

able number of cases of lymphadenoma with recurrent fever there is a great constitutional disturbance with elevation of temperature, rigors, vomiting and diarrhœa, anorexia and malaise; that in some cases urobilinurea is a marked symptom; that in some of the cases the superficial lymphatic glands and even the spleen became very tender and enlarged during the attacks; and that the skin over the enlarged glands may become reddened and show an increase of local temperature. Finally, that the prognosis in such cases is, as a rule, hopeless, and that the duration of life after the onset of the periodic attacks of fever averages about seven and a half months, but may be as much as twelve or fourteen months."

ART. II.—*The Control of Consumption by the Public Health Authority.** By T. PERCY C. KIRKPATRICK, M.D., Assistant Physician to Dr. Steevens' Hospital, Dublin.

IN the year 1897 the Dublin University Biological Association held a special general meeting, at which many distinguished guests were present, for the purpose of calling public attention to the spread of tuberculosis in the City, and resolutions were passed urging the authorities to take steps to prevent the spread of infection. This was, I believe, the first such meeting held in this country, and preceded by a considerable time the inception of the great anti-tuberculosis campaign which is at present being waged with such success in other countries. Ever since that time this Association has taken a very deep interest in the movement, and it seemed to me that a review of what has been already done in the past, as well as suggestions for our guidance in the future, would be a very suitable subject for my opening address.

The question is one of very pressing interest to us Irishmen, since the disease is so widespread and destructive amongst us, and since our country occupies the unique and unenviable position of still having an increasing mortality from tubercular disease. I do not wish to weary you with statistics,

* Inaugural Address delivered at the opening meeting of the twenty-eighth session of the Dublin University Biological Association, November 27th, 1902.

but when I tell you that in this country in the year 1900 phthisis caused 10,076 deaths, out of a total of 87,606, or a rate of 225·6 per 100,000 of the estimated population, or more than one-ninth of the rate from all causes combined, you will see that it is time we were up and doing if we do not wish to be left hopelessly behind other countries in the advance towards that satisfactory condition of public health which Preventive Medicine appears to promise. In other countries the efforts to prevent phthisis have been rewarded with a very marked degree of success. Thus in the City of New York the death-rate from phthisis has been reduced by over 30 per cent. since the adoption of preventive measures some ten years ago, and similar gratifying results have been obtained elsewhere. Let us consider then carefully the methods by which these results have been obtained, and by a study of the conditions existing in our own country see if we can learn any useful lessons for our future guidance.

In Manchester, Dr. Niven, the able Medical Officer of Health, assisted by your distinguished Vice-President, Dr. James Beatty, has been carrying on an active campaign against tuberculosis, and also has given us a very full account of their methods. As early as the year 1894 the campaign was opened in Manchester by the distribution of handbills to every house in the city, giving instructions in precautionary measures ; but at that time there was no possibility of ascertaining whether the measures so advised were adopted or not. I think we may fairly conclude that, among the poorer classes at all events, very little attention was paid to such instructions. In order then to enable the Public Health Authorities to exercise some supervision over such cases, and, where necessary, enforce the adoption of preventive measures, a very complete scheme was drawn up and adopted by the City Council in the year 1899, and this, with certain additions and modifications, has been in force ever since. The main lines of this scheme may be grouped under the following heads :—

1. Voluntary notification of consumptive cases.
2. Education of the public in general, and of the patient and his friends in particular, in the nature of the disease.
3. Treatment of the patient's surroundings.

4. Supervision.
5. Provision of isolation hospitals.
6. Protection of the food supply from contamination by the tubercle bacillus.

