THE ETHICS OF PREVENTIVE MEDICINE.*

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AN opportunity has already been afforded me of thanking you for the high honour of my election to the Presidentship of this Society, and for the forbearance you have shown towards my very imperfect performance of the duties of the office. I can only say again that your kindness has my fullest appreciation.

That life is worth living may be an occasional subject of academical disputation, but for the sanitarian it must ever be the root principle of all his work. Its denial, indeed, can hardly be regarded as serious on the part of a sane man, and belongs rather to a parade of cynicism than to the domain of real and settled belief. Moreover, the old saying that whatever is worth doing is worth doing well, applies to the living of one's life at least as much as to lesser things, and applies to it in all its aspects, physical, moral, and intellectual. These two axioms, that life is worth living, and is worth living well, may be regarded as the twin bases on which have been erected the whole science and practice of public health and preventive medicine.

How closely the moral and intellectual aspects of life are related to the physical need not be dilated on here, yet at the very beginning of any consideration of the Ethics of Preventive Medicine and the scope of its operations, there arises a question as to its moral influence. While no one can doubt the mental and moral value of better sanitary conditions, it is open to argue that sanitary administration—the means by which better sanitary conditions are attained—may have in one direction a very demoralizing effect. If too much is done for the individual by his governing body, whether central or local, may not his own sense of personal responsibility be weakened? May he not be led into a position of unwillingness to act for himself, and of reliance on Government to carry out duties which properly belong not to it but to him? These questions are parts of the very wide and difficult subject of the proper limits of municipal socialism. Where should the boundary line be drawn between what a man ought to do for himself on the one hand, and what the State, or the Municipality, or the County Council, ought to do for him on

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the other? On some points, such as the corporate provision of lighting, scavenging, water-supply, and drainage—gas and water socialism as it is sometimes called—practically the whole nation is now agreed, unless in regard to water-supply we except, say, the London water companies. As civilization advances the organisation of government, whether national or local, becomes more elaborate, and its functions more intricate and inclusive, so that the sphere of private responsibility is bound to become in these directions correspondingly narrowed. It is a long time now since the duty of looking after the poor of the land was undertaken by the State, and a generation has well-nigh elapsed since the burden of elementary education was removed from the shoulders of the parent to those of the community. The provision of school-books is now undertaken by some boards, and a still further step is the supply of at least a mid-day meal, on the ground that in the case of poor and ill-fed children, it is a natural corollary to compulsory attendance. At the same time, tennis-lawns, cricket-pitches and bowling-greens are being provided in public parks and recreation grounds, so that a cynic might be inclined to say that a return is being made to the old conditions in which Roman Emperors attempted to placate and cajole the populace by gifts of *panem et circenses*. But the differences are obvious. The games of the Colosseum were spectacles for the entertainment of onlookers, while those provided by municipalities are healthy exercises in which all may join. In many large towns locomotion in the shape of a tramway or 'bus service is in the hands of corporations. I have not yet heard of a free service being given, though it happens that in Glasgow a curious approach to that is foreshadowed. The River Clyde is spanned by several bridges, but all these are above the harbour, there being nothing equivalent to the Tower Bridge of the Thames. A large population lives on either side of the harbour, with much necessary intercommunication, and it is being urged with increasing insistence that the ferryboats which give a cross service at frequent points should be without toll, the argument being that the town which gives free bridges in one place should give a free substitute for them in another. Such a service would be a very considerable development of municipal socialism. A man merely walks across a bridge, but would have to be carried across a ferry; and if the latter be done at the cost of the town, why should he not also be carried along the street—why should the tramway service not be free? It is, I presume, too early yet to talk of the travelling pavements described by that novelist of science, Mr. H. G. Wells, as street conveyances available to all who might choose to

step on. These two conveniences, ferries and tramcars, have little to do with public health, but they might easily develop still further, so that the workers in the town might have the opportunity, by a free suburban train or 'bus service, or at least by a subsidised service, of rearing their families and spending their own evenings and weekends in the fresher air of the country. Closely connected with this is the very important question of house accommodation, and there is evidence that this subject is likely to be taken up at no distant date, as a matter of imperial concern.

In endeavouring to mark the boundaries which should be set to such enterprises as these, various principles can be suggested.

It is one of the essentials of a bye-law made under an Act of Parliament that it shall be of general application. On the same lines it is said that national and municipal schemes in the direction of socialism should be such as must benefit whole communities, and not merely individuals. Much depends here on whether direct or indirect benefit is meant. If direct benefit is intended, then not even the Poor Law nor the Education Acts can be justified, for only a small minority receive Poor Law relief, and many persons have no children attending elementary schools. If indirect benefit is sufficient, then the scope of operations may be widened to almost any extent, as very little is done by either Parliament or local authorities, in defence of which there cannot be alleged an ostensible reason of some indirect benefit to all.

