Health of Town's Association. Unhealthiness of towns, its causes and remedies / [William A. Guy].

HEALTH OF TOWNS' ASSOCIATION.

UNHEALTHINESS OF TOWNS,

ITS

CAUSES AND REMEDIES:

BEING A

LECTURE

DELIVERED AT CROSBY HALL, BISHOPSGATE STREET.

BY

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&c. &c. &c.

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ADVERTISEMENT.

By far the largest part of this lecture was written expressly for the occasion; but it may be well to state that, in consequence of the pressure of many engagements, some few passages which had already appeared in print were incorporated with the new matter. It has not appeared necessary or desirable to distinguish these passages by marks of quotation, as they are from the pen of the lecturer, were originally published anonymously, and are not likely to have been read by one in a hundred of those into whose hands this pamphlet will fall. As the lecture was intended to bear a popular character, round numbers have been substituted for more precise decimal or fractional expressions; but all the numbers are near approximations to the exact figures, and may be relied upon as being substantially correct.

HEALTH OF TOWNS' ASSOCIATION.

INSALUBRITY OF TOWNS—ITS CAUSES AND REMEDIES.

GENTLEMEN,

THE history of my appearance here this evening is soon told. I come among you as the representative and delegate of the *Health of Towns' Association*, one of those societies of which so many have been recently established in this metropolis and in our chief provincial towns, for improving the physical condition of the labouring classes and of the poor.

The object of the Association which I have thus the honour to represent must be sufficiently obvious from the very title it bears; but as it is important to obviate all possible misunderstanding, I will read to you an extract from its Prospectus:

"*Objects and Rules.*

"This Association has been formed for the following objects:

"I. To diffuse among the people the valuable information elicited by recent inquiries, and the advancement of science, 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.

"II. To correct misconception as to the expense of the requisite measures, and to remove groundless apprehension as to interference with existing pecuniary interests.

"III. To devise and to endeavour to obtain some better means than at present exist, for the investigation of the causes of mortality in any locality, and for the more effectual protection of the public by the prompt removal of those noxious causes which are proved to be removable.

"IV. To facilitate legislative enactments and their application, by the diffusion of sanitary information bearing on the several points. And,

"V. To encourage the establishment of Branch or Auxiliary Associations, not merely with a view to the local benefit that must thence arise, but also as the means of obtaining a larger amount of funds, and a more extended field of usefulness."

Such are the objects which the Health of Towns' Association proposes to accomplish. My duty, as its representative, is to explain and illustrate, to the best of my ability, the evils which led to the formation of the Society, their nature, their magnitude, their causes; to prove that these evils admit of prevention or remedy, and that such prevention or remedy would be attended, in its application, with benefit not only to the poor themselves, but to every member of society.

For some time past a feeling has been springing up, and spreading abroad, and strengthening into a deep and abiding conviction, that the condition of our labouring classes, and of the poor at large, is far from being what it ought to be; that they are exposed to many evils which are not necessarily attendant upon a life of labour or the condition of poverty; that the remedies for these evils are simple, and effectual, and, as compared to the expense they entail (to say nothing of the misery, crime, and moral degradation which follow in their train), most economical. The most obvious of the evils to which I allude is the inferior sanitary condition of this large and deserving class of our fellow-citizens.

Now, let us endeavour to form a clear conception, to paint each for himself a vivid picture, of all that is contained in that short phrase, *inferior sanitary condition*; in other words, habitual bad health, an unusual liability to sickness, excessive mortality, premature death! Is there any man amongst us that does or can estimate at its real value that great blessing, health? Is it not to every one of us a synonym of strength, of power, of enjoyment?—to those who are dependent upon us, a guarantee of continued support and prosperity?—to all with whom we have to do, a source of good humour, kindness, and sympathy? Who so helpless, so burdensome, and, as a general rule, so peevish, and selfish, and irritable as the sick? Even to the wealthy and independent, who have all the dear-bought appliances of skilful treatment, and careful nursing, and the means of cleanliness and exercise, and change of air, and costly diet, and all that sick-

ness the most severe and the most lingering can require, disease is a sad and a heavy infliction. But to the man, whatever his position in society, who is dependent upon his own exertions for support, it is something more than this. In his case it is a heavy and unforeseen expense, and even to the prudent and careful a very serious embarrassment. Sickness is always a costly thing. In addition to the direct expenses which it occasions, it *must* lead to a suspension of profitable employment—it *may* entail the expense of a substitute—in too many instances it leads to the loss of a valuable situation. Then consider how much the misery of all severe diseases, attacking the heads of families, is enhanced by the constant anxiety for those whom the event may leave in straitened circumstances or in actual destitution. All these considerations apply with tenfold force to the case of the labouring man. Of all the members of society he is the most dependent. Health is his only wealth, his capital, his stock in trade. When disease attacks him, the very source of his subsistence is dried up. He must earn his daily bread by daily toil; and, unlike many who occupy a higher position in society, he cannot do his work by deputy, nor postpone the doing of it till his health is re-established. Day by day the expense of sickness is added to the loss of income; and too often he recovers only to find his place occupied by another, and the first hours of convalescence spent in an anxious, and too often a fruitless, search after employment. I might enlarge upon this theme, and bid you reflect on the manifold miseries of the poor man's sick chamber, with its narrow accommodation, its scanty furniture, the insufficient attendance, the fast increasing embarrassment, the fearful anxieties for the future. Even if the disease terminate favourably, how much has been suffered, and how much still remains to be undergone!—but if fatally, how sad is the lot of those whom death has robbed of a husband or a father!

I fear that I may not have acted wisely in entering so much in detail into the value of health, and the misery which its loss entails, especially upon the labouring poor. It is sometimes better to leave such subjects to each man's own imagination and experience. My object, however, has been to get you to attach a due value to the terms I shall have to use. I am about to speak of a vast amount of unnecessary sickness, of a fearful sacrifice of human life continually taking place; and I wish you to consider my statements not as mere lifeless figures of speech or arithmetic, but as the representatives of so many scenes of

fearful suffering, in which the most helpless and most deserving class of our fellow-citizens are the unhappy actors.

I now proceed without further preface to discharge the duty I have undertaken. I shall first endeavour to show that the inhabitants of large towns suffer a vast amount of sickness, and that they are liable to a very high mortality. I shall then prove that that excessive sickness and high mortality are due to causes admitting of removal. Having established these two positions, I shall proceed to point out the remedies for these evils, to show that they are simple and economical, and (to use the words of the Health of Towns' Association) "to correct misconception as to the expense of the requisite measures, and to remove groundless apprehension as to interference with existing pecuniary interests." A few additional remarks on the encouragement which our efforts to improve the public health receive from the experience of the past, and some few reflections on the national importance of those efforts, will conclude the labours of the evening.

As the subject is of great extent, I hope to meet with your indulgence if I detain you somewhat beyond the time usually allotted to a lecture. I shall aim at brevity as far as it is consistent with clearness; but I would much rather incur the charge of tediousness than allow you to leave this place either sceptical as to the existence and fearful amount of the evils of which I have spoken, or with hearts untouched by the sufferings of that large class whose interests the Health of Towns' Association was formed to advocate and promote.

You are doubtless aware that England holds, in a sanitary point of view, the first place among the more powerful European states. It may, therefore, be fairly assumed that our race is robust, and our climate favourable to health; and that if any class of our inhabitants, in any part of the empire, suffers from an unusual amount of sickness, or is liable to a very high rate of mortality, it is the fault neither of the constitution of the individuals composing that class, nor of the skyey influences to which they are exposed. Another very interesting, and, for my present purpose, not unimportant, fact has been lately brought to light, namely, that the higher classes of our fellow-countrymen—the members of the aristocracy—are shorter lived than a large proportion of the labouring class. We are justified, therefore, in assuming that bodily labour, provided it be carried on in healthy places and under favourable circumstances, is not injurious to health,

but, on the contrary, highly conducive to it. Putting these two facts together—the favourable sanitary state of England, and the wholesome effect of bodily labour—we have a very strong probability that if in any place the labouring class is liable to an excessive amount of sickness or a very high mortality, such excessive sickness and high mortality are due neither to the natural constitution of Englishmen, nor to the nature of our climate, nor to the labour which that class is constrained to undergo, but to some other unfavourable circumstances to which it is exposed. In other words, wherever we find among the labouring class a high rate of sickness and mortality, there is a very strong probability that, if carefully examined, it will be traced to some local cause or causes.

Bearing these probabilities in mind, let us turn to facts.

I have already stated that England is a very healthy country. But all parts of it are not equally healthy; for while the annual mortality of the whole of England and Wales is 1 in 45, that of the south eastern and western divisions is as low as 1 in 52, and that of the north western as high as 1 in 37. That is to say, while the counties in the south of England lose annually 1 inhabitant out of every 52 living, those situated in the north west of the kingdom lose 1 out of every 37 living. Now this high mortality of the north western counties is evidently quite independent of their relative situation, for other northern counties present a rate of mortality much below the average of the whole kingdom. To what, then, is it to be attributed? To no other cause but this, that while the southern counties are *agricultural*, and contain few large towns, the north western (Cheshire and Lancashire) are *manufacturing*, and abound in large and populous cities.

The wide difference existing between agricultural and manufacturing counties will appear still more clearly if we arrange the several counties not according to their relative position in the north or south, but according to their rates of mortality. On making this arrangement, we find Sussex, Dorset, Devon, and North Wales, at the top of the scale, presenting the favourable rate of 1 in 54; while Lancashire, at the bottom of the scale, shows a mortality of 1 in 36. This low mortality, on the one hand, and this high mortality on the other, correspond to the nature and occupations of the population. Take Dorsetshire, for instance, one of the counties at the top of the sanitary scale, and Lancashire at the bottom of it—the one has not a single town containing 10,000 inhabitants, while the other

contains, in about twenty large towns, no less than a million of inhabitants.

These facts, then, lead us almost irresistibly to the conclusion that large towns, as compared with the country at large, and still more strikingly when compared with rural districts, are decidedly unhealthy.

The inference drawn from a comparison of manufacturing and non-manufacturing counties is confirmed by comparing the populous cities and large manufacturing towns themselves. The mortality of England, as I have stated, is 1 in 45; that of the metropolis is 1 in 39; of Birmingham and Leeds, 1 in 37; of Sheffield, 1 in 33; of Bristol, 1 in 32; of Manchester Union, 1 in 30; of Liverpool parish, 1 in 29.

