

Report of the Health of London Association on the sanitary condition of the metropolis; : being a digest of the information contained in the replies returned to three thousand lists of queries, which were circulated amongst clergymen, medical men, solicitors, surveyors, architects, engineers, parochial officers, and the public.

Contributors

Health of Towns Association (London, England)

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To The Most Honorable The Marquis of Chandos
M.P.
with the Co-authors respects -
REPORT
OF THE

HEALTH OF LONDON ASSOCIATION

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1847
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ON THE

SANITARY CONDITION

OF THE

METROPOLIS;

BEING A DIGEST OF THE

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RETURNED TO

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OBJECTS OF THE ASSOCIATION.

I.—To instruct the people as to the evils which result from the present defective sewerage, drainage, ventilation, street-cleansing, and supply of water; from interment in towns, and from other sources of injury to public health; and to show the beneficial influences which the removal of these evils would certainly exert on their physical and moral condition.

II.—To diffuse information respecting the most efficient and economic means of carrying out the necessary remedial measures, and, more especially, to disabuse the public mind as to the expense which would be thereby incurred.

III.—To direct attention to the increased security to life and property which would result from the appointment of properly-qualified Officers of Health, whose duty it should be to ascertain and certify the *fact* of death, and to investigate and lay before competent authorities the circumstances and agents which deteriorate, generally or locally, the health of the community, so that by a summary process they might be effectually removed.

IV.—To solicit the co-operation of the Government, the Municipal and Parochial Authorities, the Clergy, the Medical Profession, Surveyors, Architects, Engineers, and the Public generally, in carrying out the objects of the Association.

V.—To adopt such other measures as may appear best calculated to carry into effect the above objects.

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ADDRESS OF THE COMMITTEE.

THE necessity and importance of effective sanitary improvements are now so universally admitted, that the Committee of this Association deem it unnecessary to dilate much upon them.

Whether this question be viewed in a pecuniary light alone, or in connection with the moral and physical state of the great mass of the labouring population, on whose well-being the wealth and safety of the nation so much depend, it is alike regarded by all political parties, and confessed by all intelligent men to be one of the most important of the day.

In a mere pecuniary point of view it is proved, and even generally acknowledged, that the expenditure now entailed upon the empire by the absence of proper sanitary measures far exceeds that which would be required to eradicate the great evils which affect all classes of society, but more particularly the labouring population; and the important truth is dawning upon the minds of most thinking men, that, before a great portion of the industrious poor inhabiting the densely-populated districts of our large towns can be raised in the scale of civilization, it is absolutely necessary to remedy the state of moral and physical depression which is engendered and perpetuated by a constant residence in filthy and wretched abodes and localities.

To these truths, and to the threatened re-invasion of cholera, which fifteen years ago raged with such fatal effect in our country, and especially in our large towns, the origin of this Association is owing.

On the 31st day of July last, the following letter appeared in the *Times* newspaper:—

“Mansion House, July 30, 1846.

“SIR,

“I am directed by the Right Hon. the Lord Mayor to state that, as Chief Magistrate of this City, he has received information that the *cholera* has made its appearance in some parts of the suburbs of London, and that it is therefore of urgent importance for the safety of the inhabitants that every measure which prudence can suggest should be adopted with the utmost promptitude. Under these circumstances the Lord Mayor considers it advisable that you should, with the least possible delay, submit to the Board of Directors of the New River Company the propriety of directing their engineers to let out water during the night, so as thoroughly to flush and clear the several gulleys and drains within their districts, and thereby prevent in a great measure those noxious exhalations in the atmosphere which are constantly emitted from the decayed animal and vegetable matter in the sewers, and which are considered by the highest medical authorities the chief cause of the formidable disease above referred to.

“I have the honour to be, Sir,

“Your obedient servant,

“S. R. GOODMAN, Chief Clerk.

“The Secretary of the New River
Water Company.”

It would be superfluous to state that the appearance in the *Times* of the above letter caused great anxiety to the inhabitants of the Metropolis. Mr. Charles Cochrane, the active and benevolent President of the “National Philanthropic Association,” sharing this anxiety, promptly determined to call a public meeting at the London Tavern. At that meeting, which was attended by several of those gentlemen who have since taken such an active part in the

advancement of the objects of this Association, it was much debated as to whether the *blue* or *Asiatic cholera* had really made its appearance in this city. While some of the medical gentlemen stated that they had attended some few isolated cases of it, all agreed that English cholera, in a very severe form, was raging to a great extent. It was eventually resolved that a deputation should wait on the Lord Mayor to acquaint him with what had transpired at the meeting. The deputation was courteously received by his Lordship, but he declared that *there was no cholera*. The deputation called the Lord Mayor's attention to the letter signed by his Lordship's chief clerk, but to no purpose. They were again assured that *there was no cholera*, and, moreover, that there could be no sanitary improvement effected in the City of London; in fact, that in this respect *it was perfect*. It is scarcely necessary to state that some of the principal places in the City are unprovided with sewers; as, for instance, the Minories, the populous district of Duke-street, and nearly the whole of the courts and alleys where the poor reside; that house drainage is lamentably deficient throughout the whole of the City; and that many of the gully-holes are untrapped; and that the water supply is most insufficient. The deputation withdrew, rather dubious as to the correctness of the opinions expressed by the chief Magistrate, and determined to hold a second meeting. At this meeting, after much deliberation, this Association was formed, and a Committee appointed.

The proceedings of this Committee have so frequently been laid before the public, by means of the Press, that it would be superfluous to enter into any detail of them at the present time; but it may be necessary to observe, that the objects of the Association have been carried out by lectures, delivered in various parts of the Metropolis, by some of Members; and that the suggestions of the Committee, respecting the clauses to be included in the then forthcoming

Sanitary Bill, were presented by a deputation to Lord Morpeth, who promised to give them his most attentive consideration. Many of these suggestions have been embodied in the Sanitary Bill now before Parliament.

The Committee, though not unacquainted with the fact that the "Health of Towns' Association" had been most active in its proceedings, and that it had diffused much valuable information, by means of public meetings, tracts, &c., yet considered that the idea of endeavouring to obtain the sentiments and opinions of that portion of the public who were, from their professions or avocations, best fitted to afford information, had not been sufficiently carried out. They likewise considered it advisable to endeavour to ascertain how far the public mind was informed upon the subject of sanitary improvements, and how far it was prepared to assist in obtaining them. After much deliberation, the Committee considered that if they could obtain replies to the queries which follow, their important objects would, in a great measure, be attained ; the circulation of these queries would at once diffuse much information, excite and fix public attention, and fulfil the designs of the Committee.

Three thousand copies of these queries were therefore circulated among clergymen, &c., as above stated, the replies to which having been obtained, it was resolved that a digest should be made of the facts, the information, and the opinions thus elicited. A Sub-Committee, consisting of Dr. Gavin, Dr. Barnett, Mr. Abraham, and Mr. Liddle, was appointed to prepare the same. The great difficulty which the Sub-Committee experienced was the condensation of the amount of valuable information contained in the replies within limits likely to engage the attention of the public. In fact, had they not confined themselves to simply reducing to a lucid form the information thus obtained, a work as large, almost, as a blue book, the result of a Parlia-

mentary inquiry, would have been produced, many more of which are printed than read.

The Committee trust that the Report which they now present will be the means of diffusing much valuable information as to the present sanitary condition of London, and of exciting an interest in the minds of the middle and operative classes which will not be allowed to slumber, but be productive of real and permanent benefit.

SICKNESS AND DISEASE.

- [1.] Have you observed sickness and disease to arise from badly-constructed and ill-ventilated dwellings, from imperfect sewage, and from bad cleansing of the streets, courts, and alleys?

The weight of evidence from actual observation, and the concurrent testimony of all (except one) who have been interrogated on this subject abundantly prove that sickness and disease, in their varied forms, and with their varied consequences, and even death itself, are continually and extensively resulting from the faulty construction and the imperfect ventilation of dwellings, from the deficiency or total want of sewage, and from the filthy and dirty state of a vast number of the streets, courts, and alleys in this great centre of civilisation. It is, moreover, proved that these prolific causes of disease and death spread their fatal influence all around, and even to very distant situations.

It is difficult to convey an impression of the general sentiments of horror entertained by the respondents regarding "the dreadful devastation of human life," and the "lamentable extent of sickness and disease" caused by bad drainage and sewage; while it is in evidence that "these evils have a direct tendency to create more serious ones in uncleanly habits, and a train of vices which sweep away many thousands of the poor, whose lives are one scene of misery and ill-health." Destructive as these evils are, they almost necessarily, indirectly, produce others equally destructive, as mental depression, moral degradation, drunkenness, &c.

It is likewise stated, and proved, that disease has often been traced to these causes, not only among the poor, but amongst the middle classes *to a great extent*, and that the sickly appearance and depraved general health which characterise a vast proportion of the inhabitants of certain parts of the Metropolis have their true origin in these causes. It

is likewise established that the cachectic state of constitution thus induced is highly unfavourable to the throwing off disease, when it arises from other causes; and that the confined, ill-ventilated rooms in the dwellings of the poor aggravate their diseases and protract their recovery.

It is everywhere stated that a low form of fever, and typhus fever itself, is generated and maintained by the filthy state of the dwellings of the poor, and of the immediate neighbourhood, and by the inefficiency, as well as the utter want of sewage; and that in some of the courts and alleys in the Whitechapel Union, and in other parts of the Metropolis, *fever is never absent*. Instances are given of existing cases of typhus fever caused by exhalations from open sewers, and gully-holes. These fevers are generally severe. This frightful scourge and fell destroyer of manhood in its prime, the fertile source of widowhood and orphanage, of pauperism and crime, is ever in active operation in this city.

The fatal results of fever alone produced by these agencies may be estimated at from 20,000 to 30,000 annually. The absolute amount of wretchedness arising from such a frightful and unnecessary waste of human life can scarcely be calculated.

Malignant fever, typhus, or low fever, and many infectious diseases, as well as the malignancy of our epidemics, and a large majority of cases of erysipelas, measles, small-pox, hooping cough, scarlet fever, and cholera, as well as the spring and summer diarrhæa, owe their severity, if not their origin, to atmospheric poisons produced by a combination of the evils enumerated in this question.

Besides the unnecessary waste of human life by fever and febrile diseases in the Metropolis, it is calculated that of those who annually die of consumption, 2,500 might be saved by proper sanitary measures; and one-sixth of that mortality is attributed to the deficient ventilation of workshops; while five-sixths are attributed to the condition of the dwellings of the poor.

Scrofula is also stated to be largely produced by the before-mentioned causes, and contributes greatly to swell the amount of mortality and disease in the Metropolis. We have scrofulous sore eyes, scrofulous diseases of the bones and joints, and of the skin, of the bowels, and of the brain. It is asserted on high authority that the repeated respiration of the same atmosphere is the *cause* of scrofula; that, if there be *entirely pure air*, there may be bad food, bad clothing, and want of personal cleanliness, and yet no scrofu-

lous disease exist; and it is proved that a confined, impure air, and the want of exercise, are the chief causes of the prevalence of this disease among the children reared in workhouses, and similar establishments in this and foreign countries. Skin diseases have also their most fertile source in the causes just enumerated.

It is unnecessary to notice the ages at which the different diseases produced by these causes chiefly occur; it is sufficient to refer to the tables of mortality, which prove that inhabitants of country districts (who certainly are not without some removable causes of disease in and around their dwellings) live till the comparatively long age of thirty-five; while the inhabitants of Whitechapel die at the premature age of twenty-six.

The facts elicited from some of the most eminent professional men in London, are sufficient to prove, that a frightful destruction of life and health, and an awful waste of the means of the poor, are continually going on from causes which ought not to exist; that such agencies are essential causes of debased moral principles, irreligion, pauperism, as well as of the heavy expenses of police, poor-rates, prosecutions, prisons, fever hospitals, orphan asylums, and other charitable institutions.

[2.] Have the poor power to remedy these evils?

The replies to this question are in the proportion of six and a-half in the negative to one in the affirmative. Two only of the whole number are partly affirmative, partly negative.

It is quite manifest that the poor have no power to correct the faulty construction of their dwellings—they have neither the money, the time, nor the ability to do so. They are compelled to live in the vicinity of their employments, in such houses as they find vacant; but such is the demand for houses among the poor, that but little choice is afforded to them; for, to use their own words, “if one will not take the house another will.” Three-fourths of the poor, moreover, are lodgers, living in single rooms, and still less able than tenants of small houses to effect improvements. Their houses are constructed without either sewers or drains; they can, therefore, only remove the filth from their dwellings to a neighbouring heap, there to putrefy and contaminate the air. They often attempt to keep the fronts of their houses clean, but generally,

after a short perseverance in an unsuccessful labour, abandon it in despair; and while they deplore the filthy state of their streets, courts, and alleys, they know that complaint is useless, and their efforts to improve it futile, and therefore sullenly submit to what they cannot change.