By far the most important part of this scheme, from an administrative point of view, is the adoption of notification, as without this the Executive has no means of knowing where the cases are, and so is unable to carry out effectively any preventive measures. In Manchester no attempt was made to bring phthisis under the provisions of the Infectious Disease Notification Act of 1889, but practitioners were asked to notify cases, and a scale of fees payable for such notification was drawn up. The names and addresses of the cases notified were registered, and if it was thought advisable further steps were taken with a view to supervision and inspection. A very important adjunct to notification in the form of the free bacterial examination of sputum was undertaken for medical practitioners, so that in all cases the diagnosis could be confirmed. If such examination gave negative results the medical man was asked whether he still adhered to his diagnosis, and if so, the case was considered one of phthisis from an administrative point of view. The education of the patient and his friends in the nature of the disease is personally undertaken by the assistant medical officer, who visits the house after the case has been registered. An effort is made to educate the public generally by the posting of notices pointing out the danger of promiscuous spitting in railway stations, tramcars, public-houses, common lodging-houses, and workshops, &c. As yet Manchester has not gone as far as Glamorganshire, where the County Council adopted the following by-law by a majority of eight votes :—"A person shall not spit on the floor of any public carriage, any church, chapel, public hall, waiting-room, school-room, theatre, or shop, whether admission has been obtained thereto by payment or not. Any person offending against this by-law shall be liable to a fine not exceeding £5." There is, however, little doubt that a similar by-law will be adopted by many more of the County Councils in the near future.

As regards the treatment of the surroundings, the assistant medical officer reports any sanitary defects in houses visited,

and they are dealt with by the ordinary methods of the Sanitary Department, while the special disinfection is carried out under the supervision of the sanitary inspectors. The ceilings are lime-washed, the walls are rubbed down with dough, the floor, woodwork, and furniture are washed with ordinary soap and water. This process the inhabitants carry out themselves under supervision. If, however, the house is very dirty, or evidently infected, the Corporation disinfects the walls, floors, ceilings, and articles of furniture by washing with one per cent. solution of chlorinated lime, the paper usually being stripped from the walls in every case. The clothing, bedding, &c., are disinfected by steam. Some such process of disinfection is, of course, carried out in our own City by the Public Health Department in every case of infectious disease which is notified among the poor. Regular supervision of infected houses is undertaken by the sanitary visitors or inspectors, and a continuous record of the state of the house kept, while a quarterly disinfection or thorough cleaning of the house is insisted on in every case. As Dr. Beatty says, supervision is the most difficult part of the scheme to carry out satisfactorily, yet it is remarkable how smoothly it works on the whole, and how seldom the visits are resented, or there is any refusal to carry out the precautions suggested. The value of such a scheme of supervision from an educational point of view can hardly be overrated. Manchester has not yet been able to do much in the way of provision of hospital accommodation, either as sanatoria for the early cases, or isolation hospitals for the advanced cases, but in this respect there will probably be a marked advance in the future. Very elaborate precautions are adopted to prevent infection by either meat or milk; but in view of the pronouncement of Koch on the transmissibility of bovine tuberculosis, it is hardly to be expected that other places will adopt any new or expensive methods of prevention in this department while the question is still *sub judice*.

The adoption of precautionary measures in New York City is largely due to the energy of Dr. Herman Biggs, who has given such an admirable description of what has been done there. The first official action was taken in New York in the year 1889, when the Board of Health asked the consulting

pathologists of the Department for a report on the causation and prevention of tuberculosis. This report was presented in the same year, and laid particular stress on the following points:—Tuberculosis is a preventable disease; it is not directly inherited, but transmitted from the sick to the healthy, chiefly by means of dried sputum suspended as dust in the air. From this report, presented twelve years ago, we learn as fully and completely as we can at the present day the nature of the problem that we have to deal with, and all subsequent work on the subject has simply confirmed and amplified these statements. Various suggestions were made in the report as to the measures which should be adopted with a view to prevention, dealing chiefly with food inspection, education, and disinfection of premises inhabited by tubercular patients. On the receipt of this report the Board of Health consulted with many of the leading physicians of New York, and as a result decided that the medical profession and people were not prepared to accept active preventive measures founded on the belief that tuberculosis was an infectious disease. This being so, little was done except inspection of food and an endeavour to disseminate knowledge as to the nature of tuberculosis. So effectively, however, was this latter measure carried out that during the winter of 1893–94 the Board of Health, on the recommendation of Dr. Biggs, adopted certain resolutions giving effect to the following principles:—Notification, inspection and disinfection of infected dwellings. A request was made for the voluntary notification of cases of tuberculosis under the care of the physicians in the city. It was pointed out to the physicians that this information was solely for the use of the Department, and that in no case would visits be made by the inspectors unless the patient resided in a boarding house, tenement house, or hotel, except at the request of the attending physicians, and even in the case of such places if the physician requested that visits should not be made, and signified his willingness to afford the necessary instruction to the patients, no further steps would be taken by the Department. Compulsory notification was adopted in the case of public institutions, such as hospitals, prisons and asylums, &c. Visits of inspection, with a view to affording instruction and to report on the necessity for further