These numbers will give you some idea of the unhealthy state of our large towns; but a still more vivid conception of their condition will be formed if we compare the deaths taking place in an equal number of the inhabitants of rural districts and of large towns. This comparison is instituted in a recent report of the Registrar-General, from which it appears that while one million of the inhabitants of large towns lose annually upwards of 27,000 of their number by death, the same number of the inhabitants of rural districts suffer a loss of only 19,300; the loss on the part of the million of inhabitants of large towns exceeding that of their more favoured fellow-countrymen by little less than 8000. Now the population of our large towns, if we include the metropolis, falls very little short of 4,000,000; which at the same rate of 8000 in the million, gives as the waste of life in our large towns somewhat under 32,000 persons every year. By way of fixing the matter in your memory, bearing in mind that it is an estimate, and not a precise calculation, I would say that the annual waste of life occurring among the inhabitants of the metropolis and our large towns, when compared with an equal number of the inhabitants of the country, amounts to no less than 30,000. Now this excessive mortality is not peculiar to any one period of life, though young children are the principal sufferers; nor is it confined to any one class, though, as I shall soon show you, its chosen victims are the labouring class and the poor.

It is not unimportant to note the diseases which occasion this excessive mortality of large towns. If, as before, we take a million of inhabitants of the towns, and compare them with the same number of persons residing in the country, we find that while the latter (the inhabitants of the country) lose about 500 a year by small pox,

the inhabitants of the towns lose more than 1000; by measles the numbers are 350 and 900; by scarlet fever, 500 and 1000; by hooping-cough 400, and 800; by typhus fever, 1000 and 1250; by other diseases of the same class, 650 and 1000 respectively. If we throw all these epidemic and contagious disorders together, we have a total of 3400 for the rural districts, and 6000 for the town districts, or a waste of life in the towns (assuming, which is by no means the case, that there is no waste of human life in the rural districts) of no less than 2600 a year.

I have stated that this excessive mortality of towns presses with unusual severity on children. Indeed, most of the diseases which I have just mentioned are peculiarly the diseases of childhood; but, in addition to these epidemic and contagious disorders, children experience a very high mortality from teething, convulsions, and water on the head. Now, it appears that while out of a million living in town and country respectively, 120 die from teething in the country, no less than 620, or more than five times as many, die from the same cause in towns. Again, from convulsions, there are in the country 850 deaths, in towns 2000; and from water in the head 330 in the one to 880 in the other. If we add these three causes of death together, we shall have 1300 deaths in the country against 3500 in towns, or a waste of 2200 lives of infants and young children. Scrofulous diseases in childhood, and consumption in grown up persons, claim together 3800 victims in the country and 4600 in the towns, being an excess in towns of 800 deaths. Taking all these diseases together, we have a total annual waste of life from these alone, in large towns as compared with rural districts, of 5500 in the million, and taking as before 4,000,000 as the number of inhabitants of large towns, we shall have an annual waste of no less than 22,000 lives. I have selected these diseases as being both familiar and fatal; the remaining waste of life is made up by other diseases, with whose names and nature a mixed audience must be less familiar.

As I am extremely anxious to avoid exaggeration in speaking of the waste of life taking place in our large towns, I must crave your permission to confirm what I have stated by a simple calculation. I have estimated the waste of life in our large towns, on the assumption that they contain 4,000,000 of inhabitants, at 32,000 a year; but I preferred taking 30,000 as the amount of that annual loss. That this number is not a very gross exaggeration will appear from the following considerations.

The total number of deaths occurring in England and

Wales during the year 1841 was 343,847, or somewhat less than 1000 a day. Now this is at the rate of one death in 46 inhabitants. But if instead of one death in 46 inhabitants there had been one death in 50 inhabitants, or 2 per cent., no less than 25,407 lives would have been saved. Now, all men who have paid any attention to this subject agree in the opinion that, by proper sanitary measures, it is possible to ensure such a state of health among the community at large that the mortality shall not exceed that proportion. If the sanitary state of the entire country could be raised to the condition of the most healthy counties, so that instead of one death in 46 inhabitants there should be only one death in 54, we should have an annual saving of no less than 49,349 lives, or about one-seventh of the whole number of deaths! At first sight it may appear extravagant to represent such an improvement of our sanitary condition as possible; but when it is recollected that, on the one hand, even our most agricultural counties have not yet attained to their best sanitary state, and that our large towns have been hitherto almost entirely neglected, and admit of immense improvement, the attainment for the whole country of a sanitary condition represented by one death in 54 inhabitants is at least within the bounds of possibility.

This possibility is raised to the level of a *strong probability* by the fact that there are comparatively small agricultural districts, of less extent than our English counties, in which the mortality falls much below 1 in 54. In the Isle of Wight, for instance, it is less than 1 in 58, and in Anglesea little more than 1 in 62. The possibility of reducing the mortality to 1 in 50, or 2 per cent., is, as I have stated, generally admitted; and the opinion is strongly confirmed by the fact that already in several rural districts it is less than 1 in 50; that in one mixed town and rural district (that of Huddersfield) it is 1 in 52, and in one town district (that of Yarmouth) 1 in 51. In one mining district, again (that of Chorlton and Worsley), it is 1 in 50, and in one manufacturing district (Kidderminster) less than 1 in 49. As, then, on the very reasonable assumption that by proper sanitary measures the mortality might be reduced to 1 in 50, we shall have a saving of upwards of 25,000 lives, it would require a very slight improvement beyond that point to make the amount what I have assumed it to be in our large towns, namely, 30,000. I have entered thus minutely into this part of my subject, because I am anxious to impress upon your minds the magnitude of the loss which a neglect of

sanitary measures is constantly entailing upon us—a loss of which the extent may be judged by the aid of an expression so often quoted that it will soon pass into a proverb, that "*the annual slaughter in England and Wales, from preventible causes of typhus fever alone, which attacks persons in the vigour of life, is double the amount of what was suffered by the allied armies in the battle of Waterloo.*"

I have now presented you with an estimate or rough calculation of the waste of human life which takes place year by year in England and Wales, and chiefly in the large towns, and I am quite sure that as patriotic Englishmen you view that waste in the light of a great calamity, and, if it shall be proved to depend upon causes admitting of removal, as a great national disgrace.

But I must not forget that I am addressing a London audience, and that you must be naturally anxious to hear something about the sanitary state of your own city. As the residence of the monarch, the seat of government, the resort of fashion, the centre of intelligence, the metropolis of the largest, richest, most powerful, and most civilized empire in the world, it ought to be an example to the rest of the empire, and a model to other nations. And so, in many respects, it is. Its parks, its squares, its bridges, its leading thoroughfares are unrivalled; it is the best-lighted and best-paved capital in the world, and the house-accommodation of its more opulent inhabitants is certainly of a very superior kind. Those who have never quitted the pavement of its principal streets (and this is the case with most visitors, and a large proportion of its wealthier inhabitants) would pronounce it, in spite of the bad taste displayed in so many of its public edifices, a handsome and a noble city. But it is no exception to the rule of large cities. The lofty houses and the glittering shops which skirt its principal thoroughfares are but so many showy screens to hide from sight the wretched dwellings of the poor, which, revealed for a short space by some grand improvement, have scarcely time to air themselves before they are again shut out from view. Fortunately there are so many of these improvements going on at the present time, that you must all have observed for yourselves how very wide the difference is between the large streets and the small ones—the abodes of the rich, or the shops of the fashionable parts of the town, and the wretched courts and alleys in which the poor reside. I shall not enlarge at present on this subject, but must return to the consideration of the sanitary state of the metropolis.

London, when compared with most large cities, is by no means unhealthy. Its mortality (1 in 39) approaches much nearer to the average of the entire kingdom (1 in 45) than that of Birmingham or Leeds, Sheffield or Bristol, Manchester or Liverpool. It is also much more favourable than that of the capital cities of Europe. Brussels, for instance, which is a very showy capital, and can boast of many handsome buildings, and wide streets, and open squares, has a mortality still higher than that of our own unhealthiest city—Liverpool. There is no less than one death every year in every 24 persons: in Liverpool there is one in 29.

London, then, when compared with other large cities, is not unhealthy. But this is not the sort of comparison that we ought to make. We must aim at something better than a slight advantage over large provincial towns or foreign capitals. Our standard of comparison must be a high one, provided only that it be not extravagant. I have already stated that there is more than one large town in England in which the mortality is even less than one in 50, or 2 per cent. I shall, therefore, run no risk of exaggeration if I claim for the metropolis a right to as favourable a rate of mortality.

Now it appears that in the year 1844, the deaths in the metropolis amounted to 50,423; but on the supposition that the rate of mortality, instead of being 1 in 39, had been 1 in 50, we should have had only 40,145 deaths, and there would have been a saving of no less than 10,278 lives! This appears to me to be a very fair estimate of the annual waste of life taking place in the metropolis from causes admitting of removal. Now it has been stated on good medical authority that for every death which happens there are 28 cases of sickness; and if we assume that the cases of sickness are quite as unnecessary as the deaths, we shall have 287,784 cases of sickness which might have been prevented. To use round numbers as more easy of recollection we may safely assert that there occur every year in the metropolis, from causes admitting of removal, upwards of 10,000 deaths and a quarter of a million of cases of sickness.

It was not without reason that I entreated you to endeavour to form for yourselves a just conception of the true meaning and significance of those familiar words—*health and disease.* If you succeeded, you now know and feel the fearful amount of suffering which a neglect of sanitary measures has long inflicted and still continues to inflict on your fellow-citizens.

In drawing your attention to the diseases which cause the great mortality of our civic populations, I entered into some little detail, and I showed you the marked difference in the fatality of these diseases in town and country. A similar difference would be found to exist if we were to compare the metropolis with the rural districts. On referring to the table of Mortality for 1844 published by the Registrar-General, I find that the number of deaths from epidemic and contagious diseases is upwards of 11,000; from consumption (that is to say, the consumption of the adult, and several lingering diseases of children) upwards of 7000, and from diseases of children (chiefly from what is familiarly known as scrofula) more than 6000; making a total of upwards of 24,000. From the estimates of the possible saving of life among the present victims of these diseases, put forward by several medical men examined before the *Health of Towns Commission*, it does not seem unreasonable to assume, that, taking one of these fatal diseases with another, one half the lives, or more than 12,000, might be saved. One third of the lives, which is certainly a very low estimate, would give more than 8000.