It is most unfair to accuse the poor of not trying to assist themselves to the best of (what we assume to be) their abilities, and then make it a reason for not doing our own duty in assisting them. We are too apt to measure their intelligence and abilities by our own, and quite forget that they have neither the physical energy nor the industry which characterises the robust and healthy peasant, any more than they have his intelligence or his spirit. The feeble efforts which they make to improve their position and their circumstances, and the heavy, dull, and apathetic listlessness which they exhibit as to their state of wretchedness, dirt, and squalor, afford at once the most convincing and the most melancholy proofs of the impairment of their mental faculties, and of the deterioration of their physical health, and render them objects of our pity, and not of our condemnation.

The malaria which is generated in the wretched abodes, and in the sadly-neglected districts into which the poor are driven for their habitations, is a sedative poison. Its characteristic effect on the human economy is depression of both body and mind. Hence the cause of the incapacity of the poor for exertion—hence the cause of their apathy as to their condition.

We have but to observe the physiognomy of those who inhabit the filthy and crowded streets in our large towns, to discover the retrogression of the human intellect. What further proof is needed of the influence of physical causes in deteriorating their position and reducing them nearly to a level with the brute creation? What greater reward could be desired by the statesman than to see his measures for sanitary reform, while elevating the physical condition of the poor, also elevating their intellect and morals? Their physical condition once improved, their mental improvement would rapidly follow, and as it became developed, their energy, their capacity to learn, and their ability to execute would proceed *pari passu*.

- [3.] Are there any nuisances existing, or are there any offensive trades carried on, in your locality, such as tallow-boiling, slaughtering

of cattle, pig-sties, the burning and boiling of animal or vegetable matter, &c.?

The replies to this question are in the ratio of nearly two affirmatives to one negative; but it is evident that the relative proportion depends on the answers returned from persons living in the various districts in London, and that it cannot be said from this result that one-third of London is free from nuisances. The most prominent, because, perhaps, the most obvious, nuisances complained of are pig-sties, which seem to abound everywhere, and in the most unexpected places. The effluvia from these are generally described as most disgusting; in the suburbs the filth is carefully stored, and laid out in layers over the plots of ground attached to the neighbouring houses; one instance of which, at the end of Seabright-street, Hackney-road, has repeatedly attracted attention as being a concentration of foul *smells scarcely to be equalled*, as well as an apparently scientific design, practically carried out, to poison, by fever, the inhabitants of the neighbouring undrained, damp houses. Ash-pits and dung-heaps, many of them public receptacles for filth of all kinds, are frequently situated in the narrow streets and lanes inhabited by the poorer classes, and are attached to many single dwellings. The slaughtering of cattle takes place to a great extent in London, and the putrefying refuse is allowed either imperfectly to drain away, or to remain, and infect and contaminate the air; sometimes the blood is allowed to run down the middle of the main streets. There is scarcely a reply which does not insist on the slaughtering of cattle in London being strictly prohibited. The effluvium arising therefrom in and about Fitzroy Market, is stated to be horribly offensive. The Smithfield nuisance is too great and too notorious to require much reference. It is asserted to be *the greatest nuisance* ever inflicted on a civilised community, and to be a prolific source of moral and physical evil, perhaps unparalleled in the history of any people—where life and limb are constantly endangered, and the ear offended by the profane language of drovers scarcely less brutal than the objects of their unmeasured rage. The slaughter-houses in Aldgate High-street are most disgusting nuisances. In hot weather the stench arising from the accumulation of the ordure of the cattle, the

entrails, and the blood, is most offensive. There is also a slaughter-house near Newport Market, which is stated to be a shameful nuisance in that crowded neighbourhood. The complete suppression of these nuisances would meet with the unanimous approbation of all the respondents.

The stores of green hides at the back of Leadenhall-street are undoubtedly a nuisance, as well as the hide market. Knackers' yards and the boiling of horse-flesh are unquestionably great nuisances.

Whether the offal and refuse of slaughter-houses are allowed to remain, and putrefy and infect the air, or whether they are washed down the sewer, there to putrefy and emit their emanations through the gully holes, they are alike foul nuisances, and most injurious to the health of persons resident in the vicinity, and, in a modified form, to the health of those even at some distance.

The vegetable and animal remains in our markets are neither promptly nor completely removed, and thus become nuisances. Lay-stalls are also nuisances.

The cleansing and boiling of tripe is very offensive. Tallow boiling is universally stated to be a most offensive nuisance, and is greatly complained of in many localities. Both tallow and whalebone boiling are much complained of in Paternoster-row, Aldersgate-street, Barbican, and other places. They ought not to be allowed in a town, much less in closely-populated districts.

Prussian blue, patent manure making, the manufactory of sugar from rotten potatoes, blood filtering, and bone burning, also occur in various quarters of London, and are described as being very noisome.

The desiccation of night-soil is still carried on in some parts of the Metropolis, and is a nuisance of the most offensive and disgusting description.

The fermentation of grains on the premises of a cow-keeper creates a most offensive effluvium, which, in two instances, is stated to have produced fatal fever in children. The refuse is not sufficiently often removed, and thus becomes an additional source of contamination to the air.

The re-burning of animal charcoal on the premises of sugar refiners is fast extending, and without legislative interference will become general among them. This is a great nuisance, and is excessively injurious.

A patent leather manufactory is complained of as a very offensive nuisance.

- [4.] In your neighbourhood are there any noxious or offensive chemical works, especially lead, colour, mercurial, and water-gilding factories ?

About thirty per cent. of the replies are in the affirmative, about seventy in the negative. The noxious and offensive chemical works which are mentioned are, felt and gas factories, lime-burning, the evaporation of gas liquors, sulphuric and oxalic acid, and other chemical works, some of which are exceedingly offensive.

Chemical works exist at Bow-common, in the parish of St. Leonard, Bromley. There are several, also, at Battersea and at Stratford, and in some of the populous parishes in London.

Colour, mercurial, and lead manufactories, ammoniacal works, corrosive sublimate manufactories, lucifer-match and floorcloth making, and water-gilding, seem to combine pernicious influences in the highest degree.

Gas manufactories are greatly complained of, on account of the immense quantities of smoke which they send forth, and which defiles everything near them.

- [5.] If so, have you found them injuriously affecting the health of those engaged in them, or of the neighbourhood ?

There are but two negative replies to this inquiry.

The injurious results to health from the various agents referred to in the last two queries, vary greatly in character and extent.

Some are the fertile sources of the worst forms of malignant fever, and the malignancy of most diseases, and undermine the health and render prone to disease nearly all in the neighbourhood, as well as greatly protract and aggravate all diseases. Others have peculiar effects, more or less confined to those more immediately exposed to their operation. It may be said, in general, that nuisances chiefly affect the community, while offensive chemical works and trades chiefly affect the individuals employed in them. The exception to this law is, where deleterious gases are given off. The injurious effects of some acrid and irritating vapours spread to a great distance. Thus Dr. Bar-

net refers to instances where not only the physical health of individuals was greatly affected, but even every bright article of kitchen use was spoiled by the vast volumes of soot and vapours emitted from a neighbouring chimney; and Mr. Vallance, of Stratford, states that noxious fumes of nitrous acid gas from a neighbouring chemical work are frequently so extremely offensive that persons passing along the main road are obliged to run, and hold handkerchiefs to their mouths; the eyes are much irritated by the gas, more particularly in the night time, during which the works are in full play. All metal utensils are discoloured or tarnished in the houses in the vicinity. The smell can be perceived half a mile off, which will enable a correct judgment to be formed as to its intensity. This is described in strong language as being one only of a collection of nuisances. Among others, there is a work for evaporating "gas liquor," the stench of which is so foetid that, even when the poor poisoned victims, living near, are confined to their rooms by typhus fever, consumption, &c., they *dare not, and cannot* open a window, as it almost suffocates the inmates, particularly when the wind blows the fumes in that direction. The poor creatures have even been driven out by the intolerable stench into the main road, where they have asked *what were they to do?* To which it was replied, that if they could become *pigs or oxen*, and were killed, the law would punish the proprietors of these nuisances by making them pay *their* value; but as they were only *women and children* the law did not trouble itself about them. In one of these streets Mr. Vallance recently attended a female in her accouchement, in a small room with one window, in which room also lay her daughter very ill of typhus fever; the stench could hardly be endured, and yet the only window for the admission of air could not be opened, as it would thereby admit smoke and stench even more offensive than the air inside. The idea of an expensive law-suit deters persons from attempting to abate these nuisances, and enables the manufacturers to laugh at the complaints of those whose poverty compels them to live in the neighbourhood; whilst they themselves evade these noxious agencies by residing elsewhere.

The injurious effects arising to those employed in lead and colour factories, from the want of precautionary measures, may well be defined by the terms of *poisoning* by lead and arsenic. In certain districts numerous opportunities are afforded to medical men of witnessing the baneful effects of these poisons on the human frame. The different *forms*

of disease produced by those metals are, nausea, loss of appetite, sickness, constipation, colic, paralysis, mal-aise, and an incapacity for the ordinary duties of life—the *consequences* which arise are, neglect of domestic duties, want of cleanliness, and an inability to procure the sustenance of their families—the *ultimate* effects are, protracted suffering, helpless poverty, and, in some cases, death. Great burdens are thus inevitably entailed on the poor—rates through the operation of these causes.

It would be impossible to enumerate all the ill effects produced by these various agents; it is enough to state that the sum total is injurious, in the extreme, to the health of the people generally, and of the artisans particularly, and that a great portion, at least, of the injurious effects might, with proper care and under the supervision of a proper authority, armed with sufficient power, be prevented or greatly modified. It is to be regretted that so little legislation has been exerted on the subject of noxious or offensive manufactories; but, perhaps, there is not more ground for complaint with regard to these noxious agencies, than with regard to nearly all others, which do not include the taking away of our neighbours' lives by violence; for, while in the present day one man is certainly hanged for taking away the life of his fellow-creature, another man is at liberty to destroy the health and lives of multitudes by *poisonous* emanations from any source of profitable employment—the profit being on his side, the loss on that of the public. The modes and manner in which certain trades are carried on are stated absolutely to require governmental interference and inspection. Many trades are carried on at a great sacrifice of human life, a sacrifice which is altogether unknown to the public at large. Generally, as long as the employers can obtain a good return for the money they have invested, they care little about the lives and health of their workmen. They have “a low estimate and false money value of life and health.” When a man dies, or becomes disabled in consequence of his employment, another replaces him without any demand on the purse of his employer; but had he been a horse or a dog, he would have been cared for, and his life and health preserved, if possible, because it would then have cost his employer money to replace him. But as the parish will support the palsied or consumptive workman, an indifference is begotten to what should be considered an imperative duty—viz., that a trade or employment destructive to health or life should not be carried on, unless efficient sanitary measures are adopted, under the control and direction of an Officer of Health.

In France—by an imperial decree in 1810—the various works are judiciously distributed into three classes, and the formalities indicated which are indispensable for the erection of new manufactories in towns and villages. The first class consists of such manufactories as ought not to be carried on near private houses. The second class contains such as are not absolutely to be prohibited near human habitations, but ought not to be erected except after hearing all sides, and leave granted. The third class comprehends those works which may be near habitations, but should be under surveillance.

This distribution is highly deserving of imitation, and would greatly add to the health of the Metropolis. It is to be regretted that while in their first report the Health of 'Towns' Commission admit that manufactories which emit offensive and noxious effluvia may be diminished or prevented, and that the subject still requires investigation, yet, in their second report, they recommend no very decided steps for their suppression by a public officer, when it is known and acknowledged that private individuals have not the power to do it.

[6.] Would it be advantageous to the public that an Inspector of Nuisances and a public Officer of Health should be appointed?

One person only has replied to this question decidedly in the negative, and two only have given answers of a partly negative character; while the number who have replied to this question is greater than to any other. The opinions are expressed with great firmness and decision, that such appointments would not only be highly advantageous, but that they are absolutely necessary. Many state that they would be of incalculable benefit to the community. The mode of appointment, the powers to be given, the duties to be imposed and the qualifications for the offices, however, are subjects of anxious inquiry, and form very important points for consideration.

The Inspector of Nuisances, it is generally thought, should be appointed by the Local Board, and be approved of by the Central Board, and his powers should be accurately defined. It is stated that such an officer is *essentially necessary*, because some persons cannot, dare not, complain of most offensive nuisances, and that without such an officer, multitudes of nuisances, most prejudicial to the health and

comfort of the community, must remain unsuppressed. The facility which would be afforded by such appointments of a ready appeal to a public officer for the correction or removal of a nuisance would be a great boon to the public.