steps, were determined on in the case of tenement houses, boarding houses and hotels, except in those cases provided for above. In every case where the premises which had been occupied by a consumptive were vacated, either by death or removal, visits were made by the inspector, who directed the removal of infected articles such as bedding, carpets, &c., for free disinfection by the Department, while the owner was compelled to have the premises disinfected at his own expense. No person other than those residing there at the time were allowed to occupy such apartments till this order had been carried out. Bacteriological examination of the sputum was undertaken free of charge by the Department, provided that it was sent in bottles accompanied by a paper setting forth the name, age, sex, and address of the patient. Suitable bottles and blank forms to be filled in were supplied free to those who wished to make use of them.

In the year 1897 the Board of Health adopted a resolution making notification of tuberculosis compulsory, and applied to the Board of Estimate and Apportionment for funds to provide hospital accommodation for those suffering from pulmonary consumption. A sum of 60,000 dollars was granted for this purpose in the year 1898, but in subsequent years this amount was somewhat reduced. From this brief outline of the features of the movement in New York we can learn much that will be useful for our guidance at home; but before we proceed to apply these lessons let us glance for a few moments at the results that have been attained by them.

During the first year after the commencement of the work 4,166 cases of tuberculosis were notified, during the second year 5,824, during the third year 8,334, while in 1900 the cases numbered 11,997; the number of houses inspected has increased proportionally. As a result of this, Dr. Biggs is able to make the following statement:—

“There has been a reduction in the mortality from tuberculous diseases in New York City since 1886 of more than 35 per cent.; and I have no hesitation in saying that I believe with a complete and efficient scheme for dealing with pulmonary tuberculosis, including hospital accommodation and the proper enforcement of precautionary measures, the death-rate from the tuberculous diseases in New York City may

be further reduced one-third within a period of five years. This would mean a saving of 3,000 lives annually."

Such, then, is a brief history of what has been done in two great cities such as Manchester and New York, and we may take it as typical of what is being done, in a smaller way perhaps, almost all over the civilized world. In our own country, and especially in our own City of Dublin, there is ample evidence of the necessity for some such war against consumption, and in the face of the results obtained elsewhere the guardians of our public health incur a grave responsibility if they delay much longer its commencement. I propose to devote the remainder of the time at my disposal in considering a plan of campaign which would be applicable to our conditions here.

It is no longer necessary to argue the question of the advisableness of municipal control of public health ; it will, I think, be granted that under present conditions it is only by such authority that large questions of public health can be at all satisfactorily dealt with. However much may be done by private enterprise and philanthropic associations, we can expect little permanent advance without the constant co-operation and assistance of those who alone can make compulsory and universal the adoption of those preventive measures on which such advance will depend. I do not wish for one moment to suggest any hostility towards those public and private associations which have done so much for us in the past, in the foundation and management of hospitals and the spreading of knowledge of sanitary matters ; but I believe that they, from their very number, are inadequate to deal with such a question as the prevention of consumption. Taking for granted then that the already constituted Public Health Authorities are the proper bodies to deal with this question, let us consider what course of procedure we can recommend for their adoption.

It seems almost a truism to say that the first essential in the administration of any disease from a public health point of view is that the responsible authority should be in a position to know where the cases of that disease exist. The only way in which this knowledge can be obtained is by notification, and the only form of notification which has been found to

