733	4,600	0	0	0	0	0	0	—	—
0	0	1,900	12,218	10	0	123	166	217	142	—	—
0	0	427	2,723	0	0	0	0	0	0	—	—
23	162	411	2,712	0	0	0	0	0	0	—	—
24,534	171,228	39,726	217,625	1,925	611	2,880	3,476	1,760	1,436	—	—

( 26 )

IV.—HOUSES, POPULATION, WATER-SUPPLY, and CHOLERA-DEATHS in Five Water Companies.

Registration District.	I Number of Inhabited Houses in 1851.	II Population.			
		Estimated Population in 1848.	1851.	Estimated Population in 1854.	
29. St. SAVOY'S, SOUTHWARK ( <i>with Hospital</i> )	4,000	35,102	35,721	4,000	7.8
30. St. GEORGE'S, SOUTHWARK	6,892	50,111	51,384	53,200	7.4
30. NEWINGTON	10,458	62,098	64,816	66,034	6.2
31. LAMBETH	30,447	134,337	139,323	148,274	6.8
33. CAMBERWELL	9,412	50,031	54,097	55,573	5.8
Totals and means for whole Area	51,909	333,309	346,563	364,293	6.7
Ratio, by a different and somewhat more liberal estimate of the district-population	"	333,673	"	365,325	"

\* Final hospital period following the census of 1841 expired on March 31st 1851; but the census of the later not to ten years but to ten years *plus* 68 days. In the *underlined* estimates of population for 1849 and 1854 *decreased* increase of population due to this excess of 68 days. An exact estimate of the district population from

( 27 )

Districts (Twenty Sub-districts) supplied in almost equal proportions by the Two Companies.

No. of Houses.	III Number of Houses and estimated number of persons supplied in 1854 as under:		IV Number of Deaths from Cholera in Houses which Water as under:		V Proportion of Deaths from untraced Populations in Houses which in 1854 were supplied with Water as under:								
	by the Lambeth Company.	by the Southwark and Vauxhall Company.	for the Lambeth Company.	for the Southwark and Vauxhall Company.	from unknown sources.	by the Lambeth and Vauxhall Company.							
1,680	14,301	2,621	10,617	256	108	272	410	44	88	17.3	7.3	14.4	20.9
3,183	25,712	3,419	25,039	314	96	409	145	108	108	14.1	4.1	17.4	17.0
5,472	35,331	5,234	31,940	382	130	324	301	230	230	12.0	3.9	10.7	12.2
11,703	83,786	8,077	64,682	924	232	339	447	411	304	12.2	3.0	8.1	9.9
1,835	10,478	4,005	23,472	22	19	222	307	234	235	5.8	1.0	12.6	13.1
"	161,129	"	156,091	"	"	"	"	"	"	12.8	3.7	11.0	12.7
23,943	165,708	23,356	145,050	1,908	600	1,586	1,981	1,054	920	12.5	3.6	11.9	13.7

\* Year was not taken till June 7th: so that the increase of population then recorded was due, strictly speaking, to their totals which are transferred to this table. Allowance was not made for the somewhat more than usual with this exception, given the results exhibited in the supplementary line of figures.

( 28 )

Y.—CHOLERA-DEATHS IN 3,034 HOUSES SUPPLIED

Registration District.	Registration Sub-District.	Name of Street, Place, &c. &c.	Number of Houses supplied with Water as under:—		
			by the Lambeth Company.	by the Southwark and Vauxhall Company.	
ST. SAVOY'S, SOUTHWARK.	1. Greshamch	Gravel-hane	87	53	
	1. Christchurch	Thurloe-street	9	14	
	2. St. Saviour's	Duke's-court	13	11	
		Everest-street	61	40	
		Hunter-street	18	52	
	ST. GEORGE'S, SOUTHWARK.	1. Kent-road	Mason-street	18	18
			Townsend-street	18	16
		2. Borough-road	Fisher-street	45	41
			Hill-street	27	31
	NEWINGTON.		Gau-street	58	77
		Suffolk-street	46	70	
		Wellington-street	33	25	
		Barnwell-street	39	16	
		St. Andrew's-road and place	17	39	
		William-street	203	69	
		Traill-street	39	31	
		Leon-street	25	54	
		Manor-place	8	5	
		Saverdon-row	29	18	
LAMBETH.	Waterloo, 1st.	Weymouth-street	29	25	
		Brand-street	23	27	
		Webber-street	23	18	
		Gibson-street	25	25	
		Griffon-street	6	14	
		Isabella-street	33	30	
		James-street	67	67	
		Oakley-street	42	31	
		Thames-street	23	56	
		Canterbury-place	28	29	
LAMBETH CHURCH, 1st. Do. do. 2nd.	East-street	50	57		
	Jonathan-street	20	7		
	King-street	29	43		
	Richmond-street	15	13		
	Samuel-street	7	2		
	Gyves-terrace	48	7		
	Vauxhall-street	36	24		
	Lower Kensington-green	38	35		
	Manion House-street	19	25		
	Prince's-square	21	38		
CAMBERWELL.	Do. 2nd.	Beacony-place	14	45	
		White Hart-street	17	27	
		Ordnance-road	16	25	
		Westminster-place	10	32	
		Camberland-place	12	25	
			5	8	
			1	1	
			1	1	
			1	1	
			1	1	
	Total	1,517	1,517		

