

[Report of the Medical Officer of Health for Greenwich District].

Contributors

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BOARD OF WORKS FOR THE GREENWICH
DISTRICT.

REPORT
FIRST ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE

GREENWICH DISTRICT,

Presented to the District Board on the 27th of May, 1857.

By Henry A. Peck

PRINTED BY AUTHORITY OF THE BOARD.

1857.



BOARD OF WORKS FOR THE GREENWICH
DISTRICT

FIRST ANNUAL REPORT

Medical Officer of Health

GREENWICH DISTRICT

Presented to the District Board on the 17th of Nov. 1857

PRINTED BY AUTHORITY OF THE BOARD

REPORT.

TO THE GREENWICH DISTRICT BOARD OF WORKS.

GENTLEMEN,

Your Board requires that your Medical Officer shall furnish you with an Annual Report, wherein he shall give a retrospect of the health of the District; and also enter into a detailed account of the proceedings that have been carried on during the time that your jurisdiction over this District has been established; and, according to one of your Bye-laws, it is further required, that such Report shall be presented on the last Wednesday in the month of May. I therefore beg to lay before you all the information on the different subjects that I have been enabled to collect.

In order that I may be enabled to compare the Sanitary condition of the District with that of former years, I propose only to render you an account of the mortality and sickness during the year ending the 27th of December, 1856.

It is a great gratification to me to be enabled to state, that the mortality of the District during that period has been considerably below the average of previous years.

The deaths occurring in the District during the seven preceding years were in the following numbers, *viz.*:—

		No. of Deaths.
In the year 1849	.....	2,534 (Cholera year)
” 1850	.....	1,615
” 1851	.....	1,818
” 1852	.....	1,854
” 1853	.....	1,985
” 1854	.....	2,526 (Cholera year)
” 1855	.....	2,025
” 1856	.....	1,897.

From which statement you will perceive, that in the year 1849 the deaths reached a maximum of 2,534. In the year 1850 the deaths were reduced to 1,615, which large reduction, in all probability,

was in consequence of the premature destruction of infirm persons by the Cholera of the previous year. In 1851, 1852, and 1853 the mortality was gradually on the increase; and in the year 1854, the Cholera having again made its appearance, the deaths amounted to 2,526. In 1855 the number was again considerably reduced, no doubt from the same cause as before stated for the year 1850; but for the year 1856 the mortality has been again reduced, amounting to only 1897, being a saving of 155 lives upon the preceding year. This is a fact of considerable importance to be borne in mind at the present time, inasmuch as from the year 1842 to the year 1854 the mortality was gradually on the increase; but since the year 1854 up to the present period the mortality has been on the decrease; thus showing an improving state of health in the District, and more particularly so if you take into consideration the increase of population since the year 1851.

I am not sufficiently sanguine to attribute the whole of this improvement to health during the year 1856 to Sanitary measures; nor do I think we can expect for the future so great an immunity from epidemics; but at the same time there can be no doubt that much sickness has been prevented by the improvements which have been already effected.

I now propose, with the assistance of a few tabular forms, to lay before you a more detailed statement of the Sanitary condition of your District during the past year.

Districts.		Population, Census 1851.	Deaths.	Deaths per 1000 including Hospitals and Union House.	Deaths per 1000 excluding Hospitals and Union House.
Greenwich East.	Greenwich East	12628	240	666	41
	Greenwich Hospital..	2600	239		
	Union House	1000	187		
Greenwich West.	Greenwich West	18607	380	480	25
	Dreadnought Hospital	193	100		
St. Paul, Deptford		24899	608	24	24
St. Nicholas, Deptford		7071	143	22	22
Total		66998	1897	28	21

From the foregoing table you will perceive that, in the District of Greenwich East, according to the Census of 1851, the population amounted to 16,228, and that 666 deaths were registered from that locality, including those from Greenwich Hospital and the Union Workhouse. This mortality will show a death rate of a fraction over 41 per 1,000.

That, in Greenwich West, out of a population of 18,800, there was a registration of 480 deaths, including those from the Dreadnought Hospital Ship, which will make a death rate of a little more than 25 per 1,000.

That, in the Parish of Saint Paul, Deptford, where the population amounts to 24,899, there was a mortality of 608 persons, giving a death rate of 24 per 1,000; and that, in the Parish of St. Nicholas, Deptford, out of a population of 7,071, the deaths were 143, which is at the rate of a fraction over 22 per 1,000.

Thus showing that, in a total population of 66,998 persons in the whole District, the deaths were 1,897; making a total death rate of a trifle more than 28 per 1,000.

From these statements at first sight it will appear that a heavy amount of mortality has occurred in this as compared with other Metropolitan Districts; and undoubtedly such would be the case if these numbers and death rates conveyed a true representation of the mortality actually occurring in the District.

It would be a great injustice towards this District, and towards the Parish of Greenwich in particular, if the above statements were allowed to go before the public without an explanation of the reasons why this large amount of mortality has fallen to the lot of this neighbourhood.