work satisfactorily is compulsory notification. Although this is so, there is, perhaps, no point in the administration of preventive measures against phthisis which has been so hotly disputed, and about which there are so diverse opinions, as the adoption of compulsory notification. The advantages to be derived from notification are so obvious that it is unnecessary to dwell on them further than to say that without its aid it is difficult to see how any substantial progress can be made. Let us then examine the objections against it, and see if they are of such a nature as to compel us to abandon a means from which so much good is to be expected. Much confusion has arisen from the idea that if compulsory notification is adopted it is necessary to put in force in regard to phthisis all the provisions of the Infectious Diseases Notification Act, and consequently render phthisical persons who expose themselves in public liable to the penalties which that Act entails. Such a state of affairs would undoubtedly be intolerable in the case of a chronic disease like phthisis; depriving, as it would, many who were well able to work of their liberty, and involving the State in an enormous expense for their support. It is this idea which appears to pervade the late Sir Richard Thorne's objections which he published in the Harben Lectures in the year 1898, on the Administrative Control of Tuberculosis. Thorne said that, in his opinion, "a large amount of harm would result if phthisis were included in the list of diseases notifiable under the English Act." The same idea appears to pervade the minds of other objectors, even though they have no objection to offer to the notification of the acute infectious fevers.

There is no doubt that at first notification appears a hardship and a breach of that most sacred trust, professional secrecy; but we must remember that the principle has been accepted on the grounds of public utility, and in many cases in this country the provisions of the Act have been voluntarily adopted by the District Councils, though they are composed almost entirely of laymen. If the lay public wish to absolve medical men from this bond of secrecy, in definite cases and for definite ends, there does not appear any reason for objection on the part of the medical men themselves. Notification to the sanitary authority does not mean notification to the

community at large, and, if carried out on the lines adopted in Manchester and New York, does not involve any hardship to the individual unless that individual, by his neglect of proper precautionary measures, makes himself a source of danger to the community. Surely in such cases the community has the right of protecting itself from such persons. There is one objection which I fear will carry more weight, in this country at all events, than all the others, and that is the expense involved. It is unreasonable to expect, and unfair to ask, medical men to work for nothing, and undoubtedly the notification fees in a city like Dublin would form a considerable item for some years to come. We must remember, however, that it is an item which will decrease rather than increase, and which promises the very best value for the money expended. No doubt the fact that one case would be notified again and again by different practitioners would add to the expense. This appears to be unavoidable; but the difficulty would, I believe, be greatly lessened if medical men were asked to try and find out as far as possible if the cases had been already notified. There is another difficulty, and one to my mind of much more importance than those already urged, and that is the impossibility in many of the early cases of making any sort of an accurate diagnosis without a bacteriological examination of the sputum. It would be out of the question to expect the busy and overworked dispensary medical officers to undertake such examination. Thus to make notification efficient some method of free examination of sputum must be devised. This, of course, would be quite simple if we were provided with a properly fitted bacteriological laboratory. The necessity for such an institution in the city has been urged again and again, but so far without result, apparently on account of the expense it would entail. Although such an institution would be of the utmost value, not only for the administrative control of phthisis, but for the sanitary administration in general, yet I believe that it would not be an absolute essential, at the outset at all events, in our campaign against phthisis. For the detection of tubercle bacilli in sputum no costly or elaborate appliances are necessary, and I believe it would be possible for the sanitary authority to carry it out even with the means at their disposal in the

city at present. It is possible now in private cases to have the report of a skilled bacteriologist on tubercular sputum at the cost of three shillings. In the City of Manchester for the year 1901, specimens to the number of 517 were examined for the Public Health Authority, under the supervision of Professor Delépine, at Owens College. Would it not be possible for the Public Health Authority here to contract with pathologists in the various centres of the city to examine sputum, and report to them the results at a cost which would be quite insignificant compared with what would be necessary for the establishment and equipment of a laboratory? In Manchester during the same year 1,339 fresh cases of phthisis were notified, while 1,142 deaths were recorded; so that from these figures we may conclude that in Dublin the adoption of the scheme I have outlined would not be so very costly.

The immediate result of the adoption of such a scheme will be to place the sanitary authorities in a position to deal with tuberculosis both effectively and cheaply. Let us see then what measures we can recommend to them for this purpose. The future extinction of tuberculosis can be hoped for only as the result of the combined efforts of the community, both lay and medical, and the only way that we can obtain such a combination is by the education of the public in the nature of the disease. One of the first duties then of the sanitary authority will be the diffusion of such knowledge. This will be much more simple and direct when given to the patients and their friends than when simply given to the public in general. Information about matters which personally concern us or our friends is much more likely to be fruitful than when to us it appears merely of general interest. The sanitary inspectors will be able to impart such information to patients of the poorer classes directly, and at the same time give instruction how the danger of infection of the healthy by the diseased may be avoided. For this purpose, as well as to see that the instructions given are carried out, regular and systematic inspection of the homes of the tubercular should be carried out. The whole experience of sanitary supervision at the present day tends to show that such inspection will be welcomed rather than objected to, in spite

