THE PROGRAMME OF FUTURE PUBLIC HEALTH REFORM. *

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IN assuming the Presidency of this important Branch of the Society, I beg first to thank you most heartily for the honour of election to the office and for your confidence, and secondly to plead for your support in maintaining the importance and usefulness of the Branch.

Permit me to express the pride which I feel in succeeding, not only those who have more recently preceded me, but, *in particular*, my honoured predecessor in my municipal office, the President for the first ten years of the original Society (the Yorkshire Association of Medical Officers of Health), and its founder, or one of its founders—the late Dr. Samuel William North. I had the privilege of his acquaintance only for two brief years, but it was impossible to come into contact with him without being greatly impressed by his profound learning, his incessant zeal in study and in office, and his masterly initiative in sanitary administration, of which he had claim to rank amongst the pioneers. Had I had the time at command, I should have liked to have made a review of his life-work the theme of this address; such a review may be undertaken, perhaps, another day.

This Association was founded—in Dr. North's house in York, I believe—on September 17th, 1875; it was only the third of such Associations in England in the chronological order of establishment, and was amongst the first to become a Branch of the amalgamation now known as the Incorporated Society of Medical Officers of Health. The history of the Branch, as related in the excellent Jubilee Number of PUBLIC HEALTH, proves, I think, that in usefulness and zeal it has been second to none. Long may that honourable history be maintained.

This leads me to remind you that we are still in the Jubilee year of the Society, and to utter a note of congratulation upon its attainment. We rejoice in the extent and power to which the Society has attained, and in the achievements of its past, and equally, I think, we may rejoice in its prospects for the future.

* Presidential Address delivered to the Yorkshire Branch at Bradford, October 19th, 1906.

The mental search for a theme for an address on such an occasion as this is one of difficulty, not that there is a dearth of themes, but that the superabundant activities of so many of our colleagues, and the absorption of one's own mental and physical energy, in these days of rapidly increasing administrative duties, is so complete, that it is only given to a few to be able to offer anything new and original to their fellows, however zealous they may be, and proud and delightful as it is to be in such a position.

Standing, however, upon a Mount Pisgah, as we may be said to do this year, it appears to me that it may be profitable for us briefly to ponder over some of the scenes which lie before us in the promised land of Public Health reform.

First, then, let me point out that an extensive vista of reform has recently been spread before us by the National Conference on *Infant Mortality* held in London last June. Looking back upon this Conference, I regard it as one of the most important of recent years; and if its conclusions and recommendations are acted upon as they should be, its influence for good should be immense. The published transactions are worthy of the careful study of every sanitarian, and also of every medical practitioner, for there is much work for *him* to do in connection with this subject.

The Conference set forth the following prominent requirements and aims urgently calling for achievement:

(a). The inculcation amongst all classes, upper as well as lower, of a much higher sense of *the duty and sanctity of child-bearing*, and of the preciousness of human life before and after birth. As Dr. Sykes (St. Pancras) eloquently said, "If we intend to remain an imperial race, we must restore to its imperial place the dignity of motherhood." Dr. Cooper Pattin, of Norwich, suggests, in his recent Report on the Conference, that "for the largely prevalent ignorance, carelessness, and disinclination to take trouble," we require to "substitute a civic religion which will make the loss of a child something of a social stigma as well as a racial sin."

I specially commend to those who were not present at the Conference, and have not read its transactions, the papers by Dr. Sykes, on "The Teaching of the Hygiene of the Expectant and Suckling Mother," and by Dr. Ballantyne, of Edinburgh, on "Antenatal Causes of Infant Mortality, Including Parental Alcoholism." These papers were full of instruction and suggestion. They strongly emphasized the fact that we have hitherto paid an insufficient amount of attention to the mother ante-partum—in the direction of the maintenance of

a maximum of her health, in her preparation for her paramount duty of suckling (that crux of the whole question), in the prevention of her and her child becoming victims of alcoholism, and in other directions which I need not mention here. There is decided need that she should apply for, and receive, more medical attention and supervision during pregnancy, and that she should be made to realize that abortions, premature births, and still-births are *catastrophes*, which must be avoided by every effort possible. "We must, as a profession," said Dr. Ballantyne, "fight against the paralyzing conclusion that recurrent abortions are incurable, and against that dangerous popular belief that an abortion does not matter."

