James Alexander Lindsay (1856–1931)

President of the Ulster Medical Society 1897–98

Presidential Opening Address
Ulster Medical Society
4th November 1897

THE PROBLEM OF THE CONSUMPTIVE POOR

Michelet, the great French historian, once expressed the belief that the civilised races of mankind would eventually die out as the result of the ravages of consumption. There is much reason to hope and believe that this prediction will eventually find a place upon the long list of unfulfilled prophecies, and that whatever may be the future of civilisation, it does not run any serious risk of extinction from the cause in question. No fact in the recent history of medicine is more encouraging than the steady fall in the mortality from consumption, and there are good grounds for hoping that this fall is not a casual or accidental circumstance, but that it will continue in operation – perhaps at an accelerated rate. But the view of the great French writer was not wholly unwarrantable. A disease which destroys one-seventh of the human race (probably one-sixth of the inhabitants of cities), which brings to a premature termination a third or a fourth of all lives at the period of their greatest usefulness; a disease, moreover, which is in an especial sense the scourge of the town-dweller and tends to increase with increasing density of population – such a disease might without very much help from the imagination be conceived as the destined instrument in the hand of Providence for bringing the career of the human species upon this planet to a close. Indeed, I have little doubt that if the rapid growth of population and the increasing tendency for men to mass themselves together in large urban centres had not been accompanied by a corresponding development of sanitary science, a wider recognition of the principles of hygiene, and a higher standard of comfort, the prediction of Michelet would have been before now in a fair way of fulfillment.

Let us endeavour to form some rough estimate of the probable amount of consumption in existence. No precise data can be obtained for a calculation of this kind, but the number of deaths are available and a comparison of these with the probable duration of the disease will afford the basis for a conclusion sufficiently probable for the purpose which I have in view. In the year I890 Dr. Arthur Ransome estimated the deaths in the British Islands from tubercle in its various forms at 70,000. He also stated that "in the form of phthisis, at ages between 15 and 45 – the most useful stages of human existence – it kills more than a third of all the people who die, and nearly half between 15 and 35." Dr. Charles Denison of Denver computes that 40 per cent. of the deaths in New York between the ages of 20 and 40 are due to consumption. The returns of the various Insurance Companies show that between the ages of 20 and 50 consumption is responsible for a fourth, and in some companies a third, of the deaths – a sufficiently striking fact when we recollect that these are picked lives. I find by the Registrar Generals' Reports for 1895 that the deaths from consumption in that year in England were 42,490, in Scotland 7,688, and in Ireland 9,768, making a total for the kingdom of 59,946. These figures are considerably under the average for the past fifty years, but let us assume that the annual deaths from consumption in the British Islands are about 60,000, can we from these figures form any sort of estimate of the probable number of

cases of the disease existing at the same date in the same area? In order to do so, we should require to determine the following points : –

1. The average duration of fatal cases.
2. The number of cases which recover.
3. The number of consumptives who die from causes other than their pulmonary malady – *e.g.* accidents or intercurrent disease.

It is only as regards the first of these points that any definite information is procurable. Laennec and Louis estimated the average duration of the disease at two years, a calculation which still exerts some influence upon medical opinion, although it has been long ago shown to be erroneous. Pollock found that at the end of two and a-half years the majority of his hospital patients had still a fair expectation of life. C. J. B. Williams and Theodore Williams found that amongst 1,000 cases occurring in the upper classes, the average duration of 198 cases terminating fatally was seven years and eight months, and of the remaining 802, who were still living, the average duration was 8 years and 2 months. Against the rapid cases we must set the very chronic cases, which are not rare. Wilson Fox mentions cases recorded by Laennec, Andral, Portal, Bayle, Flint, Walshe, and Williams, where the disease lasted 20, 30 and even 40 years. I had recently under my care a gentleman with well-marked affection of both apices, in whom the disease set in with violent hemorrhages, just 20 years ago, in the autumn of 1877. He is still in fair health. I believe such cases, although exceptional, are not of excessive rarity, and a due consideration of them must lead us to expand considerably our ideas regarding the average duration of the disease. Putting all the facts together, I am inclined to think that the average duration of consumption among all classes may be put safely at from three to four years. Sir Douglas Powell, to whom I referred this point, and whose authority will be universally recognised, writes me that he thinks this calculation "quite within the average mark." As regards the proportion of cases which recover, they probably constitute a by no means negligeable quantity. To this subject I shall hereafter return. The number of consumptives who die of intercurrent maladies, or from accidents or violence must be considerable, but no statistics on the subject are available. Allowing due weight to all these considerations, and admitting that the conclusion reached is somewhat speculative, we may fairly estimate the number of persons suffering from consumption in the British Islands at *not less than a quarter of a million.* That this calculation is probably under, rather than over the mark, will become evident if we consider the most authoritative figures available regarding other countries. Professor Leyden, in an address delivered at the Congress of Buda-Pesth, upon September 7th, 1894, calculated the deaths from consumption in the German Empire at 170,000 per annum, the deaths in Berlin being 4,500. From these facts he concludes that the number of consumptives alive in Germany exceeds a million. A recent German Commission estimated the sufferers from tubercular disease at 1 in 50 of the population. I have no means of forming a correct judgment upon the accuracy of these calculations, and it would be presumptuous in me to criticise the views of so distinguished an authority as Professor Leyden. I merely wish to point out that my own estimate as regards this country probably errs on the side of caution, and that if I felt free to accept without qualification the method of calculation adopted by Professor Leyden, I should reach the conclusion that the number of consumptives at present alive in the British Islands was much in excess of a quarter of a million. I am anxious rather, to understate my case, which, unhappily, at the lowest calculation, is only too strong.