Having, as I trust, convinced you of the general fact that large towns are extremely unhealthy, and of the special fact that the metropolis forms no exception to the rule, I must request your attention to another question of great importance; namely, *Does the excessive sickness and high mortality obtain in all parts of our large towns, or only in certain localities?*

The answer to this question is in the negative. There is a very wide difference in the mortality of different parts of the same city. Thus, in this metropolis there is one district (Whitechapel) in which the mortality is higher than 3 in the hundred, while in St. George's, Hanover Square, it is less than 2 in the hundred. A very interesting and instructive comparison of this sort is made in the fifth annual report of the Registrar-General. He throws the several districts of the metropolis into three groups of 10 each, under the titles of the healthiest, the unhealthiest, and the medium districts. The ten healthiest present a mortality of 1 in 49, the ten medium districts of 1 in 41, and the ten unhealthiest of 1 in 36. Now it is a fact well worth remarking, that while in the healthiest districts each inhabitant has to himself 202 square yards of space, and in the medium districts 102, the inhabitants of the ten unhealthiest districts are allowed only 32 square yards.

It is evident, then, that not only are some districts of

our large towns very unhealthy as compared with others, but that the unhealthy districts are precisely those in which the greatest number of persons is crowded into a given space. I need not tell you what those districts are. The healthiest districts are the wealthy and fashionable ones, abounding in broad streets, and open squares, and in the neighbourhood of public parks and gardens, or the half-rural environs; the unhealthy ones are the abodes of the labouring classes and of the poor, the blind courts and narrow alleys in the centre of the city, or in the lowest and poorest of the suburbs. Wherever many people are crowded into a small space, there sickness is rife and death busy; and the connection between over-crowding and a high mortality is so constant, that it is always possible within the limits of the same city, to calculate the mortality from the space, or the space from the mortality. *In other words, the mortality is proportioned to the density of the population.* This, however, is not true of our towns as they ought to be, but merely as they now are; and for this reason—that density of population and neglect of simple measures for preserving health are now always found in combination. It is in the most crowded parts of our large towns, that cellars, and blind courts, and unpaved, uncleansed, unsewered streets most abound. The air is shut up, and slowly renewed, at the same time that it is contaminated by the foul exhalations constantly given off from substances which ought to be carried away by the sewers.

I shall give you one illustration out of many hundreds that might be brought forward, in support of this position. In the evidence recently presented to the Health Commission by the Rev. J. Clay, of Preston, a comparison is instituted between three classes of streets in that city. These streets are characterised respectively as "*well-conditioned*," "*moderately-conditioned*," and "*ill-conditioned*," in respect, that is to say, of ventilation, cleansing, and drainage.

From this comparison it appears that, while in *well-conditioned* streets, the mortality among children under one year old is 15 *in the* 100, and in *moderately-conditioned* streets 21 *in the* 100, in *ill-conditioned* streets it is no less than 38 *in the* 100, being much more than double that which occurs in well-conditioned streets. Mr. Clay, however, pushes his comparison much further, and by selecting from the ill-conditioned districts certain courts and alleys enjoying an unenviable pre-eminence in filth, presents us with a most appalling statement of the mortality

of which they are the scene. The mortality in the *ill-conditioned* streets, under one year of age, was, as I stated to you, 38 *in the* 100; in these selected streets and courts it was 44 *in the* 100, being, as nearly as possible, three times the mortality of well-conditioned streets. As an example on a larger and grander scale of the excessive mortality attendant upon a residence in unhealthy situations, I would point to Liverpool, the most unhealthy city in England; and why? Because it suffers 40,000 of its poorer inhabitants to live in cellars under ground, and 70,000 more to inhabit narrow and blind courts, so constructed as to confine the air, and so badly cleansed and sewered as to fill it with pollution.

The answer to one more question, and my first proposition will be completely established. *Among what class of society is it that this great mortality prevails?* This question is already answered by the facts to which I have just drawn your attention. I have shown you that the greatest mortality prevails in the most crowded and most neglected districts. I need not tell you that the inhabitants of those districts are the labouring class. But though the fact is too obvious to require further proof, it may be useful to give it a little more illustration. Some time since I was at some pains to extract from the mortuary registers of the metropolis for the year 1834 the ages at death of the members of the three classes of society—gentry, tradesmen, and operatives—dying aged 15 years and upwards; and I found that while, taking one with another, the gentry lived 59 years, the tradesmen lived only 49, and the labouring class 48; that is to say, the gentry live 11 years longer than the labouring population, and 10 years longer than tradesmen; and this, be it recollected, in spite of the circumstance, to which I have already adverted, that the labouring class, when placed in favourable circumstances, live much longer than the higher classes. How unfavourable, then, to health and life must be the circumstances by which they are surrounded in our large towns to give rise to so very great a disparity!

But there is another fact worth adverting to, namely, that tradesmen (not the families of tradesmen, men, women, and children taken together, but grown-up men engaged in trade) lose, when compared to the gentry, no less than 10 years of their lives. I confess that I rejoice to find the tradesmen possessing so slight an advantage over the labouring class. I am glad to see them mixed up together, because I am sure that the result will be that they will contend together for the rights which are com-

mon to both,—a right to pure air; a right to a good system of sewerage, to extend into every street, and court, and alley in the town; a right, in fact, to health, so far as it is in the power of good laws, well administered, to confer it.

Hitherto, you will understand, I have compared adults with adults in the three classes; I will now extend the comparison to persons of all ages—the men, women, and children of the families of the three classes; and it is right to state that here I am indebted to the valuable labours of Mr. Chadwick. I take a few facts from a series of valuable tables prepared by that gentleman, and in which he contrasts the average age at death of persons of all ages belonging to the three classes of gentry, tradesmen, and operatives. In one parish, that of St. Giles's and St. George's, Bloomsbury, the average duration of life among the labouring class and their families is 17 years! being 23 years less than the average among the gentry and their families, and 9 years less than among tradesmen and their families. In Shoreditch, again, the average age at death is 19 years; and the loss of life, as compared with the gentry, amounts to 28 years. The difference in favour of tradesmen is 4 years. In two districts, Kensington and Newington, the average age at death is higher among the operative class than among tradesmen.

But, as I have already told you, London is by no means the most unhealthy city in England. The great manufacturing and commercial cities of the north present a far more distressing picture of the effects of a neglect of sanitary measures. I will select five manufacturing towns, Leeds, Preston, Bolton, Manchester, and Liverpool; and beginning with the most healthy of them, will give you the average ages at death of the three classes of their inhabitants. In Leeds, the gentry live 44 years, the tradesmen 27, and the labouring class 19, giving an average age for all the inhabitants of 21 years. In Preston the gentry live 47 years, the tradesmen 32, and the operatives 18, giving an average at death for the whole city of 20 years. In Bolton, the ages for the three classes are 34 years, 23 years, and 18 years; and the average for all classes 19 years. We now come to Manchester and Liverpool. In Manchester the average age for the gentry is 38 years, for tradesmen 20 years, and for operatives 17 years; the average for the whole city 18 years. This is bad enough; but Liverpool is even worse. Its gentry live on an average 35 years, its tradesmen 22, and its operatives —how many think you?—*fifteen*. Yes, fifteen years! A narrow span indeed! The average for the whole town is

only 17 years, which, if you remember, was the average for the operative class in St. George's and St. Giles's, the London parish which presented the lowest average of all. When I remind you that even in one of the unhealthy towns which I have just mentioned (Preston) the gentry live on an average 47 years, and tell you that in one metropolitan parish (Newington) they enjoy an average of 50 years, you will be prepared to understand and imagine all that is contained in the startling announcement, that the span of human life is shortened in one of our metropolitan parishes to 17 years, and in Liverpool to 15, and that for the whole town of Liverpool it is not longer than in the most unhealthy parish in London. And yet what right has Liverpool to this bad pre-eminence? With a large river for its common sewer (it is one of the characteristics of semi-barbarous nations to convert their rivers into common sewers—a foul, but as things now are, a wholesome custom), and fanned by sea-breezes, what right has Liverpool to the bad name she has earned for herself? None whatever. Her air is good enough, if it could only reach the dwellings of her inhabitants. But how should it? Have I not told you that she crams 40,000 of her poor into cellars, and hides away 70,000 more of them in narrow and blind courts? The air sweeps over the one, and stagnates in the other, and aided by foul exhalations of every sort, breeds pestilence, as it always has done, and ever will do. This pestilence goes by the name of typhus fever; but call it what you will, give it what name you please, call it the black death, or the sweating sickness, or plague, or gaol fever, or camp fever, you can always conjure it up in some shape or other, if you crowd human beings into a narrow space, and pollute the air they breathe with foul emanations from putrefying animal and vegetable substances, and make no provision for the removal of those noxious matters which must ever abound in and around the habitations of man.

I think that I have now sufficiently established my first position, namely, that the inhabitants of large towns suffer a vast amount of sickness, and that they are liable to a very high mortality. I have also incidentally proved that the excessive sickness and high mortality occur in the most crowded and neglected parts of our large towns, and that the class of inhabitants who suffer most, but by no means exclusively, are the labouring class—themselves and their families. In speaking of the diseases which occasion the high mortality of this class, I have also shown that a very large proportion are what are commonly termed

epidemic and contagious diseases; that is to say, diseases which spread from one person to another, which must be communicated either by contact or through the air, and which, as you will naturally infer, must abound the most where the air is most stagnant, and least disturbed by those fresh breezes which proverbially carry health upon their wings. I would again request your attention to a few facts in reference to these diseases.

There are some which are *exclusively* diseases of childhood, namely, teething, convulsions, and water in the head; and these three together prove fatal to nearly three times as many children in towns as in the country. This fact explains a part of the excessive mortality of children to which I have already alluded.

There is another class of diseases which attacks both *children and adults*, but, for an obvious reason, more children than grown-up persons,—I mean small-pox, measles, scarlet fever, and hooping-cough. These diseases, taken together, prove fatal to upwards of twice as many persons in towns as in the country.

There is a third class of diseases to which both young and old are likewise subject, and which forms a single group in the Annual Reports of the Registrar-General. It comprises all the more lingering diseases of infancy and childhood, and the consumption of the adult. Both classes of disease, those attacking children, and that fearful malady of the adult, are attributed by medical men to one common cause, and considered as varieties of scrofula. I propose to speak separately of these two forms of scrofulous disease.

A *fourth* disease (for I place it purposely by itself) is typhus fever, the *pestilence* of our time—a disease which, hough sometimes occurring in children and young persons, is peculiarly the disease of adult life; and this destroys, as I have already stated, one-fifth more in towns han in an equal number of the inhabitants of the country.

A word or two with regard to each of these diseases and classes of disease. Small-pox, scarlet fever, measles, and hooping-cough, are more prevalent in large towns than in rural districts, for the very obvious reason that where the greatest number of persons are crowded together, where the air is most stagnant, and, as a natural consequence, most loaded with moisture, the noxious matter by which they are communicated from person to person must accumulate and become more virulent, at the same time that the very causes which lead to its accumulation and add to

its intensity, by weakening the frame, must render it a more easy victim to its attacks.