Another important point was, that "in some of our large manufacturing towns the separation of mother and suckling infant cries out loudly for prevention." For the solution of this difficult problem several methods were suggested at the Conference, the ideal one, of course, being that the only right place for the advanced pregnant or suckling mother is altogether in the home. Once get that method of solution generally recognized, there should not be insurmountable difficulty in getting it adopted in practice.

(b). The second aim demanding attention is *the education of the mothers of the present and of the future* in the hygienic care and feeding of infants. For the carrying out of this requirement two methods are prominently recommended, with which we have already become familiar, viz., the teaching of the senior girls in our schools, and the instruction of mothers in the homes, and in mothers' meetings, etc., by lady health visitors or lady sanitary inspectors. (Call her which you like, only call her a lady, as she should be a lady in order to do most good.)

I need hardly say that *the lady sanitary inspector* has come to stay, and that she has already abundantly proved her peculiar and special usefulness, in those now numerous districts which have had the enterprise to recognize her rôle in Public Health work. It is a pity that that rôle has not as yet been recognized by all. In the next Public Health Act she will surely receive such recognition as will establish her status and compel universal admission of her value. It needs no words of mine to emphasize that value. Not only in connection with infantile mortality and the diseases of young children, but in relation to domestic hygiene and workshop hygiene, and in the inspection of midwives, etc., there is a vast field of work to which women are so obviously called and fitted, and which is certain to yield so rich a harvest, that we shall regret that they were not called to the work long before.

The value of *the teaching of infant hygiene* to the senior girls in our elementary schools (why not in our secondary schools as well ?) was ably stated to the Conference by Dr. Niven ; the accomplishment of the proposal does not appear to present any great difficulties, and we should do well to urge it upon our local educational authorities. Undoubtedly, it will be necessary, however, first to teach the school teachers, upon whom this duty would devolve, as their strenuous work in school leaves them, I believe, little time and energy in which to gain acquaintance with domestic work and the rearing of young infants, even if they always had opportunity. This need not add work to the already burdened teachers, for, as Dr. Niven emphasized, there would be much sense and wisdom in substituting the teaching of these subjects for others in the curriculum of school girls which are of much less practical and vital value ; and I agree with him in the belief that the teachers, as a whole, would be glad to learn, and then to teach.

Crèche schools and nursling dispensaries, in addition to infant milk depôts, are suggested accessories in all this educational work which are worthy of consideration, and which would be of undoubted value.

(c). The promotion of breast feeding, and of the proper methods of artificial feeding, where that is unfortunately unavoidable, and the *safety of mothers and infants* involve an urgently needed reform in the suppression of all harmful *patent foods*, medicines, abortifacients, etc., and of all such swindles as tinned separated milk. It is one of the most scandalous things in our national life that such wickedly mischievous things should be allowed by the Government—which is surely the protector of the ignorant majority against the unscrupulous and fraudulent minority of its subjects, and which has ample expert advice at command—to be advertised and commended in our streets and in our press—in our religious and philanthropic press, worst of all—and to be sold to the extent which is existent to-day.

Along with it, equally evil and scandalous, is the looseness of the law in permitting the existence, and the possibility of the existence, of *unqualified practitioners* and druggists, and of quack doctors and charlatans of both sexes and of all kinds—all freely deceiving, to their mischief, our deplorably and notoriously “gullible public.” It is high time that legislation against these evils was insisted upon by sanitarians and by the more intelligent classes. At present, the latter are neglecting their duty in passing this question by, in merely sneering or laughing at the so-called “gullible public.” We ought not to allow them to be “gulled,” and, as the advisers of the public

in the promotion of their health and longevity of life, I feel very strongly that *we* and other sanitarians ought to urge stringent legislative reform upon these matters, upon which the general public has proved itself unfit to judge and sadly needing guidance and protection.