It is important with a view to our present purpose to form some rough estimate as regards what proportion of this quarter of a million of consumptives occurs among the upper and well-to-do classes, and what proportion among the classes which usually seek hospital relief. No materials exist for a satisfactory calculation of this kind, but as some concrete figure is necessary, not so much for the purpose of reinforcing my argument as to give some degree of definiteness to our ideas, let us calculate the former proportion at one-fifth and the latter at four-fifths. If these calculations are well founded, and they are put forward with unfeigned diffidence, we reach this conclusion:– that there are in these islands at the present time about 200,000 persons suffering from consumption, who might be expected to seek hospital relief. What provision is made for dealing with this vast mass of misery and suffering? London has four chest hospitals, with accommodation, as Dr. Theodore Williams informs me, for about 640 patients. There are chest hospitals, consumption hospitals, or sanatoria at Bournemouth, Ventor, St. Leonard's, Torquay, Liverpool, Manchester, Newcastle-on Tyne, Bridge of Weir (Renfrewshire), Edinburgh, Newcastle (Co. Wicklow), and Belfast. The total accommodation in these institutions would appear to be about 1,160 beds, but allowing for the fact that many of these beds are frequently occupied by cases of heart disease, bronchitis, &c., if we reckon

the number of beds bonâ fide available for consumption cases at 1,000 we shall probably be over, rather than under, the mark. We reach the startling conclusion that this prosperous, wealthy, and let us add in justice, philanthropic nation provides about one bed for every 200 consumptive patients who might be expected to demand and require hospital relief. I do not overlook the obvious fact that many of these consumptive cases enjoy a certain fair amount of general health, and that a considerable number of them are earning their living, but it will be admitted that there are very few consumptive patients among the lower classes who either do not from time to time require hospital treatment for one of the many complications of their malady or would not benefit by a temporary sojourn in a well organised sanatorium. To fortify my position and protect myself against the suspicion of exaggeration, permit me to quote the statement of Dr. Hermann Weber that "well-arranged special hospitals for the treatment of consumption have accommodation only for one sufferer in a thousand." My calculation is rather less appalling, but it shows a condition of things which will be admitted to constitute a dark blot on our boasted civilization.

To what causes are we to attribute this patent gap in the network of charity which, happily, in this country covers the greater part of the field of suffering? Not to any want of philanthropy or any indifference to disease or misery. This age – whatever may be its defects in other directions – is highly sensitive to suffering and readily responsive to the claims of charity. The cry of want and pain does not fall upon heedless ears or fail to evoke sympathy and attention. Why, then, are the great mass of the consumptive poor left with practically no provision for their special wants? The reasons are various and may well engage our attention. First may probably be placed the general feeling of hopelessness in face of a problem which seems to present stupendous and insuperable difficulties. Nothing daunts effort so much as a conviction that it is foredoomed to failure. Consumption is always with us, it is in every street, few families are permanently free from its ravages; in its developed form it is admittedly very difficult of cure and the most effective treatment involves much expense and is beyond the reach of all but the wealthy few – such are the reflections which naturally occur to the average man, and the disposition to accept these facts as part of the established order of things is undoubtedly strong. But a further and not less important reason for the general apathy regarding the pitiable condition of the consumptive poor is, as I fear we must all admit, the divided counsels and doubtful voice of the medical profession on this subject. The public naturally look to us for guidance in a matter of this kind, and that guidance has not been given – at all events with sufficient emphasis and unanimity to make it effective. It would, however, be most untrue and unjust to assert that the medical profession has been entirely silent on the subject. Most of the special workers in this field of practice have from time to time raised a warning voice and endeavoured to point out a better way, but the general mass of the profession has not made its influence felt. What we need is a consensus of medical opinion comparable to that which now upholds the principle of compulsory vaccination and insists upon the erection of special hospitals for fever. Is it too much to hope that a consensus of opinion may be attained amongst us as to the best solution of the problem of the consumptive poor? The united weight of the medical profession would, I feel sure, be irresistible, but we must first make up our own minds on this subject before we can hope to act effectively upon the general public. We must endeavour to give form and body to those vague feelings of disquiet and dissatisfaction which prevail both within and without the medical profession regarding this subject, and to formulate some general principles which would have a chance of being made effective, remembering what Alfred de Musset once said "To formulate general ideas is to change saltpetre into powder."

