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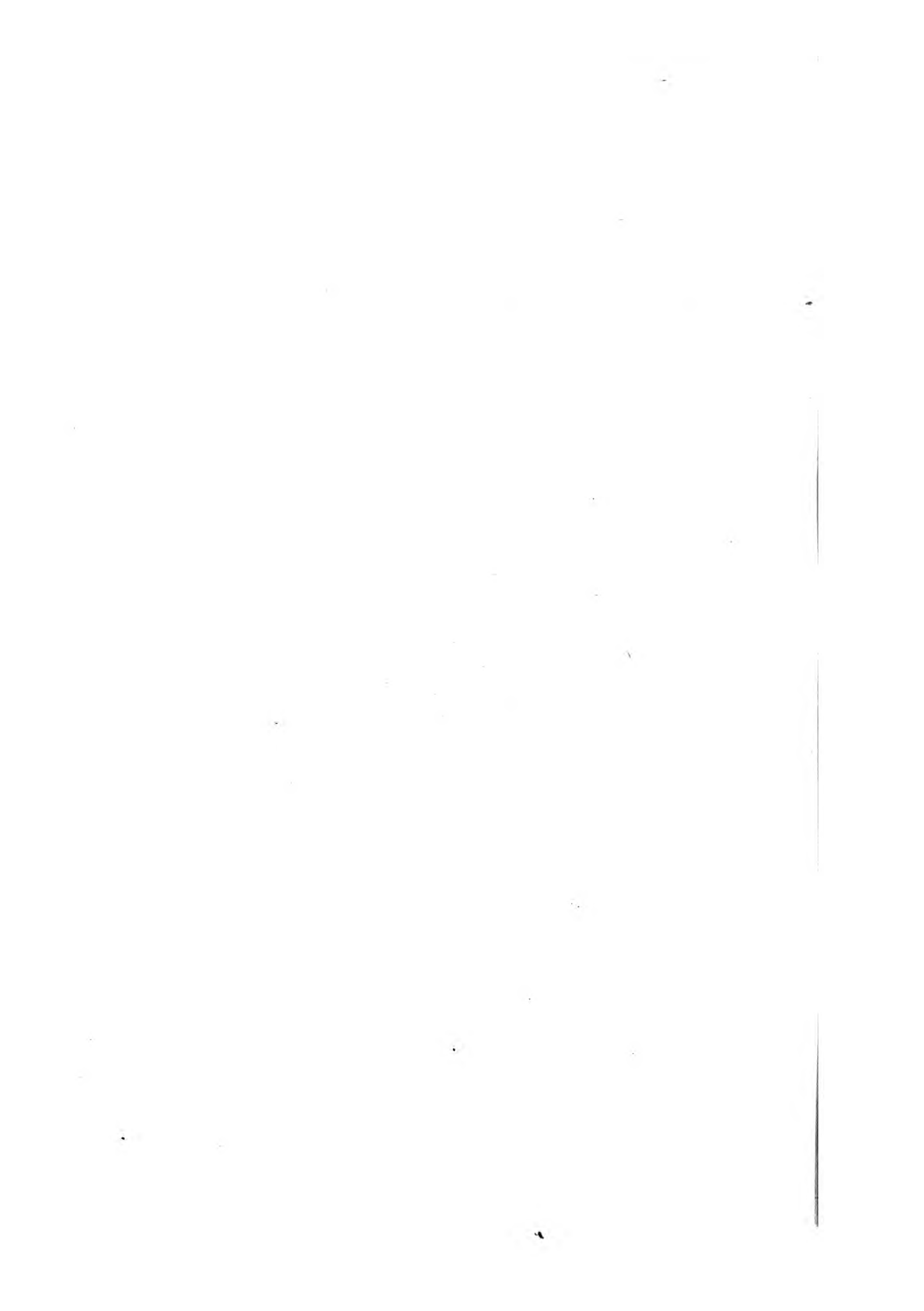
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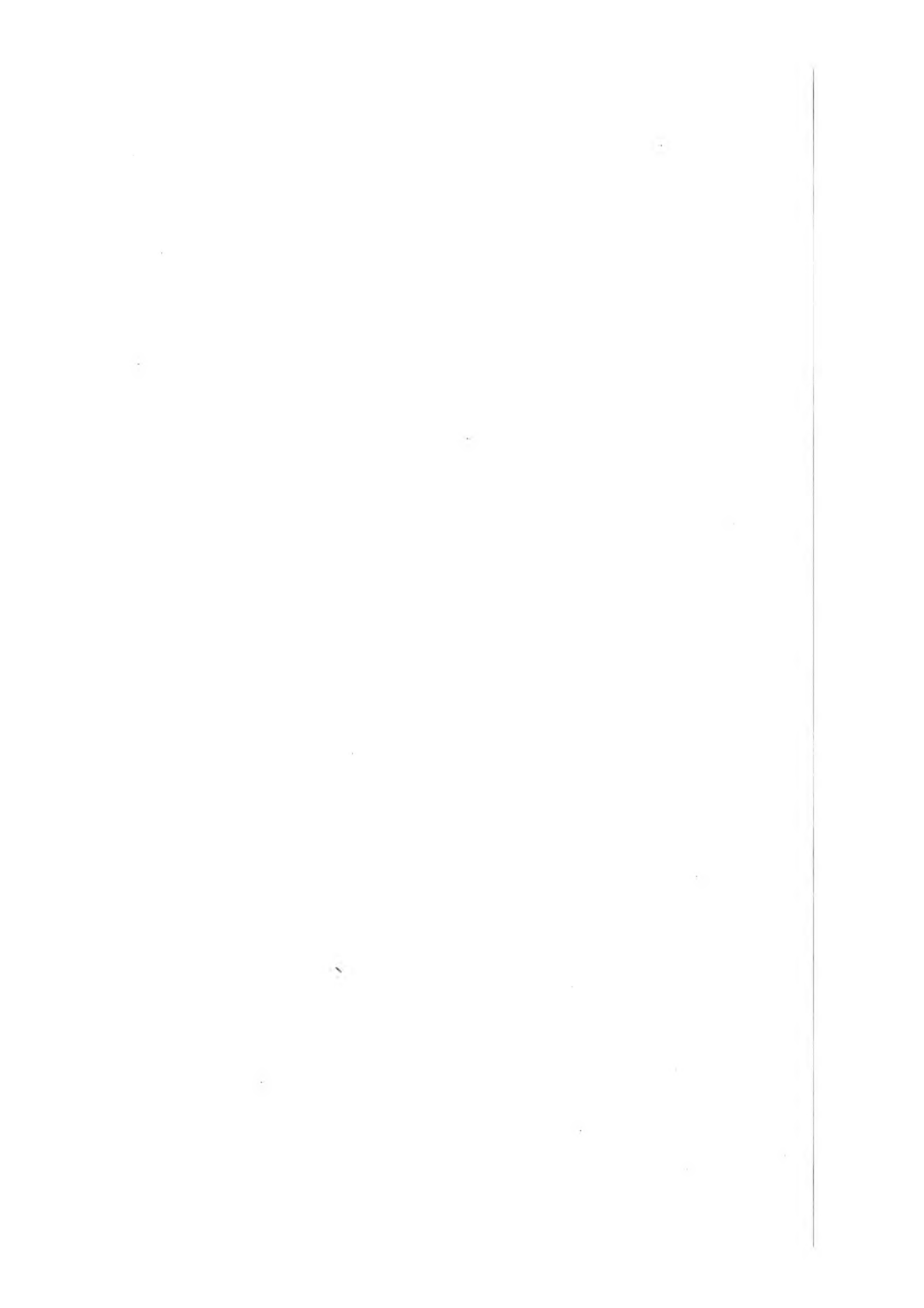
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Under the Sanction of the Metropolitan Health of Towns Association.

EDITED BY JOHN SUTHERLAND, M.D.

SENIOR PHYSICIAN TO THE LIVERPOOL DISPENSARIES,
MEMBER OF THE COMMITTEES OF THE METROPOLITAN AND LIVERPOOL HEALTH OF TOWNS ASSOCIATIONS,
AND LATE EDITOR OF THE LIVERPOOL "HEALTH OF TOWNS ADVOCATE."



No. I.

NOVEMBER, 1847.

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CONTENTS.

Address.....	1	The Sanitary Condition of Newcastle-on-Tyne. By GEORGE ROBINSON, M.D.	16	SANITARY INVENTIONS:	
Contributors and Local Correspondents	2	CORRESPONDENCE:		Walker's Effluvia-trap	27
An Account of Cottage Grove, a manufacturing Village now in the course of Erection at Chilwell, near Nottingham. By D. GRAINGER, Esq., F.R.S.....	3	Tower Hamlets Commission of Sewers	19	The Rheioline, or Patent Spring Bedstead	27
Application of the Refuse of Towns to the purposes of Agriculture	7	Appeal of the Health-of-Towns Association.....	23	LITERARY NOTICE:	
Sanitary Condition of Schools. By the Rev. C. GIRDLESTONE	11	Advantages of Sanitary Measures on board Ship.....	24	"An Inquiry into the effects of Alcoholic Drinks on the Human System in Health and Disease".....	27
Sanitary Condition of Brentford, Middlesex. By H. B. BROOK, Esq.	12	ILLUSTRATIONS OF THE CAUSES OF DISEASE:		SANITARY INTELLIGENCE:	
God's Universe, and the Poor Man's Home	13	Deaths from Noxious Effluvia. By JOHN LIDDLE, Esq.....	24	Provincial Health-of-Towns Associations and Branches, with the names of Honorary Secretaries ..	28
THE SANITARY QUESTION	14	Deaths from Neglect of Sanitary Provisions	25	Extract from a Speech delivered by CHARLES BULLER, Esq., M.P.	28
ON THE APPEAL OF THE HEALTH-OF-TOWNS ASSOCIATION	15	SANITARY LEGISLATION:		Extract from a Lecture on the Homes of the People by the Rev. J. B. OWEN	28
THE CHOLERA	15	An Act for Preserving the Health of Prisoners in Jail, and preventing the Jail Distemper	26	CORRESPONDENTS.....	28
Petitions to Parliament.....	16			Disease, bad Economy.—Ought Jenner to have a Monument? &c.	29

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OBJECTS OF THE ASSOCIATION.

I. To diffuse information as to the physical and moral evils that result from the present defective Sewerage, Drainage, Supply of Water, Air, and Light, and Construction of Dwelling Houses; and thus to facilitate the work of Legislation, and prepare the Public for the reception of a sound and comprehensive sanitary measure.

II. To correct misconception as to the cost of sanitary measures.

III. To promote local sanitary inquiries and improvements.

IV. To encourage the establishment of Auxiliary Associations with a view to the local benefit which must thence arise, as well as to procure larger funds, and a wider field of usefulness.

As the important objects of the Association, though carried out exclusively by unpaid agency, and with the strictest regard to economy, involve a large outlay of money, Contributions are earnestly requested. It should be borne in mind, that though not a CHARITY, the Association has the strongest claims on the CHARITABLE, for it aims at preventing the very evils which Charities

are formed to palliate. It would substitute HEALTH for DISEASE, CLEANLINESS for FILTH, ORDER for DISORDER, ECONOMY for WASTE, PREVENTION for PALLIATION, JUSTICE for CHARITY, ENLIGHTENED SELF-INTEREST for IGNORANT SELFISHNESS; and bring home to the poorest and meanest among us, in purity and abundance, the simple blessings which ignorance and negligence have long combined to limit, or to spoil—AIR, WATER, and LIGHT.

Those who wish to further the important objects of the Association are reminded that there are many ways in which they may be useful. It may suffice to specify the following:—1. By promoting the formation of Branch Associations. 2. By organizing or signing petitions to the Legislature. 3. By delivering Lectures or procuring their delivery in districts where the merits of the sanitary question are not understood. 4. By purchasing the publications of the Association for distribution or circulation among the poor. 5. By donations or subscriptions.

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JOURNAL OF PUBLIC HEALTH

AND

Monthly Record of Sanitary Improvement.

ADDRESS.

IN the economy of the Universe there are certain definite relations established between all living beings and the external world, on the absolute integrity of which depends the existence of those conditions comprehended under the terms health and life: and it has pleased the Great Creator to invest these relations with all the attributes of unchangeable laws, any violation or disregard of which is sooner or later followed by retribution. In order that sentient beings may walk in accordance with these laws, two endowments have been conferred upon them—instinct and reason. By the former, the lower animals, and, to a great extent, man in his natural state, are preserved from destruction; but it has been left for reason to guide the human race in its onward progress of civilization and refinement.

Whenever men exchange the comparative simplicity and healthfulness of a country life for the more complex social system of a large town, natural laws are interfered with, and new agencies called into existence, which have a direct tendency to lower the standard of health and to engender disease. This circumstance appears to have been observed at a very early period of the history of our race; for we find sanitary enactments occupying a prominent place in ancient legislation. In modern times, also, the subject has attracted much attention in several of the states of Continental Europe, and considerable advances have been made towards the establishment of a perfect system of sanitary police: but our own country, with all its practical talent, and its marvellous advance in civilization, has hitherto made little or no progress in a matter so deeply involving the moral and physical welfare of the great mass of its people.

Recent investigations have shown the results of our neglect of the teachings of reason and experience, by the disclosure of an amount of mortality, disease, demoralization, and pecuniary loss, sufficient to arrest the attention of the most careless, and to call into action the energies of all who love their country, or who can sympathize with the unmerited sufferings of their fellow-men. That dark array of facts

which is to be found in the reports of the Sanitary Commission is nothing more than Nature's visibly recorded protest against our continued disregard of her laws: and with such an amount of evidence before us, it would be a criminal neglect of most obvious duty, were we to cease to urge this great subject on public attention, till every vestige of existing abuses be swept away.

The onward progress of the sanitary movement has been obstructed by ignorance, apathy, prejudice, and fancied self-interest; but there is now no excuse for the existence of any of these obstacles. There are facts enough on record to satisfy the mind of any man who is open to conviction; and the same inquiry which has disclosed the evils in all their magnitude, has also proved that it is directly the interest of every member of society, that those evils should be immediately removed.

Two things are requisite before this desirable consummation can be brought about. There must be a sound public opinion spread throughout the country; and proper legislative measures must be enacted. To aid in effecting these objects, the labours of the Health-of-Towns Association and its branches in different parts of the kingdom have, for several years, been directed, and it is gratifying to know that a steady progress has been made in enlightening the public mind.

As another auxiliary means, and a most important one, it has been deemed advisable to publish a Monthly Journal, devoted to the discussion of all subjects connected with the public health. Through this medium, we propose to lay before our readers carefully written local reports and occasional lectures on the sanitary condition of large towns and rural districts, with the prevailing causes of disease in each. We shall be able to show the dangers arising from the interment of the dead among the living; the effect of particular trades, occupations, and habits, on health; the necessity of sanitary precautions in the army and on board ship; the preventive measures to be adopted during the prevalence of epidemic disease; the

the rate of its actual sacrifice!—if the influences surrounding their clients, on which their future health depends, were regarded in an equal ratio with its present or previous condition!

Their prompt co-operation and assistance in the endeavours now making to remove those fearful causes of disease, which are proved to be the source of the present high rate of mortality, would have more effect at the present moment than aught else that could be devised.

To this end, their field of inquiry and calculation should be greatly widened, and the services of their medical officers much extended. In every individual case of life assurance, it must be of the first importance to ascertain *the sanitary conditions under which the assuring party actually passes his existence*. The usual questions as to small-pox, fits, asthma, gout, rupture, spitting of blood, irregularity of living, or habits of intoxication—the answers to which go far to determine the offices in accepting or refusing the proffered lives—are not the only, or even the most important inquiries. Such questions as the following are at least of equal importance:—Is he living in a confined neighbourhood, without fresh air and light? Is he surrounded, either in his house or offices, with open drains, cesspools, foul gully-holes, or stagnant ditches? Is the neighbourhood in which he passes his existence kept free from refuse, and well supplied with water? Are his rooms well ventilated? &c. In a word, is he living amidst influences which have been proved to produce or promote the occurrence of typhus fever, consumption, and other fatal diseases, to originate a low state of health, and materially to shorten the natural term of existence.

The mortality from typhus fever alone is found to exceed that from gout, rupture, small-pox, asthma, palsy, and intemperance put together. How unreasonable, therefore, to fix the attention exclusively upon a presumed or ascertained liability to these diseases, or causes of disease, and yet to reject the consideration of circumstances acknowledgedly so influential in the production of fever. Many trades and employments in the least degree noxious to health are regarded by the life offices with extreme suspicion, and are either charged enormous premiums for assurance, or are refused altogether. I would therefore suggest, that the far more noxious influences just named should be looked upon with equal jealousy and suspicion; that these particulars, hitherto neglected, should form a prominent part of the inquiry addressed to the friends of applicants for assurance; and that the medical examiners, by personal interrogatories at their homes, should ascertain the probable effect of such surrounding influences upon their health.

I would also urge upon the consideration of the offices the propriety and economy of employing the services of properly qualified surveyors, in conjunction with those of their medical examiners. At first sight, this local examination may appear to

be simply the duty of the medical officer; but when we consider that local causes of disease generally resolve themselves into erroneous or inadequate construction, it is obviously the part of a surveyor, not merely to ascertain the true state of the case, but to point out the most effectual and economical remedy.

In the case of fire assurance, it is the duty of the company's surveyor to examine the premises to be assured, and to ascertain and report upon the various circumstances of hazard which attend them. Why should it not be so in the case of life assurance, where it is of equal, if not of greater, importance? It is surely but reasonable that houses so situated and constructed as to be destitute of the conditions essential to health, or surrounded with those that engender disease, and in which half the ordinary period of life is sacrificed, should be marked doubly hazardous; just as, in fire assurance, buildings in which the proportion of destruction is also as two to one of the ordinary class, are treated as incurring double risk. An indifferent life so circumstanced should be regarded with even more suspicion than the most dangerous (the explosive-class) of buildings.

The same regulation should, moreover, be enforced in life assurance as is now the practice in fire assurance—viz., that all removals be strictly reported by the assured, in order that the new premises be examined.

Additional benefits would doubtless be conferred, were the medical and other officers for assurance companies called upon to prepare codes of instructions, or bye-laws, for the maintenance of health, to be urged upon the attention of the assured, any flagrant breach of which should subject the assured to the risk of forfeiture.

In the case of wilful destruction of either property or life,* the assured is very rightly deprived of his expected compensation. A wilful *bit by bit* destruction by fire—could such a case arise—would surely share the same fate. Why should it not be so with a man who, also *bit by bit*, wilfully hastens his own end, when he can no longer plead ignorance of the certain result, of which he has been duly warned? A man has no more right to place an assured life in circumstances of constant and extreme danger, obvious, unnecessary, and avoidable, than he has so to place assured property. A man may not make fireworks, or carry on other operations dangerous to his assured premises; why should he be allowed to generate unlimited carburetted or sulphuretted hydrogen, equally dangerous to his assured life? He may not drink poison; why should he be allowed perpetually to breathe it? Actual forfeiture, in such cases, may be difficult of enforcement; but the adoption of the law could not fail to be of as much service, in the

* There is an exception to this rule in some of the life offices, where, for reasons not affecting this argument, the risk of suicide is covered.

way of prevention, in the one case, as in the other. The very same causes which have here been mentioned as influencing so materially the health and life of man, affect also—and often in a worse degree—the sanitary condition of cattle. In their assurance, similar precautions should be adopted. The power which the offices would have, in this case, in removing the terrible ignorance that exists among farmers, on the conditions essential to the health of cattle, would be certainly very great, and would reap its reward.

I would now say a few words upon the subject of the tables themselves, upon which the chances of life, and the premiums on its assurance, have been hitherto determined. These tables, I believe, were formed from observations made in London, by Mr. Simpson; in Northampton, by Dr. Price; and in Carlisle, by Dr. Heysham; with the result of the more recent labours of Mr. Finlaison.

Great pains were obviously taken to obtain the best basis for calculation which the very limited means at command at that time afforded; and as far as they go, they bear evidence of much diligence, care, and accuracy.

A safe *general* average of universal application was, however, all that could then be hoped for, and it was all that was sought. The result proves that safety was at any rate attained; but the very principle of life assurance seems to point to the importance, and even the necessity, of a more minute classification. Permanent safety to the offices and justice to the public can only thus be realized; and the official statistics now collected throughout the country and laid before parliament by the Registrar-General provide a basis of calculation, of so extended a character compared to what has been hitherto employed, and a foundation for such a perfect structure of tabular arrangements, as to leave little to desire.

How far these valuable statistics of disease and mortality may have been already considered by the offices, I am not prepared to say; but although *general* life tables of an improved character have, with much labour and talent, been recently prepared from them by Mr. Farr, it is certain that no advantage has yet been taken of the facility which they afford to perfect the principles of life assurance.

10, Walbrook, October, 1847.

To be concluded in our next.

HAUNTS OF FEVER.—“My own opinion is, that fever is a contagious disease, spreading from person to person, just as scarlet-fever and small-pox does, and, like those diseases, haunting overcrowded or ill-drained districts, and all places where, from any cause whatever, the air is foul or filled with animal and vegetable emanations. It loves the banks of rivers, the borders of marshes,

the edges of stagnant pools; it makes itself at home in the neighbourhood of cesspools and badly-constructed drains, and takes especial delight in the incense of gully-holes. It has a perfect horror of fresh air, soap, and whitewash; but when left to itself, it will linger for years amidst scenes of filth and corruption, and fold in its deadly embrace all human beings who have the same depraved taste, or are so unfortunate as to be thrown into its company. It is the favourite child of ‘laissez faire,’—in plain language, ‘let alone:’ and bears the same relation to filth that crime does to ignorance.”—*Dr. Guy's Lecture on the Causes of Unhealthiness of Towns.*

EPIDEMICS NOT OF NECESSARY EXISTENCE.—“The great historical epidemics have diminished in intensity; and there appears to be no reason why they should not be ultimately suppressed, with the advances of the population among which they take their rise. Their origin is obscure, but influenza appears generally to become first epidemic in Russia—cholera in India. It is in India that the source of the latter disease must be attacked. If the health of India become sound, Europe might be safe, and hear no more of the epidemic which is now traversing Russia. The attention of the Indian authorities has for some time been directed to this subject. The Marquis Wellesley in 1821 effected improvements in Bengal. Mr. Martin, one of the commissioners appointed by the late Government to inquire into the health of towns, addressed Lord Metcalfe, the Governor-General, on the sanitary improvement of Calcutta in 1835; his comprehensive plans were promoted by that eminent statesman. Lord Auckland appointed a sanitary commission, of which Sir John Grant was the chairman; and thus procured a very able official report on the health of Calcutta, before the subject was touched at home. The other nations of Europe are beginning to take an interest in public sanitary improvements; and any plans found to succeed in England will no doubt be carried out as speedily as possible in all parts of Her Majesty's dominions; for the vast population that owns her sway is intimately united. Asiatic cholera has taught us that the lives of thousands in England may depend on the condition of the Pariahs of Jessore.”—*Report of the Registrar-General.*

ADVANTAGE OF SANITARY REGULATIONS.—“A city breathing an atmosphere perfectly pure may not be exempt from every epidemic; but observation has shown that such irruptions are infrequent, and fatal to few persons of strength or stamina. Internal sanitary arrangements, and not quarantine or sanitary lines, are the safeguards of nations. A salubrious city in an epidemic—like a city built of stone in a conflagration—is exposed to danger and injury, but not to the same extent as the present cities of Europe, which are left without any adequate regulations for the health and security of their inhabitants.”—*Report of the Registrar-General.*

SOME REMARKS ON THE PROGRESS
OF THE CHOLERA.

BY J. C. HALL, M.D., M.R.C.S.

I PROPOSE to place before the readers of this Journal an epitomized history of the rise and progress of that fearful scourge, the Asiatic Cholera, which, taking a course somewhat similar to that preceding its last visitation, is again threatening our unfortunate country. I say unfortunate, because England, at this moment, resembles a country menaced by a mighty foe, without any means of defence, and what is worse, apparently, without any inclination to employ the precious moments which remain, whilst the enemy is at a distance, in preparing for the attack. It is foolish to attempt to check the cholera by quarantine regulations, our only safety rests in a proper cleansing of our cities, towns, and villages. Filth and dirt form the congenial habitation of the cholera, and in proportion as these are removed will our safety be provided for. Our sketch must, of necessity, be a very rapid one, because it has been left to the latest possible moment, in order to supply the most recent information up to the hour of going to press. The history of the cholera has taught us, how much the nations of the earth are dependent upon each other, how close the bonds of relationship, and how important it is that sanitary measures should be carried out by every nation upon earth: the health of the inhabitants of this country is doubtlessly influenced by that of India, for that fatal attack of cholera which spread through this island in 1831-2 broke out near Calcutta, in the year 1817. This disease appears to have been unknown in the principal European cities prior to the year 1831. In 1817 it carried off 400,000, ravaging Java and Malacca. In the succeeding year, China, the Burman Empire, the Malaccas and the Mauritius suffered severely, and assuming a more northern course, it passed through Persia and Arabia in 1821; appearing, in 1823, at the foot of the Caucasus, and the margin of the Caspian Sea; 1826 witnessed its advent in Siberia, whence it advanced with hasty strides into the interior of Russia. Africa was invaded in the next year, and the disease also was raging at the same time in Egypt. Poland, Galicia, Austria, Bohemia, and Hungary, suffered in their turn; it reached Prussia in 1831; thence it rapidly traversed the sea to England, passed over to France, and was next seen in the New World. This may serve for a brief sketch of its northern course; it also passed from Asia Minor to the south of Europe. It may be well to state here, that the number of cases in England and Wales, during the years 1831-2, including London, amounted to 61,051, and of these 40,473 recovered, and 20,578 died; of these cases, therefore, 33 per cent., or about 1 case in 3, proved fatal. But let us turn for a moment to London, where the mortality, as might be expected, was perfectly appalling, and

could it be otherwise in a city so altogether destitute of sanitary regulations? In the metropolis there were 11,018 cases, and of these only 5745 recovered, the number of deaths amounting to no less than 5273—about 50 per cent., or one out of every two patients attacked; and let it not be forgotten, that the causes which produced this fearful mortality are at this moment in full operation; the same disease is rapidly advancing towards us; and yet, regardless of the consequences, a besotted Filth of Towns Party is to be found, fighting inch by inch against sanitary improvements, and struggling to keep the devoted city in all its present helpless condition; and helpless indeed may that population be described, on the breaking out of any epidemic, which lives amongst the abominations to be found in London.

It appears, by official returns, that from the 18th of June to the 18th of October, 1831, the cholera had appeared in 2962 places, where the total number attacked was 335,711. Of these 151,734 had died, 32,957 remained under treatment, and 150,020 had recovered. The disorder had ceased in 1001 places. At Cairo and Alexandria, it carried off in 24 days no less than 30,000 Egyptians.

We must now direct our attention to the present course of the epidemic, which, after raging with very great violence for two years in Persia, where it was propagated in a direction from S.E. to N.W., towards the end of the summer of 1846 broke out at Tauris and Teheran, and during the autumn advanced to places nearest to the Russian Frontiers. On the 16th of November, 1846, cases occurred at the village of Saliandy, and also in the same month at Leukoran, *and it is worthy of remark that these were the places first attacked in 1830.* The disease also appeared at Bakrou; and advanced in December to Schémakha, Derbent, and in the month of February 1847 to the town of Kouba. Its appearance at Saliandy, and in the district of Talysch, was marked with that malignity which, for the most part, characterizes the commencement of cholera. We observe at Saliandy a remarkable instance of the influence of the trade and local situation of the place tending to foster it. Selecting for its victims those who had but recently recovered from the fever of the country, the cholera almost invariably carried off every patient; nearly 9-10ths dying. After a few weeks, the cases were less violent, and the number of deaths, as compared with that of the patients, were in the ratio of four to five. In the other localities of the Trans-Caucasian provinces the attacks became less violent, and, *without the towns*, the disease no longer presented a malignant type. Towards the end of February all traces of the disease were lost, and hopes began to be entertained that the country was once more free from this mighty destroyer. Delusive dream! In the following month it broke out with increased violence, and in April it began to spread with fearful rapidity, traversing simulta-

neously three districts, passing to the north, along the shores of the Caspian Sea; to the north-west, in the direction of the mountains; and on the west, towards Tiflis, which it reached on the 17th of May. It appeared on the other side of the Caucasus, on the 24th of May, at Kizliar, whence, re-ascending the Terek, it penetrated to Mozdok; afterwards, at the end of June, to Piatigorsk and to Georgierk, and entered Stavropol in the first week of July.

From the 16th of October, 1846, to the 14th of June, 1847, the Caucasus and Trans-Caucasian provinces reckoned no less than 17,055 cases of cholera, of these no less than 6318 died.*

During the first week of July, the cholera made its appearance, also in the government of Astrakan. The first patients were attacked on the 3rd in the quarantine of Astrakan, situate about 100 wersts to the south of the city, on an island named Birutchiakossa; on the fourth, cases occurred in the military district, and on the next day, in the third quarter of the city, a Tartar was attacked, and died on the 6th in the hospital. The malady now sensibly spread into the city. Its progress was at first slow, and some difference of opinion seems to have existed as to the true nature of the disease; the majority of the physicians looking upon it as a severe form of the sporadic cholera that annually prevails during the summer months. The number of cases reported from the 4th to the 13th was 23, and of these no less than 19 died. The doubts of the medical men were quickly dissipated, the cholera now commencing its reign with all its well known malignity. The majority of those attacked belonged to the lower orders, and it attacked all, without distinction of age or sex. The wife, the husband, the sister, and the brother; the babe entering upon existence and the old man hastening to the winter of life, were all indiscriminately attacked, and hurried to the grave. It ought to be remarked, however, that the *male* exceeded the *female* patients in a ratio of five to one, and that adults were more frequently attacked than children, and in general a much larger number of Russians than of Mahometans or Kalmuks, who form a considerable portion of the population of Astrakan, a very important fact, and to which we shall allude hereafter.

The cholera appears to have exhibited the same features in Astrakan, as in England in 1831-2, and in any investigation which may take place as to the best plan for treating it, the first thing will be to learn the period of the epidemic when the supposed remedy was used; for, although at its commencement all means of treatment may be unavailing, at a later period the same medicines may be most efficacious. Thus, it appears that in Astrakan the disease was at first most violent, death frequently ending the sufferings of the victim in a very few hours; in many cases, so rapid was the complaint in its progress, that no time for medical assistance

* These returns are from official data, which have kindly been placed at my disposal.

was afforded; the powers of life sinking from the first; during the first three days (from the 13th to the 16th or 17th of July) more than one-half died; after this, the disease gradually assumed a more favourable aspect, and the recoveries were more numerous. On the 19th of July, the number of deaths was 137, which, gradually declining, were reduced on the 2nd of August to 14.

In the last week of July, when the number of deaths had very sensibly diminished, epidemic intermittent fevers re-appeared, a convincing proof that the character of the disease had undergone an alteration. I have before me an official return of the number of deaths from cholera, in Astrakan, from the 4th of July to the 2nd of August.

Date.	Cases.	Deaths.	Recoveries.
July 4 to July 12...	23	19	4
" 13	16	49	98
" 17	19	401	278
" 20	23	318	195
" 24	26	259	113
" 27	29	99	71
" 30 to Aug. 2...	167	78	89
Total	2071	1223	848

A most fearful mortality, but hardly greater than that sustained by the inhabitants of our own metropolis during the last visitation.

The latest accounts from St. Petersburg, now before me, convey the intelligence that the cholera had reached Moscow, and that out of 140 cases, 41 had proved fatal. Here we must pause; it may, however, be well to remark, that an additional fact in favour of sanitary measures may be drawn from the Mahometans suffering much less than the Russians, the former being much more cleanly in their habits, and very sober and careful in their diet. The same thing was observed in this country, when the cholera was raging in 1831-2;—the dram-drinker, the broken down in constitution, the denizens of the crowded, dirty, badly ventilated houses, in the courts and blind alleys of large towns, were attacked, and died by hundreds, whilst the inhabitants of the large and better drained streets, and of country villages, escaped its ravages. In another number I shall venture to draw attention to the connexion between epidemic centres and sanitary condition.

Grove-street, East Retford, Nov. 24.

THE latest official accounts from St. Petersburg, dated the 12th ult., state that, between Oct. 25th and Nov. 1st, 641 persons have been attacked, of whom 233 have died. The grand total up to Nov. 1st was, 1197 attacks, and 402 deaths. The most western points hitherto attacked are the town of Alexandrof, in the government of Kherson, and the district of Olgapol, in Podolia. The latter is about thirty miles distant from the Austrian frontiers.

ON THE PROPRIETY OF SEPARATING REFUSE SEWERS FROM SURFACE-WATER DRAINS.

BY JAMES SIMPSON, ESQ. ADVOCATE, EDINBURGH.

As there can be no doubt that vast sums of money will be expended on town sewerage and drainage, suggestions of the most efficient and economical means of attaining the truly vital object of that outlay should be welcomed. Even at this time of day the science of town-drainage is only beginning to be recognised, the discreditable want of it having brought matters to a pass that cannot longer be endured. When, for example, we hear in London of branch sewers actually led into mains passing them at a *higher* level;—of sewers so devoid of fall as to accumulate the sewage they are intended to carry off;—of men, living men, being actually sent into sewers to clean them out when gorged with black mud, an active volatile poison; of those men being struck dead by its concentrated effluvia; of the sewage which does *get on* pouring itself into the Thames to the amount of millions of tons in the year, lost to the farmer, although the very best manure, and a pestilent nuisance in the river, which without it would be pure and wholesome; when, I say, we hear all this, we naturally ask, “is this the country or the age, in which practical science covers the land and the sea with its achievements,—multiplies hands a thousand fold by exquisite machinery,—sweeps the ocean with fire despite the winds,—drives iron ways through mountains, and tracks their smooth path with an engine of speed, rivalled only by the subject lightning, which heralds its course,—nay has but lately swung into the air a monster ship, and relaunched the long-stranded mass into its proper element?” We turn and ask again, has none of the skill of the times been spared for the humbler, but yet more urgent, achievement of constructing ways by which the noxious refuse of human habitations may travel inoffensively, without stoppages in the road, to its safe, profitable, natural destination? “NONE,” is the answer; and the confession is truly humiliating.

There is one most striking difference between a railway and a sewage-way. Before the former is begun, the command of its whole area is secured, and its levels, curves, and gradients, calculated to an odd inch, for it is all under one management. Not so with the London sewage-way. Its course lies through different territories, under different guides, meets with different levels, and runs down, or runs up, or stands still, according as it is fairly or foully treated by the inharmonious and not seldom hostile powers, charged with its successive transmissions. Ought this state of things to be longer tolerated? Is the population of such a town as London to be condemned to its indefinite continuance, when the masses are living in the midst of unspeakable abominations, and dying in numbers by an increasing pestilence, whose wing is sweeping within the pale of higher life, itself breathing poison at first hand, rising from a thousand issues in its streets and squares, and regorging into the atmosphere of even its mansions and palaces? It is no longer a question: a revolution in the realms of sewers is imperatively called for. The power must be centralized in every town, but especially in London, and the measure would be hailed from Caithness to Cornwall. It would not,

however, want opposition, and the distinction of opposing it would attach to London alone; not to the suffering dying multitude, not to the generally endangered public, but to certain parish-potentates, sitting round certain tables called boards, each jealous of its own power, the kings of a heptarchy of foul water,* each passing it onwards as is done with paupers and felons to their parishes and prisons, let the next jurisdiction see to their safe conduct as it may. The members of these august tribunals never personally descend into their own acherontic domains. This is done for them by ministering angels, whose “visits” clean out coffers much more effectually than conduits; who give bad work for extravagant pay, and retain a perennial estate in the repairs of their own imperfections and blunders. It is a delicate power to meddle with; hint at such a thing as reform, and conservatism of sewers awakes in all its wrath; the British Lion even is promptly engaged to growl over the threatened dignities as part and parcel of the constitution, and the subject’s liberty. Yet the generous and much desecrated beast would change sides could he be made to understand the true state of the question between the potentates and the poor, misery on the one side, and nothing but a little bit of pride on the other. In such a state of things, to humour the boards, to succumb to the heptarchy, to listen for one moment to the protests and obstinations of the mismanagers of London sewerage were utterly preposterous, either in legislature or country. Two lines of the sanitary act, for which stifled London pants, would abate the incorporated nuisance for ever.