(d). Another requirement, strongly emphasized at the Conference by Alderman Broadbent (Mayor of Huddersfield), Dr. Kaye, and others, is the need for *the amendment of the present system of the registration of births and deaths*. Upon this matter we ought not to let the Government rest until amendment has been achieved. The necessity for reform upon this subject has exercised my thoughts for some time past, and I hope to deal more fully with it at another meeting of the Yorkshire branch.

Milk Supply.—Another matter, inseparably connected with the health of infants and of young children, is the problem of pure milk supply. Next, perhaps, to the housing question, there is no problem so urgently demanding and yet so difficult of practical solution. We have had innumerable conferences upon both subjects—I confess I am weary of perusing their reports—and yet we seem little nearer, and make but little progress. And it seems to me that that is largely inevitable with *both* questions until we have obtained :

1. Consolidation, simplification, and extension of the law upon these matters.

2. More education, not of the general public merely ; but what is more particularly needed is the education of those whom these laws affect—of the property owner and the milk dealer ; the inculcation of the unselfish “ *public health conscience*,” and a strong conviction of their *moral* as well as legal responsibilities.

If we could succeed in convincing the milk purveyor of the truth about the manner of pollution and the consequent dangers of milk, and how comparatively easy it is to avoid pollution, and to sell clean, good milk, without the use of preservatives—if we could convince him that this is not all a “fad,” but that it is truth, the truth of reason and of science, and awaken his sense of moral responsibility in practice, the pure-milk problem would surely be largely solved. Without this awakened “public health conscience” in the milk trader, it seems to me that we shall never be able to make even the strongest of dairy by-laws operate successfully ; no sanitary authority that I know of has a staff adequate for the incessant inspection which the strict administration of mere by-laws otherwise involves. And, even if it had, how could it adequately control such

things as the addition of poor, polluted, or separated milk to pure, good milk? Perhaps it would be a good thing if we had a universal resuscitation of the *milkmaid* as milker; she could not be more stupid than the men of the present; surely she would be cleaner and more teachable. But could we not do more to arouse the milk dealer's conscience? I think we could, and I think we ought to try, discouraging as is his general unteachableness. Good has resulted, I believe, from conferences between milk traders and representatives of sanitary authorities (Medical Officers of Health, educated laymen, Sanitary Inspectors, Analysts, etc.), and from lectures and demonstrations by Medical Officers of Health, by lecturers from Agricultural Colleges, and others. These could be multiplied, and the educational work furthered by simple and sensible leaflets. If their unteachableness or unwillingness remain obdurate, then the present milk producers will be extinguished by the indirect pressure of the increasing number of model dairy farms, which we now welcome on almost every hand, by the possible development of municipal milk depôts, and through reforms, which in any case are urgently required, and some of which I will briefly enumerate:

(a). We require consolidation and extension of all *the legislation relating to milk*, for at present it is in a most chaotic and incomplete state. The best in the Dairies and Cowsheds Orders, in the model by-laws, and in the public and private Acts of Parliament, requires to be combined, amended, simplified, completed, and extended in a *Pure Milk Supply Act*, the whole to be made compulsory throughout the kingdom, in rural districts as well as in urban districts. Is there anything in all our Public Health Acts more cumbersome and unworkable—one might reasonably think it to be deliberately so—than Section 4 of the Infectious Diseases Prevention Act of 1890 (*re prohibition of sale of milk in infectious cases*)? The adoption and operation of the model by-laws should not be optional, when we think how greatly and vitally the towns are at the mercy of rural milk producers; in my opinion, the by-laws should be embodied in a compulsory Act, or, at least, made compulsory as by-laws throughout the kingdom, and under stringent supervision, independent of, or all-powerful over, rural authorities.

(b). It is high time that in *the Dairies Order*, as Dr. Chalmers, of Glasgow, so ably argued at the Infant Mortality Conference, the diseases of animals involved by the Article 15 should be extended to include every general disease accompanied by fever, all acute gastrointestinal affections, and inflammatory affections of udder and teats.