The scrofulous diseases of childhood, which, as I have just stated, are comprised in the Reports of the Registrar-General under the single term consumption, and the three fatal diseases of infancy (teething, convulsions, and water in the head), are not contagious, that is to say, they do not spread from child to child, but they are generally and very justly attributed to the very same state of the air which I have already pointed out as being so favourable to the spread of contagious diseases. Such is the opinion of distinguished French authorities, and you will find that opinion strongly enforced and confirmed in the valuable evidence laid before the Health Commission by Mr. Toynbee.

At the same time, I must caution you against supposing that the impure air of cities is the only cause of the excessive fatality of these diseases. There is no doubt that a diet altogether unsuited to the tender age of infants and young children, will most certainly prove fatal to them; and iti s equally certain that the baneful habit which prevails to so frightful an extent among the poor of our large towns, of administering laudanum to their children, under the deceitful garb of "Godfrey's cordial," and "children's quietness," and in other equally treacherous forms, is chargeable with a large amount of mortality. But when we have made allowance for both these causes of infantile mortality, there yet remains a very large number of deaths of infants and young children, which can be attributed to no other cause than the foul atmosphere in which they are brought up.

I would next say a few words about consumption, a disease belonging to the same class with those commonly known as scrofula; but, like fever, and in a still greater degree, a disease of grown-up persons, and especially of grown-up men.

Now there is a foolish prejudice abroad, and a mischievous one to boot, that consumption is an English disease, and in some way or other intimately dependent upon the fickleness of our climate. There is as much foundation for this opinion as there is for the equally silly prejudice that Englishmen are peculiarly prone to suicide, and that they evince this morbid propensity most in the foggy month of November. I say that this is a mischievous prejudice, and for this simple reason, that the idea that consumption is a national disease has had the effect of turning us away from the search after its real

causes, which otherwise we might have discovered. Now an inquiry into the real causes of consumption is by no means an unimportant one, for the disease destroys every year in England and Wales at the least about 36,000 lives, of which the large majority are adults, and London and the large towns, you may be sure, have their full proportion of victims. But there is another weighty reason, besides the number of its victims, which makes an inquiry into the cause of consumption important, and that is its acknowledged fatality.

Whatever credulous people may tell you to the contrary, there is no cure for consumption; the belief that it is a curable, is as absurd as the idea that it is a national, disease. Getting well and being cured are two different things, and those who know this have the key to all the nonsense that is talked about the curability of consumption. Well! it is because the disease is incurable, that it is doubly important to do all we can to prevent it; and how are we to prevent it if we do not know its causes? We all know that consumption is very often an hereditary disease, or, to speak more correctly, a disease to which there is often a strong hereditary tendency. Such being the case, it must be obvious that many of the common causes of disease, such as cold, will bring it on; but there are many instances in which the tendency is very slight, or does not exist at all, and in these cases we must search for some uncommon cause or causes. You will not be very much surprised to hear that impure air is one of those causes.

I presume that most of you have been to the Zoological Gardens, and if so, you have not failed to visit and laugh at the monkeys: and I dare say that as you did so you little thought that they could be turned to any purpose more useful than that of encouraging the pleasant exercise of laughing. Dr. Arnott shall undeceive you. In his evidence before the Health Commission, he tells the following instructive story:—

"A new house was built to receive the monkeys, and no expense was spared, which, in the opinion of those entrusted with the management, could ensure to those natives of a warmer climate all attainable comfort and safety. Unhappily, however, it was believed that the object would be best secured by making the new room nearly what an English gentleman's drawing-room is. For warming it, two ordinary drawing-room grates were put in as close to the floor as possible, and with low chimney-openings, that the heated air in the room should not escape by the chimneys, while the windows and other openings in the walls above

were made as close as possible. Some additional warm air was admitted through openings in the floor from around hot water-pipes placed beneath it. For ventilation in cold weather, openings were made in the skirting of the room close to the floor, with the erroneous idea that the carbonic acid, produced in the respiration of the animals, become heavier than the other air in the room, would separate from this, and escape below. When all this was done, about sixty healthy monkeys, many of which had already borne several winters in England, were put into the room. A month afterwards more than fifty of them were dead, and the few remaining ones were dying. This room, open only below, was as truly an extinguisher to the living monkeys, as an inverted coffee-cup, held over and around the flame of a candle, is an extinguisher of the candle. Not only the warmth from the fires, and the warm air that was allowed to enter by the openings in the floor, but the hot breath, and all the impure exhalations from the bodies of the monkeys, ascended, first to the upper part of the room, to be completely incorporated with the atmosphere there, and by no possibility could escape, except as a part of that impure atmosphere, gradually passing away by the chimneys and the openings in the skirting. Therefore, from the time the monkeys went into the room until they died, they could not have had a single breath of fresh air. It was necessary only to open, in the winter, part of the ventilating apertures near the ceiling, which had been prepared for the summer, and the room became at once salubrious."

I have only to add to this story the fact that the disease of which these animals died was consumption, to convince you of the fatal efficacy of foul air in producing that disease. It is also a well-known result of experiments upon another class of animals, that consumption can be produced at will by this mode of treatment.

Now a sceptic might, perhaps, object to these experiments on animals as not being quite conclusive, and, as the question is really one of vital importance, might propose that the government should place at our disposal, with a view to conclusive experiment, a few convicts, or some unhappy persons condemned to undergo the extreme penalty of the law. This, as it happens, is quite unnecessary; the experiment is being constantly made to our hands, and the result can be ascertained without any violence to our feelings. In the tailors' workshops, and at the letter-press printers, the experiment is constantly going forward, and I have been indebted to the courtesy

of the proprietors of several printing-offices for an opportunity of watching the result.

Most of our printing-offices are monkey-houses without the open fire-places, or the holes in the skirting, and, unfortunately for the compositors (for they are the chief sufferers), they are not, like the monkeys, passive agents, but far too active for their own good in shutting out the air.

Some time back I visited a printing-office, which, though by no means the worst I had seen, was still very bad—crowded, hot, dirty, close, and offensive. Like most similar establishments, it was not built for the purpose to which it was applied, but a number of low rooms had been thrown together, the chimneys had been blocked up, the windows were made air-proof; it was heated by stoves, and lighted by flaring gas lights. The atmosphere was as foul as you would expect to find it, not quite so hot as an oven and not quite so offensive as a sewer, but partaking more than was pleasant of the properties of both. Of course I heard the usual story. The men sensible of the evil, and applying for a remedy to the master; the master making an opening somewhere or other, and the men who were nearest to it shutting it up again because of the drafts. Well, I took the liberty of speaking to the master on the subject, and stated to him my opinion of the injury which the health of his men must suffer from such a state of things. He was aware of it, regretted it, but stated that he was soon about to move to more spacious and more airy premises, where he hoped to have everything as it should be. About a fortnight ago I visited these new premises. They were clean outside and in, the rooms were more lofty, and it was obvious that a large sum had been spent in fitting the premises for their new destination. The foreman was evidently not only pleased with the change, but not a little proud of it. Conceive my astonishment, I had almost said my horror, when I could not discover such a thing as an open fire-place in all the establishment. The chimneys had all been as snugly bricked up as if the escape of foul air was a positive evil; and as for fresh air, it was as carefully excluded as if it were a thief. The gas lights were burning in the open air as usual, without any vent to carry off the foul products of their combustion, and the source of heat was a mischievous apparatus of hot-water tubes—mischievous, because it was to economise the heat from it that the wholesome chimneys had been bricked up. Here, then, was a monkey-house without the fire-places and the openings in

the skirting, and with the odious gas-lights into the bargain.

Now, with the example of the monkeys before you, what can you expect from such a state of things? Why, a frightful mortality from consumption. It is the inevitable result, and it takes place not only in our printing-houses, but to probably a still greater extent in tailors' workshops, and in a degree proportioned to the overcrowding and pollution of the air, in offices, and shops, and schools, and barracks, and wherever human beings are confined in a narrow space, or congregated in large numbers. This, doubtless, is one cause of the high mortality of tradesmen as compared with the gentry inhabiting our large towns.

For more minute particulars connected with this subject I would refer you to Dr. Arnott's evidence before the Health Commission, and to my own. I will merely add that I have ascertained by very careful observation and very strict comparison of facts, that the number of cases of consumption has a very close relation to the degree of crowding and consequent impurity of the air, and that according to a calculation founded upon the prevalence of the disease among different classes, the annual waste of life which it occasions must, in the labouring class alone, exceed 5000.

I shall conclude this part of my inquiry by two additional facts from Dr. Arnott's evidence. In the first case the threatened disease was consumption; in the second, those allied scrofulous disorders to which children placed in unwholesome circumstances are liable. "The day after I saw the monkey-house just mentioned, I was sent for to visit a young gentleman at a respectable school in the neighbourhood of London, where there were about forty boys. The boy I went to see was thought to be falling into consumption, and I learned that others of the boys also were ill. On examination, I found the cause to be only a less degree of the error which had destroyed the monkeys." "A new school-room had been built at the back of the dwelling-house, in which room the forty boys spent much of their time, and there was no opening by which their breath could escape from the room, except through the low fire-place. There was, indeed, a sky-light above with sashes, which might be opened; but the schoolmaster told me that he took care never to open them when the boys were present, because, having done it once, a boy got severe inflammation of the lungs, in consequence of the cold air rushing in upon him. This gentleman had

gone to great expense, to secure, as he thought, the health and comfort of his scholars; but, from want of knowledge on the subject, had missed his aim, just as had happened in the case of the monkey-house."

The second case is as follows:—"A few years ago, when in the first charity-school at Norwood, containing 700 children, the greater part of them fell into ill health, and many died, really from imperfect ventilation of the house, it was believed by the public that the children were dying from want of food, and there was, consequently, a great outcry against the well-meaning man at the head of the establishment, for not feeding the children properly. In truth, he was feeding them better than the other proprietors of schools of the same class around London, but he shared the common ignorance of the subject of ventilation, and having so great a number of children in his establishment, the ill effects became more evident. The children recovered their health when the fault in respect of ventilation was pointed out and remedied. There were two or three medical men who commenced the outcry, showing that among medical men there were some who had not studied the subject sufficiently."