Another principle that may be suggested is that such enterprises should, by improving the environment, give every man a fair chance in life, but should leave the individual himself to take such advantage as he may of the opportunities given. Where, however, is the line to be drawn between environment and the environed? Climate, of course, is environment, and in so far as it can be influenced we are on safe ground. No town has yet gone the length of providing the municipal umbrella to be thrown across whole streets in time of rain, which Bellamy wrote of in "Looking Backwards," as the typical example of future socialism, compared with present individualism, whose umbrella protects only a single person, and that at the cost of shedding raindrops on the shoulders of the man next him. But certainly the removal of smoke and dirt from the atmosphere of cities is a matter of the first importance which is well within the range of practical effort. Next to climate the city itself is an inner layer of environment, and its conditions should be improved in every reasonable respect. Still proceeding from circumference to centre, we come to the dwelling, and here, as has just been said, much has already been done, and much more may be

looked for. A man's body clothing naturally comes next, but no one has, so far as I know, proposed that the State or municipality should clothe all its constituents, though many towns have provided public laundries at which clothing may be washed. But even that is not all, for the human body may itself be regarded as the inmost covering of the individual. For this layer of environment there are public baths for cleansing the body and affording additional exercise for its maintenance in health and vigour. Surely at last then, you say, coming to the soul, we have finally got away from environment, and therefore from interference by State or city. But no: to provide religious ordinances for the benefit of the soul, every town, besides its State churches, has missionaries engaged in evangelistic work. In face of all this, it will probably be admitted that attempts to measure the true functions of public bodies solely by the test of improvement of environment are likely to be attended by considerable confusion, and to leave it open to every man to claim that his own particular scheme fulfils this requirement.

In speaking of clothing, I said that nobody had proposed its provision as a national or municipal duty. The reason obviously is that this is a thing which the individual can do best for himself. Here is a principle that should often be of use in helping to draw the line between corporate and individual action. The axioms with which we began are, first, that life is worth living, and, second, that it is worth living well. When a municipality undertakes duties that can be done better for himself by the private citizen, it is proceeding on lines at variance with the second axiom. Allied to this question of what a man can do best for himself is that other question with which we started, whether modern sanitary administration may not incidentally have a bad effect by weakening the sense of personal responsibility, by ministering to selfishness, and by diminishing self-reliance. Under County Council government in Scotland very much has been done in the rural districts during the past decade which had never been thought of before. In some villages that I know of there have been localised epidemics of infectious disease which under the old régime would have been allowed to take their own course practically unchecked. The new authorities adopted an active policy. Hospitals were established, medical attendance and nursing provided, the causes of the epidemics were investigated and dealt with, and every step taken in the way of cleansing and purification of the infected areas and houses. In such circumstances local appreciation of these new efforts might have been looked for. As a matter of fact, criticism was more plentiful than complimentary; but, after all, that is not

to be complained of, for of course the costs were paid out of assessment, though the area assessed was so extensive, and the valuation of the villages so trifling, that they bore only an infinitesimal share of the burden. In one outbreak one old woman displayed none of this critical spirit. She regarded the whole thing as a blessing, holding that the construction, staffing, and maintenance of temporary hospitals, and the comings and goings of officials, gave a fillip to the trade of the place, and caused a circulation of money such as had not been experienced for years before. What struck me in particular, however, was the amazing readiness with which some people were willing to fall in with and develop and extend what they regarded as a new system of doing little or nothing for themselves and leaving the local authority to do everything. They had had no such experience before, and yet they accepted the new conditions so readily as to suggest that they had at last found their natural environment, or rather that their natural environment had at last found them. They seemed to think that a millennium of laziness and idleness had arrived. In less than a week from the commencement of proceedings in one locality, a woman from whose house a case of infectious disease had been removed to hospital demanded to be paid for washing her own floor. In another place an old man, whose wife had been taken charge of as a hospital patient, who had thus been relieved of all the trouble and expense and danger of attending to her, and had himself been employed to do some menial offices at the hospital, struck work in ten days for a rise of pay. Of course such conduct was not at all universal. I have merely picked out examples which best illustrate the point, that some people are only too willing to throw off all personal responsibility, and even to demand remuneration for work which they ought to be glad to have the opportunity of doing on their own behalf. Under the Scottish Public Health Act of 1867 the duty of cleaning a house after the occurrence of a case of infectious disease was laid on the occupier. The Act of 1897 transferred it to the local authority, obviously because thereby the work is likely to be done more thoroughly. In spite of this, I am bound to say that I do not advertise that section of the Act needlessly, but always endeavour to get the inmates to fulfil, under sanitary supervision, their obvious duty of cleansing their own dwelling, just as every man ought to attend to the washing of his own face.