Some consider that the Officer of Health should be appointed by the Local Board, others, by the Central Board; the general opinion, however, seems to be, that he should be appointed by the Local Board, subject to the approbation of the Central Board. Once appointed, he should not be liable to be removed, except with the consent of both Boards.

One of the reasons assigned to prove the necessity for the Officer of Health being a resident in the district is, that the causes of disease, and high rate of mortality in certain districts, could neither be accurately ascertained nor prevented, unless a frequent and regular official communication be maintained between the medical attendants of parishes, the Registrars of Deaths, and the Local Commissioners, through the medium of the Officer of Health.

The duties of an Officer of Health are considered to be very well defined in Lord Lincoln's Bill; they are—

“To inspect and report periodically on the sanitary condition of any town or district, as to the existence of diseases, more especially epidemics, increasing the rates of mortality, and to point out the existence of any nuisances, or other local causes, which are likely to originate or maintain such diseases, and injuriously affect the health of the inhabitants of such town or district, and to take cognisance of the fact of the existence of any contagious disease, and to point out the most efficacious modes for checking or preventing the spread of such diseases, and also to point out the most efficient means for the ventilation of churches, chapels, schools, registered lodging-houses, and other public edifices within the said town or district, &c.”

It is, however, decidedly and very strongly objected to by the respondents, that he should be liable to be called on by the coroner to make medico-legal reports, or *post-mortem* examinations, with chemical analyses, without fee or reward. Such duties necessarily require much knowledge, skill, and high professional qualifications, and to secure the proper performance of them they should be adequately paid for. These views are not opposed to such duties being required of Officers of Health. On the contrary, the omission of such duties in Lord Morpeth's Bill is a subject of great regret. One important omission in Lord Lincoln's and Lord Morpeth's Bill is, that the Officer of Health is *not* required to verify the *fact* of death; a recommendation to this effect is strongly urged in the replies received to this question. It is

generally stated, that such a verification would most powerfully tend to prevent the commission of poisoning and secret murder. The very knowledge of the fact that the body would necessarily be inspected by a competent person, able to detect the agencies of unnatural causes of death, would deter many from the attempt to murder, and would, moreover, tend greatly to diminish the enormous sacrifice of infant life, which is produced by the very common, but little known practice of the use of narcotics to procure to children a sleep—too often an everlasting sleep.

The standing, position, and qualification which an Officer of Health should possess are considered matters of the greatest importance; it is even doubted by some highly intelligent respondents, whether it is possible at once to secure a sufficient number of competent officers, on account of the defective teaching of public Hygiène in our medical schools.

[7.] Do you approve of the establishment of a Council of Health to watch over the sanitary condition of cities and towns, with power to rectify all those evils which are removable, and which are prejudicial to health?

With the three exceptions referred to in the digest of the replies to the previous question, all the responses are in the affirmative.

With these exceptions it is universally declared to be essentially necessary for the benefit of the community at large, that such a Central Board should be constituted. One of the objectors, while he disapproves of such a Board, and considers it opposed to our social and political constitution, and a great evil, states his inability to determine as to its necessity. The other is chiefly alarmed at the powers which would be vested in it, and the possibility of its becoming a vehicle for the exercise of patronage. The necessity, however, of a controlling power in connexion with Government, to compel the different Trusts or Local Boards for cleansing, paving, sewerage, &c., to perform their duties in conformity to the law is urged by all. And while some fear too great power being placed in its hands, others believe that with liberal principles, the powers given should be extensive, and commensurate with the enormous difficulties and negligencies to be coped with. Many ex-

press their surprise that Government has never yet instituted such a Council, or that the philanthropic portion of the public has not insisted on it.

The formation of the Council of Health has been much deliberated upon. The general opinion entertained is, that it should be composed of architects, surveyors, engineers, medical men, and chemists, and that they should possess acquirements of a high order. It has also been suggested that the Registrar-General, a Poor-law Commissioner, a Prison Inspector, and a Commissioner of Lunacy should be members of the Council of Health, and as the labours of the Council of Health will be gigantic, there must necessarily be a subdivision of labour among its members. It is proposed that the consideration of the quarantine laws, and all questions relating to the medical relief of the poor, as well as the general superintendence of the public health should be referred to this Council.

It is the common opinion that the power given to a Central Board should be carefully watched over.

While some Local Boards have been actuated by a laudable public spirit, and deserve the thanks of the community, many of them have done as *little* as possible for the public, and then seek for thanks and approbation, on account of the low rate which is levied in consequence of the neglect of their duties. For this reason it is stated that, in the consolidation of the various Local Boards, care must be taken fairly to apportion the taxation of the different districts, so that those represented by Commissions who have properly executed their trusts shall not be unduly taxed, by being united with Boards which have neglected their duties.

It is stated that some opposition must necessarily be anticipated to the establishment of a Central Board of Health, notwithstanding its evident and absolute necessity, inasmuch as it generally happens that those Boards which are the most corrupt, and consequently most need supervision, are the most jealous of all control, and the most clamorous against any central supervising or governing body. It is to be expected that many of the Commissioners on the existing Boards of paving, sewage, &c., will resist any measure, however good, which would tend to deprive them of the liberty of foolishly, if not ignorantly, expending the public money, and of feasting at public dinners to commemorate their sloth or uselessness. The following extract is taken from the Registrar-General's report for the Quarter ending September, 1846:—"The supply of water, and the removal of refuse from the sur-

face, or of matters in solution and suspension through the sewers, are simple engineering questions, the success of which,' in the words of Mr. Smith, of Deanston, 'is certain, while the cost can be estimated on known data.' The wealthiest and most populous parish in the Metropolis—Marylebone—is an example of the imperfect manner in which these questions are solved in the present state of the law. The parish, on an area of about 1,490 acres, had 14,169 inhabited houses, and 138,164 inhabitants, in 1841. The annual value of property rated for the relief of the poor in the same year was £815,279—£57 to each house. Yet a considerable part of the parish is without sewers, or any direct open communications with the sewers. It is said, though the information on this head is imperfect, that half the houses in the parish have cesspools, many of which remain unemptied from year to year. The vestry, under the Local Act, is empowered 'to nominate persons to carry out the *dust, dirt, cinders, or ashes*;' yet no effectual arrangements are made for the removal of decaying animal and vegetable matters—the 'filth' and 'noxious matters' which are really prejudicial to health. The contracts only apply specifically to 'ashes,' which are innoxious. 897 persons died in the parish last quarter. The condition of other parishes may be conjectured from this specimen." In the district of All Souls, Marylebone, containing a population of 27,000, the mortality is one in 28; in London generally, one in 39.*

[8.] In the evidence collected on the sanitary condition of the labouring classes by the Poor-

* Can the existing administrative body in Marylebone, by themselves, carry out an effective system of sewerage? for unless the parish be comprised in one level, it will be impossible.

Mr. Edward Joseph, one of the district registrars in Marylebone, states, that the drainage in the unhealthy streets, courts, and houses is in some very bad, and in others it is middling. The inhabitants complain of the inefficiency of the supply of water, and that the streets, courts, and houses, are anything but cleanly. "Callmell-building," Mr. Joseph says, "is a narrow court, being about 22 feet in breadth, the houses are three stories high, surrounded and overtopped by the adjacent buildings; the drainage is carried on by a common sewer running down the centre of the court, the receptacle for slops, &c., from the houses on both sides. The lower apartments, especially the kitchens, which are underground, are damp, and badly ventilated—light and air being admitted through a grating, on a level with the court. At all times, but especially so in warm weather, most offensive effluvia are perceptible everywhere."

Mr. Geo. H. Bachhoffner, another of the registrars in Marylebone, says that the cleanliness in some places in his district is very deficient.

See Fifth Annual Report of the Registrar General.

law Commissioners, and by the Government Health of Towns' Commission, it is therein stated that it would be a pecuniary saving to the rate-payers to remedy, at the parish expense, the insufficient drainage, the bad cleansing, and the imperfect ventilation of houses, workshops, and public buildings, inasmuch as sickness, and the evils attendant thereon, entail heavy burdens on the public, not only through voluntary institutions, such as Hospitals, Dispensaries, &c., but add to the increase of poor-rates. Do you agree in this opinion?

One respondent denies, and four doubt the truth of the statement contained in the prefixed query. All the other respondents admit the truth of the statement, though some qualify their belief as to the mode in which the saving would operate, and others question the manner in which it is to be brought about. It is universally admitted that if the rate-payers should not immediately reap the benefit in a pecuniary point of view, they ultimately would in their improved health; for it is exceedingly difficult to determine at what state of dilution misamata become innocuous, and how malaria engendered in an adjacent cesspool is to be gifted with a discriminating power by which to avoid the neighbouring dwellings.

The replies to this question resolve themselves into those which refer to drainage and cleansing, and those which refer to ventilation. It is stated that the drainage and cleansing of the City of London and Chelsea, for which the inhabitants are heavily taxed, are imperfect. These parties consider that they would be fully relieved from all expenses which are really unnecessary and preventable, if the drainage and cleansing were properly carried out; and they consider that the expense of ventilating houses and workshops should be incurred by the landlords or tenants. Others think that the beneficial lessees or occupants should be compelled to drain, cleanse, and ventilate their houses and workshops; but all the respondents, whilst they object to a rate being levied to improve the ventilation of houses, workshops, and public buildings, unite in opinion that Government should take measures to *compel* these things to be done.

It is stated, in misconception of the truth, that if the proposal contained in this question were carried into execution, and the improvements effected at the parish expense, it would be an inducement for sordid individuals to neglect drainage and ventilation in the erection of their buildings, knowing that their negligence would be remedied at the parish expense. It is not intended, however, in the recommendation made, that such things should be permitted; the primary expense of rendering the present abodes of the poor fit for human beings to dwell in would fall on the parish, but the property would be required to repay it ultimately. The construction of all new houses should be under proper control.

Some believe that there would be a saving to the poor-rates, and to the contributions of voluntary benevolence; but many believe that the advantage would mainly result to the latter. Most are convinced that the facts adduced in the reports alluded to in the question are fully borne out, and that the amount of disease induced by the causes named, is such as few, if any, except medical officers of public institutions who visit the poor at their own houses, can adequately appreciate. It is stated on high authority, that if it is allowed to include in the calculation the expenses incurred in hospitals and dispensaries, there would be a very large saving—enough, in fact, to carry out all other sanitary measures, not mentioned in the question, and to purchase open spaces for recreation. It is scarcely necessary to state that it is the opinion of all, or nearly all, that, even though the rates should be increased, it would be a desirable course to follow.

Several instances are referred to by the respondents, as corroborating the statements contained in the Reports, and it is stated that one street in Stratford costs yearly in sick allowances more than would purchase the fee simple of the whole of the wretched hovels of which it is composed.

It is believed that when sanitary regulations have been established and have become general, the cost of maintaining a district in a healthy state, would be comparatively small, and that every year's expenditure in the way of relief would form a large item in effecting a prevention of the evil results.

The annual waste of life, from fever alone, in the Metropolis, is very great; and as it is a preventable disease, all the expenses which this disease produces might be saved. Its influence in producing pauperism is demonstrated by the fact that in St. George's, Southwark, out of 1,467 per-

sons who at one time received parochial relief, 1,276—that is, the whole number, with the exception of 191—are reported to have been ill with fever. 16,000 persons were destroyed by small-pox in one year, in England and Wales, and 80,000 were subjected to the sufferings of this loathsome disease. This amount of disease and death was unnecessary and preventable. Of the 5,000 persons who die annually in the Metropolis from consumption, the lives of at least half that number might be saved, if proper attention were paid to the ventilation of workshops and houses. A great number of other diseases are proved to be unnecessarily destructive to life. The annual waste of life in the United Kingdom is calculated at 60,000.

It is estimated that, *under due sanitary regulations*, without doubt, the lives of 10,278 persons in the Metropolis, might annually be saved, and 287,784 cases of sickness avoided. These deaths and illnesses are over and above what are due to natural causes; they are unnecessary deaths and unnecessary illnesses. Verily, twice the loss of life occurs to the inhabitants of this Metropolis annually, which occurred to the gallant soldiers who were massacred and perished in the retreat from Cabool; yet, while a cry of lamentation was sent up by the whole country for their disastrous fate, no sound is raised for the victims of a cruel negligence, and a disgraceful apathy. One-sixth of the total waste of life and health which takes place in the United Kingdom, occurs in the Metropolis. Now, waste of life includes unnecessary sickness, widowhood, orphanage, funeral expenses, inability to labour, medical charges—it also includes the cost of the increased relative proportion of births, which is found to result from a high rate of mortality, and likewise increase of poor-rates, additional calls on public and private charity for the support of hospitals, dispensaries, and asylums, for the sick and infirm. If an estimate is made of the money value of the losses from a neglect of sanitary measures in London, and if a detailed estimate of Dr. Lyon Playfair, for Manchester, is proceeded upon, it is found that £3,204,531 are wasted every year.