In the foregoing table you will observe that, out of 666 deaths registered in Greenwich East, 239 occurred in Greenwich Hospital. The inmates of that valuable establishment are mostly aged persons, worn out in the service of their country, and, to use the expression, brought from all parts of the kingdom to that institution to close their days. A few of these Pensioners died under the age of 60 years; a very large proportion attained the

age of "three-score years and ten," the allotted age of man ; many reached the age of 80, and some lived beyond the age of 90 years. These 239 deaths cannot therefore be considered as connected with the death rate to be assigned to the division of Greenwich East.

It will also be right, that the 187 deaths registered from the Union Workhouse, most of whom were paupers sent from the Parishes of Woolwich, Deptford, and the district of Greenwich West, should be deducted from the total amount of deaths registered in that division of the District ; thus leaving a mortality of 240 persons actually dying in the division of East Greenwich during the year 1856, being at the rate of only 19 and a fraction per 1,000.

The mortality represented in the division of Greenwich West also requires some explanation.

The Dreadnought Hospital Ship numbered 100 deaths during the same year, which being deducted from the total amount of 480 registered in that division, will leave a mortality of 380 persons, which will show a death rate of 21 per 1,000 ; and thus making a total death rate for the Parish of Greenwich for the year 1856 to be a fraction over 19 per 1,000.

The death rate for the City of London for the year 1856 was 24 per 1,000 ; Chelsea, 23 per 1,000 ; Belgravia, 22 per 1,000 ; the Parish of Saint Luke, Middlesex, 26 ; the Parish of Saint Pancras, 20 ; and, according to the Returns of the Registrar General, the death rate for all the Country Towns, for the first quarter of the year 1857, amounted to 20 per 1,000. You will thus perceive, that the death rate for the Parish of Greenwich is low compared with other Metropolitan Districts.

In the published Returns of the Registrar General, a great injustice has been inflicted on the Town of Greenwich, which will be explained as follows :—

The whole of the deaths occurring in the Greenwich Union, comprising the Parishes of Saint Paul and Saint Nicholas, Deptford, the Parish of Greenwich, (including the Royal Hospital, the Dreadnought Hospital Ship, and Union Workhouse,) and the Parish of Woolwich, have been hitherto registered under the name of "Greenwich ;" thereby leading the public to suppose—or, at

least, that portion of the public who do not take the trouble to make minute enquiries into the Sanitary condition of the neighbourhood—that all these deaths actually occurred in the Parish of Greenwich.

During the years 1849 and 1854, when this country was visited by Cholera, the deaths arising from that disease in the whole Greenwich Union, comprising the Parishes above mentioned, were all handed forth to the world by the General Board of Health as having taken place in the Town of Greenwich.

A dark stain was thereby thrown upon the Town, from which, I believe, it has never recovered. I have therefore been the more induced to place these facts pointedly before you, trusting that, by your future co-operation, I shall be enabled to reiterate from year to year the favorable Report that I have now the honor of laying before you.

The members of your Board must see the injustice of such statements, and the detrimental effect they must exercise on the property in the neighbourhood.

I believe Greenwich to be already a most healthy Town. It is by nature well situated—gradually rising from the banks of a noble river, with a light and porous soil, particularly favored by a good natural drainage, most peculiarly adapted for the works of the Sanitary reformer; and—provided it were properly drained, properly cleansed, the houses of the poorer population more thoroughly ventilated, kept in better repair, and furnished with a more efficient water-supply—there is no reason why it should not become at least one of, if not THE most healthy town in the neighbourhood of the Metropolis.

The Parishes of Saint Paul and Saint Nicholas, Deptford, inasmuch as they contain no hospitals nor public institutions, will require no comment in the present part of this Report, beyond what I have already shown in the table above referred to.

The next four tables will show you the number of deaths registered in each division of the District during each quarter of the year, the diseases by which those deaths were caused, and the different ages at which the whole number of those deaths took place.

DEATHS REGISTERED IN THE DISTRICT

DURING THE QUARTER ENDING MARCH 29, 1856.

CAUSES.	Greenwich East.	Greenwich Hospital.	Union House.	Greenwich West.	Dreadnought Hospital.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.	Under 10 Years.	10 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and Upwards.	Total.
Scarlatina	1	....	....	....	....	2	....	3	3	....	....	....	....	....	3
Measles	1	....	....	1	....	1	2	5	5	....	....	....	....	....	5
Hooping-cough	10	....	....	1	....	5	5	21	21	....	....	....	....	....	21
Small-pox	1	1	....	1	....	2	....	5	2	1	2	....	....	....	5
Diarrhœa & Dysentery ..	....	....	1	2	....	2	....	5	1	....	....	....	4	....	5
Cholera .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhus	4	4	5	3	4	2	....	22	5	2	6	7	2	....	22
Chest Affections	15	25	19	40	6	47	12	164	40	8	35	30	43	8	164
Influenza .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
All other Causes	31	24	27	45	5	73	10	215	80	3	27	29	62	14	215
Accidents and Inquests ..	2	....	1	5	1	....	....	9	3	1	2	2	1	....	9
Total.....	65	54	53	98	16	134	29	449	161	14	72	69	111	22	449

DEATHS REGISTERED IN THE DISTRICT

DURING THE QUARTER ENDING JUNE 28, 1856.