Town drainage is twofold,—of *sewage proper*, the liquid refuse of dwellings, and surface drainage of rain and melted snow. Sewage flows constantly, and in measurable manageable quantity; surface water irregularly, sometimes not at all, often copiously, and occasionally excessively. I would humbly propose that *distinct and separate conduits* should carry off these two kinds of liquid discharge. The sewers for the sewage should be conduits, which, from their commencement in private dwellings to their final debouchure from the main of the largest size, should not, by one single open vent, during their whole course, communicate with the open air. If to these sewers a *regular fall* is given, it need not be a great one, and they are made of proper materials and securely jointed as they are prolonged, with an ample supply of water for their ordinary flow, and occasional flushing, they will never need any other cleansing, or, for indefinite periods of time, any repair or renewal. And, moreover, as the sewage must in quantity be nearly uniform daily, the discharge can be ascertained by measurement, at different points of its course, and a calibre given to the conduits as they increase in relative size, which, making allowance for excess at particular hours of the day, also easily measurable, shall always be more than sufficient for the most copious flow, and retain capacity for additional houses; which last, however, must always hold a ratio to that capacity. All this is very plain sailing; and it will be found that a calibre of not one-third, perhaps not one-fourth part of the present large conduits, which are calculated much more for rare floods of rain water than for sewage, will suffice, and not occasion one-

* It happens that the independent sewer sovereignties are actually *seven*!

tenth part of the cost. I would urge on the public, with the utmost earnestness, to abandon for ever *built* sewers, be they square, round, or egg-shaped, and ever so closely fitted and jointed, and to substitute *close* tubes or pipes in their room. Such pipes are quite suited to the greatly reduced diameter which is sufficient for sewage alone; and they can be made of a material insoluble in water—namely, burnt clay or earthenware. This is glazed in the inside, or on both sides, with a coating which will defy the chemical agency of sewage water with its acids and ammonia, and by its lubricity facilitate the passage of the sewage. I do trust that sewerage managements will make themselves acquainted with tubular sewers before they plunge into the ruinous cost of constructing and maintaining large *built* drains. The late Mr. Wm. Dyce Guthrie had the merit of first suggesting tubular sewerage, in his evidence before the Health of Towns Commission, and did more thereby for the sanitary cause than is likely to be done by any other individual. We have to lament his death, which happened when engaged, about ten months ago, in a sanitary survey of Belfast; and I wish I could say that his widow and family possess the means of livelihood. The earthenware tube sewers are made of any size and strength, in lengths of from two to six feet, with spigot and faucet joints, (to be united by Roman cement, or patent intonico,) by Messrs. Bellfield, Potters, Prestonpans, East Lothian; and, I understand, equally well of what is called iron-stone, in several potteries in London and elsewhere. I can myself speak from experience, so far as a house sewer goes, for I have used one for more than twelve months. Under Mr. Guthrie's directions, I filled up the old box sewer, (which annoyed my family and endangered their health, by steadily choking up, to be opened and cleaned out by manual labour,) and laid in its place an earthen pipe of four inches diameter, cemented with intonico. Of course, this pipe empties itself into the main-street drain, to which it proceeds with a fall of one foot in sixty, the latter being its whole length. It has worked excellently, and has never given the slightest trouble; no drain odour returns from it in kitchen-sink or water-closets, for nothing remains in it; and when it is occasionally flushed, the water in a few seconds runs clear in it; which can be seen by an opening only uncovered for that observation. The expense was about ten pounds, and I could do it again for six or seven. All fears from that insidious atmosphere which renders unhealthy even palaces sewerred in the old fashion, are in my case removed, and I am reaping the benefit in the improved health of my family. There are three modes of protection from reflux odour through such a pipe; first, the water-pan *in*, and the sigmatic curve *under*, the water-closet and sink; next another sigmatic curve if the descent will make it safe, where the pipe joins the main-street drain; and thirdly, a delicately hung flap valve of galvanized iron at the extreme end of the tube, where it discharges into the main drain. This valve will always be shut except when opened by a flow from the house. I may add, that all contrivances, such as cesspools, to keep down rats, are rendered unnecessary. No rat will come twice up a slippery CLEAN pipe; and when there it must return, for its mining power is utterly defied.

Rats, it is well known, are the grand enemies of built drains. They pick out the lime already softened by the sewage, and make their burrows in the ruins which they occasion.

Another advantage of conveying sewage by pipe drains, is preserving it for agricultural purposes, free from the often preponderating admixture of surface drainage. Bating the occasional flushing of the sewers, which will not amount to anything like surface water, the discharge into the reservoirs (which I presume to exist, properly constructed to disinfect and store or transmit the manure) will be the rich drain from dwellings, stables, &c. I further presume the universality, even in the humblest houses, of water-closets, now made for twenty or thirty shillings. Tube sewers require no openings into the streets, and no foul traps; and, finally, they can be put into the ground in the twentieth part of the time necessary for built drains. The saving to the public in labour and annoyance, would be very great.

I come now to the disposal of surface drainage from the occasional occurrence of sudden thunder showers. It is for these comparatively rare deluges that it is really necessary to build drains of the enormous size known in London. On these occasions only they are filled. I should say, make use of the drains already existing, for surface drainage. Take care that it is as much as possible limited to rain-water, as liquid and as *clean*, if I may use the term, as possible. The streets would still need sweeping by hand or machine, and should not be allowed to flow into the drains. Dust-carts will not be superseded, for they are wanted for the solid *débris* of houses, vegetable and animal refuse, and ashes, which ought on no account ever to be thrown down the pipe drains. With well swept streets, the rain water should not be so foul as to render foul-air traps at the gratings necessary. The old drains would soon be purified. But in streets that will permit it by any degree of declivity, I do not see the necessity of expensive under-ground drains at all, for mere rain water. It may be made to flow perfectly harmless in deep well-paved gutter-ways; and when a thunder-shower comes, the whole pavement will not be the worse for the extraordinary cleansing. These gutter-ways, in their course, must occasionally, when the level rises, be carried under ground, like some rivers, to emerge when the declivity permits. *That* discharge may flow into the Thames well down the river. Towns which have to sewer *ab initio*, or greatly to extend and improve their sewerage, would do well to think deliberately of the separation of sewerage and surface drainage, and adopt the above suggestions, in so far as they suit their localities.

The cost of complete sewerage will, to any town in present circumstances, be a heavy one; to London, which is composed of several towns, it will be immense. But the profitable conversion of the sewage into manure must not be forgotten. If *that* is worth, and there can be no doubt of it, at least a pound sterling for each inhabitant, let us only reflect on the annual value of that item in London. Something above two millions sterling! Two or three years' returns would sewer all London twice over, and leave an immense annual revenue for other purposes. A company is

about to collect and economize as manure, the sewerage of Westminster; I would earnestly counsel them to adopt for the sewage proper the tubular system, as beyond all comparison the least costly, and the best for their purpose.

It is not, however, the way to obtain a great public revenue for the sewage of a town, to give it for nothing to a private joint-stock company. Not only the sewerage, but the collecting and disinfecting reservoirs ought to be a public work. The public management should bring it into the reservoirs, by itself constructed; and might then let it out for an adequate rent to be disinfected and conveyed to the lands, either liquid by pipes, or dry by cartage.

It is plain that each house must be compelled by the Act, within a specified time, to establish a water-closet to make perfect its own private sewer. The tubular form might be enforced; though when understood, it would be voluntarily adopted. The main sewers, with their successive enlargements, must be a public work, on borrowed money at the outset, the interest and sinking fund being calculated for an assessment spread over a number of years. If the manure reservoir plan is adopted, the expense would speedily be met, and the borrowed money repaid.

There is but one opinion now of the importance of placing *water supply* under the same management with sewerage. For any sewers, water, in unstinted profusion, is indispensable; but especially for a system of tubular sewers, which can have no other method of cleansing. Public cisterns capable, when suddenly opened, of flushing the mains *full* with the force of hydraulic pressure, should be established at properly selected points in the sewers course; the discharges to be made at regular periods, by signal or by time, that they may all rush down at the same moment. Watched, as this purifying flow might be, at a point close to the final receptacles, it might, when clear, be turned off, and prevented from unnecessarily diluting the manure. When all sewage shall flow from domestic water-closets and sinks properly trapped through close tubes, which will only be a continuation of the present soil-pipes into street mains, also tubular, and like so many arteries, enlarging as the flow increases, but close throughout their course, and periodically flushed by powerful heads of water, till they are discharged into safe reservoirs to be disinfected and transmitted for agricultural purposes; and again, when streets are well swept, and the refuse carted away, like the dry refuse of houses, while rain water is conveyed away either in covered drains of large size, or in well constructed gutter runs,—I humbly submit that the problem of the health of towns will be well-nigh solved.

THE APATHY OF THE PEOPLE.—“The great difficulty with which the advocates of sanitary reform have to contend, is the apathy of the people in all that concerns the preservation of health and life. It has never occurred to them to look upon health as property. They forget that it is by it alone that they are enabled to earn a livelihood; that the strength of their bodies, the skill of their hands, and even the operations of their minds, are directly con-

tingent upon the continuance of their health; that upon it depends their own subsistence, and the support of wife and children; that without it they must bid adieu to comfort, to independence, to all hope of bettering their condition or rising in the world; that, in a word, in every conflict with outward things, in the pursuits of peace as in the struggles of war, health is victory and disease defeat. But not only is the great mass of the people unconscious of, or indifferent to, this great truth, but those to whom a conviction of the value of health is most essential are the last to feel it and to act upon it. In the tailors' workshop and in the printing-office, where men rot like sheep in the marshes, poisoned by impure air; among the fork-grinders of Sheffield, and in the noisome cellars of Liverpool, you will find this indifference at its height. The inhabitants of these places are not ignorant of their danger, but custom has blunted their feelings. They know that they are doomed to a sickly existence and an early grave, that in their peaceful occupations they have not even the soldier's chance of escape, and that with scarcely an exception they will die before their time; but they are fatalists almost to a man, and, as far as this part of their creed is concerned, might as well be Mahometans as Christians. The very men who would move heaven and earth to maintain some petty usage of their trade, or to resist the most unimportant innovation upon their so-called rights, will suffer themselves to be suffocated and poisoned without a murmur, and even oppose the most unreasonable and vexatious obstacles to the humane attempts of the employer to improve their condition. But the infatuation of these men does not stop here; for, in exact proportion as their occupations are fatal to health and life, they are addicted to that destructive habit of intoxication, which exerts so strange a fascination over the victims of physical and moral wretchedness.”—*Frazer's Magazine*.

EVILS OF DEFECTIVE WATER SUPPLY.—“Before a poor woman living up three pair of stairs can scrub her room, she must be at home at the hour when the water is turned on in her court, which is not always at the same hour, nor does it flow for the same length of time each day that it is turned on: and it frequently happens, that before the scrubbing is completed, the water ceases to flow. The labour which the present intermittent supply of water entails on the poor is excessive. People, already exhausted with the day's work, cannot be expected to be in a fit state for the additional labour of fetching water, and yet the fetching of the water is only one half of the labour the poor have to endure, if they cherish the love of cleanliness; inasmuch as the houses are unprovided with drains or sinks, so that the dirty water must either be carried down stairs, or remain in the room in which it has been used, thus producing dampness, whereby the health of the family is injured. Give the poor a more plentiful supply of water, and I am persuaded that, in the course of a short time, we shall have little occasion to reproach them for the want of cleanliness. The present difficulty and the labour, after a hard day's work, of obtaining water, has a very great effect on their domestic economy, their habits, and their health.”—*Mr. Liddle's Lecture on the Moral and Physical Evils resulting from the Neglect of Sanitary Measures*.

STREET CLEANSING.

BY P. H. HOLLAND, ESQ., MANCHESTER.

THE leading objects of sanitary improvers may be expressed in two words—cleanliness and purity. Cleanliness of our persons, clothes, habitations, and streets; purity of the air we breathe, of the water we drink, and the food we eat. Other circumstances, of course, contribute to health, such as pleasing occupation, moderate toil, agreeable exercise, innocent amusement, and the gratification of our sense of beauty; but the leading ideas of sanitary improvement are comprised in the two objects first mentioned. A proper degree of cleanliness and a healthful amount of purity can only be attained, first, by such perfection of drainage as that all liquid filth may be at once and completely removed; next, by such a copious supply of pure water as that most of that filth which is produced may be rendered liquid and washed away through the sewers. Secondly, by the immediate removal, by other means, of all that is too solid to be thus removed by means of water; thirdly, space for the free circulation of air and the free admission of light must be provided, and places for recreation and exercise found; and lastly, the most important of all, improved habits of domestic comfort, cleanliness, and order introduced, by facilities for their growth being supplied.

Among all the subordinate means for arriving at this most desirable end, few, if any, are more direct in their operation than improved street cleanliness. It is usual to regard scavenging merely as a means of rendering our streets more agreeable and convenient channels of traffic. But this is taking a very narrow and erroneous view of the subject. Our streets are the principal reservoirs whence we are supplied with fresh air, and if it be impure in them, it is impure everywhere. It is therefore of the first consequence that no foul air should be allowed to enter the streets from untrapped drains, and that no filth should be suffered to remain rotting upon their surface to assist by its poisonous emanations the other injurious influences by which the inhabitants of ill-regulated towns are surrounded. Further, dirty streets cause dirty houses, dirty clothes, dirty persons; every one walking in them in wet weather carries into his house some portion of dirt to increase the difficulty of domestic cleanliness: in dry weather, the same effect is, perhaps, even more powerfully produced by constant clouds of dust. The consequence is, it becomes so difficult to keep the house always clean, that the effort to do so is gradually abandoned, and a degree of dirtiness is habitually submitted to, which would be felt to be intolerable under more favourable circumstances. But the evil does not end here. With diminished domestic cleanliness, there is, of course, diminished domestic comfort; and from that follows a long and diversified train of mischiefs; one of the most common and most serious forms of which is, that husbands and fathers are apt to become habitual absentees from home, and to seek in the glare

of the gin-palace, or the snugness of the tavern, a refuge from their own cheerless fire-side. Of course, we do not mean that bad scavenging is the cause of this mischief, or that good scavenging will be its cure. All that we say is, that dirtiness of the streets helps powerfully to increase these effects, and that improved cleanliness will diminish them. The reasonableness of this opinion is so evident, that proof cannot be required; but if it were, it might easily be furnished; for the fact of an improvement in the condition of the streets being quickly followed by improved habits of domestic economy has been repeatedly remarked.

The only obstacle to greatly increased cleanliness is, the expense of more frequent scavenging; and though we are convinced that real economy would justify our increasing such expense were it necessary, we acknowledge it to be a formidable obstacle. We have, therefore, great pleasure in stating that mechanical ingenuity places the advantage within our reach, without any addition to the cost. Mr. Whitworth, the celebrated mechanist of Manchester, has perfected a sweeping-machine, by means of which he is enabled to sweep the streets of that town three times as often as they used to be swept by hand, at the same cost. This work he has done for several years, and the effect is, that he has, "without any extra cost to the inhabitants, converted one of the dirtiest into one of the cleanest towns of the empire." In Birmingham, Leeds, and London, as well as in several other places, the machine has likewise been worked with success. In Liverpool, from some cause with which we are but imperfectly acquainted, its working has not been equally satisfactory; but that that is not owing to any imperfection of the machine itself, may be safely inferred from the fact, that the patentees declare themselves willing to contract to cleanse the whole town of Liverpool, *to the satisfaction of the town council*, at a charge of several hundreds a year less than is now expended for unsatisfactory work.

The machine is very simple, and it is stated, in a pamphlet published by the patentees, to be little liable to get out of order. "It consists," say they, "of a series of broad brooms, about 2½ feet wide, attached to two endless chains, running over an upper and lower set of pulleys, which are suspended in a light frame of wrought iron, hung behind a cart, the body of which is near the ground. As the cart wheels revolve, they give a rotary motion to the pulleys carrying the endless series of brooms, which being made to bear upon the ground, successively sweep the surface, and carry the soil up an incline or carrier plate, over the top of which it is thrown into the cart."

The sources of economy of this machine over hand labour are, as pointed out by the inventor, first, the substitution of horse for manual labour; secondly, the conversion of the two processes of sweeping and filling the dirt into carts, into the one pro-

cess of doing both by one operation. In ordinary hand-scavenging, the dirt has first to be swept from the whole surface to the sides of the street, then gathered into heaps, then shovelled into carts to be carried away. It is said that each particle of dirt, on an average, is moved some forty feet before it reaches the cart. By machine cleansing, the dirt is at once carried to the cart. The dirt gathered in heaps by the scavengers is very apt to be scattered again over the streets by passing horses or vehicles; while remaining in the street, it is a source of annoyance; and when being loaded into the carts, the passengers, the footpaths, and even the house fronts and the windows are liable to be splashed. All these inconveniences are avoided by the machine. Further, the patentees assert, and we believe truly, that the roads are preserved, and the draught of carriages diminished, by its employment. There is one circumstance which strikes us as peculiarly important—viz., that the economy of cleansing by machine increases in proportion to the degree of cleanliness preserved. The explanation of this is very simple. Pretty nearly the same absolute quantity of dirt must be removed, whether the streets be swept frequently or rarely, and therefore the *proportion* of time occupied in carrying is less, and the proportion occupied in sweeping more, the greater the degree of cleanliness. Suppose, for instance, 10 machines to be sufficient to cleanse every street of a town, on an average, once a week, 20 would be far more than sufficient to cleanse the same town twice a week. Suppose each machine to be worked 10 hours a day, and when 10 are employed, to be occupied 4 hours each in carrying away the dirt, and 6 hours in sweeping, the total work done would be 60 hours of sweeping per day, or about 150,000 square yards. If, however, 20 machines are employed, their day's work altogether will be equal to one machine for 200 hours, of which not more than 40 will, as before, be occupied in carrying, and 160 will be left for cleansing, during which, at the ordinary rate of working, upwards of 400,000 square yards might be swept; but the expense for 20 machines would not be double that for 10, while the quantity of work performed would be increased 166 per cent.—i. e., from 150,000 to 400,000 square yards. For this illustration, we are indebted to a gentleman who has good opportunities of observing the working of the machine.

Such being among the advantages attending the use of this important invention, we are anxious, of course, that it should be generally employed. We invite the attention of our readers to the subject, and to an examination whether the opinions we have formed are or are not fully borne out by experience. We have derived our own information principally from Manchester, Birmingham, Leeds, and London. We are assured, however, that wherever the machine has been fairly used, its success has been indisputable.

APPEAL TO THE WORKING CLASSES ON BEHALF OF SANITARY REFORM.—The virulence of typhus principally exhausts itself on the industrial classes—on those who maintain themselves by the labour of their hands. This is not the first nor the second time that those who can least sustain the shock have been exposed to its dreadful violence. Year after year they have been decimated by fever. Their wives, their children, their relatives have been enfeebled or swept away. True, they have emitted no cry—and that is the most woful feature of the case. Either they must be ignorant of the poisonous influences under which they live, or they must be too demoralized to struggle against them, or they must be hopeless of the will of the State to succour them. Any of these suppositions is sufficiently deplorable. It is difficult to say whether the ignorance, or the apathy, or the distrust, be the most lamentable symptom. Surely they must soon learn to feel the blush of shame, when Southwood Smith and other men, not personally exposed to their condition, stand alone and unaided by them in their efforts to better it. This silence is not endurable by a manly and intelligent people. Surely they who suffer have tongues to tell what they suffer—and that, too, with irresistible eloquence. Why should they always speak through those who have no personal experience of their circumstances? Now that fever is raging among them, how impressive would be their appeal to the legislature! There are men among them who could draw up an infinitely better report of the deteriorating influences by which they are surrounded than could be drawn by those of a different class, and who could suggest more practical and immediate mitigations. Such a report would most assuredly have a powerful influence in hastening the enactment of sanitary measures and the increase of their own comforts.—*Edinburgh Weekly Express.*

NECESSITY FOR LEGISLATIVE INTERFERENCE.—“Charity cannot effectually alone combat these evils; you may occasionally send clouds of white-washers, loads of clean bedding, ample supplies of comforts and medicines, of medical men, and clergymen, and schoolmasters too; you may build hospital on hospital;—this is not the remedy, it has always, and always will fail; it must be a thorough change, such as legislation only can effect—by good regulations, and adequate means diligently applied, by laws founded on sound principles and comprehensive practicability, rigidly and effectually enforced through the instrumentality of the strong arm of lawful authority supported by reason and justice for the good of mankind. These are the remedies, and they are as capable of curing the evil as were watchful vigilance and wholesome regulations properly enforced and perseveringly applied in the royal navy for the cure of scurvy when it so fearfully raged.”—*Dr. Bird's Lecture on the Health of Towns.*

SANITARY CONDITION OF A DISTRICT
IN WOLVERHAMPTON.

BY J. DEHANE, M.D.

BEFORE entering into the particulars of the effect of the generally denominated "Irish Fever," upon particular districts of this place, it may be necessary to point out, that the town of Wolverhampton is seated on an eminence considerably elevated above the immediate neighbourhood, that it has a rocky substratum, and that where this is not found, its place is occupied either by a stiff clay, or a red and friable sandstone; and that in nearly every part of it, good water is to be found, by sinking to the depth of twenty and thirty feet.

The situation is therefore extremely favourable for the purpose of drainage, and consequently this object may be effected at a comparatively small outlay; but such has been the rapid increase of the town, that many long lines of streets are totally destitute of sewers, or even of any substitute for them; so that stagnant water and refuse of every description is permitted to accumulate in many of the streets and thoroughfares.

But as my object, in the present statement, is principally to show that this state of things, when it has reached a certain point, is not only injurious to the public health, but absolutely the cause of much loss of life, from fever and other diseases, it will perhaps be better at once to proceed to the description of a particular part of this town, where such has unfortunately been the case, from the want of drainage, &c.

In this district, a few hundred yards only removed from the collegiate church, and known by the several names of the Carribee Island, Colis Croft, Castle Place, and the Back Lane, all in the neighbourhood of Stafford Street, are huddled together many scores of miserable habitations totally destitute of any drainage, and where the filthy surface-water is permitted to lay in pools until it becomes putrid, emitting very offensive and noxious exhalations, while the immediate neighbourhood generally presents a most disgusting accumulation of filth and rubbish, in the shape of dung-hills, and unemptied privies, frequently overflowing with their fœtid contents. It is almost needless to add, that in such a locality, little can be expected in the way of cleanliness, either as respects the houses or their inhabitants, and such is indeed the fact. The buildings are of the most squalid description, containing a population of frequently ten or twelve in a room, without either beds or even the commonest article of furniture.

Here are found congregated a mass of men, women, and children, principally from the sister island, in every stage of rags and destitution. Even water, that commonest necessary of life, is wanting, there being scarcely a pump in the whole district, so that cleanliness is out of the question, were they even inclined to practise it.

Under these circumstances, it will not be surprising that disease should find admittance, and the result has but too clearly proved that such is the fact. The population of the district, which is of a migratory character, and fluctuating in its numbers, may be from about 1100 to 1500, and is chiefly composed of Irish labourers and their families, driven here by the late scarcity in their own country, with the view of begging or obtaining such employment as the town and neighbouring works afforded.

It will not be supposed that persons so situated will be long exempt from the visitations of disease, and that such has been the fact, I shall endeavour to show, from documents obtained through the medium of Mr. Fellows, clerk to the Board of Guardians, from the Poor-Law Union books, as well as from Mr. Cooper, the medical attendant at the union house, and Mr. Grundy, surgeon to the district in question. It appears from the sources mentioned, that during the past twelve months, 600 sick persons have been removed from that district to the union house; of these nearly the whole have been cases of fever, of which fifty have proved fatal, the remainder having been discharged more or less improved in their health, but it was speedily found that a large proportion of those who had been discharged, upon returning to their former habitations, were again seized with fever, and consequently returned to the union. In addition, seventy-eight cases of fever were attended during the last half year, at the patients' dwellings in the district, and eleven of these cases proved fatal; these facts distinctly showing that the disease was fostered and kept up by the want of proper sanitary regulations in the quarter alluded to.

The whole number of fever cases removed from the union to the town during the past year was about 1000; of this number fifty-eight died, while from the Stafford Street district alone, as before stated, nearly 700 of these cases were received, of which upwards of sixty proved fatal.

The population of the town is not far short of 40,000, while that of the Stafford Street district may be estimated, as before stated, at a maximum of 1400, furnishing, upon an average, nearly sixty cases of fever per month, or a total of 700 per year, proving most forcibly the injurious and fatal effects resulting from the want of sanitary rules.

Having thus, as succinctly as possible, detailed the facts connected with this visitation, it remains to examine their bearing, and to show how largely this fever has arisen or extended itself, in consequence of overcrowding the locality, and neglect of cleanliness and ventilation. The position of the district is quite as favourable for drainage as any other part of the town; it is situated on a gently rising ground, with few buildings intervening between it and the adjacent open country, to the north and east. In each direction, a suitable fall for the purpose of drainage is at hand, and to all

appearance, it is naturally one of the most healthy spots in the town, yet not a drain exists; the houses have already been described; but it should be noticed, in addition, that many of them are placed back to back, and that access to a great number of them, owing to their being built in rows facing each other, is obtained by a comparatively narrow gullet, generally used as a kind of drying ground, and as a sort of lounging place, by women and girls engaged in nursing the children of the residents.

The total population of the town, as mentioned, is about 40,000; that of the district in question, 1400; but owing to its migratory character, if we quadruple or quintuple its amount, which perhaps will bring the number somewhat above the reality, or if we suppose the whole population to be changed four or five times in the course of the year, we shall have respectively an aggregate of 5600 or 7000 persons. Deducting the larger number of 7000 from 40,000, the presumed population of the town, 33,000 will remain.

The total number of fever cases is, as near as possible, 1000; of these 400 have come from the other parts of the town, and about 600 from the locality in question; or, in other words, among 33,000 persons in one locality, there have been 400 cases of fever; while among 7000 persons in another locality, the floating population referred to, there have been no less than 600. The difference is enormous, and presents a striking illustration of the necessity of the rigid application of sanitary regulation to the houses and neighbourhoods inhabited by the poor. There can scarcely be any necessity to advert to the amount of suffering, and the expense incurred. In the case before us, 600 persons out of 6000 or 7000, or about a tenth, have suffered from disease, and by inability to labour, become a charge to the community. Surely such plague spots ought not to defile the towns of an intelligent nation!

Benevolence stretches out its hand to relieve the pining and emaciated sufferer; administers restoratives, and hopes that health is renewed. But, alas! the utmost aids of benevolence, whether dispensed through a public or private medium, can do little to remove the scourge, while its pestiferous original cause is allowed to remain.

It is to the legislature—to the authorities of the nation, that we must look for its removal. Whatever may be done by private effort and the influence of public feeling, is soon again undone by the operation of time and the constant working of individual cupidity.

It ought not, perhaps, to be assumed that the "Irish fever" owes its existence to such pernicious neighbourhoods, but how frightfully when the disease has once appeared have they nurtured and propagated it, the instance before us decidedly proves.

Without dwelling upon the beneficial influences

of cleanliness and proper ventilation, the efficacy of the remedy by removal from the infected locality, establishes the fact that, fever having been imported, the extension of the disease is to be traced to a local origin. The character of the fever, as is generally known, was that of a mild typhus, but very infectious, as proved by the death of four nurses of the union, and by several of the officers becoming more or less affected. Within twelve months the number of fever patients admitted into the house (it is necessary to repeat) was 1000; the deaths were fifty-eight in the last six months of the year (the date used not extending further back, as six months ago the present district surgeon was appointed); within these, the last six months, the number of fever cases which were not removed, but attended to at the patients' houses, was seventy-eight, and of these, eleven had a fatal termination. In the one instance, the latter, we find the deaths nearly one in seven; in the other, where removal had been resorted to, they amount only to about one in seventeen. There is no reason to suspect want of skill or of attention on the part of the medical gentleman on whom the burdensome and dangerous duty of attending to this local pestilence has devolved; but quite the contrary. Whence, then, this astonishing difference in the comparative mortality of the same disease? Manifestly the one class of patients were attended under circumstances where strict attention was paid to cleanliness and ventilation; the others, in wretched, close, and filthy habitations, and in an atmosphere tainted by the impurities everywhere around them. For there, under such circumstances, the best medical skill could be only of small avail.

In the description of this district, and of the visitation it has endured, only a sample has been presented of many such hot-beds of sickness and death; and were it desirable to propagate fever, and decimate a town or neighbourhood, it seems necessary only to introduce a few colonies of the kind described. Their effects are before our eyes, and from the persons of the middle and higher ranks of life, they cannot long be kept at a secure distance.

JOHN BULL'S PREFERENCE OF CHARITY TO JUSTICE.—"Go to John in the name of 'charity,' and he'll hear you readily and give willingly; talk to him in this strain, and you'll find he immediately becomes a prince in heart and pocket—he'll open the one and empty the other to the fullest extent; but do not hint at taxation or innovation, or he'll resist it instantly, and set about it in any and every way he can think of; he will find excuse after excuse, and shuffle after shuffle, to oppose and thwart those men and measures which threaten him with either hated change or novel impost, no matter how desirable or how requisite they may be."—*Dr. Bird's Lecture on the Health of Towns.*

LORD BACON'S PRINCIPLES OF SANITARY INQUIRY.

BY JOSEPH BULLAR, M.D., SOUTHAMPTON.

LORD BACON investigated the state of medicine in his age with that practical sagacity which he employed in all other branches of science, not only pointing out the wrong paths taken—a comparatively easy task,—but indicating the true course to be pursued—a much more difficult one. Thus he specially recommended that cases of disease should be written out with exactness, and digested into a body with care and judgment; that morbid anatomy should be diligently cultivated, and the results systematically embodied; that the diseased state of the fluids as well as of the solids should be examined; that the exact proportions, as well as the ingredients themselves, of prescriptions which were useful should be scrupulously adhered to; and that when a certain course of treatment in chronic diseases had been carefully determined on, it should be persevered in for a very considerable length of time. Our experience in those branches of medicine in which real progress has undoubtedly been made is singularly confirmatory of Lord Bacon's insight. The great modern improvement in distinguishing diseases is the consequence of observing them more accurately, reporting them, and digesting those affecting the same organ into separate bodies; whilst the science of pathological anatomy, the chemistry of the animal fluids, and our pharmacopœias are other realizations of his suggestions.

He did not, however, regard the cure of disease as the only object of medicine, but he recognised the preservation of health and the prolongation of life as its two other legitimate objects. The prolongation of life he considered had never been acknowledged as a principal part of medicine, but had been confounded with the other two; physicians having thought that if diseases were prevented from entering, or were cured after they had entered, the body, all had been done that was possible for prolonging life; and that they had consequently neglected the art of drawing out the thread of life, and of delaying for a time simple death from the decay of old age.

He has investigated the whole subject in his "History of Life and Death," which bears throughout the marks of his active, acute, and comprehensive intellect, diligently accumulating facts, and viewing them on all sides. His plan was, considering his age, a broad one; but our present more advanced knowledge of chemistry, physiology, and the natural history of man, shows the meagreness of his materials, and renders much of his science and many of his terms obsolete. All that part of the investigation which inquires into the action of outward influences on man, as well as the inward operations of his own passions and intellect upon his body, and those of food, of secretions and excretions, belongs to the great sanitary questions

which are now taking their due prominence in public estimation. Whether it be possible, or even desirable, to lengthen life beyond its present term, especially for mere prolongation's sake, without regard to vigorous action, and whether medicine can assist such prolongation, are questions which do not now engage attention; but the more practical inquiry, whether it is not possible to prolong to the full term a greater number of human lives, and to preserve life whilst it does last more free from bodily disorders, and more fit for active work, is one which deeply interests us as a nation; and this question is involved in that which so greatly attracted Lord Bacon, and makes the principles on which he considered the inquiry should be conducted, if not his plan, still valuable. These principles may be thus stated:—

First—That a correct knowledge of the natural actions of the bodily organs must precede any attempt to improve them.

Secondly—That the body must be considered chemically as well as physiologically—as deprived of life, and also as a living structure capable of repair.

Thirdly—That in order to ascertain the true effects of outward influences, statistical facts on the duration of life, according to the ages of the world, climate, country, race, temperament, manner of growth, diet, habits, exercises, occupations, and the passions, must be collected.

Fourthly—That as the duties of life are preferable to life itself, no plan of prolonging or preserving it which disturbs its duties, or clogs them with delay and difficulty, is worth following.

Such are the leading principles on which that great adviser recommended the study of what are now called sanitary questions. His principles are in complete accordance with the practice of the present investigators of this branch of science, still in its infancy. But the division of labour in our age being one secret of its success, it is to be hoped, that as this department of medicine is likely to be recognised as a distinct and most important branch of medical science, it may, like physiology and chemistry, have its own cultivators, and be established on the sure grounds of exact and sufficient observation.

CARE OF ANIMATE AND INANIMATE MACHINES.

—“Independently of men being sentient beings and fellow-creatures, they may also be considered as indispensable mechanical instruments. But in former times they had not the attention paid to them which would have been due even to inanimate machines of equal utility; for there seemed to be much more anxiety about preserving arms from rusting, and cordage from rotting, than about maintaining men in an effective state of health.”—*Sir Gilbert Blane on the Comparative Health of the Navy.*

Journal of Public Health.

LONDON: DECEMBER, 1847.

THE SPEECH FROM THE THRONE.

"HER MAJESTY recommends to your earnest attention such measures as will be laid before you relating to the public health." Such are the terms in which the throne has again sought to interest the people in their own welfare. Surely we ought to be ashamed of these repetitions. For a practical people, we are very difficult to move. What are we waiting for? Must we offer prayers to heaven that the cholera may be sent in mercy to our aid. Our own indigenous pestilence, though reinforced from Ireland, has failed. The truth must be told. Health and life, weighed against theories of Government, kick the beam. We are still as indifferent as Indian thugs or Irish assassins to those things without which all others are worthless. We want a coercion bill for those who poison the people. The protection must be removed from filth and fever; and air, light, and water must be set free. The throne would help us if it could; the ministry are ready to assist us; but we will not exert ourselves. The speech from the throne is not unusually cheerful; but the saddest paragraph in it, to our minds, is that which seeks for the fourth time to stimulate the people to the performance of a sacred duty which they owe to themselves, their families, and their neighbours.

THE present epidemic, typhus, has not only been accompanied by an unusual degree of mortality, but also by a great sacrifice of valuable life among those who have devoted themselves to attendance on the sick. In the discharge of these sacred duties, medical men, parish officers, and ministers of religion, have alike fallen victims to the contagion. It seems needful to call public attention pointedly to these facts; because, believing, as we do, that typhus fever may be extirpated by proper sanitary regulations, we consider that the great bereavements which have been experienced by survivors and by society are solely to be attributed to the culpable neglect of obvious physical laws.