As it has been naïvely said, "We do not want pus as a beverage." We ought to have power to stop the sale of milk, which is likely to be injuriously affected, which has been obtained from any diseased or doubtful animal, or from animals under treatment by drugs; also, to stop the sale of dirty milk, or milk from premises generally insanitary, or with a dangerous water-supply; and we ought to have distinct authority to seize and destroy such milk, without Justice's Order, so as to secure its not being sold. Moreover, we require definite power to seize and destroy any animal which proves to be affected with tubercular udder, or any other disease which would affect its milk permanently. What is the use of mere isolation of such an animal? It does not recover, and we have no security that its milk is not being used. These powers should be included in such consolidated Order or Act, with power to compensate in justifiable circumstances.

(c). I am of opinion, however, that whatever legislation we have, its satisfactory administration would be greatly facilitated, and the teachableness of the milk dealer and the purity of milk would be greatly increased, if we had a system of *annual licensing of all milk producers and purveyors*, the licence to be granted and re-granted only upon the condition that all the legislation (Orders, by-laws, etc.) had been fully obeyed during the previous year, and that the milk had always proved satisfactory upon bacteriological and chemical analysis. I do not think that this method need raise the price of milk, or increase the use of preservatives, if there be proper organization and management; and, with its general adoption, by law or otherwise, I do not think we need be driven to municipalization of the milk supply, which some think to be the only ultimate solution of the whole problem.

Of course, we ought also to have power to refuse the annual licence, or to remove the names of "incorrigibles" from the register.

(d). Other useful additions to the law should provide for: The registration, or, better still, the annual licensing of the buildings—cow-sheds, dairies, and milkshops—if sanitary; the closure of these, if grossly insanitary, in the same manner as we close a dwelling-house under the Housing Acts; the prohibition of the common little provision shop being used as a milkshop, with its mixed effluvia of onions and herrings and soap, its exposure to dust and flies and maggoty hams, its dirty dippers, and its limited trade and variable supply, which baffle the tracing of infectious disease. *We must aim at the abolition of this form of milkshop, and substitute the nice clean dairymilkshop, so common and so admirable in the cities of Scotland. Such special*

milkshops (limited to the sale of dairy produce) should help the solution of the difficulty of enforcing another much-needed reform in our milk distribution. For we must also abolish the street can, and endeavour to secure the transport of milk—cooled, strained, or centrifugalized, unsterilized, unpreservatized—*direct from producer to consumer, in sealed bottles or cans*, without the dangerous intervention of middlemen, railway churns, cart churns, street sale, or mixing, etc. It is time we abolished the house-to-house milk pail, as an insanitary abomination no longer to be tolerated. The poor should be able to buy their pennyworths from clean milkshops of the Scottish type; the larger consumer should receive his supply in sealed bottle or can.

And, lastly, all consumers should be able to receive their milk free of all chemical adulterants. Chemical preservatives are proved to be unnecessary and harmful, and their use in dairy produce should be prohibited by legislation, as in Denmark.

Failing all improved legislation and education, there will be nothing for it but municipal milk farms and milk depôts—at any rate, for the safe supply of municipal institutions and of the poor. These would serve as model teaching centres, and would possess several other marked advantages which I have no time to discuss.

The Prevention of Tuberculosis.—Thanks largely to the *Practitioner*, under Mr. Malcolm Morris (whose splendid services in this direction have never been fully recognized), to the establishment of the National Association for the Prevention of Tuberculosis, and to the influence of the great Tuberculosis Congress in London in 1901, there has been very considerable development of the active campaign against this great scourge. Notwithstanding the very partial character of *voluntary notification*, and the consequent limitations of direct effort, a great deal of preventive work has been carried out in many towns (in investigation, advice, disinfection, and education), which cannot but yield good fruit; I am quite sure that we have done much good in York, and the pity is that the field of work remains so limited for want of information, that the field is not forthwith legally extended so as to comprise the whole range of tubercular depredation and deterioration.