( 29 )

Y.—CHOLERA-DEATHS IN 3,034 HOUSES SUPPLIED

Name of Street, Place, &c. &c.	Number of Deaths from Cholera in Houses which in 1834 were supplied with Water as under:—				
	by the Lambeth Company.	1833-4.	by the Southwark and Vauxhall Company.	1833-4.	from unknown sources.
Gravel-hane	7	10	8	11	0
Thurloe-street	2	0	2	2	0
Duke's-court	1	2	0	7	0
Everest-street	12	5	3	7	0
Hunter-street	4	0	10	6	0
Mason-street	1	2	1	1	0
Townsend-street	1	1	1	1	0
Fisher-street	3	2	3	4	2
Hill-street	1	1	1	2	0
Gau-street	3	4	5	6	0
Suffolk-street	0	1	10	20	0
Wellington-street	0	2	2	2	0
Barnwell-street	2	0	1	2	0
St. Andrew's-road and place	0	0	0	0	0
William-street	14	4	4	4	0
Traill-street	0	3	0	3	0
Leon-street	10	4	0	4	0
Manor-place	5	0	0	0	0
Saverdon-row	5	0	0	0	0
Weymouth-street	5	2	0	0	0
Brand-street	5	1	1	4	0
Webber-street	5	0	0	2	0
Gibson-street	3	0	0	3	0
Griffon-street	0	1	2	4	0
Isabella-street	0	2	4	5	0
James-street	12	1	4	6	1
Oakley-street	4	1	4	5	0
Thames-street	7	0	0	4	0
Canterbury-place	4	0	0	0	0
East-street	15	2	2	8	4
Jonathan-street	2	0	0	1	0
King-street	6	1	0	1	0
Richmond-street	4	1	0	0	0
Samuel-street	4	2	0	1	0
Gyves-terrace	1	1	1	2	2
Vauxhall-street	1	0	1	1	0
Lower Kensington-green	0	0	1	2	0
Manion House-street	4	2	1	3	0
Prince's-square	1	0	1	4	0
Beacony-place	0	2	2	3	0
White Hart-street	3	0	1	5	0
Ordnance-road	0	0	2	4	0
Westminster-place	0	0	2	4	0
Camberland-place	0	1	0	5	0
	0	1	0	2	2
	164	67	95	164	26
	1,517	1,517	1,517	1,517	21

VI.—HOUSES, POPULATION, WATER-SUPPLY, and DIARRHÆA.

Registration District.	Number of Inhabited Houses in 1851.	Population.		
		Estimated Population in 1840.	1851.	Estimated Population in 1854.
56. ST. SAUVRE'S, SOUTHWARK (with Hoopland)	4,800	35,102	32,721	36,003
57. ST. OLAV'S (with Hoopland)	2,200	19,115	19,272*	19,224
58. BIRMINGHAM	7,007	45,082	48,128	50,720
59. ST. GEORGE'S, SOUTHWARK	6,202	50,141	51,234	52,500
60. NEWINGTON	10,438	62,098	64,316	66,034
61. LAMBETH	30,447	134,437	139,235	148,274
62. WANDSWORTH	8,270	48,533	50,704	54,316
63. CAMBERWELL	9,412	50,031	54,697	59,873
64. BROTHERHOFF	2,792	16,940	17,805	19,171
Not identified	.	.	.	6-6
Totals and means for whole Area	72,244	463,008	482,433	508,024
Ratio, by a different and somewhat more exact estimate of the district-population	"	466,103	"	511,425