It is estimated that the annual value of the sewage of London which is suffered to run to waste and pollute the Thames, is £433,879.

Who shall estimate the amount of wretchedness and suffering, and of abandonment to despair and demoralisation, which is produced by the want of sanitary regulations? Who shall tell how many of the 112,000 orphans, and 43,000

widows on the poor roll,* have been made fatherless and lonely?—who shall tell the number of convicts and criminals in our gaols, who have been sent thither by the negligence of sanitary measures?

SEWERS.

[9.] Are all the houses and streets in your neighbourhood provided with sewers and drains?

The sewers and drains are in a most defective state in many parts of the Metropolis and its environs. There are streets without sewers, and houses without drains, and even where there are sewers, the houses are frequently without drains communicating with the sewers.

Almost all the houses in Greenwich, except those which belong to the Royal Hospital, have cesspools, but have neither sewers nor drains. The public and private drains in Highgate are in a bad state, although no place can have greater natural advantages. In Hoxton and Bethnal-green there are but few streets and houses having either sewers or drains. In Penton-street, Pentonville, there is no sewer, and the drainage is so defective in several parts of the neighbourhood, that, though situated on a hill, the water frequently gets into the kitchens, and the inhabitants are compelled to pump it out. In Penton-grove the drainage is so bad that many houses are unlet in consequence. Hackney-road and the Mile-end-road are partly without sewers.

In the Commercial-road and St. George's-in-the-East there are no sewers, and the kitchens, after heavy rains, are several inches under water, and when the water recedes it leaves an accumulation of filth and dirt of the worst description. There is also a horrible stench from the gratings.

In the parish of Limehouse the sewage is most imperfect; it cannot be considered more than mere surface drainage, because the sewers are not deep enough to drain the *basement stories*.

The arbitrary mode of proceeding in the making of new sewers is a gross injustice to the public at large, inasmuch as

* The number in 1840.

all persons residing on the same level are called upon for the same amount of rate, whether they have sewers in their respective neighbourhoods or not; and thus they are compelled to pay for those advantages which particular localities only possess.

There are no less than seven different Commissions of Sewers within ten miles of the Post-office; these trusts are as follows:—1. The City Commission; 2. The Westminster; 3. The Holborn and Finsbury; 4. The Tower Hamlets; 5. The Blackwall; 6. The Kent and Surrey; and 7, The Regent-street Commission. The names of more than 700 persons are now comprised in these Commissions, upwards of 300 of whom have qualified. This number is unnecessarily large, and is represented as being the frequent cause of obstruction to business. When we consider who the Commissioners of Sewers are, what the mode of their appointment, and the ancient statute by which their proceedings are governed, we shall cease to wonder at the present defective state of the sewerage of the Metropolis, and we shall no longer be surprised in finding that in those places where the population is most dense, and consequently where sewers are most needed, there they exist not; and simply for this reason—because the inhabitants of those crowded localities are extremely poor, and the landlords of the wretched tenements are but little better. While thus the proprietors of houses in these unhealthy localities are in many instances unable, and in most cases unwilling, to contribute towards the construction of sewers, the Commissioners refuse, without the payment of their proportion, which is sometimes a third of the whole expense, to undertake the much-needed work; hence it follows that the poor suffer in their bodily health, the rate-payers are more heavily assessed, and the humane and charitable are solicited for increased contributions to hospitals and other charities, which have for their object the relief of the helpless and infirm. It is the labouring classes who are chiefly interested in these sanitary defects, and in their cure, and any legislative measure which will tend to improve their condition will be hailed with great satisfaction by the whole community.

[10.] Are there any open drains or sewers, and if any, are you aware of any cases of disease having arisen from their effluvia?

There are many open drains and open sewers which constantly emit deleterious gases from the decomposition of

animal and vegetable matter, and are certainly prolific sources of cholera, scarlet and typhus fevers, and other diseases. Persons residing in the vicinity of open drains and open sewers suffer seriously in their health and property. At Greenwich there are open gutters and open ditches, which, at times, give out most offensive effluvia, and in the neighbourhood of which illness of some kind or another, especially fever, is always prevalent. In Westminster there are several open and stagnant drains, from which, in many instances, malignant typhus and puerperal fever have arisen. At Rotherhithe there is an open ditch which has given rise to typhus fever to a great extent, and there are also uncovered drains which receive the sewage of thickly-populated neighbourhoods. At Poplar the main sewer is partly uncovered, and is called the "Black Ditch." It emits a most offensive stench, and frequently produces fever, headach, debility, and disorders of the digestive organs. In the district of the Tower Hamlets Commission of Sewers, there were, within the last few months, upwards of 10,000 feet of open sewers, many of which were in the crowded neighbourhoods of Mile-end New-town and Bethnal-green. This fact induced one of our respondents, a magistrate and commissioner of sewers, to send the following reply—that "in dense populations, such as Bethnal-green, the Commissioners of Sewers ought to be well rolled in their filthy ditches before going to any of their splendid London Tavern dinners."

[11.] Should sewers and drains be covered over?

The sewers and drains should be covered over, and all the openings of sewers and drains should be trapped to prevent emanations from them. All the sewers and drains should have a sufficient fall, and an adequate current of water, so that no accumulation could take place in them; for otherwise the sewers and drains when covered, are only so many elongated cesspools.

[12.] No general survey as to levels of the Metropolis has as yet been made, as a necessary preliminary to efficient drainage. Do you think that such a step should be immediately undertaken by competent persons legally appointed?

The work of sewerage and drainage cannot be well done without a survey of the levels, because it is impossible to prevent accumulation in the sewers and drains without a sufficient fall, and this cannot be secured without a general survey, which should be undertaken by competent persons, legally appointed, and subject to proper control. The preliminary step should be to provide for compelling and carrying out efficient drainage. The general survey would be the first practical step. The whole of each geological area should be comprised in one plan, and in order to accomplish the general drainage of the Metropolis, the Government should immediately cause a general survey to be made, and all the levels to be pointed out by contour lines. A map so constructed would be of infinite value and advantage to the public at large.*

- [13.] It is recommended by the Health of Towns' Commissioners, as well as by the Select Committee of the House of Commons, appointed April 30, 1846, to examine the application for local acts, &c., that all waterworks, all works for drainage of towns, for sewage, and for paving, should be placed under one administrative body. Does your opinion coincide with these recommendations?

It would be a great saving of expense, and an immense advantage and convenience to the public to have all waterworks, works for drainage, for sewage, and for paving placed under one administrative body. There can be no efficient sewage and drainage without an ample supply of water, which should be under the same control as the sewage, so that the sewers may be constantly maintained in good working order. By combining the works of house drainage with the supply of water, there will be only one expense for underground works, and the double disturbance of the streets and of the inhabitants will be avoided. The drainage area, the boundaries of which may

* It has been suggested that companies might be formed for draining effectually any part of London now without sewers, if authorised to levy, for about thirty or forty years, a rate of 4d. in the pound upon the whole rental of the Metropolis, which would produce about £120,000 per annum, a sum sufficient to pay interest at six per cent. for a loan of £2,000,000.

be defined by the spirit level, is the groundwork that should govern the supply of water, and the works for paving and cleansing. The work of house-drainage (that is, the making proper channels for carrying away water) should be performed at the same time as the works for conveying water into houses. The paramount object in uniting the supply of water with house-drainage is the removal of the pestiferous cesspools.

The jobbing, the want of uniformity, the irresponsibility, the want of publicity, and a system of combination between the different trusts, the equality of rateage, with inequality of advantages to the public, together with the wasteful extravagance which is practised by all of them (for instance, £487 1s. 1d. having been expended in tavern expenses in one year by the City of London Commissioners of Sewers, and £150 for a summer's excursion), call loudly upon the public to petition Parliament to place the management of these works in other hands, more especially as upwards of £100,000 per annum are paid by the public for the present insufficient sewage. The expense of making a rate for a portion only of the Tower Hamlets Commission, amounts to £300; every case of traverse costs the commission upwards of £100, as there is no remedy to recover costs against an unsuccessful traverser. The last printed Report of the Tower Hamlets Commission of Sewers, shows an expenditure of £7,864 10s. 4d. in works beneficial to the ratepayers; and £3,152 5s. 4d., in working the commission, or nearly one pound out of every three, to ascertain *how the other two are laid out*. From the evidence of the Surveyor to the Commission of Sewers for the City, it appears that a large sum of money has, for the last ten years (1844), annually been expended in searching out forgotten and unknown sewers. This money might have been applied with much more advantage to the community, had it been expended in draining the crowded courts and alleys where the poor reside. The Board of Sewers for the City of London has, perhaps, of all the various trusts, the most need of supervision and control.

The inconvenience to the public arising from the circumstance of the paving, sewerage, and supply of water being vested in different Boards, is daily to be seen in various parts of the Metropolis. It frequently happens that shortly after a street has been newly paved, and is again open for traffic, it is discovered that a sewer should be constructed, and the pavement is taken up for the purpose.

After being relaid, the Water Company find out that their pipes are worn out, and must be replaced with new ones, and the pavement is again disturbed for the accommodation of the Water Company. A threefold expense for relaying the pavement is thus incurred, which would be obviated if the various Boards were consolidated. Although the Board of Sewers and the Water Companies relay the pavements at their own expense, yet the public really pay by being additionally charged for water and for sewerage; the traffic is unnecessarily stopped, and the pavement can never be so well relaid, nor last so long as if it had not been disturbed.

This frequent disturbance of the pavements gives rise to much jobbery, as the fees of certain officers are dependent thereon.

There are no less than eighty-four different Paving Boards in the Metropolis, nineteen of which are in the parish of St. Pancras, and seven in Whitechapel.

The accounts of the Courts of Sewers are not open to the public, and the right of the rate-payers to inspect the accounts is not admitted.

The Commissioners of Sewers are empowered by statute to take a trifling fee from the public rate of 4s. for each day of their attendance on the affairs of the Commission, but instead of taking the fee to which they are legally entitled, they prefer spending the amount, or *perhaps a little more*, in tavern dinners. It is well known that more Commissioners attend the tavern dinners than are present at the business of the Board.

The paving, sewage, drainage, cleansing, and supply of water might be put into the hands of a company, subject to the control of the municipal body, or all the local boards might be consolidated and placed under one body, responsible either to the Home Secretary or to Parliament, or all such matters should be under the control of the rate-payers, who should be responsible to a central board.

[14.] Are you of opinion that new legislative measures are required, applicable to all towns and populous districts, for the introduction and maintenance, not only of an efficient system of house drainage, sewage, paving, and cleansing, but also for the provision of an ample supply of water for public and private purposes?

It is quite clear that the present law is totally inadequate

to insure an efficient system of house drainage, sewage, paving, and cleansing, and an ample supply of good water, and that the public health, comfort, and morals suffer in consequence. The sewers and drains are badly constructed, their bottoms are generally flat instead of semi-circular, their sides vertical instead of curved. The transverse section of the sewers should be of an oval shape, and the vertical diameter about double the length of the horizontal. In flat-bottomed sewers the water sometimes flows in a channel, leaving a deposit at each side. It requires a very large body of water to prevent accumulations in flat-bottomed sewers—in fact, it is almost impossible to prevent accumulations in them; the consequences are, that the drains in private houses are stopped, the effluvium from them is offensive and injurious, the streets are opened at great expense and inconvenience, and the pavements thus disturbed are never so well put down again; the deposit which is raised from the sewers to the surface remains exposed there sometimes for many hours, to the public annoyance and prejudice. The sewers with semi-circular bottoms are less expensive, and do not require so much water, when supplied with a full current, to prevent deposits; if flushing gates were fixed in them, the accumulation of the ordinary flow of water at these gates would be of sufficient force to sweep off the deposit. Accumulations are also caused by the sewers generally not being constructed with due regard to the levels on an extended scale, but merely with reference to the locality, so as to drain to the nearest outlet. It should be made incumbent on every person taking ground to build upon, to make all necessary drains, &c., previous to erecting houses; but so long as the existing monopolies of water companies are allowed to continue uncontrolled, as at present, it is vain to expect an ample supply of good water at a moderate cost, either for house purposes, or for efficient drainage and sewage, and quite impossible to have good drainage and sewage without an ample supply of water.

In many of the eastern parts of the Metropolis excellent sewers have lately been constructed; but as there is no law to compel either the owners or occupiers of property to make house drains to communicate with the sewers, it is found that scarcely one house in a hundred has the advantage of the sewer, the expense of the drain preventing the parties forming the necessary communication, although the annual expense of the emptying of the cesspool is far greater than the capital and interest which would be required to form the drain.

CESSPOOLS AND PRIVIES.

[15.] Are there any cesspools and privies in the poorer neighbourhoods full, and suffered to overflow?