It is the custom to encourage the existence of foci of pestilence all over our large towns,

and when fever breaks out, medical men, who are ever ready to risk their lives in the cause of suffering humanity, are sent to confront the disease, and to keep it from spreading amongst the upper ranks, or to perish in the attempt. No proceeding could be more unjust on the part of society than this, especially when we recollect that in no single case has any adequate provision been made for the families of those who have died in the public service. It is sad to consider that the greatest benefactors of the world are precisely those to whom mankind feels itself least indebted. Such has always been the case; but this affords no excuse for neglecting the dictates of common justice in regard to survivors.

In the following list of heroic men who have fallen victims to their humanity, there are names of those whom parochial munificence had rewarded with only 20% a-year for undertaking greater risks than those of a battlefield; there are others who have left families in entire destitution; and there is one case where malignant typhus cut off a medical man after a few days' illness, and the widow was obliged to beg for money to bury the body of her husband. Such a state of things is frightful to contemplate, and indicates a tone of feeling on the part of the public which augurs nothing good to society.

The following deaths have all taken place within about six months preceding the present date:—

Dr. Jordan Lynch, London.
 Robert Storrs, Sheffield.
 Dr. Curran, Dublin.
 Henry Bunn, Birmingham.
 Francis Sharpe, Leeds.
 Alfred Anderson, Belfast.
 James Houghton, Brookburgh.
 Richard M. Hiddleston, Leeds.
 Dr. Weatherall, Liverpool.
 Mr. Fell, "
 " Ellison, "
 " Ashcroft, "
 " Whitley, "
 " Hughes, "
 " Cockburn, "
 James Dundas, Manor Hamilton.
 John B. Macdonagh, Carraroe.
 John Johnston, Baltinglass.
 Dr. Richard Stevens.
 Dr. James Hurst, Clones.
 Dr. C. Minchin, Cashel.
 Peter Lavell, Westport.
 Dr. G. V. Dunne, Clendonagh.
 Dr. Lauder, Glasgow.

Dr. T. Goodison, Dublin.
 Henry Hatton, Bolton.
 Dr. David Barry, Condonstown.
 Thomas Draper, Mount Nugent.
 Dr. Stephen Brown, Roscommon.
 Henry Soden, Mothill.
 John Walker, Manchester.
 Dr. W. Ferrie, Glasgow.
 Dr. J. Price, Waterford.
 R. B. Barlow, Blackburn.
 Dr. J. B. Fletcher, Nenagh.
 Dr. Hawksworth, Ballyfarnham.
 Dr. John Roycroft, Ballinrobe.
 William Morley, Warrington.
 Dr. W. Dawson, Dungannon.
 Michael Daniel, Cahir.
 Dr. David Smith, Middleton.
 Dr. Valentine Flood, Tipperary.
 Dr. Tait, Edinburgh.
 Nathan Kennicott, Houghton-le-Spring.
 John Hinde Gandy, Warrington.
 Richard Robinson, Bolton.
 — M'Murray, Belfast.
 Henry Bullar, London.

We believe that this long list of martyrs to public duty is by no means complete, and that a closer examination of the registers would add materially to its numbers. It must not be forgotten, also, that in addition to the mortality from typhus, many members of the medical profession have suffered grievous loss from attacks of the same disease. Some idea of the extent of this calamity may be obtained from the fact, that out of twenty-five medical officers engaged in the relief of the parish poor in Liverpool, twenty have had fever. We would ask, then, whether it be fair and honest that the families of these men should be left without any public provision? We think not; for the lives of those who have died may be said to have been sacrificed in warding off the legitimate results of public neglect, and the government has made any interference on its part contingent on local subscriptions first being raised.

Great mortality has also taken place amongst relieving officers in various parts of the country. Twelve of these, we believe, have fallen victims in Liverpool alone; and it does appear to us that their families have also a claim on public consideration.

There is yet another class which has suffered most severely in relieving the distresses of the sick poor. We allude to the ministers of religion. In Liverpool, one minister of the established church has died of fever, and another in Leeds. One dissenting minister, Mr. Johns, of Liverpool, whose duties lay almost entirely

amongst the poor in their own homes, has also fallen. But the most numerous victims have been from the Roman-catholic priesthood, who have been more especially exposed to the effects of the existing pestilence. Within the last few months, no fewer than twenty-three priests have perished by fever, and of these ten have died in Liverpool, and five in Leeds.* The Roman-catholic bishop of the northern district of England, Doctor Riddell, is amongst the number. His death took place at Newcastle on the 2nd ultimo, and there are some particulars connected with it which require special notice. The following is the account given of the occurrence in a local paper; and we have been informed that the sanitary condition of the infected districts had been previously urged upon the attention of the Town Council by a deputation from the Sanitary Association.

"A few short months ago, Bishop Riddell, the Rev. James Standen, and Dr. Charlton, were in communication with the authorities of Newcastle, to represent to them the filthy, over-crowded, and infected condition of Sandgate and neighbouring localities. The project was then entertained of removing fever-patients to a more open and elevated part of the town, where, in some temporary or other building, their chance of recovery would be greater, while the spread of the infection among the inhabitants would be kept in check. A similar suggestion was made by Mr. Greenhow at the time of the cholera; Dr. Bowring, in the paper which he read in Newcastle in 1838, at the meeting of the British Association, gave a remarkable illustration of the success of such a removal in the case of the plague; but the proposal of June last, in Newcastle, was not adopted—the sanitary condition of the infected district has since undergone little amendment—and the fever has extended its ravages. The Rev. James Standen is dead—the Right Rev. Dr. Riddell is dead—martyrs to their self-denying devotion to the cause of suffering humanity."

In common with the parish clergymen and other ministers of religion, the dispensing physicians, the poor law medical officers, and the profession generally—the three gentlemen whose names are given above were led by a sense of duty into contact with active sources of disease. They were fully aware of the dangers to which they were exposed. They applied to the local authorities who had obtained a sanitary act no longer ago than last year. The appointed guardians of the public health turned a deaf ear to their entreaties, and there was no course open to them but to continue their labours at all personal risk and hazard, and two out of the three have accord-

* In Canada, twenty Catholic priests, including a bishop, have recently died from fever.

ingly perished. With such an example before our eyes, we would ask, what hope there is for the sanitary improvement of our towns? The poor, who are the chief sufferers, have no voice in the matter; and are, besides, too ill-informed to exert themselves in their own behalf. The middle classes are apathetic; and, in too many instances we fear, the local authorities, though considering themselves perfectly competent to take care of the health of those committed to their charge, would act in the same manner as did those of Newcastle, and with a similar result.

In our opinion, the whole subject under discussion illustrates strongly the necessity for a central board, whose duty it shall be to see that the sanitary provisions committed to town councils are actually put in operation, and that the public is not deluded into the belief that its health is suitably cared for, merely because sanitary laws have been enacted.

WE are glad to perceive that the last quarterly return of the Registrar-General has excited so large an amount of interest in the periodical press, as to render it almost unnecessary for us to direct attention to its contents. The deaths registered in the quarter ending September 30th, 1847, were 49,479,—“a number less by 1948, than were registered in the corresponding quarter of 1846, but 7007 more than the corrected average of the September quarters of 1838—46.” Upon the whole, there is a slight improvement in the health of the country generally; but in some particular localities, notorious for their bad sanitary condition, either no change for the better has taken place, or else there is an increase of mortality. There are some general observations in the Return, which we have given elsewhere, and which are worthy the attention of our readers, as containing sanitary principles of great importance.

THE parochial authorities of Marylebone have been exhibiting their characteristic energy in that most wholesome of all exercises, self-examination, and with the best of all results—an open confession of their faults. Their repentance has not yet reached the point of self-renunciation; but that is not to be expected all at once from men steeped to the lips in the heresy of parochialism. In what they have

done, however, they have gone so honestly and heartily to work, that we are half-inclined to forgive them their violent opposition to Lord Morpeth's bill. Indeed, we feel within us that generous glow of sympathy that we could embrace Mr. George Daniell, and shake hands with the vestry all round. To find our old enemies so suddenly converted into friends and allies, marching side by side with us to the battle with filth and fever, is perfectly delightful. We have still some points of difference, but we can talk them over on our way, and perchance our ideas will be found to diverge less than we supposed. A few crotchets about discipline must not be allowed to separate those who have now so many points in common. The Report signed by Mr. George Daniell, on behalf of the whole sanitary committee, is the exact counterpart of all the honest and careful reports which we have yet seen on the condition of our large cities. We will not affirm that the metropolitan parish is quite as bad as Liverpool, Manchester, or Sheffield; we would not even insinuate that it is worse than its aristocratic neighbours. It may be that it is a little better than the Ward of Farringdon-Without, not quite so dirty as some parts of the “nasty city,” and one per cent. or so more decent than Whitechapel; but it is very bad nevertheless. A parish with “280 streets and ways wholly without proper sewage,” and “a great portion of the remainder” with sewage “defective or incomplete,” cannot be in a very good sanitary condition. If this is the state of things under ground, we cannot expect anything very different on the surface. Roads not lighted or repaired; thoroughfares clogged with furniture and other articles exposed for sale; slaughter-houses, melting-houses, pigsties, and accumulations of dust in yards and cellars; foul, offensive, and dilapidated privies; cesspools full to overflowing; scanty supplies of water laid on in the depth of the areas in front of the houses; crowded graveyards;—in a word, the old familiar nuisances of large towns, constitute the staple of the Report. Within the houses, darkness, overcrowding, deficient ventilation, and a general state of neglect and dilapidation, in consequence of the landlords having followed the example of the authorities prior to their conversion in showing “great indifference to the wants and comforts of the poor.” The reporters, however, are not mere grievance-mongers; they are no idle grumblers, full of complaints, but destitute of remedies.

They lay about them in good earnest, dealing vigorous blows on all sides. The government is roundly rated, as it deserves, for the window-duties; the commissioners of sewers are charged with irresponsibility; the water-companies with monopoly; the owners of nuisances are threatened with the 9th and 10th Victoria, chapter 96; the Duke of Portland and Colonel Eyre are ordered to put all the roads on their respective estates into proper condition forthwith; the landlords are warned to set their houses in order; and the dust contractors are no longer to take bribes for performing their duties. Such a sweeping reform was never before heard of—such virtuous indignation never before uttered—such despotic authority never before claimed or exercised. In one word, the remedy for all these things is a system of *centralization* up to the vestry of Marylebone—no further. We have said that the repentance of Messrs. George Daniell and Co. does not go the length of self-renunciation. By no means. "They (the committee) are firmly of opinion that representative and freely elected bodies, properly constituted under the sanction of acts of parliament, and armed by the legislature with sufficient power, are capable, not only of carrying out, but of performing in the most efficient and constitutional manner everything possible, and which ought to be done, in the way of sanitary regulation." Such is the language of amiable enthusiasts in the cause of parochial centralization. But enthusiasm is in its nature transitory, and we think it more than probable that when the revelations of this report have become familiar, and the irresponsibility of the commissioners of sewers and the monopoly of the water-companies, with the repairing cleansing paving and lighting of the roads and streets, have been securely vested in the parish authorities, and the negligence of landlords has found representatives in the vestry, it may be expedient to introduce the much deprecated but indispensable element of government guidance, supervision, and control. In fact, we would go one step farther than the vestry of Marylebone. They would *centralize* up to the *parish*, we would *centralize* up to the *government*; they would control the dust-man and scavenger, we would control them. This is the only difference now existing between us.

The last paragraph but one of the report, and the speeches which followed it, challenge a word or two of comment. The committee tell

us that they "have no wish to deny or to abate the value of proper sanitary regulations; on the contrary, they are most anxious to recommend and to adopt them in every possible way. They only wish to guard against the error of enthusiasm or of design, which would suppose it possible that such regulations can obviate the effects of crowded cities, of unhealthy labour, of dissipation, and of want, in the propagation of disease, and in the hastening of death." We must confess to a misgiving as to the real meaning and object of this passage. This guarding against "the error of enthusiasm" looks very much like throwing cold water or putting a wet blanket upon the sanitary cause. These gentlemen seem to have forgotten that to obviate "the effects of crowded cities" and of "unhealthy labour," is part and parcel of the proposed sanitary measures, and that no advocate of those measures has ever yet gone the length of contending that an improvement in the structural arrangements of our towns would have anything more than a most salutary reaction on habits of dissipation and on destitution. Mr. Daniell cannot refrain from twitting Lord Morpeth with an alleged assertion of his, that Marylebone was the most unhealthy parish in the metropolis. If Lord Morpeth did say so, he was certainly mistaken. The exact position of Marylebone in the sanitary scale may be judged of by the single statement, for which our friends will find authority in the Report of the Registrar-General for the first quarter of this year, that while in the registration district of Lewisham 47 in every 1000 female children living under five years of age die annually, 85 per 1000 die in Marylebone, Clerkenwell losing only 84, Rotherhithe 82, Bethnal Green 81, and Shore-ditch 80. Measured by this simple and safe test, Marylebone, instead of standing last, ranks with the Strand and Bermondsey, *fifteenth* in a list of *twenty-four* groups of registration districts. We now take leave of the vestry of Marylebone, with our sincere congratulations on the interesting discoveries they have made, with many thanks for their admirable Report, and with the warmest sympathy for their patriotic, but somewhat timid and partial efforts at CENTRALIZATION.

WE invite the attention of our readers to the advertisement, which appears elsewhere, of a public meeting to be held under the auspices of the Health-of-Towns Association, on Saturday,

December 11th, being the anniversary of its formation. We trust that the public will show the interest now felt in sanitary reform by a large and overflowing attendance. The Marquess of Normanby, who presided at the first meeting in 1844, will take the chair on this occasion; and we understand that many distinguished men of all parties are expected to take part in the proceedings. We are glad to see that seats are to be reserved for ladies.

PROSPECT AND RETROSPECT.

BY HENRY MORLEY, ESQ., MADELEY.

THERE is something of the nature of a *battue* in the exertions of those who, now-a-days, attack error in the field of public health. The game for such sportsmen is so very plentiful, that they may shoot which way they will, and any one who wills may shoot. Scarce abuses may fly high, or hide themselves cleverly—these may be fair mark only for a practised shot; but in the way of health every path swarms with objects at which a missile may be lawfully discharged. They are of all forms—all sizes: Typhus, the mighty beast of prey, and parasitic dirt; plump luxury, and painted lust; flying contagion, and miasma born of ponds. Their name is Legion. They inhabit every place. They pollute the child in its cradle; dwell in a man's home; are buried with him, and ascend with a new life out of his grave. They live for our destruction. Of every one of them, man is the chosen food.

No doubt, they are fair objects for a general assault; yet, in the main—considering what teeth they show—these monsters do meet with a considerable amount of petting. City corporations love them, and struggle to maintain them, as one large menagerie, to which the subject-citizens shall be doled out as food. And private people have peculiar pets. Our wives and sisters grow very often pale under a bear-like hug, which is to reduce the pleasant waist to a mere pedicle—and this for no possible good object, unless it be to promote saving in the sash-ribbon. Our friends and brothers willingly sink under the daily stings of a smooth bosom-snake, which they denominate good living. We crowd into a lighted room, to laugh and dance, while we are half-smothered by the overhanging pinions of a pleasant, perfumed enemy—foul air. We love that enemy so well, that he must even be our bed-fellow, when we sleep at night snugly be-curtained.

Not only, then, is every man deeply interested in the progress of sanitary reform, but every man is able, also, to render to the cause useful assistance. If he cannot act upon others, he can, at any rate, instruct himself, and every man can be, to some extent, his own reformer.

But there is another thing to be considered.

Though rain falls, and rivers flow, and the greater portion of the earth's surface is one vast expanse of water, yet, as society now stands, every man cannot find wherewith to wash his body. Though the wide atmosphere seems boundless to our senses, many men do not taste throughout their lives one mouthful of fresh air. Though light is poured out in its due seasons as a healthful flood over every created world, yet there are many men to whom the sunlight is a thing of memory or hope, a rarely-permitted holiday enjoyment.

In good truth, then, there is work to do—work for the state—work for the individual. Instead of “Britons never shall be slaves,”—a boast now grown superfluous—we must sing “Britons never shall be dirty.” London, the city of the world, must acquire right to style itself the City of the Sun. “Every man's house is his castle” may mean a great deal, but “Every man's house is well ventilated” would be a pleasanter and less ambiguous fact. Our fathers fought the French, but let us fight the fever; let us banish Emperor Typhus. Here is good scope for popular exertion—work for the state and for the masses.

We will glance back upon the past.

Some advances we have, perhaps, made in the way of health during the last few hundred years. Thanks to the march of knowledge, our sick man is not quite so summarily disposed of by his physician as in Chaucer's days:

“Him gaineth neyther, for to get his lif,
Vomit upward, ne downward laxatif.”

So that—

“Nature hath now no domination,
And certainly ther nature will not werche,
Farewel physike: go bere the man to church.”

We are a little cleaner than those knightly ancestors of ours, who changed their body-garments once a month, and patronized perfumes to hide the smell of filth. Not a knight now-a-days, unless he be a practical antiquary, would dig a ditch around his dwelling-place for the purpose of putting a draw-bridge over it. It is no longer the duty of a gentleman to drown his inner man beneath such streams of claret as to give fair room for a question like that which has been gravely started concerning our ancestors—Had they a peculiar power of resisting wet within them? (had they, perhaps, india-rubber stomachs?) The age of matter, when men delighted in thick walls and massive towers; when love meant bodily desire, and enmity meant broken bones; when friends ran tilt against each other for amusement, and scampered after stags for the delight of scampering; the days of huge feasting and loud revelry—the reign of matter has performed its part in the world's progress. A few more years, and the last disciples of that vanished age are gone; those who remain may never more behold—

“Never one, of all the clan,
Thrumming on an empty can,
Some old hunting ditty.”

Still we are in transition. To a distant, unseen

goal the spirit of mankind daily progresses. We do not wish to have the old days back. Our hearts are with the present and the future. We have no fabulous opinion of the bodily prowess of our ancestors; we make great allowance for the number of them knocked to pieces in their youth. We are ready to compare bills of mortality, and to take into consideration the fact, that we may well hear much about their strength, because in their days strength monopolized attention; yet still it is inevitable to confess that we have not over them that vast superiority in health which is due to us on account of our improved condition. Our minds have been much occupied, and usefully so; but in the midst of other cares, the care of health has been forgotten. By the extent of an accumulated evil we at length are warned, and now we are all zealous to discover and apply the needful remedies. *Delenda est TYPHUS*: there is no need of it. Air, water, light, and drain-making are all of them things possible to compass, and it is at length proved to us that they can no longer be dispensed with. We have achieved great things at a great sacrifice of human life and power—we shall achieve greater when the sacrifice is less. Men became cannibals when they were compelled to eat each other by the dearth of other sustenance, and sacrificed their fellow-creatures, as the most noble food, to gods, whom they believed, like themselves, to hunger and to thirst. With us, there is no need that any man should perish for the common weal, and the Altar of Progress was first reared among us by a spiritual Father, who abhors the cruel tribute of corpses which is now flung upon the altar steps.

AN ACCOUNT OF THE SAMARITAN FUND
OF THE ST. GEORGE'S AND ST. JAMES'S
DISPENSARY, LONDON, FOR VENTILATING
THE ABODES OF THE POOR, &c.

BY JOSEPH TOYNBEE, F.R.S.

THE Samaritan Fund of the St. George's and St. James's Dispensary, London, is one of the few institutions established to remove some of the sources of disease which the various reports of committees, commissions, and private individuals have shown to abound almost universally throughout the land. It was founded in the year 1843, at the earnest request, and by the active influence of the six medical officers of the institution. In the course of their attendance upon their poor patients, they met with so much disease which was not capable of relief by medicines, that they were most anxious to apply more suitable means for its alleviation; and they also witnessed so large an amount of disease which was quite incurable, that they felt it an imperative duty to carry out measures for its prevention. The three objects for which the Fund was established were, to ventilate the abodes of the poor; to supply flannel in cases of destitution where disease was aggravated by want of clothing, and to provide

proper nourishment, when recovering from sickness, to those unable to procure it.

The medical officers have had reason to believe that the first object of the Fund is the one most calculated to be of service to the poor; they have, therefore, of late mainly applied their funds for the purposes of ventilation, and it is proposed in the present communication to give the results of their operations in this department only.

The continual respiration of vitiated air in the small, dark, unclean, and ill-ventilated rooms of the poor, is perhaps one of the most fruitful sources of disease among them. The following extracts from the first appeal made by myself in behalf of the Fund, show the state of the habitations upon which we had to carry out our plans:—"I have often attended, at their homes, families consisting of a father, mother, and five or six children, all of whom were living in one small room, which, after serving during the day the wife for every domestic purpose, the husband for a workshop, where not unfrequently, with one or two assistants, he carries on a business in itself tending to corrupt the air, was at night converted into a bed-room for seven or eight human beings, which contained no provision whatever for the ingress of fresh air, or for the egress of impure air. For a time, the children seem to resist the pernicious influences to which they are exposed; but at length disease appears, disfiguring and crippling some, and producing speedy death to others. In one family similarly circumstanced to that I have mentioned, I saw two scrofulous children dying in one bed—the bed of the family—while a third child was lying dead in the same room." "A poor woman, whom I am at this time attending, lived with her husband, a bricklayer, twenty-four years in one of these small dark rooms, in a miserable and dirty street. In that room she gave birth to sixteen children. What is the result? *All are now dead!* How many of them might have been saved by some alterations admitting more light and air into their miserable home!" Much attention has been paid to the ventilation of manufactories and large workshops, but the homes and the sleeping apartments of the poor have been entirely neglected, although they are really of the first importance. This is shown by the condition of agricultural labourers and their children, who, notwithstanding their exposure to the influence of the light and pure air during the day, often fall slow victims to scrofulous diseases from the unhealthy state of their overcrowded bed-rooms. I have lately witnessed instances where, in small agricultural villages, the greater part of the bed-room is taken up by beds, and these are all occupied by the parents, and children of both sexes and all ages. Indeed, from continual inquiry and observation, I believe that this terrible condition is general throughout England.

The plans of ventilation carried out by the Fund have been—the introduction of Arnott's valves into

the chimney, of panes of perforated zinc into the window, and altering the window-sashes so as to allow of their opening at the top. According to the three Reports already published, it appears that 711 ventilators have been supplied by the Fund, the effects of which upon the poor people have been highly satisfactory. The following is an extract from the evidence upon this subject, given by myself before the Health-of-Towns Commission:—“The effect of ventilation on the health of the patient, I have observed, is to accelerate the cure, and to alleviate the symptoms, so as to give great comfort to the patient. The general observation of the inhabitants is, that the room is ‘much more comfortable and airy.’ The smells from abscesses in close rooms are sometimes insupportable. The people remark that the ventilation has carried away the smells and purified the place. They have frequently said that they have been in so much better spirits since they have had these ventilators, and have always been most grateful for them; they have often been more thankful for the ventilators than for the flannel, and bread, and milk. I am now continually applied to by the friends of those whose rooms have been ventilated, to bestow upon them a similar boon. In one at No. 8, Duke-street, Grosvenor-square, I commenced with one ventilator to a room, and on the experience of this one, and the praises given of it by the patients, the inmates of the other rooms applied to me for ventilators. I have put ten ventilators there on the stairs and landing, and the whole of the people there express a very high sense of the comfort they have experienced. In the first room, the smell was so bad that I could not enter into, or remain in it, unless the windows were opened. I can now go there without annoyance. Tailors working at home have told me that they can now use the hot irons for pressing with comfort; before the ventilators were introduced, they suffered extremely from the heat and depression consequent thereon. Yesterday, at another house, where I had put in one ventilator, I was asked for five more by the inmates of five different rooms. The landlady of the house herself joined in the application. I had four other orders for ventilators to give during the same day. I have taken clergymen, and other gentlemen desirous to carry out the plans of ventilation, over the houses, into some of the rooms of which ventilators had been introduced; we could always tell, by the state of the air immediately we entered a room, whether a ventilator was in operation. I have had dispensary patients who paid for ventilators themselves.”

The testimony of the medical officers of the charity is equally favourable. One of them reports—“The improved ventilation of the rooms, which before were most unhealthy, has not a little conduced to the prevention of disease, as well as to the recovery of those patients who have availed themselves of it;” another, “I have witnessed the most beneficial effects arising from the ventilation of apartments

previously most hurtful to the health, and utterly opposed to the recovery of those suffering from disease;” a third, “I can also bear testimony to the advantages obtained by the more general introduction of ventilators in the crowded apartments of the poor;” a fourth, “No one can more highly estimate than I do the good which is done by this inestimable charity in supplying food and flannel to the sick poor, and ventilators to their close and pestiferous dwellings.” But the following extract from the thirtieth annual Report of the Dispensary, after the Samaritan Fund had been in operation three years, is perhaps the most striking evidence of its utility:—“It will be satisfactory to the supporters of the Samaritan Fund to observe a diminution of nearly 800 in the number of the sick applying for admission during the last year, as it is believed that this, in part at least, is due to the improvements made by the aid of that valuable charity in ventilating the abodes of the poor in the district, which must largely conduce to the prevention of disease.”

I may add, that the average expense of ventilating each room was about six shillings.

MR. FEARGUS O'CONNOR ON SANITARY REFORM.
—At the dinner lately held in London to celebrate the return of radical members to parliament, Mr. F. O'Connor, the only member of parliament present on the occasion, spoke as follows:—

“Lord John Russell would be compelled to go at railway speed with the present house; they would give him a new time-table; no one knew how far he would not go. Let them have none of their sanitary measures, sweeping out of alleys, and old washerwomen's stories about dirt—no nostrums for this reform or the other—but the Charter, and nothing but the Charter. (Hear, hear.)”

“It is very clear that Sanitary Reform has no charms for popularity-hunters. The health of the people is a mere secondary consideration with such persons. They know there are no laurels to be won—no showy conquests to be achieved—by an advocacy of measures which have for their object the prolongation of life and the diminution of disease among the masses of the country. They cannot move unless their progress is heralded by a flourish of trumpets. Hence, they sneer at the efforts of those who advocate sanitary reform; and, as in Mr. O'Connor's case, they become advocates of the ‘filth and fever’ interest. We never knew, before perusing Mr. O'Connor's speech, that it was desirable the working classes of the country should be compelled to breathe the vitiated air of undrained streets, and pestilential court-yards, until they obtain ‘the Charter, and *nothing but* the Charter.’—We are glad to observe that in some towns working men have taken a different view of this matter, and have formed themselves into Sanitary Associations.”—*Leicester Chronicle*.

APPLICATION OF THE REFUSE OF TOWNS TO THE PURPOSES OF AGRICULTURE.

Care of the Chinese in the Collection and Application of Liquid Manure.

BY SIR JOHN BARROW, BART.

(Communicated by Dr. Guy.)

IN the populous empire of China, where the food of the inhabitants is chiefly the produce of the ground, there are no large estates nor opulent farmers; landed property is parcelled out into small plots, which are worked generally by hand; and I believe that one of these plots can be made to produce more sustenance for the use of man than the best mode of culture in any part of Europe from a similar portion will be found to do.

This is chiefly accomplished by various kinds of manure, and the mode of their application. To secure this useful, it may be said indispensable material, no means are neglected. In the first place, none of the houses, even of the capital itself, have any sewers to carry off any of the dirt and dregs, which necessarily accumulate; and as no kind of filth or nastiness, creating offensive smells, is permitted to be thrown into the streets, each family has a large earthen jar, into which is carefully collected everything that can be used as manure.

The contents of these family jars are at all times convertible into money, or exchanged for vegetables. The same little carts of one wheel, and fitted with a water-tight trough or cistern, which supply a town with vegetables, have always to take back to their gardens or grounds the liquid contents of these jars. In travelling between the palace of Yuen-min-yuen and Pekin, for five or six weeks, I have seen on the road many hundreds of these carts, each dragged generally by one person and pushed on by another, leaving behind them an odour for several miles. Thus, though the city is cleared of its filth, it seldom loses its fragrance.

In travelling through China, about 1200 miles, chiefly in barges on rivers or canals, we had to cross a mountainous intervention of land, called the mountain of Melin, over which all the tea for Canton is carried on men's shoulders, and thousands cross it daily. On each side of the road are erected, at certain distances, small hovels, as conveniences for the passengers to obey the calls of nature; and the doors, or rather openings, were observed to be invitingly fronting the road.

Nor are the human excrements produced by the sailors and passengers of the many thousands of boats and barges navigating the canals and rivers thrown into the water and lost. In several of the large open craft we observed vast quantities of dry brown cakes, like so many crumpets; an analysis of one discovered the nature of their composition, which was a mixture of filth and excrementitious substances, thus moulded and dried in the sun. The

owners were on their way to the next town, where they were sure of a ready market from the gardeners of the vicinity, who convert these cakes into liquid manure, by crushing or dissolving them in urine.

To husband the liquid manure thus procured or prepared, drilling or dibbling are the common modes of culture; the former of wheat and the various kinds of millet (*Holcus sorghum*, *H. saccharatus*); and between the drills are dibbled a bean, (*Dolichos sinensis*), the seeds of which are steeped in liquid manure, and both dropped into the holes; and the plant ripens and is ready for gathering soon after the former plants are cut down.

Rice is the universal food of the people; it is to them what bread is to us; and the culture of it requires only the ground to be soaked with water. The *pe-toai*, or white herb, however, requires liquid manure, and as a vegetable, is universally used; it is a kind of *brassica*, or cole, and in appearance very much resembles cos-lettuce; all the garden vegetables require much manure, and, I believe, in a liquid state.

In the extensive fields of the cotton plant, of tobacco, of the dwarf mulberry, and of tea, much manure of a more solid kind is required about the roots of the plants; and the preservation and the preparation of this is much more attended to than with us. All the straw of the grain, dead leaves, &c., are brought into the dung-yard, into which is conveyed the contents of the pig-sty, and other offal and rubbish of the dwellings, &c., mixed up and systematically and progressively formed into a dung-hill. We have a fine example of the effects of manure thus obtained in the settlement of *Fredrick's-Oord*, in Holland, where 2000 acres of barren heath have been made to sustain upwards of 30,000 inhabitants. The plan was suggested by General Van den Bosch, who was taught it by a neighbouring Chinese farmer, in Java, whose land, the same as his own, he perceived gave double crops to his. The consequence was, that on the General's leaving Java, his estate, which cost him 25,000 dollars, sold for 150,000 dollars. Such was the result of a judicious application of manure.

The following abstract of the speech of the Rev. A. HUXTABLE, at Sir Robert Peel's, Drayton Manor, Sept. 23, 1847, has so obvious and important a bearing on the application of the refuse of towns to the purposes of agriculture, that we are induced to insert it in this place:—

“First, the liquid manure flows into large tanks; below them is another, in which the manure is diluted with water as the weather may require, the rule being, that the hotter the weather, the weaker the manure. I have laid down over the highest part of my farm a main of green elm pipe, of two inches diameter bored in the solid wood; at every hundred yards distance is an upright post, bored in the same manner, with a nozzle. A forcing pump

fixed at the mixing tank discharges along these pipes, buried two feet in the ground, the fluid with a pressure of forty feet. Of course it rushes up these pierced columns, and will discharge itself with great velocity through the nozzle. To this I attach, first of all, forty yards of hose, and therewith water all the grass which it can reach. To the end of this hose another forty yards of hose are attached, and a still larger portion of the surface is irrigated; and so on for as many yards as are required. When enough has been irrigated at the first upright, the nozzle is plugged, and the fluid is discharged at the next column, and so on. The cost of the prepared canvas hose, which was obtained from Mr. Holland, of Manchester, was 1s. a yard; the wooden pipes cost me only 1s., and being underground, they will be most enduring. By an outlay of 30*l.* I can thus irrigate forty acres of land; and see how inexpensive, compared with the use of the water-cart and horse, the application. A lad of fifteen works the forcing-pump, the attaching the hose and its management require a man and a boy. With these, then, equivalent to two men, I can easily water two acres a day, at the rate of forty hogsheads per acre of the best manure in the world—I say *best*, because all chemists will assure you that the liquid contains the principal nitrogenous and soluble salts, and therefore is far more valuable than the dung, and it is plain enough to every man, though he be no chemist, that plants can only take up the manure in a liquid form. The principal use which I make of the hose is to water the clover, and, above all, the Italian rye-grass. From my own observation, I know that if after each cutting, the hose immediately follows, you may cut it without wrong to the land as often as you like, and an amount of fodder will be obtained which no other plant can approach. It comes the earliest and grows the longest of all the grasses; and I feel confident that with such appliances as I have mentioned, you may secure fifty tons per annum of this milk-giving, fat-producing, muscle-making grass. I can refer to Mr. Dickinson, of Curzon-street, as an authority for growing at least this weight of green food, and, I believe, far more. That you can cut it, by the help of liquid manure, six times a year, admits of no doubt."

[*The liquid manure here referred to is that of cattle kept on boards.*]

HOMES OF THE LONDON POOR.

BY THOMAS DUNHILL, ESQ., ARCHITECT, MEMBER OF
THE GENERAL AND SUB-COMMITTEES OF THE
HEALTH-OF-TOWNS ASSOCIATION.

NO. I.—FRYING-PAN ALLEY.

NOT less ineuphonious is the name of this alley than were the discordant sounds which greeted my ear while journeying down Turnmill-street, Clerkenwell (a dirty, crooked, ill-drained, and worse

paved thoroughfare) a short time since. These sounds issued from an opening through which I squeezed my way, somewhat crab-fashion, into a paved court, certainly of greater width than the low archway by which I had effected an entrance, but so narrow that the broomsticks which projected from almost every window, with articles of wearing apparel in various stages of dilapidation suspended upon them, peered most obtrusively into the opposite dwellings.

My olfactory organ was now assailed by a compound of villanous smells, arising from the general filthy state of the alley, but principally the effluvium of a heap of decomposing filth and vegetable refuse lying near. Upon inquiry, I was told that the scavenger did come sometimes to remove the collected filth of the two hundred beings huddled into twenty houses, consisting of two rooms each, in which there was no possibility of a circulation of air, the houses being built back to back. The lower rooms very dark, and resting immediately on the earth, and the damp arising and soaking into the walls, added to the unwholesome odour within, generated vermin, and crowned the discomfort of the wretched inhabitants.

There is no drainage whatever to any of the houses, the refuse and waste water is thrown from the windows on to the surface of the court, down which it flows, or remains, as the case may be.

In no instance did I find a family, however numerous, enabled to afford the luxury of a second room!—indeed, the greater the number, the worse they were accommodated; thus, it sometimes happened that a man, his wife, and four, five, or more children are crammed day and night into a single apartment, nine or ten feet square, for which 1*s.* 3*d.* to 2*s.* per week is charged by the landlord. Unable to bear the suffocation within, the whole population turn out and sit upon the threshold of their doors, the more juvenile preferring to wallow in the filth by which they are surrounded.

Two privies, situate at the far end of this alley, which I found in a state of inconceivable filth, are all the accommodation provided for this large number of people; and these, it appeared, were rarely or never resorted to by women and children; hence arose the pent-up stench in their dwellings, and we should be slow to condemn them for this, when we reflect that in the other case, after a journey of fifty yards from their dwelling, they must perform the offices of nature in public; an ancient drain exists, but absurdly enough commences at the *top* of the large cesspool, consequently useless until the cesspool is liable to overflow. This drain is usually stopped up with tin kettles and other rubbish thrown in by mischievous children. There is no receptacle for dust, ashes, or house refuse of any kind.