Four suggestions for marking the boundaries between individualism and socialism have been touched on: that collectivist measures shall be of general application; that they shall so im-

prove the environment as to give every man a fair chance in life, but shall leave the individual untouched; that they shall do nothing for the individual which he can do better for himself; that they shall interfere as little as possible with the sense of personal duty and responsibility, and shall carefully avoid encouraging selfishness and pandering to laziness. No doubt there are other suggestions to add to these, but it is obvious that none can be applied rigidly, and that the circumstances affecting the numberless social problems which offer themselves for solution are so various that each must be judged on its own merits, just as, in the diagnosis of obscure disease, every indication has to be carefully marked and weighed and a conclusion arrived at by a connotation of all the facts of the case. This also, however, must be kept in view, that new problems are not to be faced in too timid or conservative a spirit, but that recognition must be given to the general tendency of the times to make the functions of the State and the municipality more and more extensive and inclusive.

The preservation and the improvement of the public health have long been regarded as well within even the narrowest boundaries which can be drawn round the sphere of operations both of central and local authorities. Yet when consideration is given to the various classes of measures which can be taken to carry out these important purposes we still find ourselves in the region of controversy, and there is little that sanitarians can do which is not, on grounds of principle, or of results, or of both, made the subject of hostile criticism. Busy men, fully persuaded of the value of their life-work, and knowing only too well that art is long and life short and judgment difficult, can give little heed to these criticisings and spare little time in attempting to confute the critics. Yet once in a while a half-hour may be spent in talking of them.

In an address which I once had the honour to give in opening a sanitary congress, I discussed disease-preventive measures in three groups or headings, each being described as one of three concentric walls, which, taken together, might be regarded as constituting the defences of that City of Hygeia which was first so pleasantly written of by the late Sir Benjamin Ward Richardson. The outer wall of the city I described as sanitation, in the sense of cleanliness of air, water, food, and soil, sufficiency of house accommodation, and so forth. The middle wall was preventive inoculation, which, unfortunately, was very incomplete, referring, as it did, to only one disease (small-pox), though there was at that time reason to hope that it would come to be extended, so as to be made effective against some other of the city's assailants. The third wall was

hospital isolation. I placed it inmost, because the need for it could only arise when the other defences had been proved ineffective. Its very existence, indeed, could be regarded as a confession of the insufficiency of the outmost wall of sanitation and of the incompleteness of the middle wall of inoculation.

Since the time of that address, the middle wall has been both strengthened and lengthened, and the outer and inner walls have also been improved in various particulars. Along with these improvements, however, there has been some very active criticism of this whole system of threefold defence. The middle wall in particular has been the subject of violent animadversion and objurgation, and if you will allow me, I will try very shortly, so far as my knowledge will permit, to act the part of *advocatus diaboli* in this connection.

The objections are not merely to the danger and insufficiency of vaccination against small-pox, nor to the worthlessness of similar procedure in the case of diphtheria, enteric fever, plague, cholera, and the like. The whole system, it is contended, is essentially immoral. It sins against the first principles of health, and is a contravention of the laws of God. The human body is a divine gift, and should be sacred against all such interference. When food is taken into the system, it is subjected by nature to a long course of separation of good from bad ingredients, and of purification, testing, trying, and modifying by various organs through which it has to pass before being received into the vital stream, to nourish and maintain the living temple. There is in nature no crude and violent insertion into skin or blood of food or medicine. Everything has to pass through the portals, and to be subjected to all the preparatory processes of ingestion, modification, and assimilation. Besides, inoculated material not only enters the body by a wrong pathway, but its character is such that it should never find entrance at all. The diseases which it is desired to prevent by such means are filth diseases. They are said to depend on living filth in the form of minute organisms bred in foul surroundings. How, then, should they be prevented? Surely not by the injection into the life-blood of other filth-organisms, or of the filthy products of the life-processes of such organisms. It is alleged that the filth purposely cultivated in so-called health laboratories is not so deadly as that naturally raised in breeding-grounds of bad air and human dirt and all uncleanness, and that such feeble filth will preoccupy the ground which might otherwise be taken up by its less artificially-reared relatives. But surely public health (save the name) has not been reduced to such miserable expedients as this casting out of

devils by means of devils—this capitulation to dirt and making of terms and truce with disease. To submit to any such Danegeld is to demoralize defence and stimulate attack. The procedure, indeed is cowardly as well as immoral. There is only one weapon with which to conquer dirt. That weapon is cleanliness. It is God's method; the other is Satan's.

Moreover, if for argument's sake it be allowed that such means may prevent small-pox or cure diphtheria, have we any right to exercise them? Surely not. All such false systems find us out in the end. If we spend our time and thoughts and money in miserable attempts to dodge nature, we inevitably neglect to some extent the better way. If we tell the public that they can cheat and defeat the universal law that dirt fosters disease, we delay and obstruct the advent of that universal cleanliness which after all is the only true method of sanitary advancement.