No work lies before us more important, more full of hope. All those of us who have had any experience, even of the present limited field of work, must have been sufficiently encouraged to call now for the adoption of *compulsory notification* of all forms of tuberculosis; and I fail to see any valid reason why we should delay making that a national measure, unless we are to wait to see the success of the Sheffield

Act and its administration. The question of cost ought not to weigh for a moment in connection with the matter ; it would be trivial in comparison with the vital, and even financial, benefit to be gained. Procedure after notification need be no barrier ; the procedure taken to-day after notification of the compulsorily notifiable diseases varies between one disease and another, and that taken after notification of a case of tuberculosis would necessarily also vary, according to the different character of the disease. It is stated, and even objected, that compulsory notification would lead to the serious practical discussion of the provision of *hospital isolation and treatment for phthisis*. Of course it would ; let that be so. The sooner that question is brought into the range of practical politics the better ; for we urgently need provision, not only for the cure of early cases *amongst the poorer classes*, but also for the isolation (with cure, if possible, or comfort and safety, at least) of *advanced cases*, which cannot be left in present housing conditions without grave danger to household, friends, and neighbours.

The whole question of the prevention of tuberculosis is bound up—as much of our other work is, we only too truly know—with the great problems of *poverty*, insufficient employment, housing, alcoholism, and all the other factors which contribute to physical deterioration ; but that must not make us downhearted, but all the more determined, not only to play our part in the solution of these great social problems, but also to do the very utmost in such direct preventive work as lies near to hand, and which, in the light of our present knowledge, it is almost criminal to neglect.

Until we have a sufficient number of specialized institutions we must persevere, therefore, in stimulating the utmost use of our dispensaries, our out-patient departments, our infirmaries, our empty fever hospitals, and our workhouses, for purposes of diagnosis, treatment, isolation, education, and other assistance. As Dr. Newsholme has demonstrated, at the Paris Congress, the last-named institutions have done great service in diminishing the prevalence and mortality of tuberculosis in this country. Our *Friendly Societies and Insurance Companies* have yet to make headway in emulating the splendid example of those in Germany. *Labour Colonies* for Consumptives have been commenced, I believe, in a small way in Norfolk, and their development, in connection with sanatoria and allied institutions, would be a boon the value of which, I think, is obvious.

The recent *Paris Congress* on Tuberculosis brought forth some

stimulating facts and suggestions, besides others calling forth anxious consideration and vigorous effort. France and Germany are not asleep on the question, and it behoves Britain to keep to the front of the fight.

We are assured by the Congress that we still have *bovine tuberculosis* to reckon with as a source of human infection, and when we learn that the researches of Rabinowitch and others "have demonstrated the virulence of the milk of certain cows attacked with visceral tuberculosis, without any lesions of the mammary glands,"* we are confirmed in the belief—some of us at any rate—that it is a mistake for preventive action in relation to tuberculous milk to be limited merely to tubercular disease of the udder, as is practically the case to-day.

The dangers of *tuberculous sputum and dust* are not diminished by the researches which go to show that, even with tuberculosis of the lungs, infection takes place more by swallowing the *materies morbi* than by the inhalation of it, in other words, "the most accessible route is by way of the intestines."*

"In the battle against tuberculosis in France," we are told in the Report of the Paris Congress by Dr. Timbrell Bulstrode and Dr. Theodore Williams,* "the dominant idea is *the security of the infant*," there being evidence, in France at any rate, that acquired (not congenital) "tuberculosis is present in a *latent form* in infants and young children, and that it is prone to remain thus latent, until, in later years, the soil of the human organism becoming altered by school life, by poverty, by alcohol, or by other adverse conditions, the potential or latent infection becomes an actual infection," manifesting itself at adolescence or during adult age. Adult tuberculosis is said to be "more frequently a tuberculosis of infancy which has remained latent and unrecognized." At the ages of one to six years, infants are most exposed to contract tuberculosis, especially of the "closed" type (i.e., minus infectious discharges), and that is attributable to tuberculous milk, tubercular contamination of the mouth (per fingers, food, etc.), tubercular predisposition, or residence in an infected household.

If these facts are generally true, they are extremely important and, "consequently, France is now employing all means at her disposal to improve the resistance of the child against disease in general, and tuberculosis in particular,"* and to diminish the chance of its infection, by seeking out predisposed children (the

* Vide Report of Government Delegates to the Paris Congress.