Upon entering the alley, I found the discordant sounds, which first attracted my attention to this alley, arose from a knot of men, women, and chil-

dren collected around a pipe, from which a small stream of water sluggishly flowed—all eager, quarrelling, and fighting for their turn, in fear that the supply would be stopped ere they were enabled to get what they required for two days' use. They were carrying away their modicum of water in pails, saucepans, kettles, earthen jars, jugs, and some in vessels which shall be nameless, like some treasure, with a greediness of eye akin to that of the thirsty sailor who has long been stinted of this necessary element. The supply is turned on for two hours on alternate days, but, with *great consideration* (as Sunday follows), they are allowed an hour extra on Saturday afternoon. The water is chiefly retained in old butter tubs; the cleaning of the vessels and re-filling occupies an hour; and, allowing threepence for this consumption of time, use and breakage of utensils, it will show that these poor people are taxed at the rate of 2*l.* 12*s.* per annum each family, for a shamefully scanty supply, inferior in quality, and entailing a vast amount of labour in its collection. It may have to be fetched fifty or sixty yards, and carried up two pairs of broken down stairs, to which not a ray of light can find admittance. A mechanic, whom I questioned, stated that on Mondays, Wednesdays, and Fridays, the mid-day hour, allotted for dinner and relaxation from fatigue, was wholly consumed in fetching water for his family.

The entire supply to the whole of the inhabitants of this alley does not exceed that afforded to a family of even moderate respectability, while the cost to each of these forty families resident in this alley is more than double the charge to which a single house, in a superior locality, would be subjected, without including the amount paid by the landlord to the water company, and which, of course, is re-paid in the shape of increased rent—making the cost in the one case fourfold that of the other, and the poor are thus most grievously oppressed. Mr. Hawkesley (an unquestionable authority) stated, in evidence before the Sanitary Commissioners, that one penny per week, for a *constant* supply to a house three stories high, was amply sufficient to return a fair profit upon the capital expended; here, in such a house, we should have four or five families collecting a few gallons on alternate days with immense labour, and at a weekly cost in time and materials of one shilling each; while, to make the matter even worse, a pump which formerly stood in this alley, and from which the inhabitants drew an unlimited supply of excellent water, has been removed and the well covered over.

The sanitary condition of this alley I did not expect to find very gratifying; but notwithstanding my investigation, I was scarcely prepared for the facts of the case, which will be sufficiently eloquent in simple narration. In one room, a gipsy woman and her five children were lying prostrate with fever; in another, a man and his son were suffering from an attack of a similar nature, (a family in Bit

Alley adjoining was also infected); in another house, a fine young woman, recently a bride, was lying dead; at another, a little girl; at another, a man cut off in the prime of life, after a short illness; and in the last, a case of confirmed lunacy; thus, were three corpses awaiting burial at the same time, and I was told that in Cock Court, adjacent, the mortality was much greater, and on the increase; yet these horrid facts were spoken of as if they were of every-day occurrence; and to adopt the words of one of them, "eight or nine years ago, they went off like smoke." All the inhabitants of the alley were more or less enfeebled by the vicious influences upon which I have dwelt, nor could one escape the conviction that a large majority bore the impress of premature dissolution.

The means of living were chiefly obtained by hawking fruit, vegetables, &c., casual labour, sweeping chimneys, and begging. The landlord did not appear inattentive to complaints on the part of his tenants, and I feel happy in according to him this measure of justice.

Such is the state of things in Frying-Pan Alley, an average example of the *seventeen other alleys* leading out of Turnmill-street, Clerkenwell, within a distance of 400 yards from the first to the last.

This densely populated locality is surrounded by slaughter-houses, knackers' yards, burial-grounds, &c., while its contiguity to Smithfield-market tends to aggravate its inconceivably filthy and degraded character.

North Brixton, Nov. 16, 1847.

ORIGIN OF EPIDEMIC DISEASES.—"All the diseases of the zymotic class—such as small-pox, measles, scarlatina, typhus, influenza, and cholera—have the remarkable property of becoming epidemic. After certain intervals of time, in which they are fatal to a smaller or greater number of persons in different places and seasons, great multitudes are suddenly attacked and destroyed in a given locality; the disease in this intense form involves the neighbouring population, spreads around whole regions, and sometimes travels over the tracks of human intercourse through the world. Little is known of the immediate chemical or vital causes of epidemics; but in given circumstances, where many are immersed in an atmosphere of decaying organic matter, some zymotic disease is invariably produced; where there is starvation, it is most frequently typhus; cold, influenza; heat, cholera, yellow-fever, plague. At the mouths of the Ganges, of the Nile, of the Niger in London, particularly up to the 17th century; in camps, in barracks, in ships, in prisons formerly; in Ireland, in Liverpool, in all our towns now, the circumstances in which zymotic diseases become epidemic may be witnessed."—*Report of the Registrar-General.*

Vital Statistics.

HEALTH OF BUTCHERS.

THE following is the average age attained by butchers dying 15 years and upwards in the metropolis, during the year 1839, compared with the average age attained by certain other classes. The facts themselves were obtained from the office of the Registrar-General:—

OCCUPATIONS.

Out-door... (3413 deaths)	49 years	2 months.
In-door... (3774 deaths)	47 "	3 "
Hawkers... (94 deaths)	47 "	6 "
Butchers... (132 deaths)	46 "	8 "
Grooms... (83 deaths)	42 "	5 "
Tanners... (14 deaths)	40 "	4 "

Butchers therefore live, on an average, two years and a half less than the entire class of men working out of doors, seven months less than men following in-door occupations, and ten months less than hawkers; on the other hand, butchers are longer-lived than grooms by four years and three months, and than the small class of tanners by six years and four months. These three occupations have been brought together, inasmuch as they expose those who follow them to such emanations as are encountered in markets, slaughter-houses, and the nuisances which abound in their neighbourhoods.

The following is a statement of the relative proportion of cases of fever and consumption treated as out-patients of King's College Hospital, among butchers and men following certain other employments:—

EMPLOYMENTS.	Proportion of Fever Cases.	Proportion of Cases of Pulmonary Consumption.
Out-door.....	1 in 97	1 in 5·13
In-door	1 in 100	1 in 4·81
Butchers.....	1 in 17	1 in 5·66
Hawkers.....	1 in 102	1 in 5·66
Grooms	0 in 45	1 in 5·63

The proportion of fever cases, therefore, is higher among butchers than among men following other occupations, while the liability to pulmonary consumption is as nearly as possible the same in butchers, grooms, and hawkers, little less than in the whole class of men following out-door employments, but, as might be expected, considerably less than among men working in doors. The general and broad conclusion from these two orders of facts, the average age at death and the liability to fever and consumption, is, that butchers are not a healthy class of men.—*From Dr. Guy's Evidence before the Select Committee of the House of Commons on Smithfield Market, May, 1847.*

* Mr. Neison, in his "Contributions to Vital Statistics," says, "the class butchers seems to experience a very high rate of mortality, although not subject to above the average amount of sickness."

Excess of Mortality in London as compared with Dorsetshire, a county "in which the wages are low, and in which the condition of the labourer is far from what it is desirable that it should be."

	0 to 15 years.	15 to 35 years.	35 to 55 years.	55 & up-wards.	All ages.
Deaths registered in London in 13 weeks, ending Sept. 25th..	6584 ..	1786 ..	1983 ..	2834 ..	13,187
Deaths which would have happened if the mortality had been at the same rate as Dorsetshire in the September quarters, 1838-44	3078 ..	1709 ..	1367 ..	1955 ..	8109
Excess of deaths in London in 13 weeks }	3506 ..	77 ..	616 ..	879 ..	5078

—Quarterly Report of the Registrar-General.

AN ABSTRACT OF THE LONDON TABLES OF MORTALITY.

	For four weeks ending				Weekly Average for Autumn corrected.
	Oct. 23rd.	Oct. 30th.	Nov. 6th.	Nov. 13th.	
DEATHS FROM ALL CAUSES ..	967	945	1052	1098	1046
FROM ZYMOTIC DISEASES	296	276	326	322	211
Small-pox	43	28	26	42	15
Measles	54	43	71	58	36
Scarlatina	42	61	64	71	44
Hooping-cough	14	12	25	17	32
Diarrhœa, Dysentery, } Cholera	37	33	37	28	22
Typhus, &c.	82	75	80	70	38
DISEASES OF THE RESPIRATORY ORGANS	233	243	281	299	333
Phthisis	113	116	118	121	134
Scrofula	4	5	7	3	4
Tubercles Mesenterica; } Atrophy	44	43	45	38	24
DISEASES OF THE DIGESTIVE ORGANS	87	79	85	97	74
The mean temperature was	53·5	49·8	50·5	49·8	..
Population in 1841.....	1,948,211.				

The above return shows that scarlet-fever is on the increase in London, and that deaths from typhus are double the average. The following particulars are too important to be omitted:—A woman died in Haggerstone West, Shoreditch, at the age of fifty years, of "low typhoid fever, brought on by want and filth," according to medical certificate. From a statement which the registrar adds to his return, it appears that deceased had been conveyed from her residence in Long Alley to the workhouse, on Monday, the 8th November, where she died on the following morning. The medical officer had attended immediately on receiving information of her illness, and caused a chair to be sent for her. She had been receiving partial relief for some time, and had been repeatedly requested by the relieving officer to come into the house, but refused to comply. She had been lying in a room which was nearly empty, on an old sack literally covered with filth and vermin. Long Alley is notorious for sending more cases of fever to the workhouse than all other parts of the parish together. A man also died in the sub-district of Borough-road, on whom a coroner's jury returned the following verdict:—"Neglecting to provide for himself proper food, and breathing the impure air of a filthy room."

If the 4062 persons, whose deaths are enumerated above, had been inhabitants of Dorsetshire, which is not remarkable for the means of subsistence, instead of

the densely populated districts of the metropolis, 1426 (or more than a third) would have enjoyed a longer lease of existence, though under circumstances not the most favourable to human life. With lower wages, bad clothing, worse food, the English villager has nevertheless room to live; and may possess, if he please, one of the advantages of an easy fortune:—*Tutus caret obsoleti sordibus tecti.*

Literary Notices.

Traité de la Salubrité dans les Grandes Villes, suivi de l'Hygiène de Lyon. Par les Docteurs J. B. MONFALCON et A. P. J. DE POLNIÈRE, Membres du Conseil de Salubrité du Rhône.

THIS work has just reached us in time for a short notice. The cursory glance which we have been able to take at its contents gives us a favourable idea of the method, matter, and manner of the work. It consists of two parts; of which the first, under the title of "Traité de la Salubrité dans les Grandes Villes," enters minutely into the leading circumstances which affect the health and threaten the lives of the inhabitants of cities, and the second treats of the "Hygiène de Lyon." Should a more complete examination of the work bear out our first impressions, we shall make our readers better acquainted with its general and special contents. Already, we think that we see enough to justify us in recommending it to the English reader.

Report on the Sanitary Condition of the Borough of Sheffield. By JAMES HAYWOOD, Professional Chemist, and WILLIAM LEE, C.E.

THIS is one of the most important contributions which has yet been made to the sanitary cause, and is alike creditable to the authors and to the public spirit of the Sheffield authorities, at whose request it was made, and who devoted a sum of 100*l.* for the purpose. The nature of the Report will be best understood by the following analysis of its contents:—

"1st. A Report on our mutual inspection of the town, with remarks on all local nuisances, such as stagnant pools and filthy drainage—open privies—soils saturated with bad drainage—slaughter houses, and other matters affecting public health; with remedial measures and calculations respecting the value of towns' refuse—its preparation and application to agricultural purposes; chemical quality of the water supplied by the present water company, as well as of that capable of being supplied at any future time—the present state of the ventilation of houses, workshops, and public buildings, with suggestions for improvement—the evils arising from the non-consumption of smoke, and other matters of chemical inquiry, written by Mr. Haywood.

"2nd. A Report by Mr. Lee, on the physical geography and geology of the district, and on all matters of engineering and construction, as connected with the water supply—drainage—state of the pavements of streets, courts, &c.—cleansing of the town—application of the town refuse to agricultural purposes—

obstruction of the rivers by goits, weirs, &c., and on nuisances producing similar effects—new thoroughfares and width of streets—structure, arrangement, and ventilation of houses—the structure, arrangement, and ventilation of workshops—sanitary condition of the Sheffield union workhouse, and on town interments—on the legislative powers necessary for sanitary purposes—and in whom such powers ought to be vested, and on the best mode of repayment for permanent sanitary improvement, &c."

Our space will not permit of our entering more fully at present into the details of the Report; but we shall from time to time make such extracts from it as may be interesting to our readers. In the meantime, we may state that its publication appears to have disturbed the ideas of some of the worthy towns-people, who have been in the habit of priding themselves on the exemplary condition of Sheffield. This is what we expected, and indeed the Report would have been worth nothing unless it had done so. Liverpool was equally disturbed by the revelations of Dr. Duncan's Report; but as every inquiry proved its correctness, the authorities and the public took the common-sense view of the question, and proceeded to take steps towards amending the sanitary state of the town. We have no doubt the Sheffield people will follow a similar course, especially when they discover that the most noisy opponents are precisely those whose properties most need reform.

A Per Centage Tax on Domestic Expenditure to Supply the whole of the Public Revenue: the Customs, Excise, Stamp, Legacy, Assess, Income, and all other Government Taxes, and Tax Establishments; together with the Coast Guard and the Revenue Cruisers to be abolished; by which Two Millions and a Half will be annually saved in the Cost of Collection, and Trade and Production be rendered perfectly Free. By JOHN REVANS. John Hatchard & Sons, Piccadilly.

THE sanitary reformer will find some things worth reading in this pamphlet. We would especially refer to the sensible observations at p. 29, et seq., on the causes of intemperance, and the harmlessness of making spirituous liquors cheap. Mr. Revans is evidently not indifferent to the objects of the sanitary movement; for in his short summary of the effects of the present and proposed mode of collecting the revenue, he characterizes the former as "discouraging to cleanliness, and preventive to health, because taxing soap, timber, bricks, windows, malt, and hops;" the latter, on the other hand, "does not in any way obstruct the use of the means necessary for health," and "will not produce any objectionable effects whatever."

In the importance of abolishing the taxes upon soap, timber, bricks, and windows, we fully concur with Mr. Revans, for cheap houses are to the full as important as cheap bread. With the removal of the duty on malt and hops we have less sympathy; and we leave his theory of taxation to those whom it concerns. We do hope, however, that the ministry will see how the continuance of a tax on the materials of cleanliness and health tends to raise a question as to their sincerity in advocating measures of sanitary reform.

Sanitary Intelligence.

AN interesting lecture on the health of towns was recently delivered by Dr. Bird, of Swansea, in the Royal Institution of South Wales, to a numerous and highly respectable audience, including a great number of strangers, who were in the town at the time on business connected with the quarter-sessions. The lecturer gave a lucid account of the effects of malaria in producing disease, particularly that form of it to which he applied the term "civic malaria," arising from inefficient medical police. We shall give two or three extracts from this lecture, which was listened to throughout with marked attention, and concluded with an urgent appeal to the inhabitants of Swansea to follow the example of other localities in forming a Health-of-Towns Association, which, we earnestly hope, will be done without delay.

METROPOLITAN SEWAGE MANURE COMPANY.—The ordinary half-yearly meeting of the shareholders of this company was held at their offices, 7, Waterloo-place, on Tuesday, Nov. 2nd; H. P. Fuller, Esq., in the chair. The Report gave a very satisfactory view of the financial condition of the undertaking, and stated that sufficient shares had already been subscribed to enable the company to commence operations in the district of Fulham in the course of next summer. The calls had been well paid up, and new shares were being constantly applied for, even in this period of commercial depression. Allusion was made to the Report on the Manchester Liquid Manure Irrigation Company, printed *in extenso* in the first number of the Journal of Public Health, as having removed all doubt as to the success of the undertaking. The directors seem determined to proceed with vigour. On the 23rd ult. the company obtained the formal consent of the Westminster Commission of Sewers, which is a necessary preliminary to the commencement of their works. We shall watch with lively interest the progress of a company which has been very aptly stated to bear the same relation to agriculture as the Liverpool and Manchester railroad did to locomotion. Several provincial towns are beginning to imitate the example of the parent company.

WE are glad to perceive that the Act of 9 and 10 Victoria, for the suppression of nuisances, has been put into operation by the Town Council of Hull, and also by the authorities of Doncaster, St. Mary, White-chapel, and a few other places. This Act contains several excellent provisions for the protection of public health; and the neglect with which it has been treated has been by no means creditable to the parties entrusted with its execution.

AT a meeting of the Paving and Lighting Commissioners of Ipswich, held on November 5, resolutions were passed, appointing and empowering a committee to obtain a report on the sanitary condition of the town, and placing at their disposal a sum of 100*l.* for the purpose. We understand that Henry Austin, Esq., honorary secretary to the Health-of-Towns Association, is to be requested to undertake this important duty.

THE working-men of Newcastle-on-Tyne have formed an Association for improving the Public

Health, and their preliminary proceedings augur well for the success of their undertaking. Mr. Audas has been appointed treasurer, and Mr. Pringle secretary, and the committee consists of twenty-four working men. The Corporation has assisted the undertaking by granting the use of the Grammar School, in the 'Spital, for the meetings of the society.

IMPROVEMENT OF TAUNTON.—A large meeting was recently held in the Guildhall of this town, and was thence adjourned to the Assize Hall, for the purpose of considering the best means of improving the town. Resolutions were passed, expressive of the opinion of the meeting that a larger extent of drainage and an additional supply of water were necessary for the health of the inhabitants. An amendment, pledging the meeting to wait the result of the Government Health-of-Towns Bill, was overruled, and a committee of twenty-one gentlemen was appointed to carry out the original resolution. The Secretary of the Committee has since received a letter from Lord Morpeth, dated the 8th ult., in which he says,—“I have the honour to state, that I hope there is no doubt of a measure for the Health of Towns being introduced before an advanced period of the Parliamentary Session. I cannot anticipate in what shape the provisions of any such Bill will emerge from the legislature. I should apprehend that they would be likely to embrace towns of any considerable dimensions, and to vest the election of Commissioners in the rate-paying inhabitants. I should also hope that the effect of such a measure would be to supersede the necessity of local Bills.”

OBITUARY.—After our last number went to press, we were grieved to hear of the death of Dr. Watt, of Glasgow, whose name appears in our list of contributors.

THE members of the medical profession in Hull have set an excellent example, by forming a “Medical Sanitary Society,” of which Dr. Daly is honorary secretary. They propose drawing up a report on the sanitary state of the town, and have had their serious attention directed to the threatened approach of the cholera, with the view of co-operating with the Council in measures for the preservation of the health of the inhabitants. Boards of Health have also been formed at Worcester, Gloucester, Birmingham, Leicester, Chester, &c.

THE committee of the Liverpool Health-of-Towns Association has deemed it expedient to postpone the usual meetings of the working-classes, on account of the prevalence of fever.

Two lectures on the sanitary condition of Great Yarmouth have recently been delivered at the Corn Exchange in that town, by C. L. Robertson, Esq., M.D., physician to the Military Lunatic Asylum.

ON the 8th ult., the Town Council of York gave a sufficiently significant proof of its incapacity to take the charge of the health of that city, by refusing to accede to the appointment of a sanitary committee, one of whose duties was to enforce the Act for the Suppression of Nuisances, and to take steps for meeting the threatened approach of the cholera. In the course of the debate, a Mr. Anderson indulged in an attack on Dr. Laycock for calling public attention to the sanitary

condition of the town, in a strain which did credit neither to his humanity nor his intelligence. Dr. Laycock requires no defence from us; for it happens with regard to him, as to other friends of a good cause, that every calumny only injures the author of it, while it advances rather than retards the cause itself. Some most amusing exhibitions of ignorance took place at the meeting; and Mr. Hudson asserted, on another occasion, as the result of his statistical inquiries, that "the fact is, (and facts you cannot get over—men may talk for ever,) you have tables of mortality which show that longevity is longer in this than in almost every other city in the world." We do not know to what tables the hon. member alludes; but in turning to those published by the Health-of-Towns Association, we find that in the registration district of York, with a population in 1841 of 47,779, as compared with that of Pocklington and Tadcaster, every adult loses $2\frac{1}{2}$ years of the natural term of life, and that the community voluntarily levies upon itself an annual tax of 36,199*l.* by the neglect of sanitary measures.

METROPOLITAN IMPROVEMENTS.—On Monday, November 8th, her Majesty's Commissioners of Woods and Forests lodged notices of an intended application, in the ensuing session of Parliament, for power to form a portion of the new street on which the Commissioners of Metropolitan Improvements have lately reported so favourably. The notices refer to that portion of the street which lies between Carey-street and Fetter-lane. Star-yard, Bell-yard, White's-alley, and Acorn-court, are among the places destined to partial or complete destruction. Their very names imply that they are at present occupied by the poorer classes. We trust that her Majesty's Commissioners of Woods and Forests will not lose his opportunity of evincing their sympathy with the sanitary movement, and their sincerity in bringing forward measures of sanitary reform. Let them appropriate some portion of ground near the site of the contemplated improvement to the building of houses for the dispossessed poor, and let them furnish plans for the houses to be so built. The building societies would do the work for them. We should thus have a metropolitan improvement deserving of the name—not one of those one-sided alterations which sacrifice men to the convenience of cabs and omnibuses. The sanitary associations of the metropolis should lose no time in petitioning Government on this subject. It is one of vital importance to the working classes.

STAFFORD.—On Monday, Nov. 15th, Dr. Fergus, of the County Infirmary, delivered an admirable lecture, on the Health of Towns, in the National School-room. After the lecture, several resolutions were passed relative to the formation of the Stafford Health-of-Towns Association. The leading inhabitants of the town are enrolled as members—Earl Talbot as president, and Viscount Sandon and Mr. Alderman Sidney, M.P., as vice-presidents. Mr. Urquhart, M.P., in the course of a long address to his constituents, on the following Friday, dwelt at some length on the importance of sanitary measures, but betrayed the usual dislike to so-called centralization. His proposal was, "that their town council should ascertain what powers were required to enable them to carry measures for the purpose into effect, and to petition for these

powers, and at the same time deprecate any further interference, or any central body to administer such laws." The leaven of parochialism is at work at Stafford as elsewhere; but the people will require, that, while the town councils control and direct the dustman and scavenger, the Government should counsel and overlook them.

GLOUCESTER.—The members of the medical profession in Gloucester have been up and doing. They have presented an excellent memorial to the town council, calling attention to the approach of the cholera, and pointing out those local causes which might tend to aggravate its severity should it reach the city. The authorities have at once acted on the advice given, and have appointed an inspector of nuisances; and the cleansing operations recommended are now in active progress. A premium of 75*l.* has also been offered for the best plan for the drainage of the city and suburbs, and we understand that all plans are to be submitted to an eminent civil engineer before the selection is made.

SANITARY CONDITION OF GLASGOW.—We have received a long report by Dr. Brown on the spread of typhus fever in Glasgow, which has arrived too late for a lengthened notice. Its conclusions bear out all that has been previously written on the subject. It proves that a vast amount of disease, suffering, and death is continually being produced in Glasgow, as elsewhere, by want of drainage, want of water, defective cleanliness, bad habits, intemperance, overcrowding, and want of ventilation. The authorities of the city are by no means inattentive to what they think their duty, for they have a large staff of medical men in constant activity for the purpose of curing typhus fever. How much more rational would it not be to send an army of properly qualified officers to remove the causes of all, than to spend money in the vain attempt at arresting a disease by palliatives, which cannot be, and never has been, arrested by such means? The concluding paragraph of the report contains more wisdom than all their attempts at medical relief put together. Dr. Brown says most truly—"If, therefore, we wish successfully to contend against this dreadful scourge, we must have all those nuisances, such as pig-sties and dungsteeds, removed from densely inhabited parts, the closes properly drained, and daily thoroughly washed out, and the recent excellent police lodging-house regulations strictly enforced. These, in conjunction with the present system of cleansing, whitewashing, and fumigating infected houses, would impart an incalculable amount of comfort to the poor man's dwelling, and do much to moderate the virulence, check the diffusion, if not prevent the occurrence, of many fatal epidemics."

On Tuesday evening, November 15, a "grand demonstration in favour of a sound and comprehensive sanitary bill" was held at the Crown and Anchor Tavern, under the auspices of the following associations:—Health of Towns, National Philanthropic, Health of London, City and Liberty of Westminster, and the Working Men's Association. The hall was well filled with a very respectable audience, and on the platform we observed Mr. B. B. Cabbell, M.P., Mr. Mackinnon, M.P., Mr. C. Lushington, M.P., and a number of the most influential members of the

societies mentioned above. The chair was taken by Mr. B. B. Cabbell, M.P. Letters of apology for unavoidable absence were read from Lord Dudley Stuart, M.P., Sir W. Clay, M.P., Sir B. Hall, M.P., Mr. Wakley, M.P., Mr. Duncombe, M.P., and from Baron L. Rothschild, M.P.

Mr. Mackinnon, M.P., proposed, and Mr. Cochrane seconded, the first resolution, to the effect—"That the drainage and sewage of the metropolis are very insufficient; the cleansing of the streets exceedingly imperfect; the supply of water lamentably deficient in quantity and bad in quality; that the practice of burying the dead in the midst of the living produces great demoralization, and grossly violates the sanctity of the grave; that these, among other evils, entail enormous and unnecessary expenses upon the people, and lead to a great deterioration of health and fearful destruction of life."

After an effective speech by Mr. Beggs, the resolution was carried unanimously.

Mr. Lushington, M.P., proposed, and Dr. Gavin seconded, the following resolution—"That this meeting deplores the apathy generally evinced by the public relative to the evils referred to in the preceding resolution, as well as the absence of an uniform law which would enable the government to exercise an efficient control over local administrative bodies; and that this meeting pledges itself to support the government in any efforts made by it to pass a sound and comprehensive sanitary measure."

KINGSLAND.—On Wednesday evening, Nov. 17th, a meeting to secure efficient sanitary measures was held at the Lamb, Kingsland-road, George Thompson, Esq., M.P., in the chair. The principal speakers were Mr. J. K. Dow, surgeon, and Mr. Beggs, the secretary of the Health-of-Towns Association, who had attended by special invitation. The meeting was large, and unanimous resolutions were passed declaratory of the evils of our present system, and the necessity of legislative control over administrative bodies; and a petition to both houses of Parliament, embodying the spirit of the resolutions, was signed. In the course of the addresses, several striking facts were elicited, showing the exceeding imperfections of the present local arrangements of that neighbourhood.

HEALTH-OF-TOWNS ASSOCIATION.—It is proposed that Mr. Thomas Beggs, who is now engaged as secretary to the Association, should visit several of our large towns for the purpose of conferring with the leading friends of the sanitary cause, and, where it may be deemed desirable, to give public lectures on the subject. As much of his time as can be spared from the other duties of his office will be devoted to this service. Correspondence on this subject must be addressed to him at the office, 10, Walbrook, City, London.

WE have much pleasure in stating that a Course of Lectures on the Sanitary Question, by Dr. Guy, will forthwith appear in the Journal of Public Health.

MAIDSTONE.—This town is furnishing a gratifying illustration of the hold which the sanitary question has taken of the public mind. The Town Council, and a committee, consisting of Dr. Plomley and Mr. Walker, have, unknown to each other, commenced a survey of

the town: with what result, we hope ere long to have the means of reporting.

WITHIN the last few days, government has authorized the payment of a sum equal to one year's salary, to the families of those public officers who have died of fever in Liverpool. We hail this as an acknowledgment of the truth of the principles for which we contend, but cannot consider the small sum given as any compensation for the loss of the head of a family.

ADDITIONAL CONTRIBUTORS.

SINCE our last, we have received the following names:—

NOTTINGHAM. T. Hawksley, Esq., C.E., M.I.C.E.,
Engineer to the Trent Water Works.
DERBY Douglas Fox, Esq.
BEDFORD . . . T. Herbert Barker, M.B.
BATH William Holt, Esq.
ROTHERHAM . Edward James Shearman.
FALMOUTH . . James Cornish, Esq.
GREENOCK . . Rev. Andrew Gilmour.
DONCASTER . . George Brooke, Esq.
LONDON R. Aulsebrook, Esq.
TAIN James Cameron, Esq.
HASTINGS . . . Dr. Duke.
FOREIGN CORRESPONDENT—S. Bannister, Esq., Tours.

Correspondents.

All communications and notices of Sanitary inventions to be addressed to the Editor, 10, Bedford-street North, Liverpool.

Parties desirous of becoming contributors or local correspondents to the Journal of Public Health, may obtain a "List of Topics," on application to the Editor.

Communications have been received from Mr. John Glyde, jun., (Ipswich;) Mr. J. S. Olver, (Plymouth;) Dr. Hall, (East Retford;) Mr. Dunhill, (North Brixton;) Mr. F. Moseley; Mr. H. Biggs, (Cork;) W. H. Rumsey, (Gloucester;) and Mr. Toynebee. *Civis* has been received; but all communications intended for the Journal must be authenticated by the name and address of the writer.

We have received at the eleventh hour, and too late for insertion in the present number, a letter complaining of some of the statements contained in the communication signed "A Sanitary Reformer." Our correspondent particularly specifies the selection of the expenditure on the Tower Hill Level for a single year as unfair, and obviously tending to mislead; he contends that the committee of eighteen appointed by the court fairly represented them; and states that the son of the chairman was present at the dinner referred to—not as an invited guest, but as a commissioner, who had been previously engaged in witnessing some experiments on the flushing of the sewers.

PUBLICATIONS RECEIVED.

Report on the Sanitary Condition of the Borough of Sheffield, by James Haywood and W. Lee, C.E.

Industrial Magazine of the Scottish Patriotic Society.

Belfast People's Magazine, No. XI.

Report of Belfast Society for Improving the Condition of the Labouring Classes.

First Report of Committee on the Belfast Public Baths and Wash-houses, August, 1847.

Brief Topographical and Historical Sketch of Calcutta, by J. R. Martin, Esq., F.R.S.

Indecency Assailed, by John Dixon.

An Inquiry into the Sanitary State of Lynn Regis, by George Sayle, Surgeon, M.R.C.S.—Others in our next.

Erratum.—In our first number, in the notice of Mr. Cottam's invention, the Rheiocline, for *Westminster Hospital* read *Mid-dlesex Hospital*.

SANITARY CONDITION OF LONDON AND LIVERPOOL.

SANITARY CONDITION OF LONDON.—"In London there has been no sign of improvement. 10,987, 12,601, and 13,187 deaths were registered in the September quarters of 1845, 1846, and 1847. The deaths in the summer quarters of three years from small-pox were 76, 51, and 320; measles, 688, 78, and 521; scarlatina, 194, 208, and 316; diarrhœa, 449, 1549, and 1196; cholera, 26, 197, and 98; dysentery, 43, 75, and 143; remittent fever, 8, 12, 23; typhus, 273, 403, and 895; erysipelas, 56, 92, and 126; the zymotic class of diseases generally, 2409, 3234, and 4061. The deaths from diseases of the respiratory organs were nearly stationary; 1558, 1784, and 1581 persons died of consumption; 1111, 977, and 1071 persons of inflammatory and other diseases of the lungs. * * * * The mortality in London from diarrhœa, dysentery, and cholera rose from 17 on the first to 188 on the seventh week of the quarter, and gradually fell to 107 on the last week. Typhus raged with unusual virulence. The weekly deaths were never below 50, and in the third week in September 111 persons died of this disease. The weekly average was 30 for the same quarter of five preceding years. * * * * 3506 children under 15 years of age were destroyed in London in addition to 3078 carried off by causes which may be supposed to be the same as those fatal in the country. The mortality is equal at the age 15—35, when London receives healthy recruits from the various counties. After the age of 35 the mortality is 45 per cent. higher in London than in Dorsetshire. If the chance that a man above 35 will die in the country during the summer quarter be represented by 2, the chance that he will die in London is nearly 3. It may be admitted that part of the London population is poisoned by alcohol, and that in their houses and persons they are dirtier than the country people; still the great excess of mortality, and in part, perhaps, the intemperance and impurity, must be ascribed to the crowding, the want of water, decaying animal and vegetable matters unremoved, and the inefficiency of the sewers, which neither carry off the solid, liquid, nor gaseous matters, poured into or generated within them every day. If the chance of dying is increased from 2 in the country to 3 in London, the liability to suffer from epidemics is raised still more."—*Report of the Registrar-General.*

SANITARY CONDITION OF LIVERPOOL.—"Liverpool, created in haste by commerce—by men too intent on immediate gain; reared without any very tender regard for flesh or blood; and flourishing while her working population was rotting in cellars—has been severely taught the lesson, that a part of the population—whether in cellars or on distant shores—cannot suffer without involving the whole community in calamity. In itself one of the unhealthiest towns of the kingdom, Liverpool has for a year been the hospital and cemetery of Ireland. The deaths registered in the four quarters of 1846

were 1934, 2098, 2946, and 2735; in the three quarters of 1847, ending in September last, 3068, 4809, and 5669! The population of Liverpool was 223,054 at the last census. It is impossible to represent more correctly than is done by the short notes of the registrars the piteous spectacle which this great town presented, with the floating lazarettoes on the Mersey, the workhouses crowded with destitute paupers, the three large 'sheds which will hold 300 persons nearly full of patients at the present time,' and the fever 'getting more prevalent among the upper classes.' It will require all the energy of the inhabitants of Liverpool, and the utmost resources of science, to place the health of the town in a satisfactory condition."—*Report of the Registrar-General.*

DESIGN FOR A LABOURER'S COTTAGE.—The Society of Arts has repeated the following offer of its large gold medal, or thirty guineas, for the best design for a labourer's cottage in the country. "The drawings are to comprise a general plan, elevation, and section, drawn to a scale of three-eighths of an inch to the foot, together with the requisite working drawings to a large scale, and a general specification of the internal finishing and fittings proposed. The design must provide a living-room, a scullery, and three bedrooms. Presuming, in structures of this description, where the outlay must necessarily be very limited, that both with a view to economy of material and likewise to external effect, it will be considered desirable that the cottages should be erected in pairs, the wall between them containing the flues, in such cases the details of one only will be required. It is necessary that consideration should be given, firstly, to the most convenient arrangement of the parts; secondly, to the best means of ventilation, drainage, supply of water, cleanliness, and economical heating; and lastly, to combine therewith the most pleasing and picturesque effect attainable with reference to the limited outlay. The cost of a double cottage erected in Middlesex, when completed, with the requisite landlord's fixtures, must not exceed 300*l.*"

A WORD TO THE OPPONENTS OF SANITARY REFORM.—"Do the opponents to sanitary reform know what they are about? Did they ever suffer from fever themselves? Look at these plates in which you see delineated the ulcerations of the intestines—a common result of fever. I have seen the intestines perforated like a cullender from this cause. Again, the brain may become inflamed and disorganized, producing palsy or mania, or the respiration may be impeded by inflammation of the lungs during fever; so that a person may be tormented for the rest of his life by organic disease through fever; and yet there are to be found persons who oppose legislative remedies for the removal of such an intense evil."—*Opening Address at the Hunterian School of Medicine, by C. J. B. Aldis, M.D., Cantab.*

ADVERTISEMENTS.

HEALTH-OF-TOWNS ASSOCIATION.

The Sub-Committee of this Association, being about to incur increased expenses by renewed efforts in favour of sanitary reform, make an earnest appeal to the public for pecuniary assistance. As the object they have in view is to prevent many of those evils which charitable institutions are formed to palliate, they hope to receive the support of all those who are already interested in the cause of charity. The following subscriptions, in answer to their renewed appeal, have already been received, and are thankfully acknowledged:—

Most Noble the Marquis of Normanby (additional)	£10	0	0
Right Hon. Lord Viscount Morpeth, M.P. (additional)	10	0	0
Lord Viscount Ebrington, M.P. (additional)	10	0	0
Right Hon. Lord Robert Grosvenor, M.P. (additional)	10	0	0
Right Hon. Earl of Shelburne, M.P. (additional)	10	0	0
Sir Thos. Dyke Acland, Bart., M.P.	10	0	0
Right Rev. Lord Bishop of St. David's (additional)	5	0	0
Lord Ashley, M.P. (additional)	5	0	0
R. A. Slaney, Esq., M.P. (additional)	5	0	0
W. A. Mackinnon, Esq., M.P. (additional)	5	0	0
Wm. Ewart, Esq., M.P. (additional)	5	0	0
Mrs. Wedgwood	5	0	0
Rev. J. C. Blair Warren (additional)	5	0	0
Walter Fergus, Esq., M.D.	5	0	0
Newcastle and Gateshead Sanitary Association	5	5	0
Right Hon. Earl of Radnor (annual)	2	0	0

An Annual Subscription of 1*l.* and upwards, or a Life Subscription of 5*l.* and upwards, constitutes a member.