I now pass on from consumption and its preventible cause—deficient ventilation, to fever and its preventible cause, deficient drainage. The one is our *chronic*, the other our *acute* plague. The one insidious, lingering, and ultimately in the large majority of cases, fatal; the other sudden in its attack, rapid in its progress, and though claiming only about half as many victims, prostrating on a loathsome bed of sickness some ten or twelve times as many as it destroys. The registered deaths during the year 1842 from typhus fever amount to upwards of 16,000, which corresponds to between 150,000 and 200,000 attacks of the disease. I have estimated the probable waste of life from consumption at about 5000 a year, which, indeed, must be very much below the truth; but if the opinions of an accomplished physician of most extensive experience in the treatment of fever are well-founded, the waste from this cause amounts to at least twice as many—probably 12,000 at the very lowest; and about 150,000 persons, chiefly adults, stretched upon a bed of sickness for six weeks or two months each, subjected to a slow convalescence, and recovering with a constitution not improved by the attack.

This pestilence is not peculiar to large towns; it is less in excess among town populations than the other diseases of which I have spoken. Instead of being twice or

thrice as prevalent among the inhabitants of towns as in the rural districts, it is more rife by about one-fifth, the number of deaths to a million of inhabitants being 1250 in towns and 1000 in the country. Now this is not to be wondered at when you bear in mind that typhus fever is common in rural districts which are ill-drained and abound in stagnant marshes and collections of decaying vegetable matter, at the same time that it is just as liable to occur in villages and small towns which have no drainage, as in large towns that have bad drainage, deficient drainage being, as I shall presently show you, if not the parent, most certainly the nurse of fever. My own opinion is that fever is a contagious disease, spreading from person to person just as small-pox or scarlet fever does, but like those diseases haunting over-crowded or ill-drained districts, and all places where from any cause whatever the air is foul, and filled with animal and vegetable exhalations. It loves the banks of rivers, the borders of marshes, the edges of stagnant pools. It makes itself at home in the neighbourhood of cess-pools, and badly-constructed drains, and takes especial delight in the incense of gully-holes. It has a perfect horror of fresh air, soap and white-wash, but when left to itself will linger for years amid 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 English, *let alone*), and bears the same relation to *filth* as crime does to *ignorance*. Unfortunately for us, it has kept the same name for a long time past, and has grown so familiar that no one minds it. When the cholera did us the favour to pay us a visit (I speak seriously, it was a favour), we made preparations for its reception. We cleared out many an Augean stable, set the scavengers to work in right earnest, whitewashed sundry houses, and showed a wholesome respect for the threatened invader. He came at last, and he was too strong for us. He landed, and took up his quarters where we should expect to find him—on the banks of rivers; in low marshy spots; in the crowded, filthy, and ill-drained districts of large towns, and wherever we had either made no efforts to remove accumulated filth, or where the long neglect of years admitted of no immediate reparation. I saw sundry cases of cholera myself, and they all occurred (they were the first in that neighbourhood) in a quarter of the borough of Southwark, hopelessly sunk below the level of the surrounding district, and which set at defiance all attempts at drainage.

Now, it is a strange example of the effect of habit and the influence of names that this formidable stranger should have produced such a sensation, and roused us for a time into so much activity, and yet that this domestic pestilence should be allowed to go on poisoning and killing, year by year, thousands of our people, without setting a broom or a brush in motion. When the Cholera was on his way to us, and while he was among us, we were really up and stirring, and waging a not unsuccessful war against the causes of disease; but no sooner did he take his departure than we lapsed into our accustomed negligence. The commissioners of sewers laid down their trowels, the scavengers walked away with their brooms in their hands: there was a sudden falling off in the consumption of soap and whitewash; the boards of health closed their books and their labours; the Government fell into its habitual state of calm repose; all things returned under the sleepy rule of *Laissez faire*, and Filth, with his attendant train of Disease, and Misery, and Crime, resumed his empire.

What I have said about fever I shall endeavour to substantiate by some quotations from the evidence laid before the Health Commission by one of the highest living authorities on this subject—Dr. Southwood Smith; and I shall add a fact or two from other sources.

But I shall first give you a description of one of those places which I have described as the favoured haunts of pestilence and disease of all sorts. Here is a description, written on the spot, of Punderson's Gardens and Lamb's Fields:—"The place called Punderson's Gardens is a long narrow street, in the centre of which is an open sunk-gutter, in which filth of every kind is allowed to accumulate and putrefy. A mud-bank on each side commonly keeps the contents of this gutter in their situation; but sometimes, and especially in hot weather, the gutter overflows; its contents are poured into the neighbouring houses, and the street is rendered nearly impassable."—"The street is wholly without drainage of any kind. Fever constantly breaks out in it, and extends from house to house; it has lately been very prevalent here, and we have had several fatal cases from it, in the London Fever Hospital. The open area called Lamb's Fields is about 700 feet in length, and 300 feet in breadth; of this space, about 300 feet are constantly covered with stagnant water, winter and summer. In the part thus submerged there is always a quantity of putrefying animal and vegetable matter, the odour of which at the present moment is most offensive. An open, filthy ditch encircles this place,

which, at the western extremity, is from eight to ten feet wide."—"Nothing can be conceived more disgusting than the appearance of this ditch for an extent of from 300 to 400 feet; the odour of the effluvia from it is at this moment most offensive. Lamb's Fields is the fruitful source of fever to the houses which immediately surround it, and to the small streets which branch from it. Particular houses were pointed out to me, from which entire families have been swept away; and from several of the streets fever is never absent." Dr. Smith adds: "I know that no verbal description of these places can convey any conception of their disgusting and poisonous condition; they must be seen to be at all understood; and when seen every one involuntarily exclaims, 'Can such a state of things exist in a country that has made any progress in civilization?' These places had remained in this state many years, and no one had made any attempt to improve them; and now, after an account of their condition has been published to the world upwards of five years, they are allowed to remain just the same!"—"A part of this place has been improved since this description was written, by the cuttings of the Eastern Counties' Railway, which passes through it; but the offensive ditch, with the exposed privies emptying into it, remain just the same."

I have omitted from this description some particulars which are scarcely fit for a public lecture.

We are living, I believe, in the middle of the nineteenth century; we are constantly being told that this is a civilized nation; we hear much of the immense improvements that are going on, and we must be blind indeed not to see them. But *civilization!* This is really a strong phrase to use. Punderson's Gardens and Lamb's Fields, St. Giles's and Spitalfields, Manchester and Liverpool, forbid such a sad abuse of terms. I would not cavil about mere words if the use of them led to no bad result. But words, if not representatives of things, are mere dust to throw into people's eyes. It may seem very innocent and very harmless to amuse an after-dinner audience, or an election mob, or, on rare occasions, the representatives of the people in parliament assembled, by boasting of our civilization; but it is positively mischievous when the word, by the indefinite ideas it excites, puffs us up with national conceit, when we should be overwhelmed with patriotic blushes. It is gross flattery to talk of civilization with such scenes before our eyes. It is as mischievous to flatter a nation as an individual, and it ought to be as distasteful to the one as to the other. Away then with all the cant about

civilization, till England can advance some better claim to the use of the term than any that railroads, and steamships, and electric telegraphs (and no one admires them more than I do), with all their speed and power and ingenuity, can confer upon her. The idea of civilization is inseparable from the existing well-being and progressive advancement of all classes of society, and the enduring degradation and misery of any class must needs forfeit all claim to that proud title. If an American slave-owner were to get up in this room and talk with the eloquence of a Demosthenes of liberty and equality, and the rights of man, would you not laugh in his face, and hoot him till you were hoarse? To be sure you would; and what better treatment does he deserve who, with a knowledge of the real condition of the working classes, has the face to boast of England's civilization? As a sepulchre is not less a sepulchre for its sculptured urn and glowing panegyric, so a city, in spite of its public buildings, its cathedrals, its palaces, its squares, its fountains, and its spacious thoroughfares, if the mass of its population is constrained to dwell in eternal filth, can be considered in no better light than that of a vain deceiver tricked out for ornament and show, to the neglect of cleanliness and decency and every household virtue.

I have just given you an out-door sketch on the authority of Dr. Southwood Smith. I will now present you with a very short domestic scene by another hand.

"In the year 1836," says one of the medical officers of the West Derby Union, "I attended a family of thirteen, twelve of whom had typhus fever, without a bed in the *cellar*, without straw or timber shavings—frequent substitutes. They lay on the floor, and so crowded that I could scarcely pass between them. In another house I attended fourteen patients: there were only two beds in the house. All the patients lay on the boards, and during their illness never had their clothes off. I met with many cases in similar conditions; yet amidst the greatest destitution and want of domestic comfort, *I have never heard, during the course of twelve years' practice, a complaint of inconvenient accommodation.*"

I must not withhold Dr. Southwood Smith's commentary on this fearful statement. "This want of complaint," he says, "under such circumstances, appears to me to constitute a very melancholy part of this condition. It shows that physical wretchedness has done its worst on the human sufferer, for it has destroyed his mind. The wretchedness being greater than humanity can bear, an-

nihilates the mental faculties—the faculties distinctive of the human being. *There is a kind of satisfaction in the thought, for it sets a limit to the capacity of suffering which would otherwise be without bound.*"

I leave these quotations to work their own effect upon your minds, while I proceed to establish the position that fever is intimately associated with, and in some way dependent on, defective sewerage and drainage. A few passages will suffice. "The records of the London Fever Hospital," says the author just quoted, "prove indubitably that there are certain localities in the metropolis and its vicinity which are the constant seats of fever, from which this disease is never absent, though it may prevail less extensively, and be less severe in some years, and even in some seasons of the same year, than in others." "In former years, in some localities there was not a single house in which fever had not prevailed, and in some cases not a single room in a single house in which there had not been fever." "The districts in which fever prevails are as familiar to the physicians of the Fever Hospital as their own names." Now what is the character of these districts? In answer to this question hear Dr. Southwood Smith again.

"In every district in which fever returns frequently and prevails extensively, there is uniformly bad sewerage, a bad supply of water, a bad supply of scavengers, and a consequent accumulation of filth; and I have observed this to be so uniformly and generally the case, that I have been accustomed to express the fact in this way:—if you trace down the fever districts on a map, and then compare that map with the map of the Commissioners of Sewers, you will find that wherever the Commissioners of Sewers have not been, there fever is prevalent, and, on the contrary, wherever they have been, there fever is comparatively absent."

It is necessary, however, to add one slight qualification of this last passage. It is not sufficient that sewers of some sort or other should exist, in order that we may be safe from fever; the sewers themselves must be so constructed and so amply supplied with water that they may discharge their important functions to the full. Accordingly, when badly constructed or scantily supplied with water, they become little better than a chain of cess-pools, and the poisonous exhalations rising through gully-holes, or vents unsecured by proper traps, give rise to fever, in spite of the drains themselves being well constructed and in good repair. Cases of this sort have been placed on

record, and I have myself seen one very melancholy instance of the kind.