CAUSES.	Greenwich East.	Greenwich Hospital.	Union House.	Greenwich West.	Dreadnought Hospital.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.	Under 10 Years.	10 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and Upwards.	Total.
Scarlatina	3	....	....	....	....	2	....	5	4	1	..	....	....	....	5
Measles .....	....	....	....	3	....	20	5	28	28	....	....	....	....	....	28
Hooping-cough	3	....	1	10	....	12	2	28	26	2	....	....	....	....	28
Small-pox	1	....	....	....	....	1	1	3	3	....	....	....	....	....	3
Diarrhœa & Dysentery ..	1	4	....	3	3	3	1	15	6	....	2	3	4	....	15
Cholera .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhus	5	2	6	5	6	1	1	26	5	4	5	9	3	....	26
Chest Affections	18	27	18	29	14	51	13	170	53	5	38	30	41	3	170
Influenza .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
All other Causes	22	31	35	48	7	65	22	230	92	4	22	17	74	21	230
Accidents and Inquests ..	5	3	....	8	1	4	8	29	9	3	6	3	8	....	29
Total	58	67	60	106	31	159	53	534	226	18	73	63	130	24	534

DEATHS REGISTERED IN THE DISTRICT

DURING THE QUARTER ENDING SEPTEMBER 27, 1856.

CAUSES.	Greenwich East.	Greenwich Hospital.	Union House.	Greenwich West.	Dreadnought Hospital.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.	Under 10 Years.	10 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and Upwards.	Total.
Scarlatina	4	....	....	2	....	4	....	10	9	1	....	....	....	....	10
Measles .....	....	....	....	1	....	5	1	7	7	....	..	....	....	....	7
Hooping-cough .....	....	....	....	4	....	11	....	15	15	....	..	....	....	....	15
Small-pox .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Diarrhoea & Dysentery ..	7	5	....	6	1	38	6	63	54	....	1	....	7	1	63
Cholera .....	....	....	....	....	....	1	....	1	....	....	....	....	....	1	1
Typhus	2	4	3	5	....	5	1	20	9	1	6	2	2	....	20
Chest Affections	15	30	14	26	7	31	13	136	22	13	33	25	36	7	136
Influenza .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
All other Causes	26	24	28	37	11	57	8	191	75	6	13	19	60	18	191
Accidents and Inquests ..	4	....	....	....	2	10	....	16	6	2	1	6	1	....	16
Total	58	63	45	81	21	162	29	459	197	23	54	52	106	27	459

DEATHS REGISTERED IN THE DISTRICT

DURING THE QUARTER ENDING DECEMBER 27, 1856.

CAUSES.	Greenwich East.	Greenwich Hospital.	Union House.	Greenwich West.	Dreadnought Hospital.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.	Under 10 Years.	10 to 20.	20 to 40	40 to 60.	60 to 80.	80 and Upwards.	Total.
Scarlatina	1	....	....	....	....	5	....	6	6	....	....	....	....	....	6
Measles	4	1	....	2	....	....	....	7	7	....	....	....	....	....	7
Hooping-cough	1	....	....	3	....	9	....	13	13	....	....	....	....	....	13
Small-pox .....	....	....	....	....	....	6	....	6	6	....	....	....	....	....	6
Diarrhoea & Dysentery ..	....	2	....	2	1	3	1	9	6	....	1	....	2	....	9
Cholera .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhus	2	1	1	1	2	3	1	11	3	2	1	2	3	....	11
Chest Affections	24	30	12	44	13	54	14	191	69	6	34	26	46	10	191
Influenza .....	....	....	....	....	....	....	1	1	....	....	....	....	....	1	1
All other Causes	26	21	16	41	12	64	15	195	64	12	29	21	63	15	195
Accidents and Inquests ..	1	....	....	4	4	9	....	18	4	2	9	3	....	....	18
Total.....	59	55	29	97	32	153	32	457	178	22	65	52	114	26	457

Not being in possession of any such Returns for previous years, I must content myself with a few remarks on the facts before you.

The first quarter will be seen to have numbered less deaths than during any quarter in the year; in all probability depending upon the mildness of the season at that period.

The second quarter will show an increase upon the previous one of 85 deaths, arising from the prevalence of disease amongst children and aged persons, particularly Measles, Hooping-cough, and Chest Affections.

The third quarter will show a decrease of 75 deaths upon the preceding one. Diarrhoea, as usual at that season of the year, was very fatal amongst young children, numbering 54 victims under 10 years of age, during that period. In other respects the public health was remarkably good.