of what *à priori* considerations would lead us to believe. I feel sure I shall not be contradicted when I say that sanitary inspection of the homes of the poor, when carried out by properly authorised persons, is almost always well received. To such inspection and supervision should be added periodic disinfection of the houses, and for such purpose I cannot suggest any better method than that which I have described as carried out in Manchester under the control of Dr. Beatty. Here again experience confutes our preconceived ideas. I have had some experience of the disinfection of the homes of the poor as carried out in the case of the acute infectious fevers in this city, and though I know well how thorough this is, and how much discomfort the people are necessarily subjected to, yet it is rare to find any objection raised to it—rather they seek it and ask for it on their own initiative.

There is one other part of any scheme for the prevention of consumption to which I must allude—a part, too, which appears at the outset to be far the most formidable of all. I refer to the provision of isolation hospitals. I have heard it stated by a competent authority that every bed in all the Dublin hospitals could be filled with consumptive patients without exhausting the supply of such patients in the city. I do not think that this greatly, if at all, over-states the case, and the question at once arises how can we possibly provide accommodation for such a multitude with the funds at our disposal. In the first place, I should like to point out that the Public Health Authority has only to deal with, and provide for, the health of the community at large, and not with that of the individual. Consequently, it is only so far as the health of the individual affects that of the community that it comes within the jurisdiction of the Public Health Authority. Consumptive patients, then, come within the jurisdiction of this authority, because of the danger which exists of their spreading the disease, and because of their number, which causes such an important item in the increase in the death-rate. Were it not for the existence of the first of these two reasons the Public Health Department might completely neglect the consideration of phthisis. Take, for example, the case of cancer. The death-rate from this disease in Ireland during the year 1900 was '6 per 1,000, and caused 1,469 more deaths

than small-pox, measles, scarlatina, and diphtheria taken together ; yet since, so far as we know at present, a cancer patient is not in himself a source of danger to the community, the Public Health Authority takes no steps as regards his control. This is a point of great importance, since it absolves the Public Health Authority from direct responsibility for the provision of sanatoria for the cure of the disease. Of course, in so far as such sanatoria are a valuable means of prevention they come within the scope of this authority, but only so far. There are two separate and distinct classes to be dealt with in regard to hospital accommodation—those early cases in which permanent arrest or complete cure may be expected, and those cases which are so far advanced that no improvement beyond mere alleviation of symptoms can be hoped for. With the adoption of proper precautionary measures the first class need not be a source of danger to the public at all, and it is only in so far as they form the constant recruiting ground for the second class that it becomes our duty to try and cure them by the provision of sanatoria. Such patients, however, are isolated in sanatoria for their own good, and it is difficult to see how they could be compelled to enter such institutions against their will, provided they conducted themselves in such a way as not to be a source of danger to others. With the second class it is different, for since they are unable to work and support themselves they will in consequence be unable in the majority of cases to adopt the necessary precautionary measures, and so may fairly be compelled to submit to isolation. While then we look on sanatoria for the treatment and cure of phthisis as a most useful preventive measure, still they must not be considered as essential ; and even without their aid we may hope for a very large measure of success in our efforts towards the stamping out of the disease. Let us see, however, if we cannot make more use of the means already at our disposal, for there is no doubt that in the near future, when the public become more alive to the necessities of the case, the provision of funds for the erection of sanatoria will be much more readily forthcoming. At the present time it is the rule in our Dublin hospitals to refuse as far as possible admission to phthisical patients, on the grounds that they are unsuitable for treatment in a general