One of the most instructive facts mentioned by Dr. Southwood Smith, and confirmed by the testimony of other medical men, is the tendency of fever to visit and revisit the same spots, and to take up its abode, so to speak, for a length of time in the same house. Some striking examples of this fact are brought together by Mr. Willis, in a work on the social and sanitary condition of the working classes in the city of Dublin.

"Every one," he says, "acquainted with disease within the city must admit that there are localities from which contagious fever is never absent."—"*Eighty* cases of fever, including relapses, were said to have occurred in one house in the course of twelve months."—"*Fifty* persons have been admitted to hospital from another within a year."—"*Thirty* patients from another within eight months."—"*Nineteen* from a fourth in six weeks."—"The inmates of a house which was thrice lime-washed in the space of a few weeks, were as often re-admitted to hospital, in consequence of sleeping in their infected bedding."

Now, though the fever returns with such regularity to a place which it has once visited, and clings with such pertinacity to a house where it has once taken up its abode, it is quite astonishing with what ease, and at what trifling cost, it may be driven out again.

"When I visited Glasgow, with Mr. Chadwick," says Dr. Arnott, "there was described to us one vast lodging-house, in connection with a manufactory there, in which, formerly, fever constantly prevailed; but where, by making an opening from the top of each room, through a channel of communication to an air pump, common to all the channels, the disease disappeared altogether. The supply of pure air obtained by that mode of ventilation was sufficient to dilute the cause of the disease, so that it became powerless."

This result is in strict conformity with all experience on the subject of fever, which shows that it is not a highly contagious disease, and that the contagion may be so diluted by ventilation as to be rendered perfectly harmless. It is not to be doubted that a proper system of drainage, joined to a common degree of cleanliness, and a free ventilation, would soon banish typhus fever altogether, and make it a mere matter of history.

I have now given you an instance of fever put to fligh by a charge of fresh air; take the following as an instance

of the same happy result from a supply of water and an improvement in the drainage. It is contained in Mr. Liddle's evidence before the Health Commission:—"Windmill-court, in Rosemary-lane, was one of the most unhealthy in my district. It was unpaved and filthy, and with stagnant water before the houses. I used to visit it sometimes two or three times a-day for fever cases. About twelve months ago it was flagged: it was well supplied with water from a large cast iron tank, which enables the inhabitants to have a constant supply, instead of an intermittent one, on three days a-week. The court is regularly washed down twice a-week, and the drains are so laid that the water carries off all the refuse of the houses, which was formerly a most foul nuisance, and a constant expense to the landlord. In the seven months ending March, 1843, I attended forty-one new cases of sickness in that court; in the last four or five months, I have had but two cases." Mr. Liddle adds, "The rent is better paid, and the landlord is considered to have made a good thing of the improvements, which are executed at his own expense. There is no doubt that sickness is the most common cause of the inability to pay the rent."

Here is another fact of the same kind, showing separately the great advantages of sewerage, ventilation, and increased accommodation:—"The London Hospital was badly drained, heated with hot air, and not large enough for its inmates. In 1837 and 1838 respectively, the mortality was 14 and 12½ per cent. In 1839 the sewerage was completed, and the mortality fell to 9½ per cent. In 1840 the hot air was discontinued, and a further decrease to 9 per cent. took place. The mortality in 1841 was 10 per cent. In 1842 the new wing was opened, when the mortality fell to 8 per cent., and in 1843 to 7 per cent."

You will observe that the first fact mentioned by Mr. Liddle concludes with the statement, that the judicious and probably not very extravagant outlay of the landlord amply repaid itself.

As I am upon this subject of the economy of preventive measures, and the selfish argument of pounds, shillings, and pence, I will add another case on the same authority: "In a place in Cartwright-street, where there are a number of small tenements surrounding a piece of waste ground, which tenements are occupied entirely by the labouring classes, a well has been sunk by the landlord, and a large tank erected over the well. This tank is filled by horse-power. From this tank, pipes are carried and the water is distributed into the several houses. The water

is turned on three times a-week from the tank. Some of the houses have a water-butt in the cellar, and separate conveniences. . . . . I may mention, as evidence of their appreciation of the supply, that they now pay 3*s*. 6*d*. per week as rent in lieu of 2*s*. per tenement, which they formerly paid. It appears that these houses were for many years in the opinion of the landlord underlet, but the tenants consider that the increase of the rent arises from the supply of water."

Now, it must be quite clear that if it is to the landlord's interest to convert his pigstyes into houses, it must be to the interest of other parties also. I presume that the large majority of my audience are rate-payers, and that they contribute somewhat largely to the relief and support of the poor. Now, has it ever occurred to you to inquire why the poor-rates are so high? If so, the following fact will help you to a solution of the question. I take it from Dr. Southwood Smith's evidence.

"The Bethnal Green and Whitechapel Unions," he says, "incurred an extra expense for fever cases for the quarter ending Lady-day, 1838, the one of 216*l*. 19*s*., the other of 400*l*., making a total of 616*l*. 19*s*.; and being at the rate of 2467*l*. 16*s*. a-year." And "of the total number who received parochial relief in most of the districts, a very large proportion received it in consequence of their being ill with fever; but in one district, namely, St. George's, Southwark, out of 1467 persons who received parochial relief, 1276—that is, the whole number, with the exception of 191—are reported to have been ill with fever."

This is a startling statement, and one that suggests many reflections. If this was the expense incurred by fever cases alone, what must be the total expense and cost to all parties by all the diseases which depend on the same or similar causes, and have been proved to be amenable to the same remedies? If a landlord is so ignorant as not to see his own interests, or so negligent as not to act up to his knowledge, ought he not to be first instructed, and then to be compelled by law to do that which is so clearly both his interest and his duty? And if perchance he should fold his arms and entrench himself behind the rights of property, and the selfish assertion that he may do what he will with his own, ought he not to be reminded that he cannot have a right to inflict a gratuitous injury upon the poor, or to make his neighbours pay the penalty of his own negligence? So also with the *employer*: he *can* have no right to treat his workmen after the fashion of the monkeys at the Zoological Gardens, and then to throw the

burden of their support in sickness and premature old age on his neighbours, the innocent and unconscious rate-payers. He may say, "I am not my brother's keeper. If I deal honestly by him, and pay him his wages according to agreement, I may make him work where I please. If he does not like the place I put him in, or thinks that I am doing him an injury, he can go somewhere else. He is a free man."—Yes, in one sense he is free—free by law, but he is a slave to stern necessity. He *must* live, and there is rarely such an excess of employment in a populous country that any man can dare to sacrifice his place, even though his life should be ultimately the forfeit of his remaining where he is. It is better to die by consumption than by starvation; and it is better to be a martyr to honest industry than an idle inmate of a workhouse. Away, then, with all overstrained interpretations of the rights of property—welcome to our hearts the good old motto of our common law, "*So use thine own as not to injure other*"—and welcome, doubly welcome, the Christian precept, "Do unto others as you would they should do unto you." But let that man beware and tremble who, in word, or deed, or thought, is governed by the spirit of the insolent question addressed by the first murderer to his Maker, "*Am I my brother's keeper?*"

Let no one imagine that I think landlords or masters, as a class, intentionally cruel, or worse in any respect than the rest of their fellow-creatures. They have the average share of human kindness, the average ignorance of their own interests, the average neglect of their own duties—no more nor less. Nor are they wanting in the good old English liberality. They subscribe like other men to hospitals and charitable institutions, and they contribute largely and bounteously to the support of those charities which aim at the relief and support of their own workmen in disease or old age.

I have told you that the master tailors, from sheer ignorance, often treat their men ten times worse than the proprietors of the Zoological Gardens did their monkeys. The evidence before the Health of Towns' Commission contains a graphic description of a tailor's workshop, of which this is a condensation.

Eighty men, working together in a room sixteen or eighteen yards long, and seven or eight yards wide, close together, knee to knee—the room, in summer time, what with the heat of the men, the heat of the irons, and the heat of the candles together, 20 or 30 degrees higher

than the heat outside—the heat and closeness such, that tailors from the country faint away in the shop, and visitors complain of the heat and smell as intolerable—the men sitting as loosely as possible, the perspiration streaming from them. In winter these foul places are still more unhealthy, as the heat from the stoves and candles, and the closeness, is much greater. Cold currents of air streaming in at every crevice—perpetual squabbling about opening windows—the old hands, from long habit inured to the heat, conspiring to stifle the new-comers—in the very coldest nights, the rooms so hot, that large thick tallow candles (quarter of a pound candles) have melted and fallen over from the heat—the young hands unable to work full time—the old hands losing appetite—thirst taking the place of hunger, and gin of food. Intemperance, in this as in many other instances, a sort of necessity, and not merely a depraved appetite for a destructive poison.

Now, as I have told you, the master tailors, who, from ignorance or thoughtlessness, expose their workmen to this poisonous atmosphere, are not wanting in the English and Christian virtue of charity. There is a benevolent institution for the relief of aged and infirm tailors, to which the annual subscriptions of the masters amount to 800*l.*, and those of the journeymen to 525*l.*, making a sum of 1325*l.*, which is distributed in the relief of sickness and the infirmities of old age.

I think it very likely that the employer or employers of these 200 men may contribute their share—perhaps even more than their share—of this 800*l.* It is probable that they subscribe 10 or 20 guineas a-year; and such an annual subscription would be looked upon as very liberal. I would give them every credit for their charitable dispositions, and would be the last to deny them such praise as they deserve; but I would ask you, Is not this charity a miserable substitute for justice?—is it not a ludicrously insufficient compensation for injury inflicted? If I, by an act of negligence, cause the death of a man who is able to earn 100*l.* a-year, and who, if he live as long as the average of men of his own age, might continue to earn that sum for twenty or thirty years to come, what compensation would a five-pound note, or even an annuity to that amount, be to his wife and children? And yet the charity of the employer, in this case, bears an infinitely less proportion to the complicated injury he is inflicting on his men.

In the description I have just given you of the tailor's workshop, it is stated that the young hands are unable to work full time, and that the depressing atmosphere creates a necessity, or supposed necessity, for drink; so that the men must drink, or think that they must drink, for the support of their strength. I can also state from my own experience, that men so situated are very liable to sickness, and you may infer from facts which I have laid before you, that they must die in large numbers of consumption.

Now, I am going to make the most reasonable and moderate estimate I can imagine of the loss in money alone which these 200 men will incur from the causes just specified; and I believe there is not an individual present who will not deem my estimate ludicrously below the mark.