Having thus attempted to indicate my fitness for the post of travelling lecturer to the Anti-Vaccination Society, let me now turn to the outer wall of the City of Hygeia, to that of sanitation, which is lauded so loudly by the critics of inoculation. As we approach this outer wall we note that it is being carefully surveyed by a group of studious-looking individuals, some of whom from their spectacles, tobacco-pipes, length of hair and whole appearance, impress us as being savants, possibly of the great Teutonic race. Coming within ear-shot we find that one of them is addressing his fellows on the subject of sanitation. No doubt he is praising our outer line of defence, so, smarting from the indignant derision to which our second wall has been subjected by home critics, we may restore ourselves to our own good graces by the pleasant medicine of foreign approbation, especially as Germans are past masters in the art of war, offensive and defensive. What, then, is the learned professor saying? "Modern sanitation, my friends, is the greatest curse of modern times." What an extraordinary deliverance! Sanitation, he continues, is utterly opposed to the first principles of evolution, to the universal law of the survival of the fittest. The aim of the sickly sentimentalism which is the very basis of sanitation is the survival not of the fittest, but of the unfittest. It is by constant warfare "with tooth and claw" that Nature exterminates the unfit and preserves the fit throughout the animal kingdom. Man is the only member of that kingdom presumptuous enough to attempt to dispute the doings of the great First Cause. The futility of such disputation is obvious, and man has to pay the penalty of his own blundering. He desires to improve the health and add to the longevity of human kind, and

to this end he nurses and feeds and coddles the weakest, with the result that he is often successful in rearing into adult life those whom Mother Nature would have destroyed, and, so reared, these weaklings become the progenitors of a weakly race, who in their turn are similarly dealt with, so that the whole physical progress is downwards, and at a constantly increasing speed. Indeed, this policy of cotton-wool is sapping the strength of the race. The northern tribes who came to attack ancient Rome had been bred in sterner surroundings, while the Romans, who paid more attention to hygiene in the way of baths and personal cleanliness than any people before or since, fell an easy prey to their less artificially nurtured enemies. Besides, we may assume our savant to continue, any improvement to the health of the individual which may result from sanitary measures is of no avail to the next generation. Has not Weissman shown, and does not our own Galton support, if he did not precede him, in showing that Lamarck is entirely wrong in holding that acquired traits may become hereditary? The constitutional debility of the parent may be transmitted to the offspring, but any personal benefit derived from good air, food, water, housing, and exercise dies with the beneficiary, so that in such a case the evil only and not the good lives after us, the good being interred with our bones.

I shall not ask you to follow our critic further in this most melancholy discourse. Let us instead turn now to our only remaining wall of defence, to our last and innermost protection of hospital isolation. But here, alack! we are met, not by Continental objectors, but by critics belonging to our own household. Is it not at a meeting of this very Society that we have heard a most able indictment of isolation hospitals as having failed to prevent the spread of that infectious disease for which they have most of all been used, and is it not in the correspondence columns of the *Lancet* that similar opinions have been urged with no want of rhetorical force? Let me hasten to say that it is not my purpose to discuss that question to-night, and I mention it only to complete the list of objections to the defences of Hygeia. It is a curious fact, however, that some of the keenest of the earlier opponents of inoculation were keen opponents also of hospital isolation. In 1878 the Secretary and a Vice-President of the Anti-Vaccination Society wrote: "Small-pox hospitals are the culminating mistake in the social treatment of the disease. They are sewers of death to their inmates. . . . The true policy . . . is to let each case lie where it falls, and to treat it there as it ought to be treated." That attitude has been practically given up by the most recent school

of anti-vaccinationists, and some have even gone the length of advocacy of compulsion in the matter of hospital isolation, however hotly they revile it where vaccination is concerned. This change of front is perhaps partly due to the desire to establish a kind of unholy alliance between alleged science on the one hand, and the pseudo-sentiment of anti-vaccination on the other—an alliance which now shows symptoms of rupture as a result of what pseudo-sentiment seems to regard as unfaithful conduct on the part of so-called science. The dispute is a pretty one and makes amusing reading, but is of too little moment to be more than mentioned here.

To sum up these various views, then, we find that sentimentalists disparage inoculation, that scientists find fault with sanitation, and that our own brethren criticise hospital isolation. In the midst of such discordant voices, what is a poor health officer to do? His duty, of course. But that is a platitude, for the difficulty is to define his duty.