Let us first of all inquire what is being done elsewhere with regard to this question. Have foreign nations or our own colonies successfully faced the problem which has to a large extent baffled solution at home? On the whole, the answer must be in the negative, although great progress is at present being made in various countries, especially Germany and Switzerland, and there is reason to hope that the civilized nations are awaking to a sense of their duty in this matter. Let me endeavour to give a brief sketch of the present state of accommodation for consumption in different parts of the world. It will be necessary to distinguish between those institutions where the patient has to pay for the cost of his maintenance, and those designed especially for the poor. Of the British Islands I have already spoken. Our institutions are, unhappily, few in number, but some of them are admirable, alike in construction and administration – especially the Brompton Hospital, and the National Hospital for Consumption at Ventnor. I am glad to be able to congratulate this Society and the city of Belfast on the recent opening of the Forster Green Hospital for Consumption, to which we must all wish a prosperous and beneficent career.

A. GERMANY.

Of sanatoria for paying patients we may enumerate the following:—

1. The Brebmer Sanatorium at Görbersdorf in Southern Silesia. This institution is situated on the Riesengebirge at an elevation of 561 metres above sea level. Its erection was begun in 1859, and the principles and methods therein developed by Dr. Brehmer have been the seed from which all the modern developments in the treatment of consumption in Germany have sprung. In the near vicinity of Görbersdorf there are several subordinate sanatoria, viz:— The Sanatorium Roupler, and the Sanatorium de la Comtesse Puckler.

2. The Falkenstein Sanatorium, near Cronberg, on the Taunus Mountains, 25 kilometres from Frankfort-on-the-Main. This institution was founded in 1874, and under the able direction of Dr. Dettweiler it has achieved great success and well deserved repute. I had an opportunity of visiting Falkenstein a few years ago, and I have recently been in communication with Dr. Dettweiler, to whom I am indebted for some valuable information. The Sanatorium is situated at an elevation of 420 metres above sea level, and is surrounded by pine forests. The situation is open and airy, commanding a fine prospect of the valley of the Main, and there is a fair amount of shelter.

3. Hohenhonnef on the right bank of the Rhine between Linz and Bonn. This Sanatorium was inaugurated in 1892 and is one of the finest and most complete in Germany.

4. Reiboldsgrün in the Erzgebirge mountains of Saxony was founded in 1873. The sanatorium is surrounded by pine forests and the soil is volcanic. The elevation is 690 metres.

5. St. Blasien (elevation 772 metres), Badenweiler (elevation 420 metres), Nordrach and Schönberg (elevation 650 metres), are all in the Black Forest.

6. The Harz Mountain Sanatoria, viz., Saint Andreasburg (elevation 600 metres), Rehberg (elevation 150 metres) and Altenbrack.

Other institutions more or less devoted to the treatment of consumption exist at Kissingen, Aussee, Baden-Baden, Blankenheim, Berka, Dillenburg, Meran, Ems, Brückenau, Sophienbad, etc.

Of hospitals for the consumptive poor Germany reckons the following:—

1. Falkenstein. This is a small institution close by the Dettweiler sanatorium, already described, which is for pay patients.

2. Ruppertshain, near Königstein, about an hour's drive from Falkenstein.

3. The Malchow hospital in the neighbourhood of Berlin.

4. At Saint Andreasburg in the Harz mountains, where as already mentioned, there is a sanatorium for pay patients, a small hospice exists for the poor.

Several of the German towns (*e.g.* Bremen, Stettin, Dresden, Hanover and Worms) either possess or have in contemplation hospitals or sanatoria for poor consumptives.

B. SWITZERLAND.

1. Davos (elevation 1560 metres) so well known for the successful treatment of consumption, possesses several sanatoria. The chief one is that under the direction of Dr. Turban. There are also the Maison des Deaconnesses and the Villa Pravignan.