"pretuberculous"), or latent or "closed" cases, or children living in infected households, and sending them into the country, to holiday colonies, or to marine sanatoria, or other similar institutions, which abound in France, and where splendid life-preserving work is being carried out, especially in cases of tubercular joint disease, "closed" cases which are cured without being made "open" cases.

"The general opinion was, that *infection at school* is far less common than in the home";* that school cases are mostly of the "closed" type, that tuberculosis is more curable in childhood than in later life, and that if the latent case of childhood, if not cured then, can be kept "closed" until adult age, it proves much more likely to be conquered altogether.

These facts and opinions emphasize the paramount importance of preserving and saving child-life; and in addition to the measures for that object already referred to, they call forth two other great lines of preventive work amongst children, viz., the teaching of general and special hygiene in our schools, and the medical inspection or supervision of the children attending the schools.

The first-named line does not present any great difficulty.

The second, *the medical inspection of school children*, we rejoice to say, has already been largely instituted in this country, and with such success that, not only is it rapidly becoming recognized as an essential part of Public Health work, but it is probably about to be made compulsory as a vital part of our educational system.

I am glad to be able to report that I have just made a beginning in York. The extent, variety, and difficulty of the work presented is almost appalling; but long ago we have felt that this work ought to be faced, notwithstanding its undoubted difficulties; and now it seems pitiable, almost unintelligible, that it was not systematized universally and even compulsorily a quarter of a century ago. I look upon it as being probably the chief missing link in our work of circumventing the infectious diseases of children, the results of which work have hitherto been so largely disappointing. At any rate, I have hope and faith that it will prove to be so in my own city.

I do not propose to inflict you, even if I had the time, with any discussion of the now somewhat hackneyed arguments alleging *the failure of hospital isolation of scarlet fever*. They have already been ably discussed and largely controverted in this Society. Much that was ill-considered and limited in outlook has been written and spoken in favour of the allegations, and in a manner against which

* Vide Report of Government Delegates to the Paris Congress.

I most strongly protest, as being unwise, unjust, and *really* purposeless.

What is really to be gained by these allegations? By all means let us have truth; but I do not think that any man has a right to try and overthrow a method of prevention which even he admits does some service, without at the same time endeavouring to show the way to a more effective substitute. The ideal, of course, is for every household in the realm to have a house and income large enough to isolate and nurse their sick at home. But, until that millennium comes, we cannot, for a hundred reasons, do without our isolation hospitals. It may not be necessary to send every case of scarlet fever to hospital, or even a large percentage, but the hospital remains, and for long years will still remain, one of our greatest sheet anchors in the prevention of such diseases as scarlet fever and diphtheria.

I will not say more upon the controversy, which, by the way, is ably dealt with by Dr. Fremantle in *PUBLIC HEALTH* for October, except to requote and endorse Sir Shirley Murphy's words, that, on this subject, "the statistical method is not applicable; mere isolation could not be expected to influence laws of nature or prevalence of disease." If isolation hospitals were expected to extinguish infectious disease, as vaccination, with pardonable pride and hope, was expected to extinguish small-pox, then we must confess to having been considerably disappointed with the results; but in neither case is the remedy condemned, and such expectations and hopes have not been the first in the world to be too optimistic, and thus to have led to some disappointment. Those expectations failed fully to appreciate or even foresee, and the recent or present controversy has largely ignored, three vital considerations, viz. :

(a). The utterly mysterious etiology of scarlet fever, and the still largely mysterious etiology of diphtheria.

(b). The diminution of parental care, and of the parental sense of responsibility for the health and even general welfare of the children, which our seniors credibly inform us has followed the undertaking of free education by the State.

(c). Concurrent with the establishment of our isolation hospitals there have developed, undreamed of twenty-five years ago, our present vast elementary schools, with no provision until to-day for skilled medical supervision of the thousands of children, of all classes, compelled to give a maximum attendance therein.