hospital. I say advisedly as far as possible, for cases are constantly presenting themselves with hæmorrhage or some other complication, which renders it impossible to refuse admission. In consequence of this you will constantly find phthisical patients in the general wards of our hospitals side by side with other patients who are, perhaps, in a condition which renders them peculiarly liable to the infection. That this state of affairs does exist I have satisfied myself by personal investigation, and under the present circumstances, do what we may, it must exist. If each hospital were compelled to open at least one ward for each sex solely for the reception of phthisical patients it would be possible to isolate these cases, and the benefit from the point of view of the education of the patients would be enormous. I know that there are many objections to such a scheme, but none of them appear to me to be insuperable. First of all, we must remember that the hospitals are primarily for the benefit of the sick poor, and it seems unjust to exclude such a large and deserving class as the phthisical, while it is equally unjust to submit those who are not so suffering to any unnecessary risk. Thus, quite apart from any anti-tubercular campaign, there is a distinct need for some such arrangement. Then we are told that the air of a general hospital is most unsuitable for the treatment of such cases, but we must remember that very many cases are greatly benefited, when suffering from some complication such as hæmorrhage or an acute attack of bronchitis, &c., by a few weeks' residence in hospital. In such cases it may make all the difference to the possibility of their future cure. Again, in cases which are rapidly approaching their end such wards would be most suitable, as it is far preferable that they should disseminate their infection in a ward reserved exclusively for persons with the same disease than that they should do so in their own homes. I cannot believe that these wards, if properly cleaned and periodically disinfected, would be a source of danger in themselves. The chief objection is on the score of expense—the hospitals say that they cannot afford to open special wards, but the expense would be trivial compared with what would be necessary for the erection and establishment of special sanatoria. If the Corporation and the Trustees of the Hospital

Sunday Fund would make some special extra grant to hospitals which provided such wards this objection would probably vanish at once. I do not wish to be understood as claiming that such a scheme would do away with the need for sanatoria altogether, but it would satisfy the pressing need for them from the point of view of the Public Health Authority, and so greatly lessen the initial expense of our campaign. It seems hardly possible to apply the insurance system towards the maintenance of sanatoria in this country, as has been done with such success in Germany. Free medical attendance is so easily obtained by everyone of the working class that any attempt to establish such a system of insurance, if the premiums had to be deducted from the weekly wages, would probably meet with great opposition. Most of our large trading and manufacturing companies do provide medical attendance not only for their employees, but also for their wives and families. It is just in this class that consumption is most rife—that is, among those who have to spend their lives in factories and work-rooms, where the most favourable conditions for infection are to be found. Would it not be possible for some of the great trading companies to join together for the purpose of founding and maintaining sanatoria for the treatment of consumptives among their employees and their families? I feel sure that the funds so used would not be grudged by the shareholders, and the good which would result from such a scheme would be incalculable.

I have endeavoured to tell you briefly how other countries and municipalities have tried to deal with this great problem of the prevention of consumption and the means which experience has shown it necessary to adopt to attain this end. I have also endeavoured to sketch for you the outlines of a scheme which we might adopt in this country to meet the pressing wants of public health. In formulating this scheme I have tried as far as possible to make it practical rather than ideal, remembering that the poverty of our country precludes the possibility of our adopting any scheme which would involve it in great expense. We must remember, however, that the money so expended is for the advancement and improvement of the race, and if through this expenditure

we can reduce the mortality and morbidity from phthisis we are effecting a real economy in the national wealth. Vast sums of money are being spent on the education of the people, which are no doubt necessary for the advancement and improvement of the community ; but the very existence of the race in the future will depend on the success of our efforts in Preventive Medicine.

With the increased aggregation of population in the great industrial centres, and the increased facility for communication between these centres, the spread of infectious or contagious diseases has become a much more important question than it was in the past, and any neglect of the precautions for the prevention of disease is likely to be visited with much more severe and instant punishment. Great improvements are at the present time being effected in the surroundings and housing of the working classes, and it is expected that a corresponding improvement in the public health will follow as a result. No such improvement will, however, follow in the case of consumption unless steps are taken to prevent the spread of infection.

Let me urge on you one and all the necessity of individual effort to further this great work both by example and precept. It is a true saying which tells us that legislation must follow and not lead public opinion ; and since public opinion in such a matter must be largely formed by the teaching of medical men, a great responsibility is laid on us. It is not enough that we should know and do what is right ourselves, but we must teach others to know and do likewise. Mistakes will doubtless be made, and we do not claim that our knowledge is perfect, but we do claim that our knowledge is clear and definite enough to point the way along which we must go, and it is only by going along that way that we can ever hope either to increase our knowledge or approach that goal which we all desire so much to reach.