In searching for it, we will probably be the more successful the more we recognise the limitations of our own powers both of vision and discrimination. And being only short-sighted mortals after all, we had better be satisfied with short views. Indeed, the more I have to do with sanitary administration, the more strongly does the practical value of short views impress itself on me, partly through successes, and partly, alas! through blunders. Any number of examples might be given. Take the case of a hopelessly insanitary house in a busy and prosperous town or village. It is old, damp, and dilapidated, the apartments are small and ill ventilated, the ground outside is high above the floor level, and the very elements of suitability for a civilized existence are wanting. You write to the owner telling him that he should close the house, and so make it unnecessary for you to proceed under Part II. of the Housing of the Working Classes Act. In reply, he assumes the pose of a friend of the poor. If such houses are shut, what are poor people to do? Who will build others for them? Are you not beginning at the wrong end? Should you not start by getting the sanitary authority to embark on a building scheme? Moreover, are there no worse houses than this in the district? Why don't you attack John Jones in the first place? Your correspondent, in fact, wants you to take a long view of the question. But you prefer a short one, and so the house is closed, and, trade being good and houses in demand, a much better building is soon run up in its place. Similarly there is a proposal to build a fever hospital. "But don't you think, doctor, that when we have got this new water-supply and drainage and scavenging, we may not need a hospital, as

infectious disease will so much decrease?" That is the long view. The short one is, Build your hospital. Or, again, improvement is badly needed in a colliery village with broken surface channels a few feet from the doors and windows of the miners' houses. But you are asked, Should you not wait until you get a new water-supply, and then you can introduce a proper drainage scheme? That again is the long view. The short view is, Do now the work that is required now. Repair the channels, and employ someone to keep them clean, or else remove them altogether, and provide something better in their place. Or it is proposed to prosecute with regard to some nuisances concerning which the statute law is weak. The long view is, Wait for a new Act of Parliament. The short view is, Try your best with the Act you have, but also do your best to get it amended. Or a new set of dairy regulations is in question, and it is proposed to fix a minimum cubic space per cow in every cowshed. "But what is the use of a cubic space without ventilation?" says the man with long views. Then let us have ventilation. But the answer comes this time from the dairyman himself, "I don't want ventilation, as the byre will be cold, and the cows will not yield sufficient milk." Then let us have artificial heating. Alas! the reply is ready once more, "The profit on my milk-selling won't pay for artificial heating even if the structural means were provided, and I understand no good system of heating is known of. Let us wait a while." That is the long view. The short view is, Take the first step first; get the bye-law for air-space and enforce it.

The Good Samaritan was a man of short views. The Levite and the other man were going along, one with his head in the air studying the heavenly bodies, and the other staring into vacancy, puzzling himself over some abstruse question of theology. They were too busy with high problems to pay any heed to the wounded man. But the Samaritan, who, as I have heard one of the finest of living preachers say, was a mere commercial traveller on his rounds between Joppa and Jerusalem, had no transcendental themes to trouble him, and, using the light of heaven, not to enable him to admire the firmament, but to show him his duty on the earth, observed the injured man by the wayside, and straightway proceeded to dress his wounds and get him on his feet again.

It need hardly be pointed out here that short views are not the same as narrow views. On the contrary, if one does not try to peer too far ahead in any particular direction, there is the more opportunity of looking all around within the closer range, so that shortness of view tends also to breadth. Let us then, in considering

what is our duty in presence of the objections that have been urged to our triple lines of defence of the city of Hygeia, bear in mind the value of short views and broad views.

Turning to the first group of objections—to the assertion that prevention by inoculation is a sin against the human body, and a capitulation to the powers of uncleanness, that the body is a sacred fane, and that our methods are a pollution of the fane—there is surely something to be said on the other side. Is it not mere self-conceit to assume that the flesh, bone and blood of which our living house is built are more sacred and inviolate than those of other animals, which man has, since the foundation of the world, unhesitatingly used for his own purposes, whether for work or food? Indeed, is our immediate environment of bodily tissue any more sacred than the wider environment, not merely of the animal world, but of vegetable and inorganic nature? All alike are creations, and all alike are open to or closed against interference on the part of the being who inhabits the human frame. Are we on this account to cease to dig in the earth to obtain precious metals, or to cease cutting down living trees for housebuilding, or gathering in the living grain or fruits for food? In this sense the world is made for man, not man for the world. As regards the *ego*, the body is only the innermost layer of an environment, which extends outward in clothing and dwelling and earth and air. We are alike free to deal with all of these, though obviously our dealings must have reference to the nature of the subject-matter. Who would hesitate to feed a patient by other than the usual channels, or to inject apomorphine or ether where such measures might seem in any degree better than other medication? Who would on account of any sanctity of blood or bone or brain refuse to submit himself to a life-saving surgical operation invading the very centres of vitality? There is no question here of gaining access to the affected part by channels which nature has prepared. The operator's way is that which he believes the best to reach his object, and there need be no more hesitation to cure or prevent disease by means of inoculation than to pierce the human brain by the surgeon's knife. Even consciousness, which might possibly claim greater inviolability than tissue, is unhesitatingly interfered with by anæsthetists for the mere purpose of saving a little pain. The so-called religious objections which were long ago urged to the introduction of chloroform are now regarded only as historical curiosities indicative of the persistence of human superstition.