Subscriptions received by the Treasurer, the Hon. J. T. Leslie Melville; Messrs. Williams, Deacon, and Co., Birchin Lane; Barclay, Tritton, and Co., Lombard Street; Drummonds and Co., Charing Cross; Strahan and Co., 217, Strand; and Messrs. Twining, 215, Strand.

THOMAS BEGGS, Secretary,
HENRY AUSTIN, Hon. Sec.,
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Tables of Rates, with a full Report (recently printed), can be obtained of the Society's Agent, or by addressing a letter to

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Prospectuses and forms of Proposal will be forwarded, postage free, on application to any of the Society's Agents, or to

FRANCIS G. P. NEISON, ACTUARY, 25, Pall-mall, London.

Health-of-Towns Association.—Annual Meeting.

A PUBLIC MEETING in furtherance of the cause of Sanitary Reform will be held, under the auspices of this Association, on Saturday, December 11th, at 2 P.M., in the Hanover Square Rooms. THE MOST NOBLE THE MARQUESS OF NORMANBY, the President of the Association, in the Chair. Places will be reserved for ladies. Admission will be by tickets, which may be had on application to Henry Austin, Esq., Hon. Sec., 10, Walbrook; and Mr. Renshaw, Publisher, 335, Strand.

THOS. BEGGS, Secretary.

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EDITED BY JOHN SUTHERLAND, M.D.

SENIOR PHYSICIAN TO THE LIVERPOOL DISPENSARIES,
MEMBER OF THE COMMITTEES OF THE METROPOLITAN AND LIVERPOOL HEALTH OF TOWNS ASSOCIATIONS,
AND LATE EDITOR OF THE LIVERPOOL "HEALTH OF TOWNS ADVOCATE."

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CONTENTS.

Lectures on the Public Health. By Dr. GUY, M.B. Cantab., &c., Lecture I. p. 57	Remarks on the Progress of the Cholera. By JOHN CHARLES HALL, M.D., M.R.C.S. p. 72	LITERARY NOTICES: The Manual of Public Health and Domestic Economy. Part I. p. 77
The Claims of the Sanitary Question on the attention of the Directors of Life Assurance Offices. By HENRY AUSTIN, Esq., Honorary Secretary to the Health-of-Towns Association (concluded) 61	Homes of the London Poor. By THOMAS DUSHILL, Esq., Architect. No. II. Petticoat Lane 72	Ventilation Illustrated 77
Remarks on Dwellings for the Labouring Classes at Birkenhead—Evils of the Window-tax. By J. HUNTER ROBERTSON, M.D. 63	Loss occasioned by Preventible Sickness (founded on the Returns of the Registrar-General for 1841)—County of Lancaster 74	An Address to the Inhabitants of St. James's, Westminster, on certain Local circumstances affecting the Health of Rich and Poor. By a Retired Churchwarden 77
The Sanitary Condition of Ipswich. By Mr. JOHN GLYDE, Jun. 66	Lodging-house Fever—Answers to Queries addressed by the Chairman of the Wolverhampton Union to the Medical Officer 75	SANITARY INTELLIGENCE: Meetings of the Health-of-Towns Association 77
Proposal for Draining Towns by a "Sewerage Levy" on the Superficial Area. By J. R. JEFFERY, Liverpool 68	Correspondence: Interest of Friendly Societies, &c., in Sanitary Reform. By Rev. C. GIRDLESTONE. 75	Public Meetings and Sanitary Movements in London, Edinburgh, Durham, Plymouth, Nottingham, Hull, Sunderland, Stafford, Inverness, Glasgow, Evesham, and Manchester 80
THE METROPOLITAN SANITARY COMMISSION 70	VITAL STATISTICS: An Abstract of the London Tables of Mortality 76	Mixed Sanitary Intelligence. 82
PRINCIPLES OF TOWN DRAINAGE 71		Obituary 84
TEMPERANCE PRIZE ESSAY 72		New Contributors 84
		Correspondents 84
		Literary Extracts 85

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THE HON. J. T. LESLIE MELVILLE, *Treasurer.*

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I. To diffuse information as to the physical and moral evils that result from the present defective Sewerage, Drainage, Supply of Water, Air, and Light, and Construction of Dwelling Houses; and thus to facilitate the work of Legislation, and prepare the Public for the reception of a sound and comprehensive sanitary measure.

II. To correct misconception as to the cost of sanitary measures.

III. To promote local sanitary inquiries and improvements.

IV. To encourage the establishment of Auxiliary Associations with a view to the local benefit which must thence arise, as well as to procure larger funds, and a wider field of usefulness.

As the important objects of the Association, though carried out chiefly by unpaid agency, and with the strictest regard to economy, involve a large outlay of money, Contributions are earnestly requested. It should be borne in mind, that though not a CHARITY, the Association has the strongest claims on the CHARITABLE, for it aims at *preventing* the very evils which Charities

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Lectures
ON
THE PUBLIC HEALTH.*

BY W. A. GUY, M.B. CANTAB.

Professor of Forensic Medicine, King's College, London; Physician to King's College Hospital; Honorary Secretary to the Statistical Society, &c.

LECTURE I.

GENTLEMEN,—I do not fear the charge of exaggeration, when I claim for the sanitary question the right to be regarded as the great question of the day. In saying this, I am by no means unmindful of the many important subjects which press on the attention of the patriot and the statesman. Much still remains to be done to secure the perfect triumph of commercial freedom; the work of education is scarcely commenced; prison discipline has not yet passed through the stage of experiment; Ireland has yet to be reclaimed to industry; some of our most important Colonies to be saved from ruin: and the policy of our attempts to suppress the slave-trade must be opened up to discussion. On every side, great and momentous questions offer themselves for solution; but I submit that there is not one of them, urgent and important though it be, which can be fairly brought into competition with the great question of Sanitary Reform. Look at it as a question of humanity, and it will not suffer by a comparison with the highest efforts of the philanthropist; regard it as a great act of justice, and you will acknowledge, that here, too, it prefers peculiar claims to consideration; measure it by the rule of economy, and I hesitate not to affirm that it stands without a rival; or view it, if you please, in its moral relations and re-actions, and I know not whether even the great question of education will take rank before it.

I must confess that it is not without many misgivings, that I approach a subject so extensive, so important, and, I may add, so difficult. I feel at one and the same time the embarrassment of riches (for we have a vast and rapidly increasing store of materials), the weight of responsibility (for I would not injure a great cause by a feeble advocacy), and the anxiety which is naturally engendered by the anticipation of laborious inquiries and calculations, of which the results occupy minutes in the telling,

* These Lectures on Public Health have never been delivered in the precise form in which they now appear. They are chiefly compiled from unpublished lectures addressed to different audiences, in different places, and on different occasions, always in furtherance of sanitary reform, and often under the immediate sanction of the Metropolitan Health-of-Towns Association. Some parts of them will be re-written, others revised, and such additions made as may be found necessary to adapt them to the altering circumstances of the time. Throughout the lectures an attempt has been made, by combining scientific details with popular information, to render them acceptable to all classes, and to view the sanitary question in all its aspects—physical, economical, and moral; social and political.

but hours and days in the working. The sanitary question, indeed, is so bound up with numerical calculations and estimates, it is so dependent on the labours of the statist, and so exposed to the fallacies which always cling to figures, that the scientific inquirer who feels that he must prefer truth even to the triumph of the cause in which he is most deeply interested, knows not what cherished theory he may not be obliged to abandon under the compulsion of facts more accurately ascertained, or tests more correctly applied. It may happen that, in the course of these lectures, I shall be driven from some of the positions which in common with other advocates of sanitary reform I have taken up, that I shall be forced to modify and reduce some of the estimates which they and I have put forward, and to acknowledge for them and for myself that we have fallen unintentionally into exaggeration. I say unintentionally, because I am convinced that in our advocacy of sanitary reform, nothing has been deliberately overstated. Our errors have been venial errors arising from precisely the same omissions and oversights which have marked the early progress even of those questions which were most removed from the influence of popular excitement and agitation.

I have the less difficulty in alluding to this subject, because I am convinced that after every allowance has been made for unintentional exaggeration, the sanitary cause will still rest on a wide and firm foundation. Our estimates of the waste of health and life may be reduced, and the figures which represent the economical value of sanitary reform may be curtailed, but the higher bearings of the question, and the arguments drawn from the sure reactions of the physical on the moral nature of man will retain all their original importance.

In the present state of the sanitary question, in the very midst of what is popularly termed an *agitation* in favour of sanitary reform, I think that I cannot better employ the remainder of this lecture than in laying before you a short summary (to serve as a kind of index to the rest of the course), of the facts and arguments which may be advanced in favour of a comprehensive and practical measure for preserving the health of the people.

I would begin by reminding you that those who press upon the government the expediency and necessity of sanitary legislation are merely urging it to the re-enactment of laws which have fallen into disuse among the nations of Europe, after having been strictly enforced under the Mosaic dispensation; and systematically applied through the length and breadth of the Roman empire. It is passing strange that Christian nations should, on the one hand, have been forward to justify sanguinary laws by appealing to the authority of the law of Moses, while they refused to follow its dictates when it prescribed measures for the preservation of health; and, on the other, that Rome, which showed such reckless cruelty in the sports of the

amphitheatre, should have handed down to us, with our general tenderness of human life and human suffering, examples of care for the public health and convenience which put to the blush our best efforts in that direction. Of our short-comings as compared with contemporary nations in some of the most important arrangements conducive to health, I shall hereafter have occasion to speak.

I ought, however, in justice to ourselves to state that, though in many points we have fallen short of ancient and modern standards of excellence, the principles we have professed have always been more sound than the practice we have adopted. The humane and Christian motto of our common law—"SO USE THINE OWN AS NOT TO INJURE OTHER"—carried into actual operation, would have prevented, or promptly redressed, many of the evils of which we complain; but that perfect principle embodied in the various laws against nuisances has become, to a great extent, a dead letter, from the want of easy, cheap, and efficient machinery whereby to apply it, or from the too common mistake of substituting *permissive* for *compulsory* legislation; while the *vis inertiae* of crown commissioners and of public companies, incorporated as purveyors of some of the prime necessities of life, has raised up serious impediments to improvement, and the fallacious but popular theory of the all-sufficiency of parochial management and local self-government has thrown into ignorant and interested and partial hands, and mixed up with all the heats and animosities of local parties, the management of matters which have as little to do with politics or the liberty of the subject as the repairing of roads or the building of bridges.

But I must not occupy more of your time with introductory remarks. I must proceed at once to the promised summary of the subject-matter of this course of lectures, and the arguments in favour of sanitary reform and improvement which naturally grow out of it.

The sanitary question, or, in other words, the science of public health, considered as a question now awaiting a practical solution, and the subject of a popular agitation, must be regarded in three distinct points of view:—1. As a physical question, affecting health and life; 2. As an economical question, affecting national prosperity; and 3. As a moral question, having very important reactions on the intellectual, moral, and religious condition of the people.

1. In treating the sanitary question as a physical question, I shall have occasion to make some prefatory remarks on the materials, tests, and standards of comparison which we must use, and to enter into some discussion on the value of that numerical method of inquiry to which this and kindred subjects are under such deep obligations. I shall then proceed to illustrate, by the aid of numerical estimates and calculations, the sanitary condition of England, and of its several counties and districts, which will lead us to the first great fact of the science—the unhealthiness of town populations.

Having established this fact, I shall proceed to investigate the causes of that unhealthiness, by contrasting large towns with small, manufacturing with non-manufacturing, the thickly with the thinly peopled; and shall, by this means, conduct you to the next great fact of the science—the fatal effect of density of population. The several districts and parts of the same town will then have to be compared, the more central parts with the suburbs, and the densely with the thinly peopled—a comparison which will be found to strengthen and support the conclusion already arrived at regarding density of population. A few leading principles thus established relative to all towns, I shall next contrast one town with another, English with Foreign, and one English town with another, selecting for more careful and minute examination some of the largest and most important among them. The diseases of town populations will next have to be considered, with the sacrifice of life which they occasion.

From the influence of locality and residence upon health, I shall proceed to that of social position and occupation, tracing the duration of life from the highest to the lowest class of the community; and from the healthiest to the most unhealthy occupations; showing the fatal effects of luxury, on the one hand, and of sedentary pursuits in an impure atmosphere, on the other. In this part of my course, I shall be able to lay before you some facts which are new to the greater number of my hearers. The examination of the influence of social position and occupation upon health will be followed by an inquiry into the special causes of disease, whether those causes depend upon the condition of towns and dwellings, on that of places of work, or on habits and modes of life. A consideration of remedial measures will follow, and will comprise the important subjects of drainage and cleansing, water-supply, ventilation, the consumption of smoke, and the suppression of nuisances. Such is a very imperfect outline, which I shall feel myself at liberty to modify and fill up at discretion as I proceed.

2. The second great division of my subject, or the economical bearings of the sanitary question, will comprise estimates of the waste or misapplication of money involved in the national sacrifice of health and life, or attending the present defective structural arrangements of our towns, and the existing mode of local administration. The great expense of defective plans of sewerage and cleansing, of the intermittent supply of water and of the smoke nuisance, and the loss involved in the present mode of disposing of the refuse of our towns, are among the subjects which will have to be discussed under this division.

3. The moral bearings of the question, or the reaction of the present physical condition of the people, and of the faulty structural arrangements by which they are surrounded upon their intellectual, moral, and religious state, will form the subject-matter of the third and concluding division of the course.

Such is the short and imperfect outline which I am about to complete and fill up to the best of my ability, in future lectures. In what remains of the present, I will endeavour to justify what I have stated relative to the importance of my subject.

Let us view it, first of all, as a question affecting health and life; as appealing, therefore, to our humanity and justice,—to our humanity, as involving much suffering and distress; to our sense of justice, as endangering that which is the sole property of the great majority of the community; for I need not tell you, that while health is enjoyment to the rich, it is income and wages to all who are dependent on their own exertions for support. Now, I believe that I am speaking within bounds when I affirm that, in England and Wales alone, we lose, one year with another, 30,000 men, women, and children, over and above those who would die in the common course of nature, were efficient sanitary measures in universal operation; and that the attacks of unnecessary sickness, in the same population, greatly exceed half a million in the year. These 30,000 deaths are not only unnecessary, but premature deaths. Life is in these instances not only sacrificed, but shortened. A considerable proportion, too, of these victims of our negligence are grown-up men and women, in the very prime of their age, usefulness, and responsibility—the support of families, and the strength and sinews of the state. Again, of these attacks of unnecessary sickness, a very large proportion are loathsome, lingering, and, in every sense of the term, exhausting maladies, sowing the seeds of future disease, and plunging thousands and tens of thousands of industrious and deserving citizens into embarrassment and destitution, and imposing heavy burdens on the community. Trace these evils to their source, and you will find that they all flow from ignorance or forgetfulness of the wants of the human frame, and consequent neglect of the very first and most obvious duty which man owes to man, and governments to the governed; for if there is one duty more binding upon us than another, it is that of securing to all orders and degrees of men a full and free participation in those good gifts of Providence which have been so freely and so lavishly bestowed for the preservation of man's health and life.

Let me entreat your attention while I endeavour to show the extent to which men have been deprived of these their natural rights by their fellow men or by the acts of the Legislature or the Government—not designedly, but in ignorance and carelessness.

The great essentials of a healthy existence are air, light, and water; food, fuel, clothing, and shelter; labour in moderation; the means of cleanliness; and facilities for exercise and recreation. Two of these—AIR AND LIGHT—are supplied to us, without any interference or co-operation of our own, in unlimited abundance; but we have polluted the one by every means in our power, and actually

limited the supply of the other (indeed, I may say of both) by legislation. I need not tell you that I refer to the window-duties, which, having long been a blunder and a misfortune, are fast growing into a crime. WATER AND FUEL, again, have been provided on a most liberal scale, but labour is the condition of their possession. The well must be dug, the water must be carried from the spring; or, where men are congregated in towns, provision must be made in some way or other for an adequate and cheap supply. This, which is in a peculiar manner the work and duty of legislative and municipal bodies, has been hitherto most imperfectly performed, and, as I shall have occasion hereafter to show, a scanty and intermittent supply of bad water, at an extravagant cost of money and time, is the rule in the large majority of our towns. Here the Legislature is to blame, not for any positive enactment limiting the supply (as the window-duties are a bar to light and air), but for placing that supply beyond its own control in the hands of irresponsible companies, and making no distinction between the powers conferred on them for dispensing one of the first necessities of life, and those entrusted to other companies for purposes in no way affecting the great interests of the community. The supply of FUEL may be safely left in the hands of that great and generally successful caterer, *Supply and Demand*—but as it is a necessary of life, it is obviously the duty of Government to destroy all combinations, and to remove all obstructions which interfere with the operation of that wholesome principle, and tend to enhance the price to the consumer. CLOTHING comes in the same category as fuel, and may and must, for obvious reasons, be left entirely in the same hands, the Legislature merely abstaining from imposing any tax on the raw material. With regard to FOOD—this ought, by all means, to be made as plentiful and as cheap as possible, which can only be done by perfect freedom of trade, on the one hand, and the utmost economy of time and labour, seed and manure, aided by the mechanic and the chemist, on the other. Here, too, the operation of *supply and demand* will prove all-sufficient; but here, also, the Legislature has a duty to perform—namely, to place at the disposal of the farmer the valuable refuse of our towns; for it may be fairly questioned whether this step is not an essential condition of our competition with the produce of cheap land and labour, virgin soils, and favourable climates. The Legislature has still more power, and lies under the obligation of using it, over the SHELTER provided for the people. In the first place, it has power over the *cost* of a house, by taxing the materials of which it is built, and it is assuredly its bounden duty to make timber and bricks cheap, as it has already made the materials of clothing cheap. In the next place, it has power over the *construction* of a house, through the window duty, which, as I have already stated, limits

the supply of air and light. Lastly, it has a further power over the *internal arrangements* of a house (a power which it actually exercises, to a certain extent, in the Building Act); and may, if it so please, insist upon a due supply of water, efficient drainage, and the means of decency. Experience proves that in this essential matter supply and demand have failed. They have not given, and they cannot give us cheap and wholesome houses, and the matter is far too urgent to be left to the slow operation of charitable societies and commercial companies. It ought to be regarded as the first and most welcome duty of the government. The people are anxiously looking to it for an authoritative definition of a *house*. In this place, I must speak of one fearful evil pressing on the labouring population both in town and country. I mean, *over-crowding*. The legislature may do much to remedy this, by abolishing or modifying the law of parochial settlement, which inflicts upon our village population the chief curse of towns, and adds to the intensity of that curse in our towns themselves, at the same time that it makes *over-work* a too frequent condition of rural labour. It may also forbear from increasing the great evil of over-crowding in our large towns, by enacting that in every future improvement, provision shall be made for as many of the labouring class as the improvement itself has displaced. Whether our past injustice admits of any remedy is a question I will not here discuss. **LABOUR IN MODERATION** has already been secured for the factory operative. Would that legislation could meet the hard cases of those who serve in the shops, and labour in the workshops of our large towns. **THE MEANS OF CLEANLINESS** have also been provided for the poor on a limited scale, in the shape of baths and washhouses, for which the legislature has wisely offered facilities. The abolition of the excise on soap would complete this act of mercy. **OPEN SPACES FOR EXERCISE AND RECREATION** in the centre of our large and populous towns ought also to be systematically provided, and not to be left, as now, to the rare liberality of individuals.

I have thus endeavoured to point out some of the leading requirements of the human frame, to show how they are at present supplied, and to indicate the power which legislation may exercise over them; and I would especially invite the attention of all classes to the present condition of the houses of the mass of the population in town and country, but principally in our towns. With so many external sources of pollution, in the shape of uncleansed streets, filthy markets, slaughter-houses, crowded grave-yards, lay-stalls, offensive manufactories, and that costly absurdity, the smoke nuisance; with the air thus polluted, even before it gains admission into our houses, how fearfully are its unwholesome properties reinforced by the want of water, the absence of house drainage, the foul effluvia of cess-pools, the stint of light and air, and the misfortune of over-crowding. Are 30,000 unnecessary deaths,

and at least twenty times that number of equally unnecessary attacks of sickness, too many to attribute to such a state of things? Would you not expect from the constant attacks of so many enemies, a wholesale slaughter like that of battle-fields? Are you surprised to hear that 16,000 victims are offered up, one year with another, to the pestilence, already expelled by fresh air and scrupulous cleanliness from ships and prisons? To those who are familiar with the condition of those miserable accidents of brick and mortar—the towns of England—such sacrifice of health and life must appear in the light of a natural and inevitable result.

Nor will the economical bearings of the question be undervalued by those who believe that waste and want are inseparably connected as cause and effect. On this part of my subject I will merely lay down a single proposition, which I am prepared to support and justify, that there is not a single structural arrangement accused of undermining the health and endangering the lives of the people, which is not *in itself* more costly than the improvement it is proposed to substitute for it; while the wasted refuse of our towns alone cannot possibly be estimated at less than some millions a year.

As to the moral bearings of the sanitary question, them I earnestly commend to your attention. Your own good sense will suggest how utterly impossible it is that human beings should live in a perpetual familiarity with filth, cut off from the enjoyment of the means of decency and propriety, and subject, from causes admitting at least of mitigation, to the curse of over-crowding, and yet retain those household virtues, which, even more than health itself, are the foundation of the prosperity of nations.

In my next lecture, I shall pass from generals to particulars; in the meantime, I cannot conclude this first address without earnestly exhorting all classes of men to co-operate in cordial support of a large and efficient sanitary measure. I am sure that I do not overstate the case when I affirm that whether you view it as a question of abstract right or sound policy, it is without a rival. It rests on a wide and firm basis of fact and argument, and commends itself by every possible consideration of economy, humanity, and justice; it is the very spirit of charity, the handmaid of morality and religion, the best hope of an impoverished, degraded, and demoralized people.

At the beginning of this lecture I intimated that in some of our calculations we may have been innocently led into exaggeration. It is but bare justice to the cause I advocate to state my firm conviction, that in describing the condition of the dwellings of the poor in towns and villages, exaggeration is impossible. Surely the owners of property, in suffering them to fall into such disgusting dilapidation merit a punishment far more severe than that of being compelled to consult their own real interests.

THE CLAIMS OF THE SANITARY QUESTION ON THE ATTENTION OF THE DIRECTORS OF LIFE ASSURANCE OFFICES.

BY HENRY AUSTIN, ESQ., HONORARY SECRETARY TO THE HEALTH-OF-TOWNS ASSOCIATION.

(Concluded from our last.)

THE Health-of-Towns Association has calculated, arranged, and published, for each separate county, this valuable information in a series of tables, which display in several different forms the comparative value of life in each district; and though it would be unsafe to substitute these for more exact calculations, or to place too implicit a reliance upon them, nevertheless the columns of the rate of mortality, the average duration of life, the excess of infantile mortality (children being peculiarly susceptible to atmospheric impurity), and the mortality from epidemics, taken together, will give a just view of the comparative degree in which any district is affected by the neglect of proper sanitary measures. Nor must these tables be employed even for this general purpose without taking into account certain local circumstances, which are altogether independent of the sanitary condition of the several districts themselves. Greenwich, for instance, would appear, from the average duration of life in the table, to be in a comparatively healthy state; but this is contrary to the fact, and arises solely from the circumstance of the large number of men at an advanced age who inhabit Greenwich Hospital. Other districts, again—such as the Isle of Wight—appear more unhealthy than they are, from the fact of their being the favourite resort of invalids, who go there never to return. But all such difficulties would be removed, both as to separate localities and the individual habitations of the assured, by the valuable examinations and reports of qualified surveyors, and thus the great desideratum would be attained, of classified averages without danger to the offices.

I will endeavour to illustrate from these tables* and other sources what I have already asserted—namely, that the influences among which man passes his days are of infinitely greater importance, in the calculation of the chances of life, than permanent physical imperfections, or than the germ, or even the actual presence, of many diseases. The average rate of mortality in London, in 1841, was 1 in 41. In the crowded, undrained, and neglected districts of St. Saviour (that such a name of all others should be linked with misery and pollution!) and St. Olave, it is 1 in 27; while in the more open, better paved, and better drained district of St. George's, Hanover-square, it is 1 in 58; showing a clear sacrifice of more than double the number of lives from preventable causes. Another column exhibits a corresponding ratio of deaths from epi-

demics in these districts. This is only one example of the dreadful tale of premature destruction that is told in every table of the kingdom. It is needless to produce further evidence of the fact. It may be argued, on the other hand, however, that this excess of mortality occurs only in the very worst districts, inhabited by the poorest classes, who are not assurers of life, and would therefore not affect the question under consideration. This is partly true; but let it not be supposed for a moment, that the middling, or even the higher classes, escape from the very same influences which are the scourge of the poorest. The average rate of mortality of the tradesman is found to vary but little from that of the artisan, while the duration of life among the gentry is seen to differ to a startling extent in different localities.

In Liverpool, the average age of all the gentry who died was 35 years, and in London it was 44 years. Taking the ages at death of the gentry in St. George's, Hanover-square, St. James's, and Marylebone, it appears that they scarcely amount even to the average of the whole of London; showing that even in those aristocratic quarters, sanitary arrangements are so far from being what they should be, that every individual residing there loses on the average about 15 years of life, when compared with a healthy standard. The average age in London of the tradesmen and artisans, however, differs only three years, the tradesman being 25 years, and the artisan 22 years.

The average rate of mortality in the healthiest county in England was, in 1841, 1 in 57; the average of the whole of London was 1 in 41, of the whole of Liverpool 1 in 30, while that of St. Olave, Southwark, was 1 in 19! One life sacrificed in every 19 inhabitants!—more than double the average of the whole of London, and three times that of a healthy spot! What rate of premium would be charged for the assurance of the life of a soldier about to go into action in one of the greatest battles ever fought? Would he have been accepted upon any terms? No. And yet only one life out of thirty was sacrificed in the English and Hanoverian armies on the field of Waterloo!—a proportion below that of the unnecessary annual destruction of the peaceable, hard-working, uncomplaining artisans of many parts of the most prosperous towns of this enlightened kingdom. Wealth's sacrifices, victims of municipal neglect!

I speak of the artisan; but trace down the whole column of the tradesman's life in the different districts of the metropolis, and he will be found to possess but the shadow of an advantage over his poorer fellow-citizen. What more convincing proof could be obtained of the complete fallacy of the old opinion, that the privations of the poor exert the chief influence in occasioning their excess of mortality? It has been proved incontestably that these circumstances, however dreadful in themselves in their influence on the duration of

* In order to avoid confusion, one set of comparisons only has been given in these remarks. The tables themselves may be referred to where more extended data for calculation are desired.

life, are insignificant in comparison to atmospheric impurity, which destroys alike the highest and the lowest. It is proved, too, beyond a question, that this impurity of the air is easily removed, so that it is the highest interest of all classes, but more especially of those concerned in the assurance of life, to lend their powerful aid for this good purpose.

I have already stated that influences are at work, which, unless counteracted, will render the progressive diminution of premiums which is *now* taking place very hazardous.

Mr. Finlaison has remarked, that a benefit society, founding its calculations upon the scale of prison mortality, would be ruined in three years!—a short existence truly!—a consolation for the criminal, but a sad reflection for the honest and hard-working man, that, compared to the wretched home provided for him, a prison is the blest abode of health!

The town of Carlisle is a striking illustration of what is here intended to be proved. Its rate of mortality, which in the assurance tables makes so triumphant a display in comparison with the London table by Mr. Simpson, and the Northampton table by Dr. Price, and was then lower than the present average of the fifteen *healthiest* counties of the kingdom, is now fully equal to that of either London or Northampton, and is higher than that of the average of the fifteen *unhealthiest* counties. The average rate of mortality at Carlisle, which was then 1 in 54, was in 1841 increased to 1 in 39, while that of London and Northampton was 1 in 41. How shall we account for this dreadful increase of mortality but by the fact that the population of Carlisle increased fifty per cent. in the course of twenty years between those periods, while there, as elsewhere, all sanitary conditions were neglected.

There is abundant evidence of the same fact in almost every town of the kingdom. The rate of mortality has increased with increase of population, and unless immediate and systematic arrangements be adopted for the mitigation of the evil, by proper sanitary regulations, it must, without fail, bring about such a lower standard of life, as the offices, with their present low rates of premium, are not at all prepared to encounter. ¶

The continuation, however, of the present *general* averages in life assurance, in the face of the official *local* statistics and calculations, would, under any circumstances, be an injustice, demanding, on that ground alone, extensive alterations. With the information already provided, which will allow of the distinction and classification of the statistics of every district, why should the healthy town be saddled with the burden of the unhealthy? And why should the good lives under healthy circumstances have to pay for the cost of those placed under unhealthy ones? It is clear that the office receives too little in the one case, and too much in the other.

There is a twofold injustice. The one class suffers in health and life, the other in money; an actual premium is offered to unhealthy conditions, while the office suffers in the limitation of the principle of assurance, which must follow from so unequal a distribution.

It is impossible to estimate the benefits which would arise from a more equitable adjustment of premiums, by putting upon the bad districts the full amount due to their rates of mortality, by giving the proper advantages to the good, and by ascertaining the individual conditions, in each case of assurance, by the visit and examination of qualified surveyors. These reforms would tend immediately to the perfection of the principles of assurance, and to the actual prolongation of life. They would remove the extraordinary public apathy which still exists on this important subject, by convincing individuals that they were directly interested in the improvement of their districts, and in the removal of the evil influences which surround them; and the visits of your surveyors, both at the time of assurance, and, if possible, of death, would not only assist this object, and amass an amount of most valuable local information for your guidance, but would have the additional advantage of tending to check much of the fraud which is now practised upon the offices, and which appears difficult to guard against.

Beyond the great prospective benefit which would result from these improvements in the method of assessing premiums of assurance, and from regulations and instructions to the assured, much immediate good would no doubt be effected, by the issue of recommendations to parties already assured. This could be carried out with little trouble or cost; but no trifling amount of either should be allowed to stand in the way of the adoption of some such plan. I would even suggest, as not unworthy the consideration of men of high standing and intelligence, whether, in many cases, it might not be worth while even to assist the assured in the establishment of such inexpensive but important provisions as the ventilation of rooms, improved traps to sinks and drains, and other health-restoring influences which legislation can never wholly provide for. How usefully such expense might be incurred nearly every habitation affords evidence. The cost would be trifling; but it is such as individuals are, for the most part, unwilling to incur, from not seeing its immediate necessity or importance.

Referring again to the custom of the offices in fire assurance, (and in many points of view the two cases present analogous features, justifying similar treatment,) the legitimacy and importance of such an appropriation of funds are there fully exemplified.

In order to prevent, as far as possible, the destruction of property by fire, a vast and expensive establishment is maintained on the most liberal scale, with all provisions and appliances for the extinction of the destroying element. Whether a large

or small amount, or even none at all, be at stake in the assurance office, it matters not; all possible means are exerted for its rescue. Looking at it merely as a commercial question, why should not all possible means be adopted also to rescue lives from equally destructive influences, upon which large values may be dependent? The *means* of safety are as well known, and many of them are easily and economically applicable. It would be the narrowest policy not to make some effort for their systematic and general establishment.

Illustrations without end might be afforded of the advantages which would accrue to all concerned from the adoption of this preventive policy. I would refer to my own case, as one of common occurrence. At the time of effecting an assurance on my life, I had ignorantly gone to reside in a house, the sanitary conditions of which had been entirely neglected. Such particulars as I have insisted upon forming no part of the interrogatories of the assurance office, I was of course admitted on the terms otherwise due to my case; but it was the natural consequence of such an abode, that I should shortly afterwards fall into such a seriously low state of health, as would not, in all probability, have afforded me the opportunity of paying a second premium, had not professional engagements called me elsewhere. But for a mere chance, the office would thus have been deprived of its fair amount of premium for many years, from what was otherwise a tolerably good life. Less than one year's premium would have sufficed to make that house a healthy residence; but there was no one to remove the ignorance, much less the evil itself.

Let me refer to another instance, showing the advantage and economy of the surveyor's examination of premises in the cases of the removal of the insured.

A gentleman, aged 31, insured his life for 1000*l.* when living in a tolerably wholesome atmosphere, in the eastern suburb of London, where he had always enjoyed good health; but he afterwards removed to a spot, in the Bethnal Green Road, where, surrounded with poisonous influences, his health sank, and being attacked with typhus fever, he died after a few days' illness. He had then paid three annual premiums. Had these premises been examined, either the company would have insisted upon their being put into a proper sanitary condition, or had the surveyor reported that to be impossible under the circumstances, they would very properly have declined altogether to incur so great a risk. Thus in one single case would a sufficient amount have been saved, to pay for some hundred such examinations. These are individual instances; but I look around, and find scarcely an exception to them. In almost every house the same bad influences more or less abound; and ignorance and apathy on this vital subject are co-existent and co-equal. It is true that extensive legislative

powers are required to carry out, in their perfection, systematic sanitary reforms. But while the efforts of Government to repair the neglect of ages by tardy legislation are frustrated by the most pitiful opposition, it is truly gratifying to think how much immediate, substantial, and lasting improvement in the public health may be effected by the prompt and judicious exercise of the means even now at the command of the offices. The course which their higher feelings would dictate is identical with their interest; and their example and influence could not fail of stimulating the exertions of Government to grant, without further delay, the powers necessary for the completion of the good work. By prompt and liberal assistance to those who are strenuously working to this end; by the official examinations and instructions proposed; by the judicious deduction from facts which are now collected; by the suppression, to the utmost, of the evil influences which most seriously affect the duration of life, and are so easily removed, not only will you promote the happiness and welfare of your fellow-creatures, but, at the same time, raise the principles of life assurance to the highest degree of perfection, enlarge its sphere of usefulness, and increase its well-deserved success.

REMARKS ON DWELLINGS FOR THE LABOURING CLASSES AT BIRKENHEAD—EVILS OF THE WINDOW-TAX.

BY J. HUNTER ROBERTSON, M.D.

BIRKENHEAD has the credit of having conceived and put into operation one of the most remarkable plans yet formed for applying modern improvements to dwellings for the working classes. How imperatively such works are called for, let our Health-of-Towns Commissioners and our Sanitary Bills tell. If society at large knew how very high is the rent which the poor pay for wretched accommodation, they would find that, even independently of kindly feeling, it would be really a profitable investment to build good and comfortable dwellings, which might be let at rates not exceeding those now paid for "fever factories," as the closely-pent hovels are, with fearful expressiveness, sometimes called.

If society would take the trouble to inquire how largely the poor-house, the hospital, and even the lunatic asylum, are tenanted by those who, but for their pestilent and pestiferous dwellings, might perhaps have been healthy and actively-working members of the community, they would find that, in addition to all that the poor really suffer, the middle and upper classes pay enormously for the defective system, in the shape of increased rates and increased voluntary contributions.