The fourth quarter of the year was also healthy, and requires no remark, with the exception that Small-pox prevailed to a considerable extent in some parts of the Parish of Saint Paul, Deptford. In my Monthly Reports I drew your attention to that fact; and although no large amount of deaths arose from that disease, still, it was remarked that the deaths that did occur were in children that either had not been vaccinated, or that the vaccination had been but very imperfectly attended to. Perhaps it would be desirable that the attention of the Board of Guardians should be directed to that fact. The compulsory character of the Vaccination Act has been much misrepresented, as a forcible interference with the independence of Englishmen and the discretionary power of parents. Such is the feeling amongst a very large number of persons at the present time, and more particularly amongst the poorer classes. All law is an infringement on personal freedom, for the sake of the public good; but we must not allow that children should be permitted to die, because ignorant parents will not avail themselves on their behalf of a safe and easy preventive measure; much less can we suffer the lives of others to be placed in danger by such neglect.

The next table will show at a glance a summary of the deaths registered in the District during the past year, the diseases causing those deaths, and the ages at which those deaths took place.

DEATHS REGISTERED IN THE DISTRICT

DURING THE YEAR ENDING DECEMBER 27, 1856.

CAUSES.	Greenwich East.	Greenwich Hospital.	Union House.	Greenwich West.	Dreadnought Hospital.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.	Under 10 Years.	10 to 20.	20 to 40.	40 to 60.	60 to 80.	80 and Upwards.	Total.
Scarlatina	9	....	...	2	....	13	....	24	22	2	....	....	....	....	24
Measles	5	1	....	7	....	26	8	47	47	....	....	....	....	....	47
Whooping-cough	14	....	1	18	....	37	7	77	75	2	....	....	....	....	77
Small-pox	2	1	....	1	....	9	1	14	11	1	2	....	....	....	14
Diarrhœa & Dysentery ..	8	11	1	11	5	46	8	90	65	....	4	3	17	1	90
Cholera .....	....	....	....	....	....	1	....	1	....	....	....	....	....	1	1
Typhus	13	11	15	14	12	11	3	79	22	9	18	20	10	....	79
Chest Affections	72	112	63	139	40	183	52	661	184	31	140	113	165	28	661
Influenza .....	....	....	....	....	....	....	1	1	....	....	....	....	....	1	1
All other Causes	106	100	106	171	35	259	55	832	313	24	82	86	259	68	832
Accidents and Inquests ..	11	3	1	17	8	23	8	71	21	8	18	14	10	....	71
Total	240	239	187	380	100	608	143	1897	760	77	264	236	461	99	1897

From which you will perceive that 24 deaths arose from Scarlet Fever, 47 from Measles, 77 from Hooping-cough, 14 from Small-pox, 90 from Diarrhœa, 1 registered as Cholera (which is somewhat doubtful, as the patient was upwards of 80 years of age, and had partaken of improper food whilst suffering from Diarrhœa), 79 from Typhus Fever, 661 from Heart and Chest Affections, 1 from Influenza, and 832 from all other diseases. 71 Inquests were also registered during the year.

The principal feature to be observed in the registration of the deaths of the whole year, is the enormous amount of infantile mortality. 760 deaths took place amongst children under 10 years of age; which, after excluding the deaths occurring in the Hospitals and Union Workhouse, will amount to more than one-half of the deaths registered from the different Parishes in the District.

From the following tables will be seen the number of births and deaths that were registered in the District during the same year.

I have been unable to ascertain the relative number of males and females born in the District, but according to a rule, which invariably holds good in all other Districts, the number of males exceed that of females. We may, therefore, fairly conclude that such has been the case in this District.

The relative number of males and females that died in the District were in the following proportions, *viz.*:—

Males	1,104
Females	793
Total	1,897

1st.—Table showing the total number of births and deaths in the District :—

	Greenwich.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.
Births	1194	1232	300	2726
Deaths	1146	608	143	1897
Excess of Births } over Deaths... }	48	624	157	829

2nd.—Table showing the number of births and deaths in the District, exclusive of the deaths occurring in the Hospitals and Union House :—

	Greenwich.	St. Paul, Deptford.	St. Nicholas, Deptford.	Total.
Births	1194	1232	300	2726
Deaths	620	608	143	1371
Excess of Births } over Deaths... }	574	624	157	1355

From the first of the above tables it will be seen, that the excess of births over deaths in the Parish of Greenwich is only 48.

This estimate includes the deaths from the Royal Hospital, the Dreadnought Hospital, and Union Workhouse. I am informed by the Registrars for Greenwich that this excess of deaths is also invariably maintained, and for the reasons just mentioned.

But if (as shown in the second table) the deaths occurring in the public establishments—*viz.*, 526, be deducted from the total number registered in the Parish, 620 will remain as actually belonging to the Town of Greenwich; thus proving the excess of births over deaths in that Parish to be 574, which is somewhat in a fair ratio as compared with most other Districts.