But there is another phase of the argument requiring consideration, that, namely, which urges that inoculative methods constitute

capitulation to filth, and tend to delay the advent of the sanitary millennium. Here we touch on a wide field of discussion. Is modern sanitation, even carried to its utmost limits, capable of eradicating infectious disease, not to speak of all the other ills that affect the human frame? On this point, it is not likely that men whose lives are devoted to the work of sanitation will underestimate either the achievements of the past or the possibilities of the future. We look back with pride to the fact that the sanitary barriers which have already been constructed can practically defy the invasion of these islands by cholera or plague; that scurvy on shipboard is now an unknown disease; that typhus and enteric fevers have dwindled from giants into dwarfs; and that the war against tuberculosis is being prosecuted with a large and growing measure of success. What, however, can we yet say with regard to efforts to prevent diphtheria by sanitary measures? One day it is seen flourishing in the most insanitary surroundings, and on the next it is found equally prevalent in a dwelling possessing every known quality of healthfulness. What has sanitation been able to do for whooping-cough, or measles, or small-pox? Has not influenza obtained a new place and power in the country in spite of everything that preventive medicine can do to prevent it? It is perhaps possible to imagine conditions under which such a disease might be exterminated; but these conditions might mean a diminution of density of population which would require the total abolition of town life, and the placing of every family at such a distance from every other family as to prevent conveyance of infection from one household to another. To hope for or to work for this or for anything approaching to it, would, of course, be the wildest absurdity. After all there are in this world some things worth having besides good health, and we must not let sanitation come to spell insanity.

If for the sake of argument it be agreed that the sanitary millennium is a possibility, what is the amount of sacrifice which can legitimately be made to bring it nearer? Which of us having a dirty dip-well under his notice, and desirous to see a safe public water-supply introduced, would deliberately allow a man to catch enteric fever by drinking from the polluted well, in order that thereby he might stir up public opinion in favour of an extensive new scheme? Suppose a child is dying from diphtheria or tuberculosis. Suppose, also, that an inoculative remedy is known for its disease, and that the father believes the use of this remedy to be the only chance of preventing death. No matter how fantastic his views of disease prevention, would he be justified in refusing on behalf of

his child to accept the remedy, in order that a sanitary millennium, in which no such remedies would be necessary, might be hastened? Surely every instinct of humanity revolts at such a suggestion. The man, indeed, would be criminally responsible. He would be guilty of what Lord Playfair once described as omissions infanticide.

The cure of disease and the prevention of disease are essentially on the same plane. If inoculative methods are justifiable for the cure, say, of diphtheria, they are justifiable for the prevention of it and other diseases. Of course no measure is justifiable whose risks are greater than its benefits; but that is a question of fact and evidence, and we are dealing at this moment with the principle in the abstract. If by inoculation a man can save life or prevent illness, he has no right whatever to refrain from doing so, in the hope that the spectacle of disease and death, resulting from such refrainment, may hasten the general progress of sanitation.

Then as to micro-organisms being regarded only as living filth, against which a ceaseless war is to be maintained, is it not the case that within these few years these very organisms have been the means and the only means of helping to solve what had come to be regarded as the great unsolved problem of sanitation—the purification and disposal of sewage? It is little more than a generation since science first took real cognizance of the place and power of microbic life. At that time the relationship of germs to offensive suppuration following wounds and surgical operations, led to their being regarded as universal enemies of mankind. This theory was soon extended from surgery to public health, and germicidal treatment of sewage was the order of the day. What a marvellous revolution has taken place in the practice here as compared with that of only a decade ago! Now such organisms are regarded as the best friends of the health officer, as trusted allies and servants, to be bred, fed and trained to do our best sanitary work for us. If in addition microbes are able to aid in directly preventing the invasion of disease, and in effecting its cure, surely their help must be accepted as unhesitatingly as in their less important function of preventing the putrefactive decomposition of sewage.

Coming now to sanitation itself, to these outer defences which have also been attacked, it seems rather hard that the same body of men who with the one hand have to fight anti-inoculationists professing to believe in sanitation as all-sufficient, should with the other hand have to fight anti-sanitationists. Such, however, is the position in which we find ourselves, and, in spite of the apparently opposite

views of the two sets of opponents, our reply to both must be essentially similar. But, in the first place, it is proper to set one scientist to oppose another, and that, as you know, is a task to which they are not averse, for controversy is the very breath of the life of scientific advancement. Weissman has held that acquired characters are not transmitted to posterity. To use once more the classical illustration, the giraffe did not obtain its long neck by the practice its forefathers indulged in of stretching upwards to obtain food from the higher branches of trees when the lower had already been stripped in time of scarcity. That was Lamarck's view; but Weissman declared that such additions to length of neck can never become hereditary, and that the only way to transmit a long neck is for the parent giraffe himself to be born with a long neck, which peculiarity being congenital will in time of famine enable him to survive, while his shorter-necked brethren succumb, and so surviving he will transmit this peculiarity, congenital and not acquired, to his offspring. So says Weissman; but now another distinguished German, Haeckel, is held to have overthrown Weissman's views—which had always been objected to by Herbert Spencer—and to have established the theory that acquired traits may be transmitted. Some writers, accepting perhaps prematurely the validity of Weissman's conclusions, and fearing that the survival of tuberculous children into adult life would, through transmission of congenital weakness to future generations, tend to the slow but sure undermining of the health of mankind, and frankly agreeing at the same time that sanitation is bound to have its way whatever its ultimate results may be, have discussed whether the powers of the law might not be invoked to prevent the marriage of tuberculous persons, and so avert the dreaded evil. That introduces a question about which a word seems necessary.