\* During the decennial period 1841-51 there was a decrease of population (682) in the District of St. Olavs' parish. Since 1851, the population of this year will probably answer nearly enough for that of 1846. The ratio of the population of the district in 1851 to that of 1840 is 1.003. The ratio of the population of the district in 1854 to that of 1840 is 1.004. The ratio of the population of the district in 1854 to that of 1851 is 1.004. The ratio of the population of the district in 1854 to that of 1851 is 1.004. The ratio of the population of the district in 1854 to that of 1851 is 1.004.

DEATHS in the Nine Survey Districts of London.

Houses.	III.		IV.				V.		
	Estimated Population.	No. of Houses.	1854-0	1853-4	1852-0	1851-4	1850-4	1849-0	1848-0
1,889	14,301	2,631	16,617	63	46	72	133	14	14
0	0	2,122	18,633	0	0	62	31	4	4
298	1,735	8,402	57,884	3	3	168	201	6	5
3,133	23,212	3,419	25,030	62	39	79	110	25	28
5,623	33,231	5,224	31,240	63	42	64	94	38	60
11,733	81,726	8,677	44,623	225	202	79	127	62	120
613	3,870	3,623	18,200	1	0	22	55	87	98
1,833	10,478	4,005	23,472	9	10	64	78	57	92
0	0	2,389	14,301	0	0	33	57	30	48
23	105	411	2,712	.	.	.	.	.	.
44,854	171,528	39,726	227,625	442	343	631	898	313	477
"	166,906	"	208,171	"	"	"	"	"	"

Number of houses having been taken down for the termini at London Bridge; but as few houses have been taken down since 1851, the population of this year will probably answer nearly enough for that of 1846. The ratio of the population of the district in 1851 to that of 1840 is 1.003. The ratio of the population of the district in 1854 to that of 1840 is 1.004. The ratio of the population of the district in 1854 to that of 1851 is 1.004. The ratio of the population of the district in 1854 to that of 1851 is 1.004.

VII. HOUSES, POPULATION, WATER-SUPPLY, AND DIARRHÆA.

B-D I A R

Registration District.	Registration Sub-District.	I.		II.		Estimated constant Population per House.	III.		IV.						
		Number of Inhabited Houses in 1851.	Estimated Population in 1849.	1851.	Estimated Population in 1854.		Number of Houses and estimated Number of Persons supplied with Water in 1849.	Number of Houses and estimated Number of Persons supplied with Water in 1854.	for the Lambeth Company.	for the Southwark and Vauxhall Company.	for the Lambeth Company.	for the Southwark and Vauxhall Company.	from other sources.		
26. ST. SAVOIR'S SOUTHVALE.	1. Chislehurst	1,587	15,230	16,022	16,470	8.3	1,587	13,234	345	2,913	33	36	6	6	6
	2. St. Saviour (with Hospital)	2,713	18,432	16,700	20,133	7.3	123	898	2,238	16,377	8	10	66	129	8
27. ST. OLAVE	1. St. Olave (with Hospital)	880	8,015	8,015	8,015	9.1	0	0	1,170	6,930	0	0	42	13	2
	2. St. John	1,480	11,100	11,200	11,200	7.7	0	0	62	533	0	0	0	0	0
28. BARKINGSEY	1. St. James	2,483	17,284	18,890	19,129	6.8	165	663	3,211	23,173	1	1	47	60	3
	2. St. Mary Magdalen	1,882	12,942	13,624	15,442	7.3	0	0	2,901	17,238	0	0	63	72	1
29. SAINT GEORGE'S SOUTHVALE.	1. Kent-road	2,232	17,616	18,123	18,623	7.1	183	1,092	2,690	14,063	2	2	18	60	0
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	0	0	500	3,450	0	0	0	0	0
30. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	563	3,697	1,779	12,630	21	10	31	32	7
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	878	6,672	1,176	8,457	14	11	42	5	16
31. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,230	11,839	438	3,248	32	14	5	6	2
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
32. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	2,117	16,623	1,124	7,888	92	45	5	9	9
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	444	2,728	2,886	15,775	3	5	33	62	7
33. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,274	11,839	438	3,248	32	14	5	6	2
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
34. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
35. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
36. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
37. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
38. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
39. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
40. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
41. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
42. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
43. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
44. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
45. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
46. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
47. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
48. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
49. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
50. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
51. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
52. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
53. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
54. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
55. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
56. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
57. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
58. NEWINGTON	1. Trinity	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
	2. St. Peter Walworth	4,252	20,621	20,923	21,232	6.2	1,210	12,833	804	7,111	32	29	11	21	3
59. LAMBETH	1. Waterloo, 1st	1,230	13,867	14,608	14,621	6.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	2,101	18,137	18,838	18,698	7.1	1,210	12,833	804	7,111	32	29	11	21	3
60. LAMBETH CHURCH, 1st	1. Waterloo, 2nd	3,849	25,303	26,734	28,022	7.4	1,210	12,833	804	7,111	32	29	11	21	3
	2. Do. do. and	3,677	22,630	24,321	27,401	6.1	1,210	12,833	804	7,111	32	29	11	21	3
61. BARKINGSEY	1. Kent-road	2,232	17,616	18,123	18,623	7.1	1,210	12,833	804	7,111	32	29	11	21	3
	2. Borough-road	2,079	15,623	15,882	16,288	7.7	1,210	12,833	804	7,111	32	29	11	21	3
62. NEWINGTON	1. Trinity	4,252													