I shall first assume that in consequence of the intense heat and foul state of the air, each man of the 200 drinks only one pennyworth a day more than he would otherwise do. This will amount to 30 shillings a year for each man, or for the 200 men 300*l.* a year. My next assumption, which is also, as I think, extremely moderate, is this —that each man has one day more of sickness than he would experience under favourable circumstances, and I would suppose that the loss of that day's wages, and the expense of medicine and attendance, amounts to 7*s.* 6*d.* This, for the 200 men, would exceed 65*l.* I further assume that each man loses by short work a number of hours amounting throughout the year to one day, and I will estimate his loss in wages at 5 shillings. This gives me a total for the year of 50*l.* My next assumption is that, in consequence of the unwholesome circumstances in which they are placed, only two men, over and above those who would die if they worked in a wholesome atmosphere, die from consumption in the year (one in the hundred), and I will take the duration of each man's illness at one year (the average is close upon two years, but I take it at one year). Each man's loss in wages will amount to about 75*l.* a year, supposing him to have had constant employment. This will give 150*l.* a year for the two, and the expenses of sickness cannot add less than 1*l.* a week to the sum. This will amount for the two to 100*l.*, and the total loss and cost for these two victims of aërial poison will be 250*l.* Add for the funeral of each the very moderate sum of 5*l.*, or for the two 10*l.*

Now I believe every item of this estimate to be ludi-

crously below the truth, but when added together we have a very formidable total, as follows :—

	£.
Expense of spirituous liquors . . .	300
Loss by sickness (one day each man) .	65
Loss by short work (one day each man) .	50
Two men yearly dying of consumption .	250
Two funerals	10
And we have a total of	£675

Reduce this estimate in any way you think right, halve or quarter the total, or leave out every other item of the account, and yet you have a waste of means, a loss of money, (I say nothing of other losses), altogether disproportioned to the scanty compensation of ten or twenty guineas paid into the funds of the charity.

You must be pleased to recollect that I have been speaking only of the loss of money sustained by 200 men; but from inquiries which I have made, I think it highly probable that out of upwards of 30,000 journeymen tailors employed in the metropolis, at least 1000 work in the same sort of rooms, are exposed to the same causes of disease, and sustain the same kind of injury. If this apparently moderate estimate be correct, we shall have a money-loss by these thousand men of 3375*l.* a year; and as it is not very likely that more than one half of the master's subscription is distributed among this small fraction of the journeymen, let us set this half off against the loss incurred.

This deduction made, we leave the master-tailors debtors to their men, in strict and simple justice, to the amount of nearly 3000*l.* a year.

If my estimates should be attacked, I can only say in their defence, that a very eminent authority in sanitary matters estimates the loss sustained (he states by the masters, but this is obviously an error, though they are subject to a considerable loss from the spoiling of clothes, he ought to have said by the men—the 200 men) at 100,000*l.* He does not state for what period, but I presume that he means a term of some 20 years.

I care very little for the accuracy of this or any similar calculation. It is used simply as an illustration of a principle—a very valuable principle, though conveyed in a homely proverb—*prevention better than cure.* *Better* did I say? *Infinitely better* in this case—*so much better* as to defy all calculation of the difference; for the money loss,

great as it must be, is merely a mean of helping the imagination to conceive the misery of which it is the concomitant, and in part the cause.

At present, that is to say, in our transition stage from semi-barbarism to true civilization, mankind are slowly groping their way to some great truths. They are beginning to see the giant evils which spring out of a system of public and private negligence; they are beginning to feel that something more is required of individuals than that they should subscribe to charities and relieve the destitute; of governments, much more than workhouses and prisons, and a good system of police. Disasters must happen which no forethought could have prevented—misery, to which neither the fault of the sufferer nor the negligence of others has given rise; and these are the occasions for the exercise of that virtue which "droppeth like the gentle dew from heaven." But there is a justice which forestalls mercy by preventing the misery that ofttimes charity itself cannot alleviate; and there is a wisdom that consists in guiding aright the steps of justice, in finding out all the hidden causes of physical suffering and moral degradation, and in allowing no delay to intervene between the discovery of the cause and the application of its appropriate remedy. This justice, this wisdom, is a far higher quality than charity; and this we are beginning to understand. Such rude calculations as the one with which I have just presented you may assist us in weighing the relative value of justice and mercy.

Now that I am on the subject of estimates, I will briefly state that several medical men have busied themselves in calculating the loss of money entailed upon large towns by the neglect of sanitary measures. Dr. Lyon Playfair estimates the loss for Manchester at nearly 1,000,000*l.*; Mr. Hawksley, the loss for Nottingham at 300,000*l.* According to the first of these estimates, the loss for the metropolis would be 3,204,531*l.*; Mr. Clay's estimate for Preston would make it 990,812*l.*; and an extremely moderate estimate by Mr. Coulthart, for Ashton under-Lyne, 235,997*l.* The last estimate, for reasons which it would take too much time to detail, I think extremely low. Mr. Clay's estimate of 1,000,000*l.* I believe to be much nearer the truth; and I do not consider Dr. Playfair's calculation as by any means preposterous.

I have now, Gentlemen, fulfilled my promise and discharged my duty, by presenting you with some of the more striking and salient facts connected with this great question. Much, very much, still remains to be

said, and there is very little time to say it in. I shall therefore give you a brief summary, in distinct propositions, of the points already established, and of those which would seem to flow as natural consequences from them. I shall then treat with equal brevity the remedial measures, of which I have incidentally specified the more important, and conclude by a few considerations calculated to afford encouragement, obviate objections, remove prejudices, and disarm opposition. The propositions which I would put forward are these :—

1. That in our large cities, and especially in the most crowded parts of them, there is an excessive liability to sickness, a high rate of mortality, and a great curtailment of the natural term of existence.

2. That the classes who are most exposed to these evils are the labouring poor and tradesmen, of whom the former suffer to the greatest extent; but that the higher classes are not entirely exempt from them.

3. That persons of all ages participate in these evils, but that they press most heavily on infants and young children.

4. That the diseases which occasion this excessive sickness and high mortality are chiefly fever and the whole class of epidemic and contagious disorders, together with scrofula and pulmonary consumption.

These four propositions embody the leading facts relative to the health and lives of the inhabitants of large towns.

The following propositions contain a summary of the existing physical condition of the classes who suffer most severely by the diseases just detailed :—

1. That the districts inhabited by the poorer classes are badly drained and badly cleansed.

2. That in the houses of the poor there is a great want of all the conveniences which contribute to cleanliness and decency,—an ample supply of water, efficient house-drains, and places for the reception and discharge of refuse matter.

3. That the rooms inhabited by the poor are overcrowded and ill-ventilated.

4. That the shops and workshops of the poor are also very imperfectly ventilated, and in other respects extremely unwholesome; and that these evils are often greatly increased by long hours of work.

5. That in the districts inhabited by the poorer classes there is a great want of open spaces for exercise and recreation.

6. That the evils attendant upon scanty supplies of water in the houses of the poor are exaggerated by the want of cheap baths and washing places.

7. That the several evils enumerated in the six foregoing propositions, and the excessive liability to sickness, high rate of mortality, and curtailment of human life, specified in the first four propositions, stand towards each other in the relation of cause and effect.

The economic results of the circumstances just detailed are the following :—

1. Great pecuniary embarrassments among the poor themselves, arising from loss of work or of situation, and the expenses attendant upon unnecessary sickness and premature death. To which may be added the increased contributions to benefit societies, rendered necessary by excessive sickness.

2. A heavy annual expense entailed upon the community in the shape of large contributions to hospitals and dispensaries, and the general charities of large towns, and of increased assessments to the poor-rates.

3. A loss sustained by the Government, in consequence of the diminished physical power and greater liability to disease of recruits raised from among the inhabitants of large towns. To which must be added the expenses necessarily attendant upon the crimes springing out of the unfavourable physical circumstances, and consequent moral degradation, of the poor.

The moral and religious effects of the circumstances already detailed are :—

1. The sacrifice of self-respect, and the formation of bad habits, among which the vice of intoxication holds a prominent place.

2. An absence from schools and other places of instruction, from places of innocent recreation and amusement, and from places of worship, from a want of the means of cleanliness, and of decent clothing.

3. A large amount of crime, directly produced by overcrowding, and the admixture of persons of both sexes, and of all ages, in small and confined rooms.

The remedies for this fearful combination of evils, physical, economic, and moral, are partly in the power of the sufferers themselves, partly in that of landlords and employers, partly in the power of associations, and partly in the power of government alone.

The remedies which the labouring class have at their own command are these :—

1. The disuse of intoxicating liquors, and the careful

avoidance of the temptation to drink them under whatever shape it may offer itself.

2. The disuse on the part of mothers and nurses of Godfrey's cordial, children's quietness, and every preparation of that class, whatever be its name.

3. Scrupulous cleanliness as far as the means of cleanliness are provided; personal cleanliness by the occasional use of warm baths; daily washing of the entire surface of the body with cold water; washing of the hands after work, and of the face, hands, and feet before retiring to rest; a frequent change of body and bed-linen; and household cleanliness.

4. The prompt removal, as far as it is practicable, of all slops, and every kind of refuse matter.

5. The practice of ventilation at all seasons of the year, by opening the doors and windows the first thing in the morning, and thoroughly airing the bed-clothes for a short time before retiring to rest; the introduction into the window of a perforated zinc-plate, or other cheap and effectual means of admitting fresh air, without occasioning too much draft; and leaving the chimney open.

6. The choice, where it is practicable, of a large and lofty room, preferring the higher stories of the house; and where it can be done without inconvenience, choosing a residence in the suburbs. When there are many in a family, making any sacrifice to secure two or more rooms.

7. When there is a choice of employments, to avoid sedentary occupations, and those offering the greatest temptation to drink; where there is a choice of masters, preferring the one whose rooms are largest and best ventilated, and whose hours of work are most moderate; in those cases where work may be done either at home or at the workshop, to do it at home.

The remedies which are in the power of landlords and employers are these:—

1. The landlord will best consult his own pecuniary interest, at the same time that he will discharge a bounden and most grateful duty, by keeping his houses in good repair, supplying them with water and all proper conveniences, and securing, as far as it is in his power, efficient cleansing and sewerage. He should also whitewash the rooms at least once a-year; and should take care that, after the visit of any contagious disorder, they be thoroughly cleansed, fumigated, and ventilated. His pecuniary reward will be higher rents, and those rents better paid; and he will reap the joint recompense of justice and mercy.