The controversy will have done some good, however, if it compels us to reform some points in *the arrangements and administration of our isolation hospitals*, some of which, based upon my own experience,

I will mention, viz. : It is disastrous to overcrowd our hospitals, and to mix acute with convalescent cases of scarlet fever or diphtheria ; for the successful treatment of both diseases, of scarlet fever especially, and to prevent " return " cases, we require that every case should be able to pass through three separate blocks, viz., (a) A separate block for the acute stage ; (b) a separate block for the convalescent stage (free of complications), from which the case is discharged, free from all discoverable infection, after a final bath in a discharge section, into (c) a discharging block, from which it should be sent home, in two to five days, if remaining clear, without any further hot bath or other disinfection which would tend to resuscitate discharges from nose or ears. I have here referred to a weakness in our administration which I believe accounts for a large number of our vexatious so-called " return " cases. I think, also, that there is much to be said in favour of the removal of such microbic hiding-places as adenoids and enlarged tonsils before discharge from hospital.

If these reforms were strictly provided for, I do not think we need go to any such extremes as separate cubicles.

The prevention of diphtheria is one of the most baffling problems of the day ; and when new forms, manifestations, or freaks of the bacillus are announced by the bacteriologists almost every week, and when we are advised to obtain swabs from nose and throat prior to discharge from isolation, amounting to half a dozen or more per case, and to swab every case of scarlet fever during and after the attack, the solution of the problem does not become less troublesome or costly. Although, fortunately, I have not had a great experience of this disease, I do not doubt that it is directly contagious from person to person, as is scarlet fever, but I do protest against the tendency, so common at present, to ignore other possible factors in the causation of the disease. On the etiology and prevention of both diphtheria and enteric fever, not to mention scarlet fever, we have, as we only too well know, a very great deal yet to learn. I think that we need to-day, therefore, to beware of the folly of limiting our outlook and our lines of enquiry to only one or two aspects of the causation, prevalence, and prevention of infectious disease. In particular, I would protest against ignoring or discounting the *influence of foul emanations* from drains, sewers, privy-middens, and polluted soil, in the production of diphtheria and enteric fever. Rightly or not, we do not nowadays consider these things to be capable of the direct causation of these diseases, but my experience—short as it has been, it has been pretty full—has convinced me that the insidious

poisoning of such emanations has most certainly a predisposing and even exciting influence, the reality of which it is most unwise to ignore. And, if the diphtheria bacillus is more or less omnipresent in our atmosphere or in our systems, as some would now believe, and is so frequently found in healthy throats, as the bacteriologists inform us, and if some form of *Bacillus coli* should prove, after all, to be capable, under unknown conditions, of manifesting itself as what we now call the *Bacillus typhosus*, then the part which such poisonous air can play, in lowering the resistance of the system to invasion, surely becomes more obvious and more vitally important.

Another factor I would mention. Amidst our various efforts to suppress such diseases as diphtheria, phthisis, ophthalmia, and zymotic diarrhoea, I am of opinion that we require to direct our serious attention to the very probable *influence of road dust*, particularly in our towns.

The extent of that influence in the past we cannot estimate, we can only suspect, but the question is now becoming acute, owing to the almost incessant and overwhelming raising of the dust by the rapidly increasing motor-car traffic. We know something about the contents of that dust; whether it possesses extensive pathogenic properties or not is a matter for the bacteriologists to work out, but we know it does contain all manner of organisms, and we cannot but suspect that, in these days of mixed animal and motor traffic and other sources of pollution, it has more capacity for mischief, either as a predisposing or exciting irritant, or as directly pathogenic, than we have yet debited it with. I particularly suspect *this* influence in connection with the production and prevalence of diphtheria; whether it operates through the spicular character of the dust, or its contained organisms, or both, I am not now able to say, but we know how common inflammatory or septic conditions of the throat are, and how readily these pave the way for the invasion of more serious disease. I need not say that we are bound to acknowledge that the motor-car has come to stay. It seems to me that improvements in its construction should be possible, whereby it would prove to be much less of a dust raiser. Dust-laying substances can only be regarded as costly and inconvenient temporizers. But, apart even from the consideration of the motor-dust nuisance, we are bound to acknowledge that we shall have to face the permanent improvement of our roads; that is a problem for road engineers and road authorities; but, where we can help them, as advisers on sanitation and the public health, with such special knowledge of disease and its causation as we possess, it will clearly be our duty to do so.