The next fact, perhaps, worthy of remark is, the large proportion of births in the Parish of Saint Paul, compared with the other Parishes in the District.

The population of Greenwich, excluding the Hospitals and Union House, is upwards of 10,000 more than that of Saint Paul; yet the births in the Parish of Saint Paul exceed those of Greenwich by 38.

This large amount of births in the Parish of Saint Paul is considered by Mr. MARCHANT, the Registrar for that District, to arise from the number of artizans, employed by the Government and other establishments, living in the neighbourhood. Whole streets are occupied by these workmen, who are mostly young

married persons, and whose families are rapidly and constantly increasing.

Another fact, that I ought perhaps to bring to your knowledge, is, that out of 760 deaths that occurred in the whole District amongst children under 10 years of age, 372 were registered in the Parish of Saint Paul. This infantile mortality will partly be accounted for from the large number of births, already noticed as taking place in that Parish.

On taking the foregoing facts into your consideration, the principal feature that must strike your observation will be, the great amount of infantile mortality occurring in the District.

This mortality has arisen for the most part from, what may be termed, preventible causes. It is, then, to the removal of those causes that I shall now more particularly direct your attention, and which will fall under the following subjects:—

SEWERAGE.

It is to be regretted that the sewerage of this District is at present so very limited. The Parish of Greenwich shows by far the largest portion on the plans. The Parish of Saint Paul will furnish the next in number; but that of Saint Nicholas, Deptford, appears to be almost without these primary necessities of health and cleanliness.

The rapid and complete removal of all refuse by efficient sewerage is of the most essential importance to the health of the community. Without it all human aid for the prevention of disease would be futile.

At the present stage of your operations, and in the present state of uncertainty as to the future operations of the Metropolitan Board of Works, I cannot press upon you the commencement of the sewerage of the whole District; still, there are some parts, such as the upper part of the Parish of Greenwich, and that of New Town, Deptford, in which some sewerage works may with safety be commenced.

HOUSE DRAINAGE.

In the inspection of houses, special attention has been paid to the drainage into the common sewer in those streets where sewers

exist; and although you have given your orders for the effectual drainage of all houses reported to you by your officers, I cannot say that such works have been carried out on sound and perfect principles. These imperfections are chiefly to be attributed to the scanty supply of water to the closets. I am sorry to find, in very many instances, that the water-closets of the poor have been stinted in this most important necessary—so essential to health, to decency, and cleanliness—by the cisterns being made far too small, and totally inadequate for the uses to which they have been applied.

This remark will more particularly apply to the courts and alleys, where only one water-closet and one small cistern has been provided for the use of perhaps 10 or 12 families. I trust that, by your assistance, a remedy will be found for this evil, and that the law will not be in future frustrated by such incomplete arrangements.

There is one fact of particular importance as regards house drainage that I wish to bring to your notice—*viz.*, that, in nearly if not all cases where house drainage has been properly carried out, the habits and cleanliness of the people in such localities have much improved, and they express great gratification for the comforts they have thereby received.

CESSPOOLS.

As regards cesspools, I would observe, that almost every house not drained into the common sewer has either an open privy or common cesspool, from which not only the atmosphere becomes impregnated with the most hurtful effluvia—a prolific source of disease—but, in all instances where the supply of water to the neighbourhood is obtained from wells and pumps in close proximity to these receptacles, the pernicious effects are too palpable to require any caution on my part against their use and construction.

CONDITION OF HOUSES.

Under this head I am anxious to draw your attention to the general Sanitary condition of those houses occupied by the poorer classes.

OVER-CROWDING.—One of the most striking circumstances met with in visiting the residences of the poor in many parts of

this District, is the large number of persons inhabiting each house. It is not uncommon to find a house, containing four or five small rooms, occupied by 18 or 20 persons, and in some instances even by a greater number—each room on each floor being occupied by a separate family, as a day and sleeping room. If some plan could be adopted for regulating the number of persons who should occupy rooms of a given size, much disease might be prevented. In some instances the under-ground cellars have been found to be used as sleeping rooms. Such practices are generally recognised as the sources not only of disease of the body, but also rendering the minds of the occupiers a prey to vice and immorality.

The removal of these abuses cannot be too strictly attended to in all cases brought to your notice.

CLEANLINESS.—In the most densely occupied parts of this District there is a great deficiency in the general cleanliness of the floors, walls, and stairs of the houses. Such want of attention must become a source of disease, and the landlords or occupiers should be required to cleanse and whitewash such dwellings.

IMPROPER VENTILATION.—The next point to which I would allude as a source of disease is deficient ventilation. In many houses the windows do not open at all, and where sashes do exist they seldom come down from the top, which is the only way in which a room can be properly ventilated. Good ventilation is of the greatest importance to the health. The deadly effects of an impure atmosphere gradually steal on the system. Scrofula, Phthisis, and many other diseases can often be traced to the depressing influence of an impure atmosphere. In the construction of new houses and during the repair of the old, I would call the attention of landlords to the system of more perfect ventilation.