The dwellings above alluded to were built by the Dock Company for the accommodation of the workmen likely to be required for the construction of the docks and warehouses; but from their elegant,

highly finished, and substantial construction, more so perhaps than requisite for the purpose intended, the investment, it is to be feared, will turn out an unprofitable one. The whole pile of buildings is throughout fire-proof, and made to accommodate 350 families.

I shall not here enter into further particulars about these dwellings, as they have already been so minutely described in that deservedly-popular work, "The Land we Live in;" besides, as they are on such a gigantic scale, the cost being somewhere about 50,000*l.*, probably it will be more acceptable to give the details of two tenements more recently erected in Birkenhead; the one by William Laird, Esq., called Morpeth Buildings, consisting of 64 dwellings; the other by Robert Hughes, Esq., consisting of 70 dwellings.

The first of these is built on the Scotch plan, in flats, and constitutes eight blocks, each block consisting of eight dwellings, making in all 64.

Every block has a stone passage leading to the street, from whence the staircase and doors to the various dwellings proceed. The blocks are four stories high, no sunk flats or cellars, and each flat is divided into two dwellings.

The internal arrangements are much the same as those of the Dock cottages, the dwellings consisting of three rooms—viz., kitchen, parlour, and bedroom, or two bed-rooms, of the following dimensions:—Kitchen, 13 feet by 9 feet 9 inches. The one bed-room, 9 feet 6 inches by 7 feet; the other, 9 feet 6 inches by 6 feet. The kitchen is provided with a range and oven.

Immediately adjoining the kitchen, but shut out by a well-fitting door, is a water-closet, with an abundant supply of water, for this and all other purposes, from a large cistern, placed at the top of each block, for the use of the eight dwellings; this cistern is supplied from the public works. Through the centre of each block, from top to bottom, runs a square shaft, containing the water and gas pipes belonging to the eight dwellings, and a small iron door about 10 inches square is fixed in one corner of a recess, close to the ground, through which all the dust and dirt are swept; the dust shaft receives the dust from all the eight dwellings by eight similar openings, and thence descends to a very large dust-cellar beneath the level of the house, from which it is removed at stated periods.

Each room is ventilated by two "air bricks"—that is, a space equal to the size of a brick is left open for the admission of air, covered within and without by an iron grating, and capable of being closed by an iron shutter if necessary. One of these openings is placed near the floor for the admission of fresh air, the other near the ceiling for the escape of heated or vitiated air.

As to the advantages of such dwellings in a sanitary point of view, there cannot, I think, be two opinions; but before parties will engage in such a speculation, it is but natural they should

satisfy themselves as to the return they are likely to get for their money.

Through the kindness of Mr. Laird and Mr. Hughes, I am enabled to give full particulars as to the cost and return of their respective buildings.

Cost of 64 Dwellings for the Working Classes in Wood-street, the property of Wm. Laird, Esq.

<i>Land.</i>	
Length of 8 blocks	292' 3"
Width of cottage	25 feet ..
Passage behind	5 ..
Given up to make a 12 feet street / into an 18 feet street	3 33
<hr/>	
292' 3" × 33 = 1071 yards, 3 roods, at 30 <i>s.</i> per yard	£1607 0 0
Contract for building 64 cottages, by Messrs. Walker	5965 0 0
Extras: fitting shelves, cupboards, and tables, each cottage, £3	192 0 0
Architect's commission, 3 per cent. on £5965	178 19 0
	<hr/>
	£7942 19 0

Returns.

1 block, containing 8 dwellings, produces the following rental:	
On ground floor, 2 cottages at 4 <i>s.</i> 6 <i>d.</i> per week, or £11 14 <i>s.</i> per annum each	£23 8 0
On first floor, 2 cottages at 4 <i>s.</i> per week, or £10 8 <i>s.</i> per an- num each	20 16 0
On second floor, 2 cottages at 3 <i>s.</i> 6 <i>d.</i> per week, or £9 2 <i>s.</i> per annum each	18 4 0
On third floor, 2 cottages at 3 <i>s.</i> per week, or £7 16 <i>s.</i> per an- num each	15 12 0
	<hr/>
	78 0 0
8 blocks at £78 each = gross rental of 64 cottages	£624 0

Deductions.

Window-tax, 5 windows to each dwelling, or 40 per block, and 3 staircase windows:	
43 windows per block, £14 8 9 × 8	115 10 0
10 per cent additional	11 10 0
	<hr/>
	127 0 0
Township rates—	
64 cottages, at 30 <i>s.</i> per cottage per annum	96 0 0
Water—	
64 cottages, at 6 <i>s.</i> per cottage per annum	19 4 0
Insurance—	
4 <i>s.</i> 6 <i>d.</i> per cent. on £7000	15 15 0
	<hr/>
	130 19 0
Deduct	257 19 0
	<hr/>
Net rental	£366 1 0

Or a little more than 4½ per cent.

The foregoing statement shows only a return of 4½ per cent., or a trifle more, on the outlay, being considerably under what is usually looked for on house property. We must not, however, take the buildings in question as a fair criterion to go by, for I consider they are built on much too expensive a plan for the purpose intended. From conversation I have lately had with an eminent architect, I believe a tenement of dwellings for the working classes, of the same dimensions and accommodation, could, if judiciously gone about, be built for about 30 per cent. less than Morpeth Buildings. A fair sum to allow for each dwelling, not including the ground, would be, I am informed, 70*l.* Now, multiply this sum by 64, and you have

4480*l.* instead of 5965*l.*, making a difference of 1485*l.*; and leaving the price of the ground as it is in the statement, the sum would be for the 64 dwellings 6087*l.*, which would, supposing the net rental to be the same, give a return of 6 per cent.

The great drawback on buildings of the above description is that most grievous of all taxes, the window-tax. It is without doubt the most effectual means of preventing healthful, cheerful, and comfortable habitations being erected for the labouring classes; and so long as this tax is in existence, or at least levied on the present system, we need never look for cheerful, well-aired, or well-ventilated dwellings. As a matter of course, this tax falls upon the tenant in the shape of rent; and as he cannot afford to pay for it, the landlord very naturally does all in his power to erect houses with just the light necessary to evade this tax.

The net rental of Morpeth Buildings is 366*l.* 1*s.*, or a little more than 4½ per cent. on the cost, which is decidedly not an adequate return; but deduct the window-tax, and the return will be ample. The window-tax on the buildings in question is 127*l.* or more than 20 per cent. on the gross rental, and 1¾ per cent. on the price, which, if added to the 4½ per cent., gives upwards of 6 per cent.

The window-tax on the Dock Cottages is 600*l.* per annum; and owing to the depressed state of trade at present in Birkenhead, tradesmen are unable to pay the required rent, and consequently it is considered more prudent to shut them up altogether for the present, merely to avoid paying this heavy tax.

Perhaps we could not at the present time look for the total abolition of the window-tax, but certainly there might be some improved mode of assessment, and one that would not be instrumental in generating disease. The smallest opening made in the walls of an ordinary sized dwelling subjects the tenant to an additional 8*s.* 3*d.* per annum; consequently, cellars, privies, and the roofs of houses are left entirely without ventilation, the very places most requiring it.

Mr. Hickson suggests, that for every 1000 cubic feet covered in for habitations, there ought to be a certain number of windows or openings for light and ventilation; that these ought to be charged for, whether they exist or not, and the window-tax would no longer operate as a premium upon defective ventilation. This, however, would not, I think, answer the purpose intended, but have quite a contrary effect. A certain amount of space in dwellings is requisite to health, and the plan proposed by Mr. Hickson would be a temptation to diminish it, and would consequently be productive of great mischief. If I might venture an opinion on so intricate and important a subject, I would suggest, that instead of taxing the number of windows or the cubic contents, a certain per centage should be charged on the rent of every house

exceeding 15*l.* In this way, there would be no object in decreasing either the dimensions of dwellings or diminishing the number of windows, and the benefit of this arrangement would be felt by those most requiring it—viz., the working classes, their houses seldom exceeding in rental 15*l.* per annum. At present, all houses of about this rent are constructed with just the number of windows necessary to evade the tax; consequently, they are in this way rendered deficient both in light and ventilation.

The rents of house property might be taken at the same valuation as for the poor and local taxes, and instead of keeping a vast number of individuals throughout the country, in constant employment at high salaries, for no other purpose than to annoy people by counting their windows, the rent would at once be ascertained by referring either to the books of the parish or township.

I have taken every pains in ascertaining from the tenants themselves, their opinion of the dwellings in Morpeth-buildings, and it is exceedingly gratifying to find that they are unanimous as to their comfort and excellent accommodation.

As it may not be uninteresting, I give the exact words of a few of the tenants as I had them from themselves.

First. Tenant states—My house is most comfortable, well worth the rent I pay. We never have had illness in our family since we occupied it. No one can tell the comfort we feel in having such an excellent water-closet, and so ample a supply of water. I think the air-holes create too much draught. If the rooms were from one to two feet larger, the house would be unexceptionable.

Second. Tenant says—I think my house excellent. The water-closet is a great comfort. The air-holes made the house uncomfortable until we pasted paper over them. The great fault I find with the house is the smallness of the rooms. One foot more would add considerably to their comfort.

Third. Tenant states—I have seven of a family. We all like the house very much, but the rooms are too small for so large a family. We resided formerly in Oliver-street, and had much illness there, but have all been in excellent health since we came to reside here. The water-closet is a great comfort, but the air-holes admit too much cold air. As the windows open from the top, we could dispense with the air-holes.

Fourth. Tenant says—I never was in so comfortable a house. If the rooms were only a little larger, I would willingly pay a trifle more rent per week. We never had such continued good health as we have had since we occupied this house. The principal fault I find with the house, for a family, is the smallness of the apartments. From the manner in which we can so easily get rid of all dust and rubbish through the shaft, we have always a clean house. I don't like the way the house is ventilated.

The statements of all the tenants were nearly to

the same effect; it is therefore unnecessary to give further examples, but I will proceed to describe the 70 cottages erected by Mr. Hughes.

They are built in five blocks, each block consisting of 14 houses, and divided by parallel streets or avenues of 12, 8, and 6 yards in width, the broadest being at the back, and decreasing as they advance towards the main street. Mr. Hughes very kindly took me through the whole of them, and I must say I was both astonished and pleased at their arrangement and accommodation. They are not in flats like Morpeth-buildings, but each house consists of three stories and a sunk one, and has three rooms and a kitchen of the following dimensions:—each bed-room 12 feet square, sitting-room 12 feet by 9, kitchen 12 feet square. The kitchen is provided with a range and oven. There is an excellent water-closet, with an abundant supply of water from the public works. Each of the avenues is lighted with gas; in fact, there appears to be no expense spared in contributing to the comforts of the tenants.

The ventilation appears to be excellent, every window opens both from above and below, and the stair is lighted with a glass cupola; indeed, they have the appearance of being built for a much higher class of tenants than they are really intended for.

I give the cost of these 70 cottages as furnished me by Mr. Hughes.

Land for 70 cottages.			
2250 yards, at £1 per yard	£2,250	0	0
Building account	10,350	0	0
		12,600	0
<hr/>			
Gross rental of 70 cottages	£850	0	0
<i>Deductions.</i>			
Township rates.			
70 cottages, at 30s. per an.	£105	0	0
Extra public gas-lights for avenues	24	15	0
Water, 6s. per annum on 70 cottages	21	0	0
		150	15
Insurance, 4s. 6d. per cent on £8000	18	0	0
		168	15
<hr/>			
Net rental	£681	5	0
Or equal to 5½ per cent.			

The foregoing statement shows a considerably higher return than that on Morpeth-buildings, solely in consequence of these cottages not being liable to the window-tax. This is an exceedingly hard case as regards Mr. Laird, for although the dwellings in Morpeth-buildings have the same number of windows as Mr. Hughes's cottages, they are taxed, whilst Mr. Hughes's are not.

This is the great objection to dwellings being built in flats, as the law has determined, that in any building with a door opening into the street, all within that door are as liable to the window-tax as if they were one house; consequently, as there are in each block in Morpeth-buildings eight dwellings, each dwelling having five windows, besides three in the staircase, 43 windows are taxed, making

14l. 8s. 9d. per block, or 127l. on the whole tenement.

As to the convenience, comfort, and healthfulness of such houses, there cannot, I think, be a doubt; and now that Birkenhead has shewn such a praiseworthy example in contributing so largely towards the health, comfort, and enjoyment of the labouring classes, I trust it may ere long be universally followed throughout the kingdom; for it is a well-ascertained fact, that no means can be more effectual, not only for rendering a man a better member of society, but also a better labourer, than that of increasing the comforts of his home.

40, Hamilton-square, Birkenhead,
13th December, 1847

SANITARY CONDITION OF IPSWICH.

BY JOHN GLYDE, JUN.

IN the early part of the year 1847, I, assisted by two other friends, made inquiries into the sanitary condition of Ipswich. We made a general survey of the streets, and lanes, and courts of houses in the town, and attended minutely to one parish, that of St. Matthew's. The result of our labours I embodied in a report laid before the corporate body, and I afterwards published it in the press of the town and neighbourhood. Believing that a digest of that report would be acceptable to your readers, I shall detail the facts we elicited in the course of the inquiries.

The average annual number of deaths in Suffolk is, from a calculation of seven years, 1 in 51; in Yarmouth, 1 in 51; in a mining district, Charlton-on-Worsley, 1 in 50; in Kidderminster, less than 1 in 49;* in England, 1 in 46; and in Ipswich, more than 1 in 42. The mortality of this town, although placed in a healthy agricultural district, is, excluding Lancashire, above that of every county in England. During the last eight years, from 1838—47, the average annual number of deaths has been 603. If we assume the population during this period to have been 25,600, and the rate of mortality to have been the same as at Beverley, Yarmouth, &c., the number would have been 512, instead of 603; showing a loss of 728 lives in this town in the last eight years. In the year 1842, the total number of deaths in Ipswich was 594. The deaths from consumption were 137; from pneumonia, 52; and the mortality of infants under five years of age, 236. In England, the deaths from consumption, during the same year, were 16 out of every 100 of the total deaths; in Ipswich, they were 22 out of the 100. Had the deaths from this disease in Ipswich been uniform with those in England, we should have had 96, instead of 137. The deaths from pneumonia in Ipswich were more than 8 out of the 100, while in Suffolk they were less than 4 out of the 100. An uniformity of deaths from this disease between

* Dr. Guy's Lecture on the Health of Towns, page 10.

Ipswich and Suffolk would have produced 24, instead of 52!

Infantine mortality is considered one of the most important tests that can be applied to prove the sanitary condition of a town. In Whitby 26 per cent., in Lancaster 29, in York 31, and in Ipswich 39 per cent. die under five years of age. Again, the number of deaths under one year of age in 1842 was 159, which is 1 in 5 of the number born; had they been uniform with those in Suffolk, the number would have been 104, instead of 159!

In Ipswich, there are 103 streets and lanes, 15 of which are without any drainage, and 19 with surface drains on one side only, and these sometimes extending but partly through them. In several parts of the town there are portions of sewers, but only six roads and streets have them for any considerable distance. They are formed with circular and elliptic bottoms, but in consequence of their not being flushed with water, they are little better than extended cesspools, and the stench which sometimes issues from their gully-holes is most offensive and injurious. There are 42 streets and lanes not paved, and several only partially paved. Upwards of 100 courts of houses also exist in the town, the drainage from some of which is very bad. In several instances, all dirty water has to be carried to a dead well, situated either in the middle or at the end of the yard, there being no gutter leading to it; the distance in one case varying from twenty to thirty yards at least. In some instances, the gutters are very badly paved, and the water stagnant. In one case, parcels of rubbish and dung, collected from the streets by the occupants of the court, lay in various parts of the yard, exuding their offensive effluvia. Hogs were also kept and slaughtered, and the place in the summer must smell at times very offensively. Another case we observed where the fluid from an adjoining privy had broken through the wall, and the exuding filth lay within about five feet of the doors of some of the dwellings.

In those houses situated in streets and lanes where there is no drainage, dampness is a general complaint. In the New Cut, Handford-road, the answers received from many of the occupants are—"Very damp." "Paper rots on the wall." "Water rises in the cellar." "Things get mouldy in the cupboard," &c. The drainage generally in this district of the town is very inefficient. Upwards of 250 houses in St. Matthew's parish are drained by dead wells; and 77 are reported as having no drainage whatever, the tenants have to throw their water into the street, or into the dust-hole, or get rid of it as they best can. Some of the dead wells are complete nuisances to the houses to which they are contiguous. In one case, it was stated that the well sometimes overflowed after a heavy rain, flooding the whole yard, and compelling the persons in the house to lay down bricks and stones to step on down to the privy. In other cases, "only an old

sugar hogshead was found to carry off the waste water of five houses." "Dead well not been emptied for a long time, so full of water that the stench from it is exceedingly offensive." Very few of the houses that are drained by pipes into sewers have traps to prevent the foul air arising therein from entering the dwelling. This at times makes the kitchen or backhouse, where the drain commences, unfit to enter.

The indecent and demoralizing practice of allowing but *one* privy to several houses is very general. It is the case in the greater number of the courts, as the following table will show:—

Houses having One Privy in common.

In 1 instance ...	12	In 10 instances ...	6
„ 4 instances ...	10	„ 17 „ ...	5
„ 2 „ ...	9	„ 16 „ ...	4
„ 4 „ ...	8	„ 11 „ ...	3
„ 2 „ ...	7		

Houses having Two Privies in common.

In 2 cases ...	12	In 2 cases ...	7
„ 2 „ ...	11	„ 5 „ ..	6
„ 4 „ ...	10	„ 3 „ ...	5
„ 1 case ...	9	„ 1 case ...	3
„ 6 cases ...	8		

Houses having Three Privies in common.

In 1 case ...	12	In 2 cases ...	6
„ 1 „ ...	11	„ 1 case ...	8

The Parish of St. Matthew's, which, be it remembered, is considered the West-end of Ipswich, does not contain so many of the working-classes as some other districts of the town, and is not, in consequence, so densely populated. In this parish, however, there are 125 houses without private conveniences. In many instances—I am not now alluding to courts—three and four, ay, and sometimes five, houses to one privy, and this in cases where the rental of the property would lead us to suppose that the landlord would feel it to be to his interest as well as his duty to provide a necessary for each dwelling. In several instances, both in private houses and in courts, *two* privies have but one soil-hole, which is frequently quite open and exposed. In others, the soil is in a fluid state, liable to be stirred up by the dust thrown into it, and "ready to yield to the sun as it shines and the wind as it blows, vapour charged and tainted with disease and death." In others, the fluid occasionally overflows, so as to make the place a nuisance to those who live near it. The privy and wash-house very often join each other; sometimes I found the privy adjoining the sleeping-room, and a chamber over it; and in one case, it was close to the pantry, which was said to be damp.

The purity of the water which comes into this town has been frequently spoken of in high terms, and the ability to afford abundance to every dwelling is, I believe, generally acknowledged by practical men.

The inquiries show that there are—

	Without Water.	Supplied by Well.	By Pump.	By Tap.
Courts	10	4	21	69
Houses in St. Matthew's Parish	14	4	325	450

In several instances, the water from the pumps is complained of for its impurity; and those who have Mr. Alexander's water have a very bad supply, frequently being without for a week, and sometimes for a much longer period. A great many of the inhabitants of the courts, and the dwellings of the poorer classes, have a great distance to fetch their water.

The usual ignorance and non-attention to the important principle of ventilation was manifested on examining the residences of the poor. More than 600 houses are situated in courts, some of which are badly drained. Many of them back to back—all without back-door or window. There were also cases of "thirty children in a school-room twelve feet square;" "six men sleeping in an attic;" and three instances in our parish of "a man and his wife and five children sleeping in one room." The size of the room in one case could not be more than ten feet square; another, twelve feet by fourteen; and the rest, about twelve feet square; and in each case about seven feet high.

It has been shown, that during the last eight years, there have been in Ipswich 728 deaths above the average of healthy towns. The expense which this excess of deaths has cost the inhabitants would have gone far towards providing remedial measures. Taking the average expense of funerals at 4*l.* 10*s.* each, the inhabitants have lost in eight years, from excess of funerals, upwards of *three thousand pounds!* To look more minutely at this view of the case, take the year 1842. In that year, there were 82 deaths above the average of Huddersfield and Beverley. The funeral expenses for these amounted to 369*l.* Of this number of deaths, there were 137 from consumption, which is 41 above the average for England. Taking the duration of illness at nine months, the expense of sickness at 10*s.* per week, or 18*l.*, there is a loss from excess of deaths from consumption, of 728*l.* The calculations of Dr. Playfair show that for every death there are 28 cases of sickness. An excess of 82 deaths would give 2296 cases of unnecessary sickness. Assuming the average expense of each case of sickness and medical attendance at 10*s.*, there is a loss from unnecessary sickness of 1148*l.* These items are purposely placed below the average, yet they show a loss as under:—

Expense of excess of Funerals . . .	£369
„ Deaths from Consumption . . .	728
„ Unnecessary Sickness . . .	1148
	£2245

When we consider, that in addition to the above

expense of unnecessary sickness, the individual in ill-health is, for the time being, an unproductive member of society, living either upon his own savings or the contributions of his fellow-men, we shall have a slight insight into the immense pecuniary sacrifices that are now made in consequence of neglecting sanitary arrangements.

The amount of moral evil that flows also from similar causes is very great. Bad drainage and defective supply of water induce personal uncleanness and slovenly habits in the woman, and cause the man to be dissatisfied with his home, and seek refuge in an ale-house. The deficiency of private receptacles for refuse must tend greatly to deteriorate the moral habits of the community. Must not the practice of making the privy common to several houses destroy all notions of delicacy in the youth of both sexes? and is it not sufficient to banish modesty, to blight the beauty of the female character, and militate most grossly against the comfort, decency, health, and morality of the labouring classes of this town? Over-crowding in sleeping apartments is another great cause of demoralization. When we find a man and his wife and five children sleeping all in one room—one, a girl of thirteen, another, a boy older—can we expect anything but depravity to result? Must not such herding together tend to destroy all the finer feelings of our nature? The bad ventilation of our courts and houses has a great effect upon the nervous system, induces a desire for stimulants, and lays the foundation for drunken and disorderly habits.

These are the leading points of the arguments I have used, showing the inhabitants that physically, morally, and pecuniarily, they are great losers by the present arrangements, and concluding by calling, in the words of Dr. S. Smith, upon all classes to come forward and help the government in promoting the health of our towns.

St. Matthew-street, Nov. 4, 1847.

PROPOSAL FOR DRAINING TOWNS BY A "SEWERAGE LEVY" ON THE SUPERFICIAL AREA.

BY J. R. JEFFERY, LIVERPOOL.

It is universally admitted that one of the most important sanitary improvements would be a complete system of drainage for large and thickly populated towns, and on this subject I propose to make a few suggestions which have presented themselves to my own mind. First, then, before one penny be spent in sewerage, a well-digested plan of any given town or district should be made by some competent engineer; showing the various levels; where the water from sundry parts would fall, and how the whole is to be disposed of through three classes of sewers as described by Mr. Newlands, in his report on Liverpool. On considering this plan, however, although I was impressed with the importance of its adoption, I was nevertheless struck

with the very great amount of money it must necessarily cost, and the difficulty of raising that sum within any reasonable time by the levying of "a rate." It is true that Lord Morpeth, in his bill, in some measure lessens this difficulty; but he is far from removing it altogether. I have a very great objection to the levying of a rate for such a purpose. I think it is levying a twofold injustice; first, on the tenant who has hitherto always paid a proportion toward a permanent improvement with only a temporary interest; and, secondly, on the present owners of brick and mortar; both parties being taxed for extending the sewerage over the whole drainage area, although a part only may be built on; while the land itself, which would be greatly increased in value by a good system of sewerage, would not be called on to pay one farthing for its own improvement.

I believe there no longer exists two opinions that under-draining for agricultural purposes improves the value of the land in a greater ratio than the amount of its cost, and if this be the case with such land, how much more so will it be with land laid out for building purposes? But in order that this benefit may be felt to its fullest extent, it is absolutely necessary that the same authority that makes and controls the sewers should make and control, if not actually lay out, the streets; for I cannot see how the sewers are to be made, unless the streets are first laid out; and to lay them out aright, the levels must be known. But this is diverging a little from my present object. I apprehend it will not be necessary for me to show that house property is materially improved in value by good and efficient drainage. I think I may fairly take this for granted; nor do I think any one will deny that vacant or unproductive land will realize a higher price in the market when the actual cost of drainage is known, and when it is also known that that drainage, when done, will be efficiently and permanently done—(no doing twice over, because the level taken in any one given locality is not in accordance with that in any other given locality subsequently occupied.) Admitting, then, that the land, whether built or unbuilt upon, is increased in value, the fairest, easiest, and most equitable mode of raising the ways and means for so desirable a purpose, is to levy a tax on the superficial area of the land, to be called a "sewerage levy." There are, I believe, within the Parliamentary boundary of the borough of Liverpool twenty-one millions of square yards of land; this includes every description of land, built and unbuilt, public, private, and that belonging to the corporate estates, every square yard of which should pay its proportion.

After having prepared a complete sewerage plan of the town, the estimated cost may readily be obtained, and for the present purpose I will assume it to be, for Liverpool, 1½ millions, which would probably have been the expense, if no money had been spent, nor any sewers already made. But it is our

misfortune to have made a considerable extent of sewers, in some instances exclusively at the cost of private individuals, and the remainder with moneys raised by rates, a portion of which has been paid by the tenants, and the rest by the owners of built property, amounting altogether to about a quarter of a million; and nearly all these sewers, I understand, have been constructed without a sufficiently comprehensive regard to the levels, and therefore, I believe, much that has been done will have to be undone. I do not wish to attribute blame to any one; but here we have the fact, and it must be dealt with. I would propose to begin as nearly as possible *de novo*; and to do so, the money spent, after deducting the value of the present sewers, must be added to Mr. Newland's estimate—then the *land* value of the entire borough must be estimated, which I will assume for my present purpose to be twenty millions. This, it must be remembered, is the land value, without buildings at all. If, then, the land value be twenty millions, and the estimated cost of sewerage that land be two millions, the "land levy" will be clearly ten per cent., the payment of which I would propose to spread over a period of ten years, being at the rate of one per cent. per annum, the first payment to be made as soon as the necessary legal powers shall have been obtained. In the meantime, should more money be requisite to do the required work than can be collected by the one per cent. per annum, powers may be obtained to borrow on "corporation sewerage bonds," bearing interest at five per cent., and falling due for payment at the respective times (or soon afterwards) when the periodical one per cent. should be in the hands of the bankers. But, on considering the money already spent as part of the present estimates, it will be necessary for me to state how this is to be disposed of. I would first refund to every individual the estimated value to the public of any public sewer or sewers he may have made, or contributed towards making, out of his private purse, and the balance I would return to the present owners of property according to the gross amount contributed on account of such property, under the rating system. This would enable the sewerage levy to be raised almost as if no money whatever had been previously spent.

Since the land in Liverpool is held under various tenures, I would say the "sewerage levy" for any lease, whether under the corporation, Earl of Derby, Earl of Sefton, or the Marquis of Salisbury, having more than twenty years to run, should be wholly paid for by the lessee, and every year below twenty years should be paid for by the lessor—so that if a lease only have ten years to run, the lessor pays the whole of the "sewerage levy."

That portion of land which then remains will be the public thoroughfares, which should pay its portion by a rate to be included in the paving rate.

It appears to me that this plan of making the land pay for its own sewerage is the only perfectly fair method of apportioning the expense; for under the rating system, large tracts of building land will be seweraged, and their value greatly improved, without a farthing of outlay on the part of the proprietors, the expense being borne by tenants and proprietors of houses in other parts of the town. In a sanitary point of view, it is also of great importance, as it involves the principle of draining land *before*, and not *after*, it is built upon.

Journal of Public Health.

LONDON: JANUARY, 1848.

If we are not greatly mistaken, the last month of the year 1847 will form an era in sanitary progress worthy of honourable mention and remembrance. It has opened with an act of salutary vigour which reflects the greatest honour on the Lord Chancellor and the Ministry. Six members of the "Heptarchy of foul waters" have been superseded at a blow, and no less than 671 commissioners have been dismissed amid the plaudits and hearty congratulations of the public, whose underground affairs they had so grievously mismanaged. In their stead, a working commission of twenty-three good men and true, comprising some of the names best known in connexion with sanitary reform, has been appointed, and has lost no time in setting to work. The commissioners held their first general court on Thursday, Dec. 16—Lord Morpeth in the chair; and after some formal business, proceeded to show the metal they were made of. Having agreed unanimously to a suggestion of the noble chairman, that a Bill should be drawn up, to assimilate the powers of the commission in the whole of the districts entrusted to their care, a report was read from Mr. Chadwick and Sir H. de la Bèche, detailing the steps which had been taken to procure a survey of the Metropolis by the Board of Ordnance. This was followed by reports from Messrs. Phillips and Roe, the surveyors, of the progress made in flushing and cleansing cess-pools, by means of the common fire-engine and hose, combined with the use of Sir W. Burnett's disinfecting liquid, at one-sixth the cost of the old method. The surveyors were directed to proceed with vigour in this new course, and to give a preference to the "worst-conditioned streets and places, chiefly occupied by the poorer classes." A committee was also appointed to aid the officers with information. Mr. Byng then drew the attention of the commission to certain neglected localities—especially to a notorious place called Dudley Court, which, it appears, is glebe property, belonging to the Vicar of St. Giles's-in-the-Fields, and where new houses were being run up without any provision whatever for drainage. The commission ordered the clerk to serve notices on the parties under the Act 10 and 11 Victoria,

and to pursue a similar course wherever it might appear necessary. Such were some of the proceedings of the commissioners at their first meeting. There was, on the whole, an air of business about it quite refreshing, when we recollect the slow progress of the superseded authorities; and we entertain the most sanguine expectations that ere many weeks have elapsed, the new commission will have completely established itself in public estimation, as a practical, hard-working body, bent upon reforming all abuses, and conferring on the metropolis the inestimable blessing of a scientific and cheap system of sewerage.

While these things are going on under the vigilant eye and active management of the new commission, the City of London is taking steps to obtain an efficient Bill. On the day following the meeting just referred to, Mr. Deputy Peacock presented to the Common Council a report from the City commissioners of sewers, setting forth that notices had been given of an application to Parliament next session, and that the City Remembrancer had been directed to prepare the draft of a Bill to provide for the sanitary improvement of the city, and for the better cleansing, paving, and lighting the same. We trust that the Legislature will not sanction any measure which for all purposes of a general nature does not virtually bring the exceptional commission into harmonious working with the six consolidated commissions. It will be an unheard-of absurdity to leave so many outfalls under the control of an authority, isolated from those bodies which have the command of the main lines of sewerage. In this, at least, there must be combined action. But the city is evidently heaving under the same wholesome impulse which has stirred the heretofore self-satisfied vestry of Marylebone. The wardmotes have given some significant indications of the movement which is everywhere stirring society, and Mr. Alderman Moon has thrown a new light upon the condition of Portsoken Ward. It appears that the inquest of that ward has presented a report, complaining of the existence of horrible nuisances in several of the lanes and alleys in that neighbourhood, which report was referred to him as alderman of that ward. He had paid immediate attention to the subject, "and he certainly had had to encounter not a little in the revolting adventure, upon which he considered it his duty to go. He was astonished how any human being could contrive to exist

in the midst of such abominations as he witnessed in the performance of the melancholy duty." Such is the invariable report of the eye-witness, and such reports will at length bear down the ignorant opposition of the noisy crew, with whom all sanitary reports are "extravagant humbugs," all estimates and calculations "gross exaggerations," and every practical step taken by Government a "job."

We must not conclude our retrospect of the month without reminding our readers that Lord Morpeth has announced his intention of applying for leave to bring in his promised Sanitary Bill on Thursday, Feb. 10. Let, then, the sanitary reformers be alive and stirring. Now is the time for public meetings; now is the time to pour in petitions from all places and all persons—from the metropolis, the provincial towns, the rural villages—from the clergy and the medical profession—from rate-payers, shopkeepers, and working-men—from insurance-offices, temperance and benefit-societies—in a word, from all to whom their own health, and that of their neighbours, is not a matter of indifference. Let no one forget that the Government requires support; that Lord Morpeth has earnestly appealed to all classes for assistance; and that if the public refuse their aid, the next Session may be as barren of practical results as the last.

WE have received the *Report*, and the *Evidence* taken before the Metropolitan Sanitary Commission, which contains a great deal of matter only hinted at in the Report itself. The evidence of Mr. Austin on pipe drainage, and its application to solving the problem of the low Surrey and Kent district, is one of the most important contributions to the practical part of the sanitary question that has ever come under our notice. It is well known that the great difficulty in all such districts is to obtain a sufficient fall; and the only way which has hitherto been proposed for the purpose has been to make large reservoir sewers, to retain the water during high tide. The sanitary effect of such an arrangement cannot be otherwise than mischievous; and the plan proposed by Mr. Austin is to have a radiating system of pipe-sewers, of small diameter, converging towards a well in a convenient locality of the district; the well to be made of sufficient depth to afford the requisite fall, and the sewerage water to be

raised by steam power, and conveyed away either to a proper outfall, or into the country, for agricultural purposes.

The application of steam-power to the purposes of drainage in towns is certainly new; but there is no reason why it should not be as successfully employed for such purposes as for agricultural drainage. Mr. Austin shows, by calculations, that sewers of a much smaller size would be required, and that the whole expense, including steam-power, would be very much less than that of any other plan that could be adopted in such situations. He proposes to fix the maximum size of pipe at two feet diameter, as being of easy construction, and to apportion such a surface to this pipe as it can drain with the fall available. Suppose the fall from the extreme point to the central well to be only fifteen feet, such pipes would carry away the drainage of half a square mile. In reply to a question as to expense, Mr. Austin says, that "it will not amount to more than one-fourth of the system now pursued in the Surrey and Kent district."

The expense of draining the most crowded locality on this system is calculated at 2*l.* a-house, with an annual charge of 2*s.* for engine power.*

There are very many other points in the evidence deserving notice did our space at present permit; but there is one thing that has struck us, and that is, the progress which has been made in the practical development of the sanitary cause. There is a far greater familiarity with detail displayed in this evidence than in that taken before the last commission of inquiry. The practical talent of the country is being directed to the subject, and with the most promising results; and while we congratulate Mr. Chadwick and the other members of the commission, in having been the means of putting an end to the absurdly divided jurisdictions of the metropolis, we cannot help feeling that they have rendered an equal service to the cause, by having laid before the country so large a mass of valuable materials for thought and for application.

* It cannot but be regarded as a most fortunate circumstance that, at this very time, the Metropolitan Sewage Manure Company is ready to co-operate with the new commission, by pumping away the sewage of the low parts of Westminster, and of the portions of the Metropolis north-west of the Thames; so that we may hope for an early solution of the whole problem of town drainage, and an example on a sufficient scale of the most important engineering novelty of the age. We shall be greatly disappointed, if, in the course of next summer, the sewage of Westminster is not irrigating the market gardens of Fulham.

WE have received from one or two quarters friendly remonstrances on the price of this Journal, for which we tender our best acknowledgments, while we offer an explanation that we trust will prove satisfactory. Most of our readers are aware that the Journal was set on foot by subscription, for there was no fund at the command of the Health-of-Towns Association to meet the preliminary, much less the current, expenses. It was not till after mature consideration that the price of One Shilling was determined upon, and experience has fully justified that step. Though the number of subscribers has greatly exceeded expectation, the preliminary and current expenses have, in at least an equal degree, exceeded the rough estimate originally formed; and we trust that we shall gain credit with our readers for the statement that a reduction of price during the present year would, in all human probability, be attended with a serious loss. If the subscription list and the sale of the Journal shall be found to increase, we pledge ourselves that the subject of reduction of price, or corresponding increase of matter, shall be fairly considered at the end of the year.