I venture to think that medical officers of health as such, and perhaps even the medical profession as such, are on unsafe ground when they begin to agitate for legislation to make compulsory the measures which science has proved to be of value. In such matters the official attitude should be not that of legislators, but of educators of legislators. We know that certain things are good for health and certain things bad for it, but it does not necessarily belong to us to say that the doing of the one set of things and the avoidance of the other shall be insisted on by Act of Parliament. Our proper place is to tell the country and Parliament the exact facts regarding every such question, and to use all the earnestness we possess in impressing on the public mind the scientific conclusions deducible from the facts. It is not always for us as medical men to say that

a law must be passed to give practical and universal effect to the truths that we have brought under notice. We have, of course, the same rights as other men to defend and advance the interests of the profession to which we have the honour to belong; but as regards the enforcement on the public of the lessons taught by medical science, we should walk warily. Supposing that the country and Parliament accept to the utmost the conclusions to which our science has led us, it still remains to decide whether it is wise or unwise, expedient or inexpedient, to force or try to force all the inhabitants of the kingdom to take the course to which these conclusions point. Let us assume that Parliament agrees with us that the bodily constitution which favours the development of consumption is very likely to be transmitted from parent to child. Must it in this matter put no trust in that education and prudence which so often prevent marriage where there is a strong taint of insanity to fear, and must a law be passed to forbid the marriage of consumptives? Surely not of necessity. It is for Parliament to consider whether such an enactment might not do more harm in other directions than good in this one special direction. Parliament may hold that the affinities of the sexes, the play of natural affection between man and woman, cannot be summarily put on one side, and the question must be considered whether the danger is so great as to justify the prohibition of marriage, or whether such prohibition would not be a worse evil than that which it is desired to remedy. The same remarks apply to all similar questions. As regards vaccination, it is our duty as experts in public health to tell the public and their Parliamentary representatives that vaccination prevents small-pox, and that small-pox cannot be prevented without vaccination, to show them how terrible an evil uncontrolled small-pox is, and to point out that revaccination is equally necessary with primary vaccination, and that whatever Parliament sees fit to do with the one it should do also with the other. It is our duty to drive in these facts with all our might, and to make the nation absolutely sure that we are absolutely sure. But it is for the Legislature, which, if it is wise, will accept our convictions, to look on all sides of the question of compulsion, and to judge whether a succession of small-pox epidemics will be a greater or a less public evil than compulsion itself may be when exercised on communities which, by means of noisy agitation and elaborate misrepresentation, have been filled to the brim with prejudice and passion against the protection which is offered to them, and of which they stand so sorely in need. This attitude of scientific advisers is that which we adopt in our capacity as medical officers

of health. With all seriousness we impress on sanitary authorities the danger of one water-supply and the safety of another, the objections to one drainage scheme and the advantages of another; but having done so, we do not go about canvassing members of committees to vote for one proposal and to oppose another. It is for us to provide our local authorities with facts, and conclusions based on facts. It is for them as business men and representatives of the ratepayers to determine how to act on the data thus put before them.

Returning now to Weissman and Haeckel, it is not for me to express any opinion on the question of use-inheritance which divides the schools they represent. Even, however, if acquired traits are not hereditary, there is still much profit in sanitation. May I repeat on this point an illustration which had the good fortune when previously used to meet with the approval of a valued critic? Let us take the births for a year in Great Britain at a million, and let us assume that in inferior health conditions one-tenth of these will during the first ten years of life fall below the line of viability, will cease to live. That, it may be urged, is a good thing, as they are better dead, being unfit to remain. Let us suppose, however, that the environment is improved, so that this tenth remains above the line of viability, survives into manhood and womanhood. That, it may be said, is bad, as it tends to propagate an unhealthy race. But let it be observed that when this tenth is raised from non-viability into viability, all the superimposed nine-tenths of the million are raised through a similar space in our imaginary scale. The lowest tenth, which formerly rested on the level of viability, is now one place higher, and so throughout the column. The gain is nine times the loss. And if in obstinate determination to get rid of that unhealthy tenth we return to the old and inferior conditions of life, it is true that the lowest tenth goes below the line, but the second lowest takes its place. If pursuing this course we determine to get rid of the second tenth by making still harder its struggle for life, no doubt we succeed, but then the third tenth takes the place of the second, and so on, until, endeavouring to improve the species, we exterminate the race. Fortunately, in this matter science and natural affection, social economy and philanthropy, go hand-in-hand. The quality of mercy is not strained, and the same conditions which strengthen the weakest make also for the survival of the fittest. The charm of sanitation is that its benefits are not confined to so-called preventable diseases. Whatever may be the limitation of their powers in the prevention of measles, whooping-cough, or influenza, good food, fresh air and

cleanliness are good for lungs, liver, brain, and every part of the animal economy.