2. The employer may do the same good on a great scale, and reap the same rewards, by giving his workmen room to breathe, keeping his chimneys open, selling his stoves, hot water and hot air apparatuses, and returning to the good old English open fire-place, with its true economy; conducting the foul air of gas-lights, if he use them, into tubes fitted for its discharge; and resorting to some efficient means of ventilation. In large establishments the open fire-place will entail too great an expense; heating by hot water is therefore to be preferred; but a free ventilation—a free entrance and free exit of air—is absolutely necessary. By paying his men on Friday, or on Saturday morning, and on his own premises; by adopting moderate hours of work; by encouraging, or, if he please, insisting on, the appropriation of a small part of his men's wages to insure them against casualties, he will be discharging high duties, and will see and enjoy their benefits.

The things that are in the power of associations may be stated thus:—

I. To promote inquiries into the actual physical condition of the working classes, and the influence which the circumstances that surround them have upon their health and well-being; to instruct the public by lectures and cheap publications; and to urge on the legislature, by public meetings, petitions, and all constitutional means, the necessity of interference.

II. A very important kind of association for carrying out these great objects, is an association of the labouring classes themselves. Such an association has been recently set on foot, and from my heart I wish it all possible success.

I will take this opportunity of introducing to your notice a young society whose Prospectus has just been put into my hands. It is entitled, 'The Metropolitan Working Classes' Association for Improving the Public Health,' and it adopts as its motto a dictum of Dr. Johnson's—"Health is the basis of all social virtues." It runs thus:

"The working classes in London feel that they suffer extremely in mind as well as in body from the presence of causes, many of which they are confident can be removed or considerably diminished. Several working men, living in different parts of the metropolis, have therefore united into a society which has for its aim the improvement of the public health, and they trust that by the active co-operation of their fellow-workmen, and the assistance of the wealthier classes, they shall be able to effect much good.

"The objects of the society are:—

"1. To diffuse very extensively, among the working classes, by addresses from the committee, lectures, public meetings, pamphlets, the formation of libraries, and every other available means, information, showing the evil effects to their health and moral condition, produced by bad ventilation, imperfect drainage and sewerage, burials in towns, deficient warmth and exercise, and by a neglect of cleanliness in their persons, houses, and workshops.

"2. To point out the most effective and economical means of removing the evils alluded to, by describing plans for ventilation, warming, drainage, and bathing; to state the cost of these plans, and where they can be obtained and seen in operation, and to attempt to get them carried out at as little cost as possible.

"3. To use every effort to obtain a more abundant supply of purer water, and to secure better means of carrying away that which has been used.

"4. To endeavour to ascertain the sources of impurity in the articles of food and drink in general use, and to adopt measures to remove them.

"5. To diffuse among the wives of working men information respecting the best means of nursing, feeding, and clothing their children, and to point out the most efficacious plans for the preservation of their health.

"6. To seek assistance in procuring open spaces of land for conversion into public grounds for manly exercises, and by thus securing the means of healthful recreation and amusement among the working classes, to afford facilities for the advancement of temperance and sobriety.

"7. To encourage and assist the formation of district societies having objects similar to those of this Association."

The president of the association is the Right Reverend the Lord Bishop of London, and it has secured the patronage of many men of rank and influence.*

III. Another kind of association is that which has for its object not so much to learn, and teach, and influence, as to act. The societies recently formed for building houses for the poor, and that for establishing baths and wash-houses, are of this kind. These effect a great good,

* The subscription of members is 6*d.* a quarter, or 2*s.* a year, payable in advance. The subscription of an honorary member is 1*l.* or upwards. Subscriptions are received by the Treasurer, 12, Argyll Place, St. James's; by Mr. Wilson, the Honorary Secretary, 25, Hart Street, Bloomsbury; and by the London and Westminster Bank, 1, St. James's Square.

partly by doing a little direct good and partly by setting an example. May they be prosperous in both ways!

I have already explained to you the objects of the *Health of Towns' Association*, as those objects are embodied in their prospectus; I have only to add that one very important kind of instruction, and a great and valuable facility offered to the public, is about to be provided in the form of a depôt at which may be seen all the cheapest and best forms of apparatus approved by the society, for effecting the great objects of ventilation, drainage, and sewerage.

I may mention here what will both surprise and gratify all who take an interest in this subject, that the estimated cost of all the great sanitary improvements—water-pipes, and an ample supply of water, main sewers, secondary drains, house-drains, water-closets, ventilating apparatus, scavenging, widening of streets, rent of public parks and gardens, salary of inspectors of health, interest and fund for the repayment of capital—all may be well and thoroughly done for an additional weekly expense over and above the rent of—what think you per week? 3½*d.* Yes, improbable as it may seem, all these health-preserving blessings, all these appliances of decency, all these aids of virtue (may I not justly say, of religion too?) may be purchased for 3½*d.* per week per house.

It only remains that I should say a few words of the power which Government has in this matter. Legislation can do much—very much—so much that no efforts of individuals or associations can avail without its help. We are dependent upon legislation for our supplies of water, and the construction of sewers. Unsound legislation may place a thousand obstacles in the way of both, but a good and comprehensive measure may carry these cheap blessings into every court and alley in the kingdom. To legislation, again, we must look for a good system of supervision and inspection, the abatement of nuisances, the closing up of crowded churchyards, the removal of cattle markets and slaughter-houses from the centre of our large towns, the consumption of smoke, the purification of our rivers, and the application of the valuable refuse of towns to its proper use, and, what is doubtless more difficult, the regulation of the hours of work, and the enforcement of ventilation in public buildings, churches, schools, barracks, factories, shops and workshops. The task, in some respects, will be difficult, and the statesman who makes up his mind to earn the old Roman crown of him who had saved the life of a citizen, must be prepared to

carry out against all opposition the great principle of the common law, which I have already once cited—*so use thine own as not to injure other*. There must be interference with what the selfish will term *the rights of property*, but wherever the rights of property become the wrongs of the poor, there the legislator must step in with the strong arm of the law. He must dare to know more, to see farther, to judge better than the people whom he governs; but of this he may be secure—that if he make enemies of the ignorant and selfish, he will find friends among the intelligent, the philanthropic, and what is better than all among the poor. He has a great mission to perform. He can have no greater, and the peace we are happily enjoying is an opportunity which ought not to be lost.

Happily our legislature is not indifferent to this great subject. It has taken the initiative. The report of the Health of Towns' Commission is already embodied in an Act of Parliament, which will be submitted to the Houses in the next session, and then we may hope that the expectations held out in the speech of our gracious Queen at the opening of the last session of parliament will suffer no disappointment.

As all classes have an interest in this matter, so all classes must have duties to perform in respect of it. Those who, like the members of my own profession (I am happy to say that they are foremost in this good work), have opportunities of collecting facts, and establishing valuable general principles by means of them, should bring these facts and results before the public; the clergy should inform themselves of the influence of these physical evils on the moral and religious habits of the people, and should advocate sanitary measures as a great assistance to them in their sacred work; the rich should contribute of their wealth to associations having the improvement of the physical condition of the poor in view; the poor themselves may associate and learn and teach each other, and all members of society may co-operate for the mutual benefit of all; and in no way can they be more usefully employed than in promoting petitions to the legislature. The legislature itself has a higher and more responsible position as the representative of the people's wants, wishes, and interests; the statesman has here an opportunity of displaying his highest qualifications, and of discharging his most welcome duties; and the Monarch, in her noble mission of drawing closer the ties which bind nation to nation, and thus preserving the peace we have so long enjoyed, will find no pleasure so great as that which consists in

removing those very sufferings which make up nine-tenths of the misery of war.

Everything we see around us promises a brighter and a happier future for all nations and classes of people. We are beginning to discover, what some have long known, that physical suffering lies at the root of half the moral evil of the world. Where that is, there ignorance, and violence, and vice, are most surely to be found. It is the parent of discontent, and turbulence, and insurrection; the great enemy of social order, the chief obstacle to all social improvement. We have now found out the most influential of its causes, and we cannot doubt the effect of its removal. The prejudices which for a time had opposed us are fast disappearing. The opinion is now no longer entertained that fever and consumption were sent into the world to keep down a redundant population, but a juster conception of the dealings of Providence has taken its place, and Science has corrected the fatal mistake. She has shown that so far from these diseases having any tendency to check the increase of population, they lead directly and of necessity to its increase, at the same time that they substitute children for adults, and unproductive for productive citizens. These things, paradoxical as they may appear, are proved and acknowledged to be undoubted truths, and thus the last obstacle to the success of our efforts is removed.

As correct reasoning and observation are in favour of sanitary measures, so also is the result of our experience. Formerly our prisons were as much neglected as the houses and workshops of the poor are now, and they were consequently most unhealthy. The gaol fever committed dreadful ravages within their walls, and often infected our courts of law. Now, thanks to the philanthropic exertions of Howard, most of our prisons are particularly healthy, and the gaol fever of former times is a matter of history. So also with our ships. Formerly a ship abounded in every conceivable cause of disease. The provisions were bad, the water was putrid, the air was foul, and, as a necessary consequence, scurvy and putrid fevers were never absent from them. Now both classes of disease have been nearly banished from our navy, and an enormous waste of life and money has been prevented. These improvements in health have alone sufficed to double the effective force of our navy, to make one ship, for all purposes of navigation and warfare, equivalent to two of equal force, and to enable a vessel to keep the sea

for twice or thrice the time which was possible some fifty years ago.

Now these great advantages were gained by very simple means—by precisely such sanitary measures as I have recommended in this lecture; and it was by such means that our prisons, our hospitals, and our workhouses have been rendered comparatively healthy.

These facts, to which I have only time to allude in the most cursory manner, ought to encourage us in the adoption of sanitary measures. The example afforded by the navy, especially, ought not to be lost on those who have it in their power to extend these provisions for the preservation of health to the other branch of the public service, and to the community at large. The necessity is quite as pressing; the advantage to the full as real and substantial. Sickness and death in our fleets formerly cost an extravagant outlay of public money. Do the pestilential diseases and frightful mortality of some of our large cities cost the public nothing? Do fever hospitals, and workhouse infirmaries, and pauper burials, and widows and orphans, and cripples—the victims of diseases which might have been prevented, but cannot be cured—cost nothing? If but a small fraction of the money expended on objects such as these had been employed in constructing sewers and widening streets, and providing places of recreation in the centre of our crowded cities—in letting the fair light of heaven into their dark and gloomy recesses, and the sweet breath of heaven into their foul and reeking habitations—we should not now have to lament over such scenes as those which the great manufacturing and commercial cities of the north have lately disclosed. The preservation of the public health is economy in every sense; it not only saves money, but it makes it: it substitutes men for children, productive for unproductive citizens: it supplies a country with its best riches and its cheapest defence—the arm strong to labour, and, if the sad necessity arise, to fight.

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