It is obviously impossible for me to exhaust the subject indicated by the somewhat ambitious title of my address—or, to resume my metaphor, to point out all that lies before us in the panorama of Public Health reform. And even if I could, more lies beyond the misty horizon that we know not of, cannot even guess, and shall probably never see. But time forbids me to do more than *mention* a few points which are possibly still within our range of view. Such are the following :

(a). The extermination of small-pox, through the transference of the administration of fortified vaccination laws to the sanitary authorities, the compulsory re-vaccination of children at the age of twelve years, and the compulsory re-vaccination of vagrant contacts, whose liberty is altogether excessive and mischievous, and who should be compelled to give to the community some security in return for their freedom.

(b). The universal establishment in towns of public abattoirs (in lieu of private slaughter-houses), and of the skilled inspection and certification of all meat about to be sold as food.

(c). The co-ordination of effort as to the purification and preservation of our water supplies.

(d). The extermination of such insect carriers of contagion as the common house-fly and the mosquito.

(e). The closer relationship between Poor Law and Public Health administration—perhaps the complete organic union of the two.

(f). The education of the public in general hygiene, and on such special questions as the prevention of infant mortality, the prevention of tuberculosis, the abuse of alcohol, the evil results of tobacco-smoking by growing boys, etc., etc. Here lies a work which, to my mind, is one of the most important, although unprescribed, duties of the Medical Officer of Health, one which is by no means sufficiently recognized, either by the sanitary authorities, the public, the Medical Officer of Health, or the Local Government Board, viz. : We should seize every opportunity of educating the people, by *lecture*, as well as by leaflet and report.

(g). Greatest of all present and future problems is the Housing question. It does not seem to grow less difficult and less despondent—and I do not see how its solution is to be furthered under the present condition of our laws. We are grateful for the Act of 1903 and other amendments of the Housing Act, but we still need a great simplification of the procedure regarding the abolition of insanitary areas, under Part 1 of the 1890 Act, and a simplification of the procedure

regarding the demolition of closed dwelling-houses, under Part 2. Instead of having to face the paradox of proving that a closed dwelling-house is a nuisance, or a recurring nuisance, we ought to be able easily to obtain the demolition of a house which has remained *closed* (by Justices' Order) *and unimproved for twelve months*. Moreover, we need legislation that will prevent such exorbitant values being placed upon insanitary areas, and the insanitary property thereon, to which our present land and property laws conduce.

(h). Above all, we should earnestly pray for the statesman who will undertake the consolidation and improvement of the whole of the present confused mass of Public Health legislation.

And lastly, not merely for our own sake, but for that of Public Health progress in general, we must never rest until we have obtained security of tenure of office for the Medical Officer of Health and the Sanitary Inspector, and until we have compelled the practical admission that we, too, when we can no longer sustain the fight, are as worthy of a handsome pension as the officers of either the Police Force, the Civil Service, or the Army.

THE PROTECTION OF MILK.—In view of the many sources of pollution to which milk is frequently exposed before it reaches the consumer, and of the extent to which it may become a cause or vehicle of disease, the Royal Institute of Public Health appointed a committee, composed of Medical Officers of Health, bacteriologists, and representatives of the milk trade, to consider what steps should be taken with the object of securing purity of the supply. The report of this committee has just been published in pamphlet form, and it points out that the chief means of legal control of the milk trade are now obtained under the clauses of the Dairies, Cowsheds, and Milkshops Order of 1885 and the subsequent amending Orders. While the powers contained in these Orders are not nearly so stringent as those in operation in many of the British Colonies, the Committee are of opinion that, if they were carried out firmly and uniformly, sufficient control of the trade would be obtained. In the course of the enquiry an endeavour was made to obtain information as to the enforcement of the existing Orders in different parts of the kingdom; and it was found that in a large majority of rural districts they are practically inoperative. In these circumstances, the Committee were of opinion that, where the local Sanitary Authority is in default, the obligation to enforce the Orders should devolve upon the County Council, and that the power to make regulations should be compulsory and not permissive. With this view the Committee have republished the existing Order as amended, and have printed in italics or within brackets the various omissions, alterations, and additions which have appeared to them to be required in order to render it really protective to the consumer.