Ninety-two per cent. of the replies state that the cesspools and privies in the poorer neighbourhoods are generally full and suffered to overflow. Some of the respondents supply us with instances, and refer to Johnson's-place, Burying-Ground-passage, Gee's-court, Gray's-buildings, Orchard-place, and other places too numerous to mention. They are to be seen in the Farringdon district, and out of Bishopsgate-street, in the south-eastern extremity of St. Marylebone, and adjacent part of St. Pancras and St. Giles's, and even on the Duke of Bedford's estate, where attempts have been made in vain to remove them. Very disgusting scenes are stated as being seen in small streets in Lisson-grove, the respondent refers to those districts known to the police as the haunts of the lowest characters. One reason why they are so generally full is, that all sorts of slops and decomposing matters are thrown into them.

Not many months since the landlady of some small houses in Armstrong's-buildings fell into an open privy and was suffocated. It has *since* had a top put to it; *before* that event it only had a rail.

In certain localities it is stated that after rains the contents are washed into the houses, and the yards are constantly covered with soil.

In some cases the night soil has been seen running down the walls of the rooms in which the family lived, and even in respectable houses the soil has been seen oozing through the walls. In fact, the abomination of open privies is universal over all the poorer, and a very great part of the middle-class districts of London. Cesspools are attached to the great majority of the middle-class houses, and to most, if not all, the large houses and mansions in our squares. It happens, however, in many instances, that the existence of

such cesspools has been forgotten, and is unknown to the present occupants. Mr. Macilwain states that in 1833 he took a large house in Argyll-place; having only just recovered from an illness which had lasted nearly two years, and which had almost prevented him from pursuing his professional duties, he spared neither pains nor expense, after so costly a calamity, to secure as far as he could the salubrity of the premises he had taken. This it was thought had been accomplished; still he had not good health, nor had his family, and finding that every year he was obliged to go into the country, and having lost two children, he subsequently took a house permanently in the country, and left Argyll-place for a smaller house in town. The subsequent tenant, in making some improvements, discovered an enormous cesspool, the existence of which was not even suspected. Not only do cesspools so generally abound, but it is (or was lately) a common practice in some of the public institutions in and about London to bury, or cover over the filth with a film of earth, contenting themselves with the silly belief that when the filth ceased to be an eye-sore it could not prove injurious.

It is stated that the only substitutes for privies in the poorer dwellings about Stratford are holes dug by the inmates of the rooms, about two feet deep; these are soon filled up, and are then allowed to empty themselves, by the rain washing the soil out upon the surface of the yards, there to evaporate. This soil has raised the yards at least eighteen inches above the floors of the rooms, and, of course, frequently oozes over them, so that bricks are in requisition to step on to the tottering stairs.

Even where sewers have been made some cesspools are still used, because the parties are not compelled to form a communication with them.

The act for the more speedy removal of nuisances is stated to be so vague that it is practically inoperative.

It is the opinion of the respondents that cesspools and open privies in towns ought to be abolished by act of parliament.

[16.] Are they productive of sickness among the inhabitants?

The replies to this question are, without one exception, in the affirmative.

It appears that decomposing animal refuse gives rise to three distinct gaseous products, each of which may exert injurious and fatal influences. They are sulphuretted hydrogen, hydrosulphuret of ammonia, and nitrogen. The former two are exceedingly deleterious. They may exist either in combination or separately in the soil of privies and cesspools. When combined they differ little in their effects from those of sulphuretted hydrogen.

Although there are no decided experiments by which we can determine the smallest proportion of this gas which, when mixed with atmospheric air, will destroy life, yet we know that when respired in its pure state, it is almost instantaneously fatal, and that when allowed to remain in contact with the skin, even although a pure air be respired, it will speedily prove fatal. Thénard has found that 1-800 of its volume would destroy a dog, and that one volume in 250 sufficed to destroy a horse. Most certain it is, that an atmosphere, even when only slightly impregnated with this gas will, if long continued to be respired, seriously injure the health of an individual, and cause death.

A lodging in Paris was examined—it consisted of a bedroom with a chimney, and an ill-ventilated ante-room; the pipe of the privy passed down one angle of the room by the head of the bed, and the wall was saturated with the soil. There was no perceptible smell, although the room was small and low. M. D'Arcet attributed the death of three young and vigorous men, who had died successively in the course of a few years, under similar circumstances, in this lodging, to the slow and long-continued action of the emanations from the pipe.

It is reported, on the best authority, that the strongest and most robust men who worked in the Thames Tunnel, by respiring an atmosphere loaded with this gas, derived from the action of water on iron pyrites, became, in the course of a few months, reduced to an extreme state of exhaustion, and that several died. At the present moment, the writer of this has under his care a family, whose health is permanently undermined by the malaria arising from the soakage of a cesspool of an adjoining house into the wall of their ordinary apartment.

In Paris, and other large cities, where the soil is often allowed to collect in large quantities before any attempt is made to remove it, its removal becomes a highly-dangerous occupation for the workmen.

The air of one of the principal sewers of Paris gave the following results on analysis:—

Oxygen	13·79
Nitrogen	81·21
Carbonic acid	2·01
Sulphuretted hydrogen	2·99

100·

Now, the amount of sulphuretted hydrogen per cent. in the air of cesspools must necessarily be much greater. It is well known that the air of a cesspool may sometimes be respired without any well-marked immediate ill consequences, till the soil is disturbed, when a large quantity of vapour, charged with death, may suddenly escape, and suffocate all present.

Modern researches strongly tend to prove that all fevers, and the malignancy of all eruptive fevers, derive their origin if not from this cause, at least from a cause which produces precisely the same phenomena in *the living body*, and leaves *the same appearances in the dead*.

[17.] State what cases of disease you have known to arise from this cause.

5-8ths of those who have replied to this query have stated that they have known cases of disease which have derived their origin from this cause.

The illness and disease stated to have fallen under the personal observation of the respondents are, headache, dyspepsia, neuralgic affections, diseases of the throat and mucous membranes, skin diseases, erysipelas, bowel complaints, diarrhæa, and dysentery, cholera, continued fever of a low type, and even typhus in its worst forms. One respondent states that in two houses, in his district, the privies are in the house, and immediately under the bedrooms, and that during last summer, fever ran through one of the families, and cost the parish (St. Matthew, Bethnal-green) a considerable sum of money to maintain them during their illness. Another respondent states that he has known fever to break out in a court, in consequence of the overflowing of a cesspool, and, in one instance, to his knowledge, the fever extended to every house in the court. In Glasshouse-street and Blue Anchor-yard, Whitechapel, several families have suffered from fever from the over-

flowing of privies. It is stated that depression of the system and a general deprivation of health, so as to incapacitate the individual for labour, and often terminating in inflammation of the lungs, have been frequently traced to these causes, and that people residing in the neighbourhood of these abominations are very liable to suffer from disease, and are generally very slow in recovering from its effects.

Dr. Gavin relates that, a few years ago a public institution, containing from forty to sixty inmates, was the scene of much distress, in consequence of the inmates being attacked by a low form of fever. This occurred in spring, and at first did not excite much attention, until a great number of the inmates became successively attacked with the disease. The drains were accused of being out of order, underwent repairs, and were trapped; by the time this had been accomplished autumn had come, and the fever gradually disappeared, with one or two solitary cases; but early next spring, the disease again set in, and in a more virulent form, the dormitories became fever wards, and the house a fever hospital. A more complete examination of the premises took place, when it was discovered that in order to save the expense of casting the nightsoil, it had been the custom to remove it from the open necessaries and cesspools, and fling it into holes dug in the loose earth at the end of the yard. The earth was sprinkled over the soil, and formed, in dry weather, a sufficient screen from an ocular detection of the decomposing filth contained below, but in rainy weather the soil was washed up, partly dissolved by the water, which covered the whole of the end of the open yard—there it stagnated, and in its pasty and semi-fluid state, sent forth the pestilential gases which occasioned the severe and extensive amount of disease which prevailed within doors. The whole of the nightsoil was removed, the fever abated in severity and frequency, but the inhabitants never had good health in that house. Since the removal of the establishment to a healthier spot, no case of disease has occurred, which could not be traced to accidental causes, or agencies, in existence previous to the party coming to reside in the establishment, and the duties of the Honorary Medical Officer have become comparatively nominal, whereas formerly they were most onerous and oppressive.

[18.] Have the houses of the poor separate privies, or are the inmates compelled to use a common one, indiscriminately as to the sexes?

Five per cent. of the replies state that the poor in their various neighbourhoods have separate privies to each house, while 95 per cent. state that the poor are compelled to make use of a common one indiscriminately.

The general statement is, that many houses have no privies at all; that a few have separate holes, from two to three feet deep, with no drain from them. That, generally, each cluster of houses constituting "a court," has a common privy, *but not always*: and that where the houses consist of several rooms, with, of course, three or four families residing in them, there is usually—but by no means always—one privy in common for them all. In low neighbourhoods, one privy usually serves for eight, or ten, or twelve, or even more houses, each containing several families.

No one knows of a case where there is a separate privy for the two sexes.

The common privies are stated to be often in a very wretched condition, with no fastening to the doors, or the doors themselves in such a condition that they scarcely, if at all, serve their purpose of concealing from view the person within. They are generally in a most filthy condition, so filthy that some poor persons have said it was impossible to use them. These observations refer more particularly to Newton-place, St. George's-in-the-East. Newton's Rents presented lately one of the grossest scenes of abomination, from the want of the simplest conveniences, of mere barbarous life that could possibly be conceived to exist.

It is stated by one respondent, that in a case where two privies are attached to twelve dwellings, nothing but compulsion will make the landlord alter them, and that he has constructed a surface drain which runs into the bye-road, which is no sooner pulled up by order of the trust, than in defiance he repairs it.

None are aware of the privies being trapped, which can now be effected for 6s. each.

[19.] Are uncleanly and indecent habits created by the want of separate privies?

It is the general opinion of rather more than 96 per cent. of the respondents, that the want of such arrangements must necessarily have a very injurious tendency, and that the indecency which common privies produce is quite horrible.

The more decent poor attend to their necessities in the rooms which they inhabit, and afterwards empty their slops into the common privies—a practice which must prove detrimental to health.

One respondent is not of opinion that separate common privies for the sexes are indispensable to decency, if due provision were made for cleanliness and privacy.

[20.] Is it practicable to introduce a water-closet into each house? If so, would it produce more decent and cleanly habits, and a better state of health?

The practicability of the introduction of a water-closet into each house entirely depends upon the preliminaries of efficient drainage, sewage, and a sufficient supply of water, at a cheap rate. With these, there can be no question either as to the practicability of the measure, or as to its economy.

The introduction of cleansing by the use of water-closets, and the discharge of refuse at once from the house, through the drain, into the sewers, prevents the delay and the accumulation before removal, as well as saves the expense of removal. It is most demanded in the poorer districts, because it is, in truth, the cheapest procedure—*i. e.*, supposing them to be drained, sewered, and supplied with water at a cheap rate.

It can be proved that the cost of a cheap and appropriate apparatus, and of a sufficient supply of water, is less than the prime cost of cleansing, independent of the cost incurred by the decay of the wood and iron work, and of the tenement itself.

This is entirely setting aside the money value of the manure, and the loss which results to both the landlord and the tenant by the sickness of the latter, and of his family.

It is stated in the Second Report of the Health of Towns' Commissioners, that water companies could construct and maintain in repair an apparatus, in the nature of a water-closet, or soil pan, and house drains, for the removal of all refuse, and waste water, for a rental of from 5s. to 6s. per tenement per annum, or for a weekly charge of 1½d. per house.

With two exceptions all agree in the practicability of the plan referred to.

There is some doubt, however, entertained, as to whether all existing houses could be so improved. Most of the houses in some neighbourhoods are so old and dilapidated, and there is such a want of room in them, that a water-closet could not be introduced into them. It is likewise stated that some of the houses of the poor have no back-doors, and the courts are so narrow that increase of privies in front would be an increase of nuisance.

One of the two respondents, who doubts the practicability of the introduction of water-closets, does so on account of the destructive character of the inmates, and on account of the children being left at home to do any mischief, while the mother is out at work. The other doubts whether a water-closet could be constructed so simple in its action that it would answer the purpose, seeing that there are so many apathetic poor, who would not trouble themselves to get rid of a nuisance, even at the slight trouble of turning a tap.

With regard to the second part of the inquiry, all agree that there can be no doubt that when a plan for the introduction of water-closets shall have been adopted and executed, great moral good and physical advantage will be derived.

CABINETS D' AISANCE, OR WATER CLOSETS AND URINALS.

[21.] Do not the public suffer in their health and comfort, and is not decency outraged, from the want of public water closets and urinals in large cities and towns?