( 34 )

VII.—Houses, Population, Water-Supply, and Deaths

Registration District.	Registration Sub-District.	I.		II.		Estimated constant population per House.
		Number of Inhabited Houses in 1851.	Estimated Population in 1846.	1851.	Estimated Population in 1854.	
32. WANDSWORTH.	1. Clapham	2,627	16,232	16,230	17,206	61
	2. Battersea	1,790	9,618	10,050	12,120	61
	3. Wandsworth	1,222	9,173	9,611	10,306	61
	4. Putney	913	5,115	5,280	5,473	57
	5. Streatham	1,419	8,865	9,023	9,681	61
Houses supplied in streets in which no death occurred.		—	—	—	—	61
33. CAMBERWELL.	1. Dulwich	299	1,632	1,632	1,632	61
	2. Camberwell	2,831	16,032	17,742	18,221	61
	3. Peckham	3,457	17,280	19,444	22,132	51
	4. St. George	2,845	14,578	15,869	17,128	57
Houses supplied in streets in which no death occurred.		—	—	—	—	51
34. ROYALHEATH.	Redcliffe	2,792	16,940	17,805	19,171	61
	Houses supplied in streets in which no death occurred.	—	—	—	—	61
Not identified		—	—	—	—	61
Totals		72,344	463,008	482,435	508,024	—

( 35 )

Deaths in the Thirty-one Surrey Sub-districts of London—continued.

Registration District.	Registration Sub-District.	III.		IV.							
		Number of Houses and estimated population in 1854 with Water as under:—	No. of Houses.	Estimated Population.	By the Lambeth Company.	By the Southwark and Vauxhall Company.	By the Southwark and Vauxhall Company.	From other sources.			
32. WANDSWORTH.	1. Clapham	23	134	1,106	6,747	1	0	19	22	12	15
	2. Battersea	46	276	1,046	6,276	0	0	6	33	17	27
	3. Wandsworth	15	94	144	907	0	0	0	0	20	35
	4. Putney	0	0	13	74	0	0	0	0	18	6
	5. Streatham	215	3,244	0	0	0	0	0	0	20	14
Houses supplied in streets in which no death occurred.		20	122	719	4,286	0	0	0	0	0	0
33. CAMBERWELL.	1. Dulwich	4	25	0	0	1	0	0	0	1	1
	2. Camberwell	163	630	1,474	9,130	2	1	42	42	21	23
	3. Peckham	70	302	971	5,438	0	0	13	15	19	43
	4. St. George	971	5,438	767	4,205	6	9	9	21	16	29
Houses supplied in streets in which no death occurred.		627	3,885	733	4,000	0	0	0	0	0	0
34. ROYALHEATH.	Redcliffe	0	0	1,809	12,218	0	0	33	57	20	43
	Houses supplied in streets in which no death occurred.	0	0	427	2,728	0	0	0	0	0	0
Not identified		23	103	411	2,712	0	0	0	0	0	0
Totals		2,4524	171,528	39,726	257,625	442	343	651	898	313	477