WE beg to call the attention of our readers to the handsome offer of a prize of one hundred guineas for the best essay "On the Use of Alcoholic Liquors in Health and Disease," of which the particulars will be found in our advertising sheet. Under the influence of this wholesome stimulus, we trust that a work of real merit will be produced, calculated to advance that important reform in the personal habits of the people which should go hand in hand with the promised improvement in the structural arrangements by which they are surrounded, and through which alone they can be supplied with the best substitutes for spirituous liquors—pure air and water, light, the means of cleanliness, and the much-needed facilities for exercise and recreation.

REMARKS ON THE PROGRESS OF THE CHOLERA.

BY JOHN CHARLES HALL, M.D., M.B.C.S.

WE have little additional intelligence to communicate since the publication of our remarks a month ago, in the pages of this Journal. We are happy to learn that the cholera has ceased in the government of Saratov, after having attacked 18,954 of the inhabitants, and destroyed 9194—a fearful rate of mortality; nearly one out of every two cases.

From accounts that have reached this country, dated December 1st, it appears, that the disease has broken out at Warsaw, and at Slupsce, a frontier village, about fifteen leagues from Posen. The cholera is rapidly declining at Constantinople.

In the *Ausburgh Gazette* of December 4th, there is no account of the progress of the disease at St. Petersburg, from which we are inclined to think a favourable conclusion may be drawn. A rigorous quarantine is kept up by the Swedish and Norwegian authorities; and the same strict quarantine regulations prevail in the Mediterranean ports of Sardinia, Malta, and Naples; the advantage of which is certainly doubtful in reference to a disease which (although we are decidedly of opinion that it is not contagious) can quickly climb up the sides of mountains, and leap over the waters of the ocean, passing with the greatest rapidity from the burning suns of the tropics, to the ice and snows of Russia.

We know, however, that cholera almost invariably first makes its appearance and spreads amongst the habitations of the poor; that it is fed by those pollutions which poison the atmosphere surrounding their abodes, and we therefore are most anxious to insist, that our defence against the ravages of cholera must be found in proper sanitary measures, rather than in quarantine laws. No time ought to be lost; in a few months, perhaps sooner, the pestilence will be in the midst of our towns and cities.

Grove-street, East Retford,
December 24, 1847.

HOMES OF THE LONDON POOR.

BY THOMAS DUNHILL, ESQ., ARCHITECT.

NO. II.—PETTICOAT LANE.

IT is not without misgiving that I address myself to the task of picturing the wretchedness and misery in this notorious pestilence-breathing lane, and the scores of alleys diverging from each other on either side, (extending into Spitalfields,) teeming with pollution to an extent which beggars all description.

Fifty thousand human beings are here cooped up, filthy in habits, debased in morals, oppressed with want, abandoned and reckless—because without hope of relief—the proper subjects of disease and death, engendered by the foulness which pervades the air they breathe, taints the food they eat, the water they drink, covers the ground they walk on, ever clinging to them in close companionship with their persons, their clothing, their bed, and their board.

Mostly ruinous and dilapidated, the dwellings are without a single redeeming quality; no ventilation! no drainage! occupied exclusively by Jews and Irish of the lowest class, the eye seeks in vain for an "oasis in the desert," a clean spot amidst this scene of squalid poverty and dirt. In festering hillocks at the entrance, or strewn upon the surface of these alleys, lie vast quantities of putrefying

animal and excrementitious matter, gradually liquefying by admixture with the foul water from the dwellings, some portion perchance wending its noisome course to a distant gulley, and escaping there; but more usually remaining to form a stagnant pool, ankle deep, exhaling into the air a stench so disgusting to the sense, that these distressed creatures, having endeavoured in vain by closing their doors and windows, to exclude it from their abodes, are impelled by sickness and nausea to rush in despair to the gin-palace, and drown the fumes of filth in those of alcohol.

The refuse is of the most offensive description, and peculiar to this haunt of plague and fever, on account of the Jew population, feeding almost entirely upon *flat fish*; immense deposits of the entrails of which accumulate before the doors of those who purvey it, while that which has become stale and rotten is got rid of, by distributing it in the alleys and courts least likely to come within the province of the scavenger. The animal food I observed exposed for sale was uniformly of the worst description, the veriest offal of the Aldgate shambles, diseased, putrescent, both cheaper and even worse than horseflesh. Unfit for dogs to eat, it should have been destroyed, yet hunger impelled these poor creatures to purchase that which I could not look on without disgust.

In that portion of this colony of sties which is bounded on the north by Raven-row, on the east by Commercial-street, on the south by Whitechapel and Aldgate, and on the west by Houndsditch, (not half its entire extent,) I enumerated in my visits no less than one hundred and twenty-four alleys and lanes, abutting on each other, the ramification of which only a plan could describe, but a brief account of a few will convey some notion of the whole:—

Love Court consists of about sixty houses in the most neglected state of repair, nothing having been done for years; a deep channel is cut in the centre, into which the inhabitants throw their refuse; there is no drainage whatever, and one half of the lane is never visited by the scavenger, consequently in a dreadful state of accumulated filth, while the other half is partially cleansed three times a week, for which boon each house pays 1½d. per week (about 4s. in the aggregate!) and this is demanded in the most arbitrary manner, under threat of leaving them uncleansed. *No water is laid on for the supply of any of the houses on one side of the lane*, the occupants being compelled to resort to a pump; upon drawing some water from which, I was horrified to find it *full of maggots*, (its general state) arising from the impure and stagnant condition of the well, so that it is only used by compulsion—i. e., if they cannot beg or steal it from their neighbours. What marvel, then, that typhus and scarlet fever exist to an alarming extent, and that death is an almost daily visitor?

A magistrate of Middlesex and a rich Jew are

the chief owners, and divide somewhere about five hundred pounds a year between them, as the rent of *Love Court*.

Boar's-Head Yard—includes fourteen houses built back to back; in each room seven or eight persons live and sleep; the atmosphere is peculiarly close and oppressive, and the dwellings generally filthy. One stand pipe only is provided for supplying water to the entire inhabitants, and no outlay has been incurred within the last twelve months. Upwards of a hundred pounds per annum are collected from the poor tenants, which are enjoyed by the proprietor in that delightful suburb, St. John's Wood, where he can breathe the most fresh and fragrant air in the neighbourhood of the metropolis.

Little Love Court consists of twelve houses, with two rooms each, is without any drainage whatever, and frequently under water, the accumulations from the dwellings. There is only one pipe for the supply of water, and the privy is in a most offensive state. A hundred guineas per annum are collected from the inhabitants, who pay it to a resident, acting on behalf of the landlord.

Back Alley is a horrible place, inhabited by Irish; malignant fever pervades every dwelling; it is shunned as a pestilential hole, even by the wretched denizens of the adjoining lanes, to whom disease is so familiar. Several were lying dead at the time of my visit, and the medical officer had fallen a sacrifice to his humane endeavours to relieve the miserable sufferers.

The lord mayor has at length directed the whole of the houses in this plague spot to be razed to the ground.

Three Tun Alley is ten feet wide, and numbers about twenty houses, which are literally crammed with human beings; *one, two, and three families dwell in a single room!* whose filth is collected and heaped up at the end or entrance, from whence it is removed three times a week. These accumulations are enormous, consisting chiefly of stale and decayed offal, the refuse of a hundred fish shambles, this being a favourite place of deposit with the dealers in Petticoat Lane.

Bull Court has a population of about four hundred souls, *who have no means of obtaining a drop of water* but by begging it of their favoured neighbours. Nearly as many pounds per annum are pocketed by the landlord, who is a large owner of this class of property.

Cobb Court has no other than surface drainage. Vast accumulations of fluid filth occur. The scavenger attends but once a week, and the tenants declared the nuisance an intolerable affliction, that their earnest and oft-repeated complaints were disregarded, and that they must soon abandon the place. A cart-load of rotten offal, giving out a disgusting stench, was lying there at the time of this visit, and I was assured it would be increased tenfold ere the day for its removal came round.

Stoney Lane is but eight feet wide, and includes

about forty houses, three or four stories high, containing six or eight rooms, and forty or fifty inmates to each house. The dwellings are very dilapidated and dirty; there is no circulation of air, *no drainage, and no privies or water-supply whatever for one side of the lane.* The population does not fall far short of a thousand souls, and the rental amounts to many hundreds per annum.

Diana's Buildings is a court eight feet in width, having six houses on either side, and there is no drainage. The privies are situated at one end, and are emptied once in three years. It is the custom of the landlord (Mr. Harris, of Hatton Garden) to cleanse and whitewash the dwellings whenever a change of occupants occurs; his reward is, that few deaths take place, and the cases of fever are nearly as rare.

Thus over-crowded in the most extraordinary manner, with gaunt starvation, pale disease, and grim death stalking in the midst, thousands upon thousands of these abject specimens of poor humanity are entombed alive in dens scarce fitted for the inferior animals they but too nearly resemble in their habits and influences; every ray of what is divine in man or charming in woman extinguished, every tie of social brotherhood snapped asunder, the remnant of intelligence they possess is only exerted in devising expedients for the gratification of the worst passions and most degrading impulses.

The statistical tables of the Health-of-Towns Association show, that every year, nearly one thousand lives are sacrificed in this (Whitechapel) district unnecessarily—i. e., from neglect of sanitary measures, involving an absolute pecuniary loss in sickness, funerals, and labour, of upwards of one hundred and fifty thousand pounds per annum; the duration of life including children is only 26 years, and one female in 24 dies annually; an awful amount of mortality scarce equalled perhaps in Portugal or any other misgoverned country; and this, be it understood, is *the average*, including all the better portions of the district.

The subject of this sketch is by no means the worst example of the "Homes of the Poor" within the City of London, the metropolis of the world. Glowing with enthusiasm and pride, the chronicler tells of the magnificence of its palaces, the grandeur of its cathedrals and public edifices, the liberality of its institutions, the spaciousness of its streets, and fair and stately squares; of the cornucopiæ ever pouring their treasures into its markets; the profuse and splendid hospitality of its Mansion-house, the wealth and enterprise of its merchant-princes; ingenuity is racked to portray its gold, its glitter, and its sweetness; to dazzle the eye, and charm the sense; but "Look on this picture and on that," which shows in one comparatively little spot, (and there are many such in London,) *three thousand dwellings* but imperfectly described, from which a rental of *twenty thousand pounds* is realized every year, and peopled with *fifty thousand* beings

fashioned after the image of God, but conceived, born, bred, and dragging out their shortened span amidst the filth of corruption, and pinched by the iron grip of hunger, until "The Fever" terminates an unnatural career of benighted ignorance, foul immorality, shameless immodesty, and dark deeds of crime.*

North Brixton, Dec. 7, 1847.

Loss occasioned by Preventible Sickness and Mortality.

(Founded on Returns of Registrar-General, 1841.)

COUNTY OF LANCASTER.

The returns for this county were from twenty-one Registration Districts, containing a population of 1,725,750. Some of the districts are almost entirely rural, and others comprehend the great manufacturing and commercial towns of the county. The former are remarkable for their favourable sanitary position, while the latter exhibit specimens of almost every possible defect in structure and management, and the results are very clearly shown in their effect upon the health of the people. In the two most healthy districts, comprehending Ulverston, the Fylde, Garstang, and Clitheroe, the deaths were 1 in 56 of the entire population; in Warrington, Wigan, Leigh, and Prescott, they were 1 in 42; in Manchester, 1 in 33; and in Liverpool, which stands lowest in the scale, 1 in 30.

It is an observed fact, that causes of disease act with most intensity in infancy and childhood, and hence the infantile mortality becomes *cateris paribus*, an index of sanitary condition. Thus the deaths under five years vary from 24 per cent. of *all the deaths*, in the most healthy districts, to no less than 52 per cent. in Liverpool; and if we take the other extreme of life, we find that while above 29½ per cent. of the deaths are above 70 years of age in the Ulverston district, about 7 per cent. only die above the same age in Manchester, and 5½ per cent. in Liverpool. The average age at death varies from 41 years and 8 months in the healthiest district, to 20 years and 5 months in Liverpool, and assuming that the most healthy district is the type of highest attainable sanitary condition, we find the loss of life to each individual born varying from about 8 years at one extreme, to 21 years and 3 months in Liverpool, and for every adult the loss varies from about 4½ years to 12½ years also in Liverpool. The number of adults dying prematurely in Liverpool is 94 to every 10,000 of the population, or nearly double the corresponding mortality in the Ulverston district. The number

* Since writing the above, the attention of the corporation has been directed to this locality, and the report of the worthy alderman for the ward (Portsoken,) couched in the strongest confirmatory terms, encourages the hope that preparatory measures will be speedily adopted to mitigate, in some degree, the evils I have endeavoured to expose.

of all classes killed by epidemic, endemic, and contagious diseases, which are directly connected with bad sanitary condition, was 75 out of every 10,000 of the population in Liverpool, or nearly six times as large a proportion as in Ulverston.

The excess of sickness and mortality occasions great pecuniary loss. This sick and death tax is levied—

First—In the expenses attendant on sickness, which amount to 398,944*l.*

Second—The expenses of excess of funerals, 71,240*l.*

Third—In loss of productive labour, 3,610,811*l.*—making a total loss to the county from preventible excess of sickness and mortality of no less than 4,800,995*l.* per annum.

LODGING-HOUSE FEVER.

THE following answers to queries addressed by the Rev. Mr. Owen, chairman of the Wolverhampton Union, to the medical officer, are of great importance, and demand the careful consideration of all persons engaged in the relief of the poor.

SIR,—In answer to the annexed queries, I beg to return the following answers :—

Query 1. About how many cases of fever have left the house cured, returned to their lodging-houses, and been brought back with fever to the Union-house ?

Answer. About five in every ten, from the 1st of January to the middle of May, when in consequence of the lodging-houses having become less crowded, from the fact of vast numbers of the Irish labourers having gone into the country for harvest work, &c. the fever evidently diminished; the number returning after that period only being two in ten up to the middle of July, when the lodging-houses again became crowded by large numbers of Irishmen, having come over from Ireland for the purpose of reaping; but owing to their places being pre-occupied by those parties that had previously gone out in May, they began to suffer from the effects of want and over-crowded abodes. The fever then spread rapidly, and from that time up to the present, almost every man returns a *second or third time to the Union-house.*

Query 2. About what proportion of disease and pauperism, as compared with any average part of Wolverhampton, comes from Cribby Island.

Answer. The number removed from various parts of the town to the Union-house for the last nine months, has been about 1400, out of which nearly a thousand have come from Cribby Island and the adjacent districts (it must be observed that the inhabitants of Cribby Island are migratory). The population of the town of Wolverhampton is about 40,000, that of Stafford-street district being nearly 1400.

Query 3. What is the total number of fevers and other maladies actually caught in the Union-house,

notwithstanding its more commodious and well ventilated condition, by parties previously in a good state of health ?

Answer. The average number has been about two in fifty, for the most part occurring in parties superintending the sick by washing and purifying their clothes. In general, fevers rarely make their appearance in the Union-house.

Query 4. Are tramps, in your experience, generally healthy ?

Answer. In the summer months LITTLE disease prevails amongst them, from the fact of their being able to sleep in barns, and other well ventilated places; but in the winter months, the greater part of the sick admitted into the Union-house are from the tramp ward, they being then compelled by the cold weather to seek shelter in crowded lodging-houses, thereby engendering fever.

Query 5. Are paupers from country villages generally healthy ?

Answer. Yes; so also are tramps from the country, such as navigators, and other English labourers.

Query 6. Is there any domestic cause to which you can ascribe the extensive prevalence of bad legs among applicants for relief, and the labouring classes generally ?

Answer. From my experience, I should state that bad legs are not prevalent amongst men employed in out-door labour, except from mechanical injuries, whilst almost all the paupers admitted into the Union-house following the occupation of locksmith, &c., are afflicted with constitutional sores on the legs, arising, in my opinion, from the nature of their occupation, being compelled from early life to stand at the vice in ill-ventilated shops, and by the use of ardent spirits producing varicose veins, which in the latter period of life terminate in constitutional sores.

G. T. COOPER, Surgeon.

Snow Hill, Wolverhampton.

Correspondence.

To the Editor of the "Journal of Public Health."

SIR,—The important appeal of Mr. Austin to the obvious interests of Life Insurance Societies, given in your last Journal, has suggested to me the importance of bringing the matter before the Friendly Societies, Lodges, and Sick Clubs, in use amongst the labouring classes. I doubt not that your pages are read by many influential members of such associations. To these parties, I do not hesitate to say, that if the principles of sanitary reform are thoroughly carried out, so largely will the amount of sickness be diminished, and the length of life amongst their members increased, that many of their clubs, now actually insolvent, will become capable of meeting their engagements, whilst those which are constructed on the plan laid down by Mr. Beecher, will find themselves in a condition either to reduce the payments made by their members, or to give them a very large bonus on their respective in-

surances. Thus every man who pays into any club or lodge whatsoever has a direct personal pecuniary interest in the progress of sanitary reform. Let all, therefore, exert themselves vigorously in promoting its success. And let the parochial clergy, and others familiar with the hardships of the poor, who daily meet with the case of sick getting no relief from clubs into which they have paid for years, hail with joy and forward with hearty good-will the only prospect, and a most promising one, of seeing many such institutions most unexpectedly rendered capable of answering all demands.

Very truly yours,

CHARLES GIRDLESTONE.

Kingswinford Rectory, Dudley,
December, 1847.

Vital Statistics.

AN ABSTRACT OF THE LONDON TABLES OF MORTALITY.

CAUSES OF DEATH.	For five weeks ending					Weekly average of Autumn.
	Nov. 20th.	Nov. 27th.	Dec. 4th.	Dec. 11th.	Dec. 18th.	
ZYMOTIC DISEASES.....	344	415	638	783	629	211
DISEASES OF BRAIN, NERVES, &c.....	132	174	231	177	178	157
DISEASES OF RESPIRATORY ORGANS.....	293	634	994	913	657	333
DISEASES OF HEART, &c.....	30	52	77	50	52	34
DISEASES OF DIGESTIVE ORGANS.....	86	96	113	114	79	74
Small-pox.....	26	29	27	22	17	15
Measles.....	76	96	89	69	75	36
Scarlatina.....	69	49	63	45	36	44
Diarrhoea.....	24	29	28	25	29	17
Fever.....	92	91	136	140	134	38
Hooping-cough.....	24	44	65	71	36	32
Influenza.....	4	36	198	374	270	3
Bronchitis.....	61	196	343	299	234	39
Pneumonia.....	95	170	306	294	189	109
Phthisis.....	108	153	198	192	148	134
ALL CAUSES.....	1086	1677	2454	2416	1946	1046
Mean temperature.....	40°7	46°5	47°9	46°7	48°0	..

The six weeks, which close the present year, will be unfavourably remembered for an extraordinary amount of sickness and death in the abodes of men. The above statement shows that an epidemic, which still prevails, but is happily on the decline, obscure in its origin, but acknowledged in its effects, whether produced by change of temperature, excess of moisture, or a *vis contagionis* which science is not able to detect—destroyed in a month 4309 of the population of metropolitan districts. In an average state of the public health, 4184 persons would have died; during four weeks of influenza, 8493 have ceased to live, an amount of loss by death which there is reason to believe is greater than can be remembered by the oldest inhabitant within the bills of mortality. This disease, as an epidemic, visited London in 1733, 1833, 1837, and in 1782, 1788, (and perhaps other years) but at the last two periods apparently with inconsiderable effect. So far as an opinion can be formed from the defective records of previous years, it has been more fatal at the present time than at any former period, the comparison being made with due regard to population, though the mortality of a single week in 1733, appears to have been greater than in any week of recent experience. In the present returns, the rapid increase is principally attributed to influenza *proper*, fever, hooping-cough, bronchitis,

pneumonia, and affections of the lungs generally; but besides these, the epidemic has taken advantage of other denominations of disease, which it found in a state of progress, and pressed into the service. A glance at the details of influenza proves how many cases of long-standing asthma and disease of heart have received a new and quickening impulse; and where it is not specially named, the increase of mortality under these heads shows that the same agency has been at work. The registration of the English counties, when the results are obtained, will prove by comparison, whether the force of the disease, in accordance with the ascertained law of other epidemics, has been aggravated by circumstances peculiar to town populations; and to what extent this effect has been produced. The following table exhibits the rise and fluctuations of the mortality, and gives the means of obtaining the relative increase in various districts. For example, the increase on former weeks of the quarter was, in Lewisham 50 per cent.; in St. Pancras 92 per cent.; in Hackney 100 per cent.; in Marylebone 117 per cent.; in Shoreditch 121 per cent.; in Islington 157 per cent.; in Rotherhithe 175 per cent.

RETURN OF DEATHS, in the Weeks ending

Population 1841.		Nov. 13th.	Nov. 20th.	Nov. 27th.	Dec. 4th.	Dec. 11th.	Dec. 18th.
1,948,425*	London.....	1098	1086	1677	2454	2416	1946
300,711	West Districts.....	173	180	179	300	332	273
375,971	North Districts.....	215	167	267	422	482	415
373,653	Central Districts.....	210	205	319	530	458	314
392,444	East Districts.....	221	262	504	602	463	371
501,190	South Districts.....	279	272	408	600	681	573
74,779	Kensington.....	46	47	43	61	91	57
40,179	Chelsea.....	26	22	31	39	57	52
66,552	St. George, Hanover-sq.....	23	36	32	44	56	44
56,712	Westminster.....	44	43	43	99	66	71
25,091	St. Martin-in-the Fields.....	17	18	11	27	25	15
37,398	St. James, Westminster.....	17	14	19	30	37	34
138,164	Marylebone.....	80	52	103	141	155	156
139,856	Pancras with Hampstead.....	88	73	94	164	210	150
55,690	Islington.....	34	28	40	80	74	73
42,261	Hackney.....	13	14	30	37	43	36
54,292	St. Giles and St. George.....	25	28	49	49	64	61
43,598	Strand.....	23	19	35	44	37	32
44,461	Holborn.....	34	30	28	93	56	47
56,756	Clerkenwell.....	39	33	42	77	75	47
49,829	St. Luke.....	30	25	35	68	52	26
39,655	East London.....	26	29	51	75	48	26
29,142	West London.....	17	21	39	64	61	40
55,920	City of London.....	16	20	40	60	65	35
83,432	Shoreditch.....	36	50	85	111	118	94
74,088	Bethnal Green.....	33	48	103	124	90	78
71,765	Whitechapel.....	69	53	113	134	88	78
41,350	St. George in the East.....	23	37	84	82	54	43
90,687	Stepney.....	41	56	98	115	88	54
31,122	Poplar.....	19	18	21	36	25	24
32,975	St. Saviour.....	24	24	28	57	60	43
18,479	St. Olave.....	14	21	37	39	38	21
34,947	Bermondsey.....	22	33	35	49	66	36
46,644	St. George, Southwark.....	43	30	55	65	64	66
54,606	Newington.....	33	26	40	66	92	65
115,888	Lambeth.....	52	63	83	117	135	128
39,868	Camberwell.....	10	12	30	52	51	38
13,917	Rotherhithe.....	8	8	19	32	24	12
80,997	Greenwich.....	55	34	59	98	105	112
39,855	Wandsworth.....	7	13	16	19	31	32
23,014	Lewisham.....	11	8	6	6	15	20

* Includes 1366 men on river, and 3090 police on duty.

“WHAT THE ROMANS WOULD HAVE DONE.—The old Romans had their *Ædiles*, who would, I think, in direct contravention of supply and demand, have rigorously seen rammed up into total abolition, many a foul cellar in our Southwarks, St. Giles's, and dark poison lanes; saying sternly, ‘Shall a Roman man dwell here?’—*Past and Present.*”

Literary Notices.

The Manual of Public Health and Domestic Economy.
Part 1. Pp. 128, and 29 woodcuts. Published by the Metropolitan Working-classes' Association for Improving the Public Health.

It is highly satisfactory to find that the working classes, who are the great sufferers from the want of efficient sanitary regulations, are taking an active part in the furtherance of the public health cause. The Manual before us, issued by the London working men, is one of the most practical publications that has been sent from the press. It contains in a remarkably small compass all the most approved views that have been advanced upon the important subjects of which it treats. The opening address plainly shows that the enormous amount of disease and misery at present afflicting mankind may be prevented, and it briefly points out the grounds we possess for arriving at this conviction, and the means to be adopted for the realization of this all-important object. The article on the ventilation of rooms, houses, workshops, &c., is a most admirable exposition of the necessity and practicability of affording a supply of fresh air to all inhabited places, and of carrying away the impure air which is always generated within them. "Bathing and Personal Cleanliness," after a description of the structure of the skin, aided by woodcuts, points out the simple means to be adopted for bringing it into a healthy and cleanly state both in children and adults. "Drainage and Sewerage" shows in a masterly way the enormous evils arising from want of efficient measures, and it demonstrates how easily and economically, by the tubular system of drainage, these evils may be removed. "Household Cleanliness," "Water Supply," "Exercise and Recreation," and the "Training and Rearing of Children," are the names of the other articles in the first part of the Manual, and we can recommend each as a most philosophical and practical exposition of the subject upon which it treats. We are glad to find that the public appreciate the value of this publication. It appears that 20,000 copies of some of the separate articles, published in the shape of tracts, have been issued, and several societies are now about to republish them for their own use, with permission from the parent association. The first edition of the Manual, although only published two or three months since, has been sold, and a second is just out.

Ventilation Illustrated; a Tract for the Schools of Rich and Poor. Pp. 36. John Churchill, Princes-street, Soho; and B. Wertheim, Paternoster-row.

THIS tract has been issued by the committee of the Samaritan Fund of the St. George's and St. James's Dispensary, London; the first charitable committee, so far as we know, that has realized the duty of preventing disease among the poor, as being equally binding with that of curing disease.

The tract is profusely illustrated with wood cuts, so as to make the subject of ventilation and its principles as familiar as possible. It explains generally the anatomy of the lungs and blood-vessels, and shows why fresh air is constantly necessary for the preservation of health, and how it is that neglect of ventila-

tion engenders disease. It points out a variety of simple means for renewing the air in houses, workshops, churches, chapels, and other apartments, and concludes by an appeal on behalf of their adoption. The tract is clearly and simply written, and contains just such information as is required by the public on this important subject.

An Address to the Inhabitants of St. James's, Westminster, on certain Local Circumstances affecting the Health of Rich and Poor. By A Retired Churchwarden. London: James Ridgway.

THIS is a pointed and well-written address on the sanitary condition of one of our fashionable West-end parishes. Any one who will be at the trouble of reading it will soon be convinced, if he had any previous doubt on the subject, that the poor are not the only sufferers by the existing neglect of sanitary measures.

Everywhere there is the same want of legislative interference, the difference is only in degree. In the immediate neighbourhood of the most aristocratic mansions in London are disgusting and dangerous nuisances, infecting the air and injuring the health of all within their influence. After enumerating the various sources of atmospheric impurity in the parish, the author cautions the higher classes to beware of imagining that they are safe, merely because their eyes and noses may not be so much offended as those of their poorer neighbours; and he tells the rich man that his "weakly child may often be regarded as the index to hundreds of previous sufferers who have passed through, and it may be, died under the same affliction." We trust the argument will have its due weight, and that it will enlist persons of wealth and influence in the cause of public health.

THE TIME FOR REFORM.—Now is the time to grapple with the hydra of corporate selfishness and vested interests. It is all very well to talk of the sacredness of vested interests, but vested interests that poison or help to poison the air, the food, the drink of two millions of people, and chronically vitiate and enfeeble them, till, under a certain condition of the atmosphere, they perish at the rate of 2500 a week, must give way, if they were ten times as sacred.—*The Morning Chronicle, on the High Mortality of London.*

Meetings of the Health-of-Towns Association.

A Preliminary Meeting of the committee of this association, and of the more immediate friends of sanitary reform, was held in the rooms of the Statistical Society, St. James's-square, on Friday, the 10th ult., at four o'clock, p.m., the Hon. F. Byng in the chair. The following noblemen and gentlemen, members of the committee, were present:—Lord Ashley, M.P.; Lord Ebrington, M.P.; R. A. Slaney, Esq., M.P.; W. A. Guy, M.D.; R. D. Grainger, Esq., F.R.S.;

J. W. Tottie, Esq.; Joseph Toynbee, Esq., F.R.S.; N. H. Black, Esq.; Charles Gatliffe, Esq.; N. H. Hyett, Esq., F.R.S.; John Dunlop, Esq.; F. D. Goldsmid, Esq.; Thomas Dunhill, Esq.; R. B. Grantham, Esq.; Dr. Aldis, Dr. Hector Gavin, Dr. Barnett, Richard Aulsebrook, Esq., &c. &c.

The following gentlemen from the provinces were in attendance, many of them as deputations from local associations:—Mr. Alderman Smith, Mr. Councillor Poppleton, and Mr. J. A. Cowper, town clerk, from Bradford, Yorkshire; Rev. J. B. Owen and Dr. Dehane from Wolverhampton; Dr. Baker from Derby, who was deputed by the corporation and board of guardians of that town; Dr. Gill from Nottingham; William Lee, Esq., C.E., from Sheffield; James Heywood, Esq., M.P., from Manchester; Dr. Fergus from Stafford; Dr. Bowring, M.P., from Bolton; and Dr. Robinson from Newcastle-upon-Tyne.

Dr. Guy stated briefly the objects of the meeting. It was thought advisable that preliminary to the anniversary meeting, the committee should have an opportunity of conferring with those friends from the country who had intimated their intention of being present the next day, as to the best means of promoting the objects of the association.

Dr. Guy then entered into some details as to the efforts of the association since its commencement. 75,000 copies of various publications had been issued; numerous lectures had been delivered by Mr. Grainger, Mr. Toynbee, and himself, and by other members of the association in town and country, several of which had been followed by the formation of branch associations and health committees in some of the most important towns in the kingdom.

Towards the end of the last and beginning of the present year, the association had redoubled its efforts. With the same object, that of diffusing information, they had published a weekly sheet of facts and figures, with the view of circulating information in such a form as would give facilities for the newspaper press to copy out some of the most striking facts bearing on the subject. This effort having been continued for upwards of half a year, and having answered the purposes contemplated, was then discontinued.

In order further to carry out these objects, the committee, after full consideration, had recently engaged the services of a paid agent, Mr. Thomas Beggs, who had previously been employed in another public institution, and was now engaged as the acting secretary; and he was sure he was only stating the feelings of the committee, when he said that the way in which that gentleman had conducted the business of the association during his short connexion with it had fully justified the step they had taken.

Dr. Guy also referred to the exertions made by the committee in procuring petitions, and in influencing members of Parliament in support of the cause; and feeling that renewed efforts were necessary to secure the success of sanitary reform, the committee had resolved on the publication of a monthly Journal of Public Health by subscription. A liberal response had been made to their appeal, and he doubted not that that Journal, as a permanent organ of public opinion, would render much good service to the cause. Dr. Guy, in conclusion, said that this must

not be considered as a formal report, but merely as information thrown out to elicit suggestions from parties present from the country.

The Chairman then read the resolutions which had been prepared for the meeting of the following day; upon which an interesting conversation followed on the important step taken by the Lord Chancellor in superseding the several commissions of sewers, Dr. Guy, Lord Ashley, Dr. Bowring, and Dr. Baker, all expressing their approbation of the step, and hailing it as an earnest of other practical steps in the same direction. It was also stated that this step had been received with the most marked public approbation.

The Rev. J. B. Owen stated that he had recently delivered lectures in several towns, and from what he was able to gather of the opinion abroad, the Government would have no difficulty in carrying a sanitary measure. He then read a series of questions submitted by him to the medical officer of the Wolverhampton Poor-Law Union, and the answers received, and urged the necessity of stringent regulations as to mendicity and lodging-houses for itinerants. He also suggested the desirableness of the secretary addressing all the boards of guardians, requesting them to take copies of the Journal.

Dr. Baker, of Derby, said he had been engaged in preparing an exposition of the calamities and expenses arising from common lodging-houses, and that he was authorized by the corporation and the poor-law guardians of Derby to say, that they were prepared to follow up the course adopted the last session, by petitions to the Legislature.

Mr. Hyett, of Painswick, concurred in opinion that it was desirable to apply to the boards of guardians to take the Journal, and also to supply statements as to the sanitary state of their localities.

Mr. Joseph Toynbee urged the necessity of licensing lodging-houses, and also encouraging men of capital to invest their money in building houses for the poor. From the experiments already made, it was evident it might be done with great profit to themselves.

The gentlemen from Bradford said that the corporation of that town were ready to do all they could in furtherance of the sanitary cause.

Mr. Aulsebrook urged the necessity of increased exertions on the part of the association.

Dr. Guy stated that the efforts of the association had been limited, owing to the small amount of funds with which they had been entrusted, and hoped that efforts would be made to help the committee in their recent renewed appeal for pecuniary aid.

James Heywood, Esq., M.P., considered that it was the duty of Government to appoint commissioners to instruct the boards of guardians and local authorities on the subject.

Dr. Dehane referred to the inefficiency of the late act for the summary removal of nuisances, and thought it desirable that the public should be made acquainted with the provisions of the proposed Sanitary Bill as early as possible.

Mr. N. Lee, of Sheffield, suggested that the secretary should be instructed to make inquiries as to the existence of nuisances and seats of disease, more especially in those towns where branch associations

did not exist; and he related a remarkable instance in which malaria had been generated and fever produced in an elevated situation by causes supposed to exist only in low and undrained districts.

Mr. N. H. Black referred to the practice of interring the dead in towns, and suggested the expediency of interments at sea.

Mr. Tottie stated that it was impossible to ascertain the provisions of the new Bill until it was introduced into the House of Commons.

Dr. Guy wished to remove an impression that appeared to exist in some quarters, that this association had an immediate connexion with Government, such not being the case.

Dr. Fergus stated, that an association had recently been formed in Stafford, that lectures were delivered fortnightly, and publications distributed.

Dr. Gill, of Nottingham, stated that an association had been formed in that town, and that the corporation were now taking up the subject of nuisances, and were about to carry out several improvements.

Mr. F. D. Goldsmid was desirous of warning the gentlemen present and the public generally, that the measure was not yet passed; that the most strenuous exertions would be required to aid the Government in their endeavours to pass an efficient sanitary measure. The same sinister influences which had opposed former efforts, would no doubt be again at work, and would require considerable and united action on the part of the friends of the cause to counteract.

Mr. Tottie, in confirmation of this statement, read an extract of a letter, addressed by Lord Ebrington to a part of his constituents at Plymouth, in which he says:—"Unless the enactments of Parliament are carried out with zeal and intelligence by the local authorities, supported by the public opinion of the inhabitants, they will produce comparatively small results."

The Chairman then said, that he begged leave to express his thanks, and those of the committee, to the gentlemen of the several deputations from the country for their attendance, and the many valuable suggestions with which they had favoured the meeting. The cause they had met to promote was one in every way deserving the utmost attention of rational beings, and the public generally had as yet no conception of the wretched state of places, even within 200 yards of that in which they were now assembled, and oftentimes in the possession of men of high position and large property. The meeting then separated.