The testimony on this subject is unanimous, and the number of those who have felt themselves competent to reply to it is much greater than to any other of the foregoing queries

The want of such conveniences is considered to be a great public evil. Very many speak as having experienced much personal suffering, and many, to avoid offending public decency, have endured the torments of retention of urine till serious effects have followed, which sometimes have not been remedied for years; even death itself has ensued from this cause. There is not a surgeon in London who has not had many cases of severe suffering from the want of these accommodations.

Public urinals might be erected in many places without inconvenience, and they would be a great blessing to thousands every day. They might be erected in the streets as well as in the parks. They should, however, be better constructed for privacy than those generally placed against public-houses, which greatly offend decency. They should be regularly visited to ascertain that their drainage is perfect.

It is suggested that they should be very differently constructed from those at Westminster-bridge and at some other places, inasmuch as from the insufficient manner in which persons in them are protected from view common decency is much outraged.

One or two consider that the experience of Paris is unfavourable to the existence of cabinets d'aisance, while others again state that they have there felt the great convenience of them.

WATER SUPPLIES.

[22.] Are the poor adequately supplied with water?

This question has been answered in the negative by all from whom returns have been received, with the exception of two, who state they have heard no complaint on the subject of an inadequate supply of water to the poor. In some courts there is no water at all supplied to the inhabitants, and the poor people are obliged to procure it at a distance from their homes, at a considerable amount of labour. The water has in some instances been cut off from the courts, in

consequence of a dispute between the landlord and the water company; thus visiting the sins of the two parties upon the unoffending tenants. In the Metropolis there are about 270,000 houses, and 70,000 of them are without a supply of water being carried into them. Under the voluntary system, it is several years before water reaches the lower class of houses.

[23.] What accommodation have they for keeping the water, and what is its general condition?

All the replies to this question are to the effect, that the poor have very scanty accommodation for keeping the water, which flows from stand-taps in the courts where they reside. It is turned on three times a week, for about two hours each day; in some places for a much shorter time. The consequence of this intermittent supply is, that the poor, for want of proper covered cisterns, preserve the water in pails, tubs, or earthenware jars until the next water day. In the interim, the water in these vessels becomes contaminated by absorbing the vitiated air of the rooms in which it is placed, and is covered with soot and dust, so as to render it totally unfit for culinary purposes; and hence a reason why many resort to the public-house for beer, and other intoxicating liquors, when, if they had pure fresh water constantly at hand, they would make use of tea or coffee. Mr. Liddle states that the poor incur great expense, from the want of wholesome water, by being obliged to resort to public-houses or coffee-shops for their breakfast, instead of having it at home with their families, which they would otherwise be enabled to do.

The general condition of the water supplied to the houses in some parts of the Metropolis, is stated to be at times most "disgustingly filthy," and is always exceedingly hard, so that the public incur considerable expense for filtration, and for the additional quantity of soap which they are compelled to use. It is urged that all the water supplied to the Metropolis should be filtered, which could be done at a very small cost.

[24.] Is the charge for it reasonable?

To this question nearly the whole of the replies are to the effect, that the charge for water, both to the rich and the

poor, is extravagantly dear; and that, so long as the water companies are allowed to go on uncontrolled by the Government, so long will the public have to complain of their exorbitant charges. It is also stated that the water companies do not exact from the public the full amount they have the power to demand. The ordinary charge is 5s. a room, but they may exact from the public a per centage upon the rent of the house.* It is stated that the supply of water to all the population may be carried out at a lower rate than the cost of maintaining pumps. The average repairs of a pump are about 5s. per annum; and, including interest, depreciation, and repairs, it generally costs from 15s. to 20s. per annum. A company would be able to supply water to every tenement for 4s. 6d. a year, or 1d. a week, under a general rate, so that it would not be worth the labour of the poorest person to go and fetch it for nothing. If the supply of water in Manchester were universal, a house at £5 per annum rent might be supplied with water, at high pressure, at 4s. 9d. per annum; for houses under £10, at 6s. 1½d., on an average, for every house; and for houses above £10 and below £20, at 9s. 2d. per annum. For 1d. a week additional rental, the poor at Nottingham have an unlimited supply of water! The constant supply is the most economical and the best.

[25.] Does its scarcity conduce to uncleanness and ill-health, and are the comforts of the poor greatly abridged in consequence?

[26.] Is it not the duty of the Legislature to remove every impediment to an abundant supply of water, and to protect the public from high and unreasonable charges?

By universal consent it is admitted that the scarcity of water conduces to uncleanness and ill-health, and that the

* Table of rates which the East London Water Company are empowered to make:—

£20 per annum, not exceeding £7½ per cent.

40	"	"	7	"
60	"	"	6½	"
80	"	"	6	"
100	"	"	5½	"
All above	"	"	5	"

As usual in all taxation, the poor are called upon to pay more in proportion than the rich.

comforts of the poor are greatly abridged in consequence. It is, therefore, the duty of the Legislature, as the guardians of the poor, to impose certain conditions on the water companies, so that the poor should be provided with an abundant supply of water, and the public protected from unreasonable charges. The poor are not, as is sometimes supposed, dirty by inclination; give them a constant supply of water, without the labour of ascending and descending two or three flights of stairs—which, owing to the window-tax, are unprovided with a single ray of light—and an immediate improvement will take place, not only in their persons and dwellings, but in their health, comfort, and morality. The labour of fetching water induces many poor persons, particularly the aged and infirm, to reside in kitchens, when they would otherwise have occupied more airy, and, consequently, more healthy apartments. Some of the poor have ailments, attributable to the necessity they are under of being obliged to carry water up and down the stairs of a lofty house. Since Nottingham has been well supplied with water, personal, house, and street cleanliness have increased, and there is less disease. Lately, when orders were given by parties under the direction of Dr. Lynch, to let the water run freely over some of the courts in the City of London, when disease was prevalent, the Water Company threatened to inflict a fine upon those parties whose philanthropy prompted them to issue the order for an increased supply of water.

[27.] Would not a constant supply of water to the public at large, and to the poor in particular, at high pressure, instead of the present intermittent supply at low pressure, greatly conduce to the comfort, cleanliness, health, and morality of the people?

The answers to this question inform us that the intermittent supply is quite inadequate to the wants of the poor. In Snow's-rents, Westminster, there are sixteen houses with only one stand pipe in the court. On the principal cleaning day (Sunday) the water is on for about *five minutes*, and it is on also for three days in the week for one half hour, and so great is the rush to obtain a modicum before it is turned off, that perpetual quarrelling and disturbance is the result. About Stepney the water is supplied at so low a pressure,

that it will not reach a cistern on the first floor of a fourth-rate house; and such is the arbitrary power of the company, that they will not allow two houses to be supplied from the same cistern—a landlord must fix two, one for each house.

We also learn that the intermittent supply is highly demoralising—the young and the old, the virtuous and the vicious, are compelled to congregate together at the stand-pipes.

As regards the supply being given at high pressure, it is generally admitted to be most desirable; but some manufacturers in the eastern part of London doubt the practicability of that plan, and say, if it were at present to be enforced, they would sustain incalculable injury. They further state, that the East London Water Company cannot now supply them with a sufficient quantity of water during the summer months, except at night, for, during a certain portion of the twenty-four hours, the consumption is so great, that the Company is obliged to shut off the supply from certain districts, to enable the consumers in other districts to get their cisterns filled. It has been stated, that if the water were supplied to the inhabitants of the Metropolis at high pressure, the quantity required would be so enormous, that it is doubtful if the existing water companies could supply the demand; and that an additional expense would be incurred, by the wear of the cocks from the attrition of the sand, and that the communication pipes must be stronger, and, consequently, more expensive. On the other hand, we learn, that the shareholders of the water company at Preston find it more economical to supply the water at high pressure than on the intermittent system; and for this reason—when the water is constantly in the pipes the pressure is equal, and there is not so much danger of the pipes bursting, as when the gush of water is sudden, and compresses the air in the pipes. It is a saving of expense to have a constant supply; there is less corrosion of the pipes, and there is less waste of water. A man comes to the tap and turns it on, to see if there is any water, and finds there is none: he does not turn the tap again, but leaves it negligently, and therefore, when the water comes on, it runs to waste. The high-pressure system is adopted at Nottingham, Oldham, Ashton, Preston, Bury, and in several other towns in Lancashire. In Glasgow the supply of water is infinitely superior to that in the Metropolis. One water company supplies a po-

pulation of 315,000 ; the mains are kept constantly filled night and day, and cisterns are used to a very limited extent. Mr. Joseph Quick, engineer of the Southwark Water Company, says, that every tenement in the district might be supplied with a constant supply of water at the additional expense of 1½d. weekly, which expense would be more than saved in the abolition of butts and cisterns.* The extra cost of pumping, to raise the water to the highest points for which it is ordinarily required, is stated by Mr. Hawksley to be very slight. Mr. Wickstead is of opinion that larger mains would be required for the constant supply, but other engineers of equal eminence remark, that as smaller pipes are required for the tenants' supply under this system, smaller mains will suffice. It is absurd to suppose that all the pipes would be discharging water at the same time, as the advocates for the present method of supply have suggested, and which they say must be provided against, by laying larger and more expensive mains. Mr. Hawksley says it is quite possible to engraft the constant supply on the present system in London without much additional expense. Water, it has been observed, is an article of that importance, that it becomes the duty of the government to see that as full a supply as possible be given to the community.

- [28.] Would it not be advantageous if all dwelling houses, capable of being benefited by an ample supply of water, were rated in the same way as for sewage and other local purposes ?

The answers to this question have generally been in the affirmative ; some gentlemen, however, have stated that the subject requires some consideration. It has been remarked that the municipality should contract, in the first instance, for a supply of water, and competition should be entered into then, and not afterwards ; and that the expense should be defrayed by a general rate on all the inhabitants. It should be imperative upon every company to supply each house with water, which would so considerably reduce its cost to the people as to become a real economy.

- [29.] Are the present water companies sufficiently under the control of Government ?

* The estimated cost of the receptacles for containing water, as butts, cisterns, &c., in London, amounts to £2,000,000.

In answer to this question it has been stated, that the existing water companies are under no other control than that of self-interest, which the public is most heavily taxed to support. In a matter so essential to the very existence of the community as the efficient supply of wholesome water, which in towns cannot be procured, except through the medium of trading companies, all agree that they ought to be placed under the strict control of some competent public authority. The quality of the water which is supplied to the inhabitants of the eastern and western parts of London is sometimes grievously complained of. It is a subject of much regret that the public have no redress for this grievance, seeing that the only parties to whom they can complain are the directors of the companies, the very persons complained of, who derive the same profit from the public, whatever be the quality and quantity of the water they supply. A large dividend appears to be the only object the companies are anxious to obtain.

Competition in cases where a large capital is required, is not the best way of securing a low price for any commodity. It will always be the interest of the companies to combine for their own protection, rather than compete for the advantage of the public. Water ought to be provided at the common expense. The only security the public can have against the high charges of water companies is, for the rates to be fixed, by a competent authority, at a fair remuneration; and, to make the company submit to such rates, the supply of water should be managed by some local authority, subject to the superintendence of an officer of the Crown. The supply of water by private parties should be discontinued, and made a public undertaking.

The present water companies have summary and stringent remedies against the consumers, but the consumers have no remedies against the companies. A tenant must pay even if the water be stopped; or interrupted from any cause, or deteriorated in quality. In concluding this part of the subject, it may be remarked that it will be of no use to carry water into the houses of the poor until means are afforded by sinks and drains to carry it away.

VENTILATION AND LIGHT.

[30.] Is sufficient attention paid to the ventilation of workshops and houses occupied by the poor in your district ?

With three exceptions all have answered this question in the negative. For the inattention so universally shown to so important a subject, the following reasons, among others, have been suggested :—

1. The ignorance of architects and builders as to the principles of ventilation.
2. The ignorance of employers both as to its principles and importance.
3. The carelessness and ignorance of the people as to the evils resulting from the want of a due supply of pure air in and about their dwellings.
4. The want of power on the part of the poor to secure a good and economical ventilation.

The injurious effects which arise from the want of proper attention being paid to this subject in factories and workshop appears to have led to the following recommendation :—

“ That provision be made to secure the efficient ventilation of factories and workshops—the ventilation to be approved of by the Inspector of Health, or each workman to have 500 cubic feet of space *at least*.”

In carrying out a system of ventilation in the poorer dwellings, much difficulty will necessarily be experienced, in consequence of the inmates, by constantly respiring impure air, having become enfeebled. They would rather continue to breathe a vitiated, and even a poisonous atmosphere than tolerate the admission of pure air, should it happen to be productive of the slightest draught.

External ventilation, effected by the opening of thoroughfares, &c., as contemplated in Question 35, would, perhaps, in some measure, mitigate the evil, by admitting air and light more freely to the abodes of the poor.