DUST AND ASHES.

The accumulation of the house refuse is more often the cause of disease than is generally imagined. From the decomposition of such matter many dangerous poisons are produced. Too much attention cannot therefore be given to the removal of this refuse previous to such changes taking place.

During the inspections made by myself and your other officers, frequent nuisances of this kind are brought to our notice. Great

difficulty appears to exist amongst the poorer classes in getting rid of their rubbish, inasmuch as they are unable to pay the dustmen for their labour. During your next Session I trust you will be enabled to determine upon some plan whereby these difficulties can be overcome.

Having briefly disposed of the condition of the houses of the poor, I wish to touch on a few other subjects that require your attention.

GAS.

I have been favored by my friend Mr. HEISCH with an analysis of the qualities of the gas, supplied to this District by the Phoenix Gas Company, and which I beg to lay before you. He says, "that 100 cubic feet yielded by combustion about 5 grains of anhydrous sulphuric acid; and 100 cubic feet gave 0.9 grains of ammonia, 17.6 grains of carbonic acid, and a trace of sulphuretted hydrogen."

The general conclusions to be drawn from this analysis are, that the quality of the gas during the time that the experiments were in progress was tolerably satisfactory. The total quantity of sulphur was not large; but the portion existing as sulphuretted hydrogen should be removed in the purifiers. The ammonia also ought not to be present, as its combustion gives rise to very injurious fumes. The carbonic acid should not exist in well purified gas; but it is, I believe, no further injurious than as it interferes with the illuminating powers of the gas, and tends to vitiate the air of the room in which the gas is burned more rapidly than need be the case. It would be well, therefore, if the attention of the Company were drawn to these objections.

There can be no doubt that gas works in general are nuisances to the locality in which they are placed. Many of the gas works in London are being inspected by the Association of the Medical Officers of Health, a Report on which will shortly be made; and I have no doubt that after the inspection of a number of those works, some measures will be recommended for the prevention of these nuisances. This Report I hope to be able to lay before you; and it will then be in your power to enforce the adoption of any measures that shall be thought requisite on the inspection of the gas works in this District.

THE SURFACE OF THE DISTRICT.

The condition of some of the roads and gutters, especially in the narrow and crowded streets, exercises an important influence on health. Many streets that have been reported on are in an improved state; but there are still many in the District covered with mud and water, mixed with animal and vegetable refuse, giving off pestilential effluvia, and operating injuriously on the human constitution. Such streets I hope to bring to your notice in my future Reports.

OFFENSIVE TRADES.

Many offensive trades carried on in this District affect, to a certain extent, the public health.

In dealing with these trades or manufactories, I feel that I have a difficult duty to discharge. I have a duty to perform towards the neighbourhood; I have a duty to perform towards the proprietors of these works; and I have a duty to perform towards the public in general, not only as regards their health, but also as regards the effect that these works exercise on the trade and parochial assessments of the Towns in which they are carried on.

The great principle I have endeavoured to carry out has been, to impress on the owners that, inasmuch as the formation of noxious and offensive odours is often inseparable from the business they hold, it is their duty to endeavour to confine these odours as much as science can dictate to them, and to carry out the most recognised chemical principles for their destruction previous to their being finally allowed to escape into the atmosphere.

I have also endeavoured to impress on the minds of the manufacturers that, unless these stipulations be properly carried out, it will become my duty to make such Reports to your Board as will prove their works to be injurious to the public health.

In most instances my injunctions have been complied with, and hence it is that I have not found it hitherto necessary to make many unfavourable Reports thereon.

I am aware that some dissatisfaction has been expressed respecting the line of conduct that I have pursued towards these

trades; but I would most respectfully observe that, should the Board require a Report from me upon every nuisance arising from these trades, without previously using my private endeavours to get them removed, I shall be ready at all times to comply with such instructions.

IMPROPER FOOD.

During my tenure of office I have on many occasions visited the markets and other places, with a view of detecting any unwholesome food that might be exposed for sale.

We have now arrived at that season of the year when decay goes on very rapidly, and it would be desirable that a more strict inspection of the meat, fish, and vegetables, should be carried out.

Under the Act 19 and 20 Vict., c. 131, any two Justices of the Peace have the power to authorize any person or persons to act as Sanitary Inspector or Inspectors, for the purpose of inspecting the markets and other places, and of empowering them to seize all unwholesome food.