Let it be granted that acquired traits are not transmitted, that does not prove present-day sanitation to be of no benefit to new generations. It must be clearly apprehended that there are other ways besides heredity by which the future of the world may be made brighter, happier, and healthier. Improvements in water-supply, drainage and house accommodation are not for a day merely, but remain for those who follow after. Progress is built on progress, reform on reform, advance on advance, so that present measures are stepping-stones to still better measures in the time to come. But in addition to all the direct benefit which accrues to the living generation from improved sanitation, and in addition to the good which the inhabitants of this country fifty years hence will derive from the persistence and development of improved environment, it would certainly be a gratification if sanitarians and all who are endeavouring to help humanity could feel that their efforts are to be of direct service in the future through the parents whose health is being helped, transmitting by heredity some of the bodily conditions which they themselves have acquired as a result of better air, food, and exercise.

However this may be, and whatever doctrine may ultimately prevail, it seems to me that our duty remains the same. We are not charged with the responsibility of the future of the whole human race. Like the fish in the globe of water, we cannot go outside of our world, move all around it, and consider it from the vantage-ground of a spectator. To withhold a helping hand in the hope that some distant good may result would be to act on the doctrine that the end justifies the means. It would, indeed, be worse, for there is no certainty that such ends would ever be attained by such means, or that they may not be achieved by methods quite beyond the scope of our knowledge. Our little systems of philosophy have their day and cease to be, but our daily tasks remain. We may exercise our minds in the consideration of transcendental problems, but duties are more important to us than speculations. If ever there is to be any hope of realizing the visions of the night, of turning into solid fact the dreams which young men dream—and there is nothing like a deep-seated belief in the value of one's work to make a man continue to feel young, notwithstanding any evidence of the almanac to the contrary—if ever long views are to lessen their distance from us, it must be through unceasing energy in giving effect to present short views. So that we continue carefully to distinguish between creed and

programme, there need be no hesitation in admitting that long views may help to frame the creed, though short views alone can be of use in filling up the programme. Our programme must be to conserve health, protect life, and prevent death, whenever and wherever the opportunity can be found. Using our vision to its natural limits, let us do our work within these limits, saving one life by inoculation, another by sanitation, and a third by isolation. On these lines and on these only is progress safe and sure. The doing well of daily administrative duty may not bring the notoriety that irresponsible sentimentalism would ensure; it may not create the interest which properly attaches to high philosophic thought and great scientific achievement; but "whether crowned or crownless when we fall, it matters not, so that God's work be done."

A DISINFECTANT DISTRIBUTOR.—A new and simple apparatus for distributing liquid disinfectants mixed with a stream of water has been brought to our notice. The apparatus is called the "Chloros Distributor," and is the invention of Mr. E. Shrapnell Smith. It appears to promise to prove very useful for cleansing yards, passages, roads, etc., and we have had good accounts of it from outside sources. We hope to give a more detailed account of the apparatus in our next issue after seeing it in actual use.

THE VALUE OF KOPLIK'S SPOTS IN THE DIAGNOSIS OF MEASLES.—Further testimony to the diagnostic value of Koplik's spots is offered by the recent Yale thesis of William J. Maroney (*Yale Medical Journal*, October, 1900, p. 133), who reports a study of 140 cases of measles observed at the New York Foundling Hospital. In fifty-three cases the spots were noted at the beginning of the eruption, a large majority of these patients having been examined for the first time after the appearance of the eruption. In fifty-one cases the spots were observed twenty-four hours before the appearance of the eruption. Slight fever, ranging from 99° to 101° F., was present in all, and slight coryza and conjunctivitis in thirty-five. In twenty cases the spots were seen forty-eight hours before eruption, and slight fever, but no coryza, was noted; while in four cases they were detected three days, and in two cases four days, before the rash, slight fever being noticeable, without catarrhal symptoms. Spots without eruption were observed in two very delicate children, but the patients undoubtedly had measles, and died in a few days, without development of the rash. No spots were observed in eight cases, in four of which the children were marantic, with very dry mouths.

The author points out that some elevation of temperature was observed in all cases showing the spots, and he considers this condition as almost necessary for positive diagnosis. Another fact to which attention is drawn for the first time is that the spots are seldom recognised in the mouths of marantic children, which is ascribed to the dry condition of the mouth in such cases, or to the fact that these children do not react well to the infection.—*Amer. Journ. Med. Sciences.*