It must not be forgotten that individuals take or build houses for the purpose of letting them to the poor *by the room*—the more rooms they can make available for that purpose the greater is their gain; ventilation is neglected, and the *health* of the tenant is sacrificed to the *avarice* of the landlords. Would it not be desirable that Government should make *private interest* yield to PUBLIC GOOD?

In those instances where partial ventilation exists, it would appear to result from accidental circumstances (as the convenience of the builder), and not from any attention being paid to the subject.

The Inspectors of prisons recommend no less than 1,000 cubic feet for every prisoner, as being essential to health and ventilation.

[31.] Is the neglect of it productive of demoralisation, such as drunkenness, &c.?

A very large majority reply affirmatively to this question; and those who appear to have well considered the subject, agree that the neglect of ventilation is productive of depression, faintness, &c., and that the poor resort to ardent spirits to relieve these sensations. They further state that if the house of the poor man be made miserable from this cause, he will not be much in it, but will frequent the public-houses, preferring the glittering polish of a gin-palace to his own uncomfortable dwelling.

[32]. It is proved that the want of ventilation is a prolific source of disease, such as fever, consumption, scrofula, &c., among the inhabitants. Do you think that public means should be adopted for promoting a proper system of ventilation in all edifices for public assemblage and resort, especially those for the education of youth?

All have answered this question in the affirmative.

In most public buildings there is a total want of means to regulate the ingress and egress of air. The results which necessarily take place from such neglect are, accumulations of poisonous gases, the products of respiration and of the

combustion of gas, fires, oil, candles, &c. ; to which may be added great inequality of heat, producing chilling draughts, —these evils, in their turn, give rise to various forms of disease.

The great number of persons attacked with faintness, vertigo, hysteria, epilepsy, &c., during the period of divine service in the several places of public worship, proves that the atmosphere in those buildings, in a short time, loses that state of purity in which all places of instruction require to be kept, in order to preserve an active state of the mental faculties.

There can be no doubt that a systematic mode of ventilation would greatly check the production of disease, and preserve the mind in a state more fitted for instruction ; it would be the means of carrying off not only the injurious products of combustion and respiration, but also the effluvia arising from the vaults beneath the pews—a well-known source of fever, and a most disgraceful and abominable nuisance.

It is therefore suggested, that means to secure a well-regulated supply of pure air might with great propriety be enforced in such buildings.

[33.] It is likewise proved by the evidence taken by the Health of Towns' Commission, that overcrowding in common lodging-houses, in poor neighbourhoods, is a prolific source of disease and demoralisation. Are you of opinion that such lodging-houses should be placed under inspection and control ?

Nearly all who have replied to this question, not only agree in the opinion that such inspection and control would be justifiable, but that it is imperatively called for ; that it would be most beneficial, and add much to the comforts of the poor, and prevent profligacy and disease. Suggestions have been made that landlords should be responsible for the decency of the houses which they let to the poor, and that such houses should be liable to inspection. Landlords in general are exorbitant in their demands for rent, and negligent of their property ; they should be compelled to whitewash ceilings and walls twice a year.

A regular system of inspection and licensing of the com-

mon lodging-houses has for some time past been in operation in Glasgow, with the happiest effects.

- [34.] Do you think that in the construction of dwellings for the poor, provision for the efficient admission of light (especially solar light) and air should be enforced?

The replies to this question are in the affirmative, and contain the following statements:—That the subject deserves more attention than it has hitherto received—that an abundance of solar light is so essential that health and organisation are never perfect without it.

In the construction of dwellings for the poor its admission should be insisted on as conducive to health and cleanliness, and it should form part of the duty of an Officer of Health to enforce the provision made for that purpose.

The window-tax, by impeding ventilation, and the free admission of light, is productive of disease, and consequently becomes a tax on health. Whether it would be politic to repeal this tax is a question which at the present moment it may not be desirable to enter upon; a suggestion has been made, however, to the effect “that the assessment should be made, *not* on the number of windows that actually exist in a house, but on the number of windows which *ought* to exist in such house, in proportion to its cubic contents. Such an alteration would, perhaps, go far to remedy the evil complained of, but its total repeal would be to say—

“Let there be light.”

The following fact, as showing the physical effect of the want of light, is instructive, and well worthy of attention:—“Some poor people having taken up their abode in the cells under the fortifications of Lisle, the proportion of defective infants produced by them became so great, that it was deemed necessary to issue an order commanding these cells to be shut up.”

- [35.] Do you think it would be desirable to give power to parishes, or to the local administrative bodies, to raise money to purchase property for the purpose of opening thoroughfares

whereby both light and air would be more freely admitted into the abodes of the poor ?

The majority have answered this question in the affirmative, without any qualification ; others consider that to prevent "jobbing" it would be desirable for such power to be subject to some central control, as, for instance, to that of a Board of Health.

It is believed that such power would secure co-operation and harmony of action.

It is also suggested, that prior to any such contemplated alteration taking place, proper accommodation for the poor should be provided, and that funds should be raised for building dwellings for the labouring classes similar to those at Birkenhead.

[36.] Can you suggest any plan reconcileable with the feelings of the poor, to remedy the evil of keeping the bodies of their dead (frequently for a week or upwards) in the same room with the living.

The general tenor of the answers to this question may be considered to be—

That it would be desirable to have a compulsory enactment to the effect that no dead body should be permitted to remain in any dwelling-house for a longer period than *four days*.

That the Officer of Health having ascertained the *fact* of death, should have power to enforce the removal of any dead body (the burial of which, from any cause, may have been prevented taking place within the *prescribed* time) to a public building provided for the reception of the same.

That the relatives of any such deceased person should be allowed free access to the apartment containing the corpse at all reasonable hours, or that they should even be allowed to keep the key of such apartment until the funeral shall take place, and that if such a plan were adopted and carried out gradually, due regard being paid to the feelings of the poor, these depositories would eventually be as much used as the public wash-houses at the present time are used in those localities where they have been erected ; but that in

all cases the Officer of Health should possess a discretionary power to enforce burial in any case, and at any time after death, should he deem it essential to the public safety.

STREET CLEANSING.

[37.] How often are the streets, courts, and alleys cleansed in your district, and by what means.

[38.] Are they effectually cleansed?

The answers to these questions prove, that while the first-class streets are cleansed at regular periods (which is far from being universal), the second-rate streets are cleansed irregularly; whilst the courts and alleys, for the most part, are a perfect disgrace to the different districts in which they are situate—dirt is allowed to accumulate, and it need scarcely be said, that during warm weather some of these places become horribly offensive. The streets where the poor reside are invariably worse cleansed than those where the wealthy reside. It is suggested that if any difference be made at all, the reverse should be the case. In some localities, while the best classed streets are cleansed once a week, the others are neglected for months, and even for years, or until the medical officer has, of his own accord, repeatedly reported and remonstrated with the local authorities on the filthy condition of these places. It is stated, too, that some parts have been cleansed once or twice only in the memory of the oldest inhabitant.

[39.] Are the habits of the people, as to cleanliness, affected by the condition of the streets, alleys, &c.?

The respondents to this question, for the most part, agree in the opinion that where dirt and filth prevail *with-*

out, want of cleanliness will generally be observed *within*, the dwellings of the lower orders—and that dirty streets and dirty habitations are usually found to be combined with moral and social degradation, sickness and destitution, squalor, misery, and early death.

[40.] What is the reason that, in some parts of the Metropolis, the streets, courts, and alleys are cleansed daily, while in others they are only cleansed at indefinite and irregular periods?

Among the reasons why in some districts the streets are cleansed at stated periods, while in others they are cleansed only at indefinite and irregular periods, may be mentioned the following:—

1. The partiality, caprice, and other corrupt motives of the local authorities—(or else why is Fleet-street comparatively clean whilst Clare Market is disgustingly filthy?)
2. The negligence and inattention of the local authorities.
3. Their pitiful and disgraceful sacrifice to economy, which frequently refuses the funds requisite for cleansing.
4. The want of power to enable them to enforce street-cleansing, and empower them to dispose of the refuse (as is the case in the parish of Hackney).
5. The carelessness of surveyors.
6. The nature of the contracts entered into.
7. The number and clashing interests of Local Boards.

[41]. Are those courts which are private property cleansed by the public scavengers?

By the replies to this question it is found that courts which are private property are scarcely ever cleansed by public scavengers. Their condition as to cleanliness is entirely dependent on the exertions of the inhabitants. The evils resulting therefrom are:—

1. That they are seldom cleansed at all.
2. Where cleansed, much additional labour is necessarily entailed on the poor, whose domestic duties become neglected in consequence.

It has been truly said that the *high rents* which they pay ought to secure to them the daily removal of all refuse matter from and about their dwellings.

In the answers to this question, it is recommended that means should be taken to prevent accumulation in dust-holes and in areas, where refuse matter (both animal and vegetable) is frequently suffered to decompose, and where, in warm weather, it becomes very noxious;—that no masses of manure or refuse of any kind should be allowed to accumulate;—and that cleansing ought to be universal, and not left dependent on the exertions of private individuals, but effected through the instrumentality of local commissioners.

[42.] Ought mews to be kept as clean as the streets?

All concur in the opinion that mews ought to be kept as clean as the streets. They frequently adjoin dwellings and coach-houses, and are sometimes used as slaughter-houses or cow-stalls.

[43.] If the public thoroughfares were skilfully constructed, proper attention being paid to surface drainage and efficient kennelling, would there, in your opinion, be a diminution in the price to be paid for cleansing them?

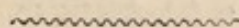
With reference to this question most of the respondents *consider it would be highly desirable to have the public thoroughfares skilfully constructed*, with efficient kennelling, and that provision should be made to prevent the constant disturbance of the paving. With such alteration in the construction of streets it is thought that the price to be paid for cleansing them would not only be considerably lessened, but that they might be cleansed *daily*, and *an absolute profit* derived therefrom.

[44.] Is not interment in towns frequently attended with desecration of the dead, as well as with outrage on public decency; and is not the frequent disturbance of the earth in churchyards

saturated with the gases of decomposing animal matter deleterious to health?

Interment in towns is not necessarily attended with desecration of the dead ; many of the parochial churchyards in the Metropolis are kept in excellent order, and the greatest vigilance is adopted to prevent anything like a desecration of the dead. In the united parishes of St. Edmund the King and Martyr, and St. Nicholas, Lombard-street, the Rev. Dr. Horne informs us that every interment is required to be at least five feet below the surface of the earth. But there can be no doubt whatever that many of the burial-grounds in London which are private property may, with truth, be affirmed disgusting nuisances ; and recent disclosures fully testify as to desecration of the dead being habitually carried on to an incredible extent, and characterised by acts the most revolting and brutal, and opposed to every principle of humanity and civilisation. Most of the burying grounds in the Metropolis are at the present time over-crowded ; in many of them the earth has been raised several feet, in consequence of the great number of corpses which have been interred. If the burial grounds were placed under the control and inspection of a Public Officer, many of the disgusting scenes which now so frequently are brought under the notice of the public would be prevented. The vested rights and interests of the various parties appear to be the great obstacles to the discontinuance of the interment in towns. It is difficult to say how much of the ill health of the inhabitants of London arises from the emanation of the pestilential gases from the churchyards, and how much from the untrapped and open sewers and drains, and other nuisances with which the Metropolis abounds. There can, however, be no doubt that where gases do escape, they must be injurious, for the same gases which escape from over-crowded churchyards, and are so detrimental to health, are of the nature as those which are emitted from common sewers. Some doubt that the gases arising from the decomposition of animal matter are injurious to health, and found their opinion upon the statement that the men employed in removing the dead from the Cimetière des Innocens, at Paris, did not suffer in their health. But so many facts proving the deleterious nature of the exhalations from the dead in churchyards have been presented to the public that it is now considered to be an indisputable fact, that

church-yard emanations are pestilential agents. Numerous instances are recorded of pestilential diseases and death having resulted from the poisonous exhalations of grave-yards. For further evidence on this subject, the reader is referred to the works of Mr. Walker on grave-yards, and to the correspondence between Mr. Smith, of Minchinhampton, and Dr. S. Smith, which was recently published in the public journals. When interments in towns are discontinued, care must be taken to prevent cemeteries becoming as great nuisances as common grave-yards. The number which may be interred in one grave should be restricted; the time for renewal and decay, and other circumstances, be specified, and care taken that habitations be not erected within a specified distance, and some provision made that cemetery companies do not become oppressive monopolies.



SMOKE AND GASES.

- [45.] Are not the quantities of smoke generated in cities and towns injurious to the health of the inhabitants?
- [46.] Ought not the Legislature to make every possible exertion to abate this nuisance?