By this Act, it is lawful "for any Clerk or Inspector, or other
"officer of any fair or market, or for any Constable or Policeman,
"or for any other person, authorized by the Mayor or by any
"two Justices of the Peace having jurisdiction in the place, or
"for any person authorized by Her Majesty in Council, to seize
"all sheep affected with Small-pox." And, "if any meat unfit
"for human food be exposed or offered for sale, in any market,
"fair, or other open or public place, it shall be lawful for such
"Clerks, Inspectors, Constables, Policemen, or other persons
"authorized as aforesaid, to seize the same, and to report such
"seizure to the Mayor or Justice." The Mayor or Justice may order the thing seized to be restored; and in this case, if there were probable cause of seizure, the officer seizing cannot be made to pay more than 2d. damages, or be fined more than 1s.; on the other hand, should the Justice condemn the meat, it is to be destroyed, and the person offering it to be fined £20.

It would be very advisable that the Inspectors of Nuisances for this District should receive such authority; and I would

recommend that the necessary steps be taken for that purpose without delay.

WATER SUPPLY.

In the instructions which I had the honor to receive from you at the commencement of my duties, it was required that I should in my Annual Report lay before you a statement of the quality of the water supplied to this District.

The works of the Kent Water Company call for no particular observations, with the exception, that they are well constructed, that the operations are well carried out, and that the engines and buildings are a model of cleanliness and order.

As regards the water itself, I am desirous of drawing your attention to two analyses—one made for the Government Commission in 1851, and the other by Professor HOFFMAN, for the Board of Health, in 1856; and which are placed in juxtaposition in the following table:—

KENT WATER COMPANY.

Date.	Total amount of Hardness.	Solid Constituents, Grains per Gallon.		
		Total Solid Residue.	Organic Matter.	Inorganic Matter.
1851.....	16.00	29.71	2.61	27.10
1856.....	12.03	26.10	1.37	24.73

The most important circumstance to be observed in the above table, is the great diminution in the amount of organic matter; in fact, the water supplied to this District in 1851 contained double the quantity of organic matter to that supplied in 1856.

In pursuing this part of my enquiry, I have also procured the assistance of Mr. HEISCH, who is more conversant than myself with the practice of analysis, on whose talents I can implicitly rely, and from whom I have obtained the following account of an

examination of a gallon of water, made during the present month, *viz.*:—

Total amount of solid residue 25.54 grains, composed of—

Organic matter	1.506
Silica	0.053
Oxide of iron	0.633
Carbonate of lime	6.600
Lime	2.974
Magnesia	1.905
Soda, potash, and a few other substances of little importance	11.383
	<hr/> 25.054.

The main features to be observed in this analysis, as compared with those of 1851 and 1856, will be shown in the following table:—

KENT WATER COMPANY.

Date.	Solid Constituents, Grains per Gallon.		
	Total Solid Residue.	Organic Matter.	Inorganic Matter.
1851	29.71	2.61	27.10
1856	26.10	1.37	24.73
1857	25.54	1.506	23.548

It will be thus seen that the total solid residue upon evaporation is even less than in the year 1856. There is a slight increase in the quantity of organic matter; and, as a matter of course, there will be a proportionate decrease of inorganic matter.

These favourable results are also borne out by a microscopical examination, lately made by Dr. HASSALL, who kindly forwarded me a copy of his Report, extracts from which I beg to lay before you. He says—

“The sample was taken from the service pipe at the *Prince Regent*, High Street, Deptford.”

“ No sediment visible to the naked eye was deposited from this water ; there were detected in it, however, a good number of infusoria.”

“ It was remarkable for its freedom from diatomacea, a few frustules only being detected.”

All the waters supplied to the Metropolis contain considerable numbers of living vegetable and animal productions ; still, in comparing this microscopical analysis with those of the other Water Companies, (also made by Dr. HASSALL,) it will be found that the water supplied by the Kent Company contained fewer organic productions than the water supplied by one half of the other Metropolitan Water Companies.

These results do not appear to be accidental, but, I believe, must be attributed, in a great degree to the improvement which has taken place in the purification of the River Ravensbourne ; and the collection, filtration, and general management of the works of the Kent Water Company.

To have water of tolerable purity supplied to this District is a comfort which you all must feel to be of the most essential importance, and I am sure that I do not overrate that importance when I affirm it to be one of the greatest Sanitary advantages that can be conferred on the neighbourhood. As regards the quality of the water, therefore, I have no observations to offer beyond what has been above shown ; but as regards the quantity, and method of supply, I do feel that the poorer classes of this District are yet very much restricted in this great necessary of life. The quantity with which they are provided, the method of supply, and the receptacles they have in use for the receiving that supply, cannot but act as a barrier to the decency, the comfort, the health, and civilisation of that class of the community.

At the houses of the poorer classes the water is collected once in each day (Sunday excepted), for the most part in butts or tubs, seldom having any lids or coverings, receiving all kinds of impurities from the atmosphere and other sources ; and being generally so small that they do not contain anything like a proper quantity of water for the use of the family.

In a great many places the water is not laid on from the waterworks at all, consequently the daily supply is obtained from some distant source, and is kept in jugs, dishes, or pans, whichever the people may happen to possess ; and which are usually placed in the room which serves as their sitting and bedroom, thereby becoming exposed to all the impurities arising from a close and confined atmosphere.