ANNIVERSARY MEETING, held in the Hanover-square Rooms, Dec. 11, 1847—Marquis of Normanby, President of the Association, in the chair; supported by Lord Ashley, M.P.; W. A. Mackinnon, Esq., M.P.; the Hon. F. Byng; Wm. Ewart, Esq., M.P.; A. S. Adair, Esq., M.P.; the Right Hon. E. Ellice, M.P.; E. Cardwell, Esq., M.P.; Lord Ingestre, M.P.; R. A. Slaney, Esq., M.P.; H. Tuffnell, Esq., M.P.; General Tanner, M.P.; James Heywood, Esq., M.P.; W. G. Craig, Esq., M.P.; M. T. Baines, Esq., M.P.; the Earl Fortescue; C. Fortescue, Esq., M.P.; Henry Suffield, Esq.; the Right Hon. the Earl of Mulgrave; Hon. E. P. Bouverie, M.P.; Sir Charles Lemon, Bart., M.P.; R. Palmer, Esq., M.P.; Dr. Bowring, M.P.; T. E. Head-

lam, Esq., M.P.; J. Parker, Esq., M.P.; Lord Ebrington, M.P.; C. P. Greenfell, Esq., M.P.; Sir Thomas Birch, M.P.; Rev. J. C. Blair Warren; R. D. Grainger, Esq.; Sir I. L. Goldsmid; David Salomons, Esq.; F. H. Goldsmid, Esq.; Dr. Southwood Smith; Dr. Guy; Dr. Aldis; Rev. E. Pizey, M.A.; J. W. Tottie, Esq.; John Dunlop, Esq.; Henry Austin, Esq.; Mr. Halcombe Marlborough; Drs. Duncan and Watson of Liverpool, and Dr. J. C. Hall.

In the body of the hall we saw the Rev. R. Jelf, D.D., Principal of King's College, the Rev. Dr. Major, Head Master of King's College, the Rev. J. Fearnley, &c.

Apologies were received from Lord John Russell; Duke of Buccleuch; Lord Shelburne; Bishop of Norwich; Lord Morpeth, M.P.; Sir B. Hall, M.P.; Sir W. Clay, Bart., M.P.; C. Lushington, Esq., M.P.; Mr. Bright, M.P.; Mr. G. Thompson, M.P.; Mr. H. G. Ward, M.P.; Mr. Grey, M.P.; the Hon. W. Cowper, M.P.; Mr. Brown, M.P.; Mr. Marshall, M.P.; Mr. H. Currie, M.P.; Mr. Broadley, M.P.; Mr. Bramstone, M.P.; Charles Dickens, Esq.; Dr. Bullmore, Truro; James Simpson, Esq., Edinburgh; John Glyde, Esq., Ipswich; E. D. Devitré, Esq., Lancaster; James Orwin, Esq., Worcester; Rev. W. W. Champneys, Whitechapel; C. Bray, Esq., Coventry; George Rigden, Esq., Canterbury; Rev. J. B. Owen, Bilston; Rev. W. J. Odgers, Plymouth; H. Duncalfe, Esq., Walsall; Dr. Jenks, Brighton; Samuel Wood, Esq., Salop; R. L. Carpenter, Bridgewater; Dr. Laycock, York; Rev. J. Clay, Preston; Dr. Robertson, Birkenhead; G. Dawson, Esq., Birmingham; James Russell, Esq., do.; H. W. Rumsey, Esq., Gloucester; P. H. Holland, Esq., Manchester; L. Heyworth, Esq., Liverpool; Dr. Baker, Leeds; Dr. Sutherland, Liverpool; Wm. Long, Esq., Bath; J. R. Coulthart, Esq., Ashton-under-Lyne; and Dr. Alexander, Halifax.

We regret that want of space obliges us to omit the speeches made on this occasion, and to restrict ourselves to the resolutions, with the names of the movers and seconders.

First resolution, moved by Lord Ashley, seconded by Dr. Guy.

"That the vast amount of disease always prevailing—greatly augmented during the past and present years, and likely to be still further increased by the visitation of the cholera—and proved by successive Government commissions, as well as by recent local investigations, to exist in every part of the empire, in connexion with causes admitting of removal—renders it imperative that sanitary legislation should be immediate, and as universal as the evil it seeks to remedy."

Second resolution, moved by Mr. Bouverie, M.P., and seconded by Mr. Cardwell, M.P.

"That this meeting regards with lively satisfaction the earnest recommendation contained in the speech from the throne; the expressed determination of Her Majesty's advisers to renew the efforts made by Lord Lincoln and Lord Morpeth in former sessions of Parliament; and the practical step taken by the Lord Chancellor in remodelling the Metropolitan Sewers Commissions."

Third resolution, moved by Mr. Shafto Adair, M.P., and seconded by Mr. Heywood, M.P.

"That all past experience, and the nature of the case, enforce the necessity of combining in any sanitary measure an efficient local administration responsible to

the ratepayers, with the superintendence of a government department duly represented in parliament."

Fourth resolution, moved by Lord Ebrington, M.P., and seconded by Mr. M. T. Baines, M.P.

"That although great exertions have been made by sanitary associations, ably seconded by the press, to arouse the public mind to a sense of the evils (physical, economical, and moral) which affect all classes, but especially the poorest, much ignorance and apathy still remain; and that this meeting, while it pledges itself to aid the Health-of-Towns Association in the efforts now making for their removal, would especially call upon the clergy and members of the medical profession to exert their powerful influence in furtherance of this great object."

Fifth resolution, moved by Mr. Slaney, M.P., and seconded by Dr. S. Smith.

"That the thanks of this meeting be respectfully tendered to the most noble the Marquess of Normanby for his able and impartial conduct in the chair, and his valuable services to the cause on all occasions."

Sanitary Intelligence.

On Monday, the 20th ult., Lord Morpeth gave notice, that on Thursday, February 10th, he would ask for leave to bring in a Bill for promoting the public health.

WESTMINSTER SANITARY ASSOCIATION. — The anniversary meeting of this association was held at the residence of Dr. Aldis, Chester-square, Pimlico, on the 17th ult., Lord Robert Grosvenor in the chair; who opened the proceedings by a few observations on the advance of the sanitary cause, and the need of continued exertion. Mr. Randolph, Hon. Sec., next read the report of the Committee. It began by pointing out the necessity for sanitary reform—the obstacles which had been thrown in its way by interested and ill-informed parties—the exertions made by various societies and individuals to keep alive public attention to the subject. It then detailed the objects of the association, such as the advocacy of sanitary measures, the diffusing of information, and the enlisting the co-operation of Government, of local authorities, and various professions in the cause. The report next gave an account of the operations of the association for the past year, its intercourse with Government, the holding of public meetings, and the influence it had exerted on behalf of various sanitary improvements. The income for the past year was stated at 26*l.* 18*s.*, and the expenditure at 35*l.* 16*s.* 11*d.*, and an appeal was made for enlarged pecuniary support. Charles Lushington, Esq., M.P., moved the adoption of the report, which was seconded by Mr. Ridgway, and carried. Mr. Higgs moved, and Mr. Ellerman seconded, the appointment of the Committee for the ensuing year. Mr. Grainger moved, and Dr. Aldis seconded, a resolution approving of the New Metropolitan Commission of Sewers, which was supported by Mr. Abraham. The thanks of the meeting were then given to the Chairman, on the motion of the Rev. Mr. Lusignan, seconded by Mr. Holt.

EDINBURGH.—Dr. Stark in his report for November states that "the mortality in Edinburgh has been greater during the month than it has ever yet been. Since the

beginning of 1840 the mean monthly mortality (excluding still-births) averaged 331 deaths per month, or 11 deaths daily. During the year 1832, when the epidemic cholera swelled the bills of mortality, the deaths only numbered 438 per month, or 14 daily. During the past month, however, they have increased to more than double the usual average, having amounted to 728 during the month, or 24 deaths daily. In fact, the deaths from epidemic diseases alone during November have exceeded by 30 the mean monthly mortality of former years from all causes. This excessive mortality did not manifest itself till influenza broke out on the 18th, when the deaths daily increased till they reached 61 on the 30th of November."

"Influenza, though so excessively general that it has affected more or less severely fully three-fourths of the whole population, has of itself cut off very few, only 15 deaths being registered under that head; nevertheless it, and the peculiar atmospheric states which gave rise to it, have largely increased the mortality from all causes, but in especial from fever and diseases of the respiratory organs. Thus, the mortality from fever alone during the month amounted to 248, of whom 131 were males and 117 females."

In commenting on Dr. Stark's report, the *Scotsman* newspaper has the following very pertinent remarks:—"The greater proportion of this striking and unexampled mortality has probably originated in causes over which man has little or no control, and in so far it becomes us to submit uncomplainingly to the will of Providence. But at the same time there can be no doubt whatever that in many instances the predisposing causes of disease and death have been greatly aggravated by our own culpable neglect of the means for preserving life and health. Till every town and city in the empire has obtained sanitary arrangements as complete as human skill can devise, the risk of greatly aggravating, by uncleanness and want of ventilation, every natural cause of disease will remain to be encountered."

We are glad to observe that the local authorities of Edinburgh are fully alive to the subject, and are going to parliament for increased powers to improve the sanitary condition of the city.

DURHAM.—A meeting of the Durham Mechanics' Institute was recently held in the Town-Hall, for the purpose of discussing various questions relative to the sanitary condition of the town, and for considering the best means of effecting the requisite improvements. The public had been invited to attend, and the meeting was very numerous. Amongst those present we observed J. Fawcett, Esq., the high sheriff of the county and a vice-president of the institute; W. L. Wharton, Esq., the president (in the chair); Professor Johnston, Captain Ellis, and Messrs. W. Henderson, A. W. Hutchinson, J. Shields, J. Bonomi, R. Dixon, G. Shaw, E. Shafto, J. Tiplady, E. C. Jepson, R. N. Robson, J. Allison, and Monsieur Bouet. The meeting was addressed by the chairman, Mr. Bonomi, Mr. W. Henderson, Mr. G. Shaw, Mr. R. Dixon, Professor Johnston, Mr. Forster, Mr. Hutchinson, and Mr. Allison. Several of the speeches were very able, and shewed a thorough knowledge of the sanitary question in its various departments. At the conclusion of the meet-

ing, a committee of inquiry was appointed with the view of co-operating with the authorities.

PLYMOUTH.—A large and influential meeting on behalf of sanitary reform took place in the Guildhall, Plymouth, on the 7th ult.,—the Mayor, James Moore, Esq., in the chair. Excellent addresses on the subject were delivered by Mr. G. W. Soltan, Dr. Cookworthy, Dr. Soltan, Mr. Andrews, Mr. S. Derry, the Rev. J. Hatchard, the Rev. J. Odgers, and others, and a petition to Parliament was unanimously adopted, setting forth the sanitary evils which exist in Plymouth, and praying that the Legislature may “at the earliest practicable opportunity, take into consideration the propriety of establishing general and efficient measures and authorities for the administering of judicious sanitary regulations.”

The following observations of Mr. Andrews were warmly responded to by the meeting:—“No bill of health can be considered efficient, unless there be connected with it a repeal of the window-tax. Shall ye, in the nineteenth century, be shamed by Mahometans; shall we be told that, within fifty years after the death of Mahomet, his followers devoted one-third of the public revenue to the improvement of the health of their towns, while Christians, 1800 years after the departure of their heavenly teacher, are but discussing the question, and at the same time taxing the light of heaven. That light is our birthright; it has been the birthright of every man since the creation of the world, and should not form part of the revenue of any country—(hear, hear.) There was, perhaps, no sentiment ever uttered with more solemnity by the Almighty than the one—‘Let there be light!’—and it was infamous for man to say, ‘Let that light be taxed!’ Ventilation, sewerage, and even the circulation of hot water in the streets formed a part of the Mahometan police in the seventh century; and their plans for giving light to their houses were especially admirable, acting, as there was no doubt they did, upon that beautiful Hebrew expression—‘Where there is light there is joy!’ I hope we shall never cease petitioning until this iniquitous tax be repealed. Nothing is so productive to the revenue of a country as a healthy population, and that health, which constitutes our defence in time of war, must not be sacrificed for money.”—(Applause).

NOTTINGHAM.—At a meeting of the Town Council of Nottingham, held on the 29th November, the sanitary state of the town was taken into consideration, and after an admirable speech from Dr. Williams, a committee was appointed to examine and report. An adjourned meeting of council was held on the 13th ult., at which the report of this committee was read and adopted. It states that “nuisances are found to be greater in number and extent than could have been believed.” “That this prevails mainly in the poorer or more closely built districts.” “That the residents near them suffer greatly in their comforts—in their health, and in their social condition, and that fever and similar diseases are constantly found in their immediate neighbourhood.” A long list of localities is then given in which nuisances exist. The report goes on to comment on the wretched state of the dwellings of the poor:—the want of the means of common decency and

cleanliness:—the want of drainage: the surface of the streets and courts being “often the receptacle for the refuse of the houses, and yet these streets and courts are the play places of the children, and, in fact, almost part of their homes.” “In the midst of the most closely built neighbourhoods are filthy pig-sties, slaughter-houses, accumulations of blood and refuse, and cesspools—all sending out noxious effluvia.” The medical statistics of the town show that, in the midst of all these nuisances, and during the year ending July, 1847, about 900 cases of continued fever had been under the care of three charitable institutions: and the report concludes by an urgent recommendation “that the most prompt and efficient means be taken to remove the existing nuisances in the town.”

We congratulate the authorities of Nottingham on the decided course they are pursuing, and would recommend the excellent report, with the remarks made on it at the council meeting, to the serious attention of the inhabitants: and the following words of one of the speakers, Mr. Felkin, to the careful consideration of proprietors:—“Is it not time that those titled and other owners of property, who sell or let their lands at high rates for buildings in towns, should be constrained to acknowledge that their position enjoins duties, as well as confers rights? On reading the account of this day’s proceedings, he would hope their consciences would lead them, on next appearing in His sanctuary, whose stewards after all they were, to confess ‘they had done what they ought not, and left undone what they ought to have done;’ and that, so far as these ill-paved, ill-drained, ill-accommodated streets, built on their lands, were concerned, there was but little health in them.”

Two public lectures on the sanitary question were delivered in Nottingham last month, by Mr. Hugo Reid (Principal of the People’s College) and Mr. Small, surgeon, of Radford, to numerous and attentive audiences; and lectures on various departments of the subject are shortly to be given by other gentlemen of the town.

HULL.—In the last number of the Journal we stated that the medical profession of Hull had formed “A Medical Sanitary Society,” and we have since received the report which they have drawn up on the condition of the town. It is in our opinion a very valuable document, and affords ample details as to the existing causes of disease. The town of Hull, like most other towns, requires the aid of the sanitary reformer to make it as healthy as it ought to be, and we have no doubt that much good will result from the labours of the society.

SUNDERLAND.—A sanitary association has recently been formed in this town. The mayor has been elected president, and Mr. T. F. Hedley, secretary. There is abundant scope in Sunderland for the benevolent exertions of such an association.

STAFFORD.—The authorities of this town have appointed a special committee of health, for the purpose of inquiring into its sanitary condition, and pointing out such means as may be necessary for its improvement.

INVERNESS.—The prevalence of fever, and the threatened approach of the cholera, have occasioned an

energetic movement in this town on behalf of the public health. A sanitary committee was appointed a short time ago, and an active inspection made. The report which has been drawn up affords sufficient evidence of the deplorable condition of the poorer part of the town, and the necessity of further legislation for improving its sanitary condition. The powers of the Act 9 & 10 Vict. ch. 96, which are amply sufficient for the suppression of nuisances, are being put in execution; but, after all, a great deal will require to be done by increased powers before this town can be placed in a proper sanitary state.

GLASGOW.—We are happy to learn that an important meeting was recently held in Glasgow on the subject of sanitary reform.

ABERDEEN.—A meeting of the Health-of-Towns Association of this city was held in the Court House on the 14th ult.—Professor Blackie in the chair. An excellent report on the condition of some parts of Aberdeen was read and adopted. The remedies which it recommended were “well-directed compulsory means,” and benevolent attempts at the reformation of the lower orders. Bailie Forbes moved the adoption of the report, and concluded amid loud applause by expressing a wish that “the hands of the Government might be strengthened so as to overcome the petty peddling paltry interests that stood in their path, and to carry through a large and effective measure of sanitary reform.”

EVESHAM.—“Mr. Orwin, surgeon, of this city, delivered the first lecture for the season before the members of the Evesham Literary Institution, at the Guildhall, on Friday, Nov. 26. His subject was the Health of Towns, which was very fully and satisfactorily treated, embracing striking and important facts, much practical detail, and urgent appeals to general consideration. The lecture was illustrated with diagrams, and occasional experiments, and was received with marked attention and interest. The Mayor, A. Martin, Esq., and Mr. New, subsequently expressed the thanks of the Institution to the lecturer, which received due acknowledgment.”—*Worcestershire Chronicle*.

MANCHESTER.—The threatened approach of the cholera has put the authorities of Manchester on the alert, and it is stated to be the intention of the nuisance committee of the Town Council “to insist imperatively on the removal and suppression of all works, manufactories, &c., where any trade or business may be carried on, which in any stage or process may create noisome effluvia prejudicial to the public health.” There can be no doubt that this determination is founded on sound sanitary principles, and that it deserves the countenance and support of every member of the community.

MANUFACTURE OF MANURE AT MILE-END, LONDON.—This manufacture, after having been carried on by Mr. Poincette for several years, has been suppressed by the authorities as an intolerable nuisance to the neighbourhood. The manure was made from the sweepings of Smithfield-market, blood, and night-soil accumulated in three sheds, each about fifty or sixty feet in length, and of a proportionate breadth, and the substance filled these sheds to a depth of four or five feet. The effects produced by this manufacture were as follow:—Mr. Liddle and Mr. J. Byles, union sur-

geons, stated that in Spitalfields workhouse, distant about 100 feet from the sheds, whenever the wind carried the odour of the manufacture into the house, putrescent diseases showed themselves—that spontaneous gangrene occurred among the children—and that fever cases relapsed, and that a dangerous form of diarrhœa attacked adults, which subsided as soon as the direction of the wind changed. Mr. S. Birch, surgeon to the London Hospital, gave evidence to the effect that cases of disease in the house were materially influenced and the cure retarded by the malaria, although a considerable distance intervened between the hospital and the manufactory. On visiting the premises, M. Liddle was himself seized with faintness and sickness, which lasted several hours afterwards, and the inspector was attacked with similar symptoms. It is perhaps necessary that extreme cases of this kind should happen occasionally, to prove the correctness of the principles we advocate; but we sincerely hope that all manufactures of this nature will ere long be subject to such control as shall prevent the lives of the poor being endangered or sacrificed for the pecuniary advantage of any man or class of men. There is something else to be cared for in all communities besides the making of money.

ABOLITION OF INTRAMURAL INTERMENTS.—It is stated that this subject is attracting the serious attention of the metropolitan clergy, and that a plan has been proposed to effect the abolition of intramural interments without loss of fees. It is proposed that they should apply to Parliament for a loan, to be expended in the purchase of land for cemeteries and catacombs beyond the precincts of London, and so situated as to suit the convenience of parishes. It is also contemplated to purchase existing companies, and to repay the loan within a given time on security of the various livings.

PRACTICAL SANITARY MEASURES.—“One of the first acts,” says the *Times*, “of the new Commissioners of Sewers on the 6th inst., was to order their surveyors to take immediate measures for cleansing all sewers and drains, and, as far as practicable, cesspools, commencing with the poorest districts, and to obtain supplies of water for this purpose. The powers of the Commissioners of Sewers are, however, in some respects, inconveniently limited; and it may be prudent on the part of the Legislature to pass as speedily as possible a short bill, conferring on them such powers as they most obviously need.” The *Daily News* proposes a general bill for a similar purpose:—“We are most anxious to see Government introducing a bill to enable towns to adopt an effectual and compulsory cleansing. Power should be given to corporations to assess the inhabitants in the amount necessary to carry these cleansing operations into effectual execution, and these must be commenced *now*, or their effect will be much weakened. In times of fever, the most beneficial effects have been found, not only from a cleansing of sewers, streets, and alleys, but from the whitewashing of the lower class of dwellings at the public expense. The latter operation has proved most beneficial, and a true economy of public money.”

PETITION TO PARLIAMENT.—We have received from Mr. F. Moseley a copy of a petition to Parliament, which has been most numerously signed by the

inhabitants of a district of London, in the neighbourhood of Goswell-street. It states that a population of 13,000 souls is crowded upon 19 acres of surface. That gardens which formerly belonged to houses in the district have been covered over with "labyrinths of courts and alleys without any drainage." That the sun's rays and the fresh air are alike excluded from the houses. That the spirit of money-making has not only taken away open spaces which used to be a source of comfort and recreation to the inhabitants, but has formed no fewer than five grave-yards within an area of only ten acres. That three out of the five belong to undertakers, and that in *one* of these there are sometimes between twenty and thirty interments daily. That the houses themselves are badly constructed, and unfit for the habitation of human beings. And that as a consequence of all this, "the most hardy frame amongst the inhabitants becomes weak, and a prey to ill-health, that fever and pestilence prevail, and death makes rapid strides." That "long familiarity with all kinds of loathsome sights and stenches outside these miserable abodes begets an indifference to cleanliness and neatness in the interior, which soon extends to personal habits." That the population becomes "short-lived, improvident, reckless, intemperate, and depraved, by which there is occasioned a constant expense and danger to the metropolis, through illness, death, and crime." And the petition concludes with an urgent appeal to the legislature to pass a Health-of-Towns Bill.

We are truly glad to see that the working-classes are taking their own interests into their own hands. Let them only follow the example we have quoted above, and we have no fear of the result. Ignorance and selfishness will be compelled to give way to justice, whether they will or no.

CHLORIDE OF MANGANESE—A CHEAP DE-ODOURIZING AGENT.—At a late meeting of the Manchester Literary and Philosophical Society, a notice of a new de-odourizer for night-soil was read by Mr. Young, a chemist of that town. The substance suggested is chloride of manganese, and is a waste product of the manufacture of chlorine; it is produced in very large quantities (probably about 160 tons a day,) is at present applied to no useful purpose, and consequently will be very cheap. It is stated by Mr. Young that it almost immediately destroys the disgusting odour of night-soil and other animal substances in a state of decomposition, even when used in very small quantities, such as a pint to a middenful, say about a ton, in winter; in summer more would be required. The chlorine of the chloride combines with the ammonia, and the manganese with the sulphur of the hydrosulphurous acid, and thus two of the most disagreeable and injurious gases are got rid of. It is believed that decomposition will be checked by its addition to night-soil, but this opinion requires confirmation. Besides its cheapness, this de-odourizer is not likely to exert any injurious influence upon vegetation, and therefore will not destroy the efficacy of the night-soil, to which it is added, as a manure. Mr. Young is entitled to much praise for his ingenuity in applying to so valuable a purpose a waste product which is now useless, and even injurious, and to still more for giving his invention to the public, instead of applying it to his own exclusive

profit. We shall notice the various de-odourizing agents at a future opportunity, but in the meantime we may state that the Vestry of Marylebone has given the preference to Messrs. Dam and Ellerman's patent over those of Le Doyen and Sir Wm. Burnett.

LAYING THE FOUNDATION-STONE OF A COTTAGE.—Did our readers ever hear before of the ceremony of laying the *foundation-stone of a cottage*? There is something new under the sun at last, for that august ceremonial which has hitherto heralded the creation of churches, palaces, and public institutions, has so far laid aside its dignity as to consecrate by its presence the rearing of the poor man's home. We regret that our limited space prevents our inserting the full account of the proceedings, which appeared in the *Berkshire Chronicle* of the 11th ult., but what follows deserves a place in our columns:—

"The foundation-stone of two model cottages for the poor was placed on Wednesday, the 1st inst. in a close near the centre of the town of Lechlade, by the two youngest daughters of Captain W. J. Cole, K.H., in the presence of the lord of the manor, G. Milward, Esq., several clergymen, and other gentlemen and ladies, with their families. These cottages will have four rooms, two below and two above, thereby offering ample accommodation for a large family, and will give the opportunity for any sick or dying member to be placed in a separate room, and not be compelled, as is too generally the case in our agricultural cottages, to occupy the same room with the rest of the family. We hail with sincere gratification the period when the better housing of the poor in this country is becoming an object of deep interest to all classes of society. The company was addressed by Captain Cole, Mr. Milward, the Rev. Mr. Jay, M.A. (in the absence of the vicar), and the Rev. C. A. Brook, M.A., pointing out the present fearful wants of the poor, and commending the present undertaking to the notice of all who may hereafter think of erecting similar cottages.—Captain Cole assured the meeting that it was only his deep interest for the welfare of the poor that induced him to erect these cottages; they would be of the plainest kind, and perhaps the inside walls would not even be plastered, but they would possess every convenience, and as there would be a place for everything, so he hoped the occupiers would put everything in its place. The rent would be within the reach of the sober, industrious agricultural labourer, and none need apply for the houses who were not of those habits. It was only the fearful want of decent accommodation for the poor which led him to think of building; but when he had visited the sick and dying in the same confined and hardly wind or water-tight rooms, not only in this, but in various other towns and villages, and when he had seen the dead body of the husband and father laid out on a miserable bedstead, around which his poor widow and five children had been compelled to lie down, from the want of a second room, he felt called upon to try and do something towards erecting cottages capable of having *two* bed-rooms, in one of which he intended to have a small fire-place, in case of a poor soul living to a good old age, or being bed-ridden. There would be a good garden, a well, a sink, &c. to each house; and he hoped the time had arrived when

the noblemen and gentry of the land had begun to think of the best interests of the poor by improving their religious and moral condition, and giving them decent houses to live in, and in promoting sobriety and industry." At the conclusion of the proceedings, cake and wine were distributed to all present, and thus ended a ceremony which does the highest honour to all concerned, and which we cannot but hail as the forerunner of better things and better days.

POISONED WELLS.—Any one passing Richmond-terrace, Clifton, during the last week or ten days, must have remarked the long string of doctors' carriages drawn up in the neighbourhood. The reason for this formidable display was the existence of illness in almost every second house, the inhabitants of which were afflicted with gastric fever. Nearly a whole school of young ladies were lying down ill at the same time, and there was scarcely a family which had not some of its members sick. It was not, however, until one death took place, and several were in imminent danger, that the cause of this extensive illness was discovered, when it turned out to be produced by the use of a spring which supplied the place, and whose waters had been imperceptibly poisoned by a sewer breaking into it, and so greatly vitiating their character, as to cause gastric fever in every family using it! On being found out, of course the evil was remedied, but not before much mischief had been done, and the necessity both for a pure supply of water and an improved system of drainage shewn. Indeed, we have before, we believe, compared Clifton, with all its apparent splendour, as standing on little better than a subterranean cesspool, which poisons at once its springs and its atmosphere. It is to no purpose that they erect stately rows and squares, while "rank corruption, mining all below, infects unseen;" and until a better system is adopted, they are but raising in their best residences nothing better than whitened sepulchres.—*Bristol Times.*

OBITUARY.—DEATHS FROM TYPHUS FEVER, IN THE DISCHARGE OF PUBLIC DUTY.—S. Wilson, house-surgeon to the dispensary, Gateshead; W. Swan, assistant to Mr. Newton, poor-law medical officer to the fever parish, Newcastle-on-Tyne; Dr. Thomson, resident physician to the fever institution, Clyde-street, Glasgow; James Quayle, assistant relieving officer, Liverpool; Thomas Tyzack, superintendent of the fever-sheds, Great Howard-street, Liverpool; Robert Davis, superintending surgeon to the fever-house, Gateshead; Dr. Lawrence Martin, Dundalk; Dr. Carruthers, Dundee; John Davenport, governor of the Millgate fever hospital, Manchester Union; Edward Kingsley, Templemore.

DEATH OF DR. WIGAN.—This gentleman expired lately, at his residence, Queen-street, Camden-town, after a very short illness. Dr. Wigan was well known as a writer for the periodical press, and as the author of a work "On the Duality of the Mind." The deceased attributed his fatal illness to having stood over an open drain in the neighbourhood of Regent-street, when he felt suddenly ill, and was obliged to go into an hotel, where he nearly fainted. From that moment, his naturally robust constitution appeared to receive a shock, from which he never rallied.

NEW CONTRIBUTORS.

BIRMINGHAM . . Frederick Field, Esq.
BLACKHEATH . . F. R. Hunt, Esq.
SHELTON.—Potteries . . John Scott, Esq.
LONDON M. Baines, Esq., Camden Town.
 John Angus, Esq.
 William Davison, Esq.
KENSINGTON . . Dr. Lloyd.
WATERFORD . . Robert A. Carleton, Esq.

Correspondents.

PUBLIC URINALS.—In a note, Mr. Dunhill strongly deprecates the present neglect of these indispensable conveniences. He points out the evils and indecencies arising from the want of them; and urges the town authorities everywhere to follow the example of those in Paris and other continental cities, where ample provisions of this kind have been made. The subject is one of great importance, and ought to be taken into account in the Health-of-Towns Bill.

We have received a letter from Mr. W. Davison, in which he complains of the spreading of putrid manure over the surface of the Green Park, to the great annoyance of visitors, and suggesting the use of plaster of Paris or common salt for the purpose of fixing the ammoniacal gases. He thinks the nuisance calls for the interference of the Woods and Forests, and "only requires to be pointed out to be removed."

Communications have been received from Dr. Bullmor, (Truro;) Mr. Brooke, (Brentford;) Mr. Booth Eddison, (Nottingham;) Mr. John Bullar, (London;) Dr. Bullar, (Southampton;) Mr. Aulsebrook, (Hanwell;) Dr. Watson, (Liverpool;) Dr. Cotton, (London;) Rev. Mr. Odgers, (Plymouth;) Mr. Fowler, (London;) Mr. Henry Morley, (Madeley;) Dr. Robertson, (Newcastle-on-Tyne;) Mr. Bannister, (Tours.)

All communications to be addressed to the Editor, 10, Bedford-street North, Liverpool.

Parties desirous of becoming contributors or local correspondents to the Journal of Public Health, may obtain a "List of Topics" on application to the Editor.

Errata.—In column 1, page 43, for "Henry Bullar," read "Henry Baller." In column 2, page 43, for "dispensing," read "dispensary."

In column 2, page 56, the name of Dr. Shearman, of Rotherham, was inadvertently printed without the professional designation.

PUBLICATIONS RECEIVED.

Report of the City and Liberty of Westminster Sanitary Association.

Statistics of the Sanitary Condition of the Borough of Reading, by John Billing, Esq.

Statistical Return of the District of Christ Church, St. George-in-the-East, Middlesex, by Rev. W. Queckett, M.A.

Practical Observations on the Ventilation of Gas-lights, by J. O. N. Rutter, Esq., F.R.A.S.

Chaplain's Report of the Preston House of Correction, 1847.

Unhealthiness of London, and Necessity of Remedial Measures, by Hector Gavin, M.D., F.R.C.S.E.

Birkenhead, its present Sanitary Condition, by J. H. Robertson, M.D.

Note sur l'Importance de l'emploi des Matières Fécales désinfectées comme Engrais, par Ed. Dam, Pharmacien à Bruxelles.

Report of the Twelfth Anniversary Meeting of the Provincial Medical and Surgical Association held at Northampton.

Report on the Sanitary Condition of Plymouth, by the Rev. W. J. Odgers.

Manual of Public Health and Domestic Economy, Part I.

Others in our next.

NOTICE TO SUBSCRIBERS.—Subscriptions may be paid by post-office order to Henry Austin, Esq., Hon. Sec., 10, Walbrook. As the Journal is chiefly dependent for support on subscribers, the subscriptions have been made payable in advance.

LITERARY EXTRACTS.

MILITARY HYGIENE.—OVERCROWDING OF BARRACKS.—"If it be the intention of the government to render the accommodations in barracks better for officers and men, it is to be regretted that no steps are taken to effect the object. In some barracks the men are shamefully crowded, to the injury of their health. We have had letters from soldiers complaining that in rooms which are numbered for sixteen only, there are twenty-one huddled together; and that many have to sleep on the floor, there not being space for the iron bedsteads to be let down. In some barracks in Ireland the accommodation is so bad, that the ordinary regimental establishments cannot be maintained. A false economy some years ago caused our barracks to be sold or let out, and now, when required, they cannot be repurchased or the present tenants ejected from them. We could name a barrack in England in which men were compelled for a considerable time to make two beds serve for three men; and in Ireland we know of more than one barrack in which the men cook in their wretched sleeping-rooms—in which there is not a serjeant's room to mess in—in which there is not a school-room—and in which there are rooms more crowded than during the late war. There is a screw loose somewhere—"something rotten in the state of Denmark"—or these things could not exist and be complained of by soldiers to us. Do the engineer officers not inspect and report—do barrack-masters not properly appropriate—do commanding-officers not represent, and general officers not redress, that complaints of barracks are an ever-pouring stream?"—*Naval and Military Gazette.*

"OH for a good spirit who would take the house-tops off, with a more potent and benignant hand than the lame demon in the tale, and shew a Christian people what dark shapes issue from amidst their homes to swell the retinue of the destroying angel as he moves forth among them! For only one night's view of the pale phantoms rising from the scenes of our too long neglect; and from the thick and sullen air where vice and fever propagate together, raining the tremendous social retributions which are ever pouring down and ever coming thicker!—bright and blest the morning that should rise on such a night: for men, delayed no more by stumbling-blocks of their own making, which are but specks of dust upon the path between them and eternity, would then apply themselves, like creatures of one common origin, owning one duty to the Father of one family, and tending to one common end, to make the world a better place."—*Dombey and Son.*

THE EXAMPLE OF NATURE.—"Man acts strangely. Although a current of fresh air is the very life of his lungs, he seems indefatigable in the exercise of his inventive powers to deprive them of this heavenly blessing, and he carefully closes every cranny of his bedchamber against its entrance. Why should

he be so terrified at the admission of night air into any of his apartments? It is Nature's ever-flowing current, and never carries the destroying angel with it. See how soundly the delicate little wren and tender robin sleep under its full and immediate influence, and how fresh, and vigorous, and joyous they rise amid the surrounding dew-drops of the morning. Although exposed all night long to the air of heaven, their lungs are never out of order; and this we know by the daily repetition of their song."—*Waterton on Fresh Air. Essays, Second Series.*

WE insert the following lines from "The Mowers," by Charles Mackay, as an instance of the application of literary talent to the Health cause:—

"All the blood that Cæsar spilled,
All that Alexander drew,
All the hosts by 'glory' killed,
From Agincourt to Waterloo,—
Compared with those whom I have slain,
Are but a river to the main.

"I brew disease in stagnant pools,
And wandering here, disporting there,
Favoured much by knaves and fools,
I poison streams, I taint the air.
I shake from my locks the spreading pest,
I keep the Typhus at my behest;
In filth and slime
I crawl or climb.

"I find the workman at his trade,
I blow in his lips, and down he lies;—
I look in the face of the ruddiest maid,
And straight the fire forsakes her eyes,—
She droops, she sickens, and she dies.
I stint the growth of babes new-born,
Or shear them off like standing corn.
I rob the sunshine of its glow,
I poison all the winds that blow;
Whenever they pass they suck my breath,
And freight their wings with certain death.
'Tis I am the lord of the teeming town,
I mow them down—I mow them down.

"But great as we are, there cometh one
Greater than you, greater than I,
To aid the deeds that shall be done,
To end the work that we've begun,
And thin this thick humanity.
I see his footmarks East and West,
I hear his tread in the silence fall:
He shall not sleep, he shall not rest—
He comes to aid us one and all.
Were men as wise as men might be,
They would not work for you—for me—
For him that cometh o'er the sea.
But they will not heed the warning voice:
The Cholera comes—Rejoice! Rejoice!
He shall be Lord of the swarming town,
And mow them down—and mow them down."

ADVERTISEMENTS.

HEALTH-OF-TOWNS ASSOCIATION.

The Sub-Committee of this Association, being about to incur increased expenses by renewed efforts in favour of sanitary reform, make an earnest appeal to the public for pecuniary assistance. As the object they have in view is to prevent many of those evils which charitable institutions are formed to palliate, they hope to receive the support of all those who are already interested in the cause of charity. The following subscriptions have been received, and are thankfully acknowledged:—

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