It is generally acknowledged that the large quantity of smoke which is emitted from factories, consisting as it does of unburnt particles, is irritating to the air passages of the lungs, and tends to increase the mortality from pulmonary affections. There can be no doubt that smoke, if not injurious to health, is exceedingly uncomfortable, and persons who are obliged to reside in the neighbourhood of those manufactories which emit large quantities of smoke, are unable to open their windows for the proper ventilation of their houses. Smoke, by some manufacturers, is considered unavoidable, and they say, that if the smoke is stopped, labour will be stopped. Kitchen chimneys, they remark, are as bad as furnaces, and if the Legislature should cause the smoke of the one to be suppressed, they should

cause the smoke from the others to be suppressed also. An opinion is very generally entertained that the Government ought to use every possible, or as some would rather say "*reasonable*" exertion, to abate the nuisance created by the escape of acrid fumes, as well as of unburnt particles of coal.* The following clause is inserted in the East London Water Company's Act, dated August 8, 1807, Section 33 :—" And be it enacted, That the furnace of every steam-engine to be erected by the said Company of Proprietors, should be constructed upon the principle of consuming its own smoke."†

Atmospheric purity cannot be looked for so long as clouds of *soot* and noxious fumes of all description are evolved in such large quantities from factory chimneys. It is proved that smoke can be consumed with economy to the manufacturer ; its evolution ought, therefore, to be prevented.

Sulphate of ammonia, in minute crystals, resembling hoar frost, is deposited on the windows of the houses in the neighbourhood of those factories which emit much smoke.

The manufacturers strongly object to any enactment compelling them to consume the smoke from their factories ; they say, it is unjust to tax them with the expense attending the necessary alterations in their chimneys. On the other hand it has been asked, is it right for them to injure the health of the community, and to tax the public in forcing them to pay an increased amount for washing, and house-cleansing, when it is proved that the smoke *can* be consumed, even with profit to the manufacturers themselves?‡ Many of the patients in the London Hospital suffer in their health, and the institution is put to extra expense for washing, in consequence of the large quantities of smoke which are emitted from the factories in the vicinity. Sometimes the hospital is completely enveloped in smoke.

* It is stated that during the prevalence of the plague in London, where so many of the inhabitants fled from the city, that the quantity of smoke became considerably reduced, and trees which before scarcely ever blossomed, at once regained their vitality, and exhibited plentiful crops of fruit.

At Newcastle-upon-Tyne a Smoke Prevention Committee is organised.

† The smoke preventive clauses in the bill now before the house, entitled "The Towns' Improvement Clauses Bill," will be equally as inoperative, in consequence of the penalty being placed on the construction of the chimney, and not upon the emission of the smoke.

‡ Mr. Walker, of Bradford, informs us that he is enabled to save £400 per annum in fuel by consuming the smoke from his factories.

BATHS AND WASH-HOUSES.

- [47.] The Legislature having passed an act to authorise municipal authorities and vestries to establish baths and wash-houses for the poor at very low rates of payment, are you of opinion that they should be brought into use in your locality without delay?
- [48.] Would you recommend baths being introduced into parish and union workhouses and hospitals—not as a remedial measure only, but to promote the health and cleanliness of the inmates?
- [49.] Do you think that habits of uncleanness are productive of demoralisation?

Question 47 has been very generally answered in the affirmative; some persons, however, think public baths and wash-houses are but of secondary importance. A constant supply of water, at high pressure, in every poor man's house, would go far to supersede the necessity of such establishments. Under existing circumstances, the establishing of public baths and wash-houses in districts is very generally admitted to be essential to the promotion of comfort and cleanliness among the poor. It is justly remarked, that personal cleanliness leads to household cleanliness, and household cleanliness conduces to morality and domestic happiness. Any plan for improving the habits and adding to the cleanliness of the poor must be advantageous to the community, for dirty people are never moral or religious. Dr. Timothy Dwight, an American theologian of a bygone generation, remarks, "Neatness of dress, and decency of appearance, strongly persuade to softness and

civility of manners. A person (in the inferior ranks of life) better dressed than in his ordinary manner, will regularly behave with more than ordinary decency. The association in our thoughts between the dress and the manners, is instructive and inseparable."

The careless and dirty mode of living, so prevalent among the poor, arises chiefly from the difficulty of procuring water; when water is wanted, it is not to be obtained without great loss of time, and much personal fatigue.

Many individuals have expressed their doubts about the benefits likely to result from the establishment of wash-houses, but all concur in the necessity which exists for providing the poor with the means of obtaining a bath without much trouble or expense.

It is generally thought it would be desirable to introduce baths into workhouses and hospitals, and that encouragement should be given to the inmates to make use of them for the promotion of habits of cleanliness. The following declaration has been signed by nearly 200 of the most eminent physicians and surgeons:—"That if London was properly supplied with public baths, warm and cold, and wash-houses, and they were properly made use of, the amount and severity of disease, and the number of deaths would be materially diminished."

The answers which have been received to Question 49 are in the affirmative. Some gentlemen seem to think demoralisation produces habits of uncleanness, and that the public-houses and beer-shops are the principal causes of the demoralisation of the working classes.

Many of the poor are so insensible to the want of cleanliness, owing to long-continued habit, and even to the deficiency of the means of procuring the requisites for its adoption, that they must be taught its advantages. The want of cleanliness is like the want of knowledge or religion, the more destitute a person is of them, the less is his inclination for them; we ought to take the initiative, by providing the people with the means, and instructing them in the benefits which will morally and physically flow from the cultivation of such habits. "Tolerate," says Dr. Franklin, "no uncleanness in body, clothes, or habitation." G. F. Young, Esq., of Limehouse, observes, that "habits of uncleanness are productive of demoralisation to an extent far greater than is generally admitted, or even conceived. I am thoroughly persuaded," he says, "that we ought to labour to induce habits of decency and cleanliness among the poor, *prece-*

dent to, and preparative for efforts towards their moral and social improvement. Filthy skins are always accompanied by ragged clothing, and general want of appreciation of outward decencies, and the men who disregard these will always rather resort to the gin-shop than to the church."

[50.] Should it not be an object of the Legislature to encourage the spirit of commercial enterprise in the execution of the measures for sanitary improvements?

[51.] If the expense for sanitary improvements should be charged upon properties, and be distributed over a term of years, co-equal with the probable duration of the works; and if a special rate of small amount be levied upon the occupiers until the capital and interest shall have been repaid—do you think the burden would be felt by the people?

Sanitary measures, in order to be effectual, must be carried out on a large scale; and, unless the Legislature give encouragement to public bodies to carry out efficient measures for sanitary improvements, they will never be effectually promoted, for it is impossible for private contractors to undertake very extensive works. The powers vested in the various existing commissions are wholly inadequate for the purpose of promoting the public health. The Legislature should encourage sanitary improvements in every possible way, either by giving more power to the existing boards, controlled by central boards, or by creating new powers. The people are now determined to endeavour to improve the health of the working classes in populous districts at almost any present cost, for they are persuaded that the burden, if any, will scarcely be felt, and that ultimately there will be a great saving. The primary object of the present sanitary movement is, "to substitute enlightened self-interest for ignorant selfishness." The enormous expense which is entailed upon the rate-payers in many parishes in consequence of the frequent attacks of illness to which the poor are subjected, and the immense number of widows and orphans now dependent upon the poor-rates and the contributions of the humane and charitable, is an expense far greater than would be incurred by

the adoption of those measures which are now proved, upon the highest authority, capable of removing, to a very great extent, the causes of destitution, widowhood, and orphanage. Although the people in this country are already sufficiently burdened with taxes, yet some are of opinion that, with a *proper* application of the rates now levied, most of the objects mentioned in the last question might be attained without any additional burden; but, for sewers and expensive works, powers ought to be given to borrow money to be repaid in the manner suggested in the last question. By the adoption of this plan, the burden would bear no appreciable proportion to the unsuspected burdens the community now labour under, in having to endure the expenses of so many cases of unnecessary sickness, including the payment of nurses, medical expenses, and the extravagant charges of undertakers. It is thought by some that, instead of the people having to pay an increase of taxation, the taxes which they now pay would be diminished, and that there would be less demand on private benevolence to support the numerous institutions at present in existence for the relief of many of those evils which are now proved to be remediable. If efficient sanitary measures are adopted, the annual number of deaths will be diminished by several thousands, hundreds of thousands of cases of sickness will be prevented, and several years will be added to the lives of the entire population.

In order to remedy the inequality of payment for permanent improvement, Mr. Chadwick proposes "that the charge should be distributed over a period of time coincident with the permanency of the work. For example—the advantages of a house drain will be of thirty years' duration, then he proposes to repay the principal and interest by annual instalments, so as to replace the outlay at the end of thirty years; or suppose it is a question of water supply, and that for the apparatus of the water 20s. is put down, 1s. 6d. additional to the water rate is charged for principal and interest, and wear and tear of the apparatus. Every tenant for a year, supposing the apparatus to last twenty years, will have his twentieth portion of the benefit, and for which he will pay 1s. 6d., and so every tenant or occupier in succession. The occupier enjoys the benefit of all improvements, and it is only right he should pay for them. The rent of the house will of course be increased; but the increase of payment will be for an increased benefit—a benefit that was not contracted for at the time the house was taken."

Nearly the whole of the respondents to this last question

state that if the money were to be raised in the way proposed, the public, instead of having to pay money for sanitary improvements, would, if such measures were carried out, be considerable gainers, and there can be no doubt that if properly enforced, they would be the means of diffusing (in the words of Mr. Roulatt) "the greatest amount of comfort, happiness, virtue, and religion to the greatest number of the inhabitants."

"Circumstances daily calling my attention to the condition of the poor throughout England and Wales," observes Harry Chester, Esq., of South-grove, Highgate, "convince me that the accomplishment which this Association aims at is even more important to the improvement of the intellectual, moral, and religious condition of the poor than the building of churches and schools."

NOTE.—In addition to the valuable evidence obtained from the numerous respondents to the foregoing queries, the Sub-Committee, in drawing up the Report, have occasionally availed themselves of the evidence of Mr. Chadwick and others before the Select Committee of the House of Commons on Private Bills.

SUMMARY.

The summary of the information respecting the state of the Metropolis which has been obtained from the replies to the questions propounded by the Association may be thus briefly stated :—

That an immense amount of sickness and disease results from the want of proper sanitary measures.

That a multitude of nuisances are tolerated in London, whose suppression is essential to the health and well-being of its inhabitants.

That the drainage and sewerage are still most lamentably defective and insufficient.

That the inhabitants suffer much from the want of public and private water closets, and from the existence of pestilential cesspools.

That the supply of water is utterly insufficient, is not pure, and the charge for it is extravagant, and that a great part of the distress and wretchedness of the poor is thereby produced.

That ventilation and admission of solar light, especially in the abodes of the poor, are most deplorably neglected.

That most of the streets, courts, and alleys are badly, and some are never cleansed.

That interment in the Metropolis is the source of frightful and revolting evils.

That smoke and gases from factories are constant nuisances.

That an increased number of Baths and Washhouses would materially tend to produce habits of cleanliness among the poor.

That the public earnestly desire to obtain a sanitary measure to remove these constant causes of sickness and disease, of expense and of demoralisation.

The Sub-Committee, in concluding this Report, consider themselves called upon to state that the thanks of the Association are justly due to the gentlemen who have furnished the valuable information contained in their replies. They also desire to express to those gentlemen their extreme regret that (owing to the absolute necessity of great condensation), they were compelled to omit many facts and observations which, under other circumstances, they would gladly have introduced.

(Signed)

HECTOR GAVIN, M.D.
ADOLPHUS BARNETT, M.B.
THOMAS ABRAHAM, Surgeon,
JOHN LIDDLE, Surgeon.

In laying this Report before the public, the General Committee cannot but acknowledge the very kind and condescending manner in which the benevolent Patron, Lord Ashley, lent his valuable name to the Association. The present Lord Mayor was first solicited to become the Patron, but his Lordship thought fit to decline the honour. Doubtless the idea entertained by his Lordship of the perfect state of the City of London with regard to sanitary measures occasioned the loss of his patronage.

They would also award their thanks to the Vice-Presidents, who have taken an active part in promoting sanitary reform; but their thanks, in common with those of the Association and of the public, are pre-eminently due to Charles Cochrane, Esq., without whose generous and liberal pecuniary assistance the proceedings of the Association could neither have been carried on, nor their results laid before the public in their present form. The General Committee earnestly trust the eminent exertions of this gentleman, who has devoted his time and means to this and other objects of philanthropy, will be fully appreciated by the members of the Association and the public.

They likewise beg to tender their thanks to the Committees of the various literary and scientific institutions for their liberality in placing their lecture-rooms at the disposal of the Association.

They would also tender their thanks to the public press in general, and to the Editor of the *Morning Advertiser* in particular, for the interest they have shown in promoting the objects of this Association.

M. W. LUSIGNAN, } Hon. Secs.
JOHN LIDDLE, }