The manner in which water is supplied to the houses of the higher classes is not without objections. In these houses the water is, of course, received into cisterns. One of the evils arising from the use of cisterns is, that they are so situate that they can be only reached with difficulty, thus offering a great obstacle to their being regularly cleansed.

In some cases they are placed over the water-closet, so that the water imbibes the emanations which proceed from it.

Another great evil connected with cisterns is, that the organic matter contained in the water supplied to them does not find a ready egress, but subsiding day after day goes on accumulating at the bottom of the cistern. This liability to accumulation shows the extreme necessity for the frequent cleansing of the cisterns. There is in this respect a most lamentable neglect on the part of occupiers of even superior houses. It is no uncommon thing for these receptacles not to be cleaned out for months, or even years. The consequence of this accumulation is, that the water present in the cisterns, from faults of construction and neglect in cleansing, frequently contains a much larger amount of organic matter than that supplied to them by the Water Company.

From the preceding remarks I trust you will be convinced that there are many serious evils associated with the use of cisterns and other receptacles for the storage of water in this District. These evils can only be effectually obviated by their complete abandonment, and that by adopting the constant instead of the present intermittent supply.

On and after the 1st of July, 1857, or about that time, I believe I am right in stating (and therefore wish to remind you) that you will have the power of requiring from the Kent Water

Works Company that they shall accommodate the whole or any part of your District with a constant supply of water.

I believe also, I am right in stating, that such a scheme is practicable, that the desirability of such an undertaking is undoubted, and that a continuous supply will tend very considerably towards the Sanitary improvement of the District and the domestic wants of the people.

The last subject of importance which I consider to be my duty to lay before you will be, an abstract of the other Sanitary works performed in the District, from the commencement of your labors to the 30th of April, 1857, *viz.*:—

- 401 feet of new pipe sewer, in Luton Place and Leach's Alley.
 - 278 entries into sewers.
 - 913 houses drained into sewers.
 - 383 closets supplied with water, exclusive of drainage.
 - 547 privies emptied, exclusive of drainage works.
 - 936 cesspools and bogholes emptied and filled up with dry rubbish, consequent on drainage.
 - 65 nuisances, arising from accumulations of filth, stagnant pools of water, &c., removed, by order of the Board.
 - 12 old gullyholes trapped.
 - 12 new street gullies made and trapped.
 - 8 new waterclosets.
 - 1 open ditch filled up with dry rubbish.
 - 3 cases in which pig-styes have been removed.
 - 52 slaughter-houses have been inspected on several occasions, and kept in good Sanitary condition.
 - 17 summonses have been taken out. The Magistrates have made the order for the removal of the nuisances complained of, and the expenses charged on the defendants.
- The streets throughout the whole District have been generally swept twice in every week, and in some instances three times, when found necessary.

These works are such as can be verified from the books kept by the officers of the Board; but there have been some thousands of inspections made, and an immense number of nuisances removed,

by your officers, respecting which it has not been found necessary to occupy your valuable time.

CONCLUSION.

I feel that this report is far from being complete. Many subjects have been omitted, and many subjects have not received the consideration that ought to have been devoted to them. These omissions have occurred from the fear that I should weary you with a too lengthened detail.

What I am desirous of doing, as your Medical Officer, and which I have always endeavoured to do, is to point out to you the unhealthy localities of your District, the various nuisances therein arising detrimental to the public health, and to suggest those measures which are required for their permanent improvement.

Having done this, the public will look to you for an earnest co-operation in enforcing the execution of these improvements, whereby the atmosphere will be so depurated of its impurities as to lessen the sickness that prevails, and also still further diminish the present rate of mortality.

To those, perhaps, who reflect that after all the age of man (as I mentioned in an earlier part of this Report) is but "three-score years and ten," it may appear that the pretensions of Sanitary Science to prolong life rests on a very slender foundation; but I think you will agree with me, that our efforts are not required to surpass this standard of human life, but rather to attain it. It is only by vigilance and energy in the work of self-preservation that this appointed average can be attained; and it is when we consider the number of lives that are annually carried off by, what may be termed, preventible diseases, that we feel the importance of the duty imposed upon us of employing to the utmost the remedial means that we have at our command.

The foregoing are, doubtless, the essential and pressing reasons for Sanitary reform and Sanitary measures in this and every other part of the kingdom. But there are other and numerous incidental advantages to be derived from the carrying out of the beneficial system which I have recommended, and which, it is to be hoped, will in future be obtained in this neighbourhood; and, not the

last nor least which will naturally suggest itself to the minds of a Board composed of gentlemen possessing very considerable freehold and other property in this locality, is the positively increased value of such property, arising from the known improved Sanitary condition of the District.

I have the honor to remain,

Your most obedient Servant,

HENRY N. PINK.

Croom's Hill, May 27, 1857.