2. Arosa, not far from Coire, at an elevation of 1856 metres, possesses a sanatorium where the same methods of treatment are pursued as those found efficacious at Davos.

3. Leysin, elevation 1450 metres, above Aigle in the Khone valley.

4. Weissenbourg in the valley of Simmen to the west of the Bernese Alps. The elevation is 890 metres.

The above are for pay patients. Of sanatoria for the consumptive poor Switzerland reckons the following:—

1. The sanatorium at Schwendi overlooking Lake Thun. This was erected by the town of Berne in commemoration of the sixth jubilee of the Swiss Confederation.

2. The sanatorium at Bâle. This town also possesses a sanatorium at Davos-Dörfli, recently erected at a cost of ^20,000.

Other towns and cantons of Switzerland have followed or are about to follow the excellent example of Berne and Bâle, e.g., Glarus, Zurich, Geneva, Vaud, Neufchatel, St. Gall, the Grisons, and Zofingen. There is good reason to hope that in a short time Switzerland will possess a complete chain of hospitals for the consumptive poor, thus affording a proof of what even a very poor country can effect in the cause of charity.

C. AUSTRIA-HUNGARY.

The only Austrian sanatorium of which I can obtain any information is that of Neu-Schmecks in the Carpathian Mountains, at an elevation of 1,004 metres. A hospital for poor consumptives is projected at Alland, near Vienna.

D. NORWAY.

The sanatorium Tonsaasen is situated between Bergen and Christiania at an elevation of 600 metres. The Norwegian Parliament has recently decided to devote two disused leper hospitals to the treatment of poor consumptives. This is a very interesting fact in"view of the parallel which I shall attempt to draw|between leprosy and consumption.

E. RUSSIA.

There are the foliowing'sanatoria:—

1. Oranienbaun, near Peterhof.
2. Slawuta in Volhynia.
3. Halila in Finland.
4. Yalta in the Crimea.

F. ITALY.

Professor Tommasi-Crudeli, of Rome writes to me— "No special hospital for consumptive patients has till now been founded in Italy. They have only some special and isolated sections in many of the general hospitals. There is some talk now of building some sanatoria in the Alps, but till now it is only a remote hope, and no sanatorium of the kind exists in Italy." It should be remembered, however, that Italy possesses quite a number of hospitals, scattered along the Adriatic and Mediterranean coasts, for the treatment of tubercular disease of bones and joints.

G. FRANCE.

The following sanatoria exist:—

1. Angicourt in the department of the Oise.
2. Canigou in the Pyrenées Orientales.
3. The Sanatorium Touraine, in the environs of Tours.
4. The Ormesson Hospital, on a plateau above the valley of the Marne.
5. The Hospital of Villiers-sur-Marne.
6. The Sanatorium at Saint Martin Lantosque, near Nice, at an elevation of 1,000 metres.

H. AMERICA.

The following sanatoria exist:—

1. Saranac Lake sanatorium in the Adirondack Mountains (elevation 1,600 feet), under the direction of Dr. Trudeau, founded 1884. This is the best known sanatorium in America, and has been very successful.
2. The Sharon sanatorium (elevation 300 feet) near Boston.
3. The Ashville sanatorium in North Carolina (elevation 2,250 feet).
4. The Chestnut Hill Consumption Hospital, Philadelphia.
5. The Bellevue and the Gleckner Sanatoria in Colorado.

As regards the provision for poor patients, Dr. Osler writes me from Baltimore — '' No attempt has been made to provide proper hospitals for the consumptive poor in America."

For many of the facts relating to foreign sanatoria I am indebted to the works of Knopf and Léon-Petit, and to Dr. R. W. Philip of Edinburgh. The above enumeration makes no pretence to completeness, as new institutions are constantly springing up.

As regards our colonies, a movement is at present on foot in Sydney, New South Wales, to provide proper hospital accommodation for consumption, but the matter is still only in the tentative stage, and some difference of opinion appears to exist as to the best method of procedure. One party advocates the foundation of a central institution in the City, with branches in the country, while the other would rely solely upon small cottage hospitals.

Let us return to the case of Germany and Switzerland, where the most substantial progress has been made. Dr. Brehmer of Görbersdorf, and Dr. Dettweiler of Falkenstein, have been the greatest pioneers of the modern movement, and to their teaching and example we owe a large debt. The broad principles which underlie their methods are identical, and may be summarised as follows:—

That consumptive patients should be treated in special institutions erected for the purpose on a healthy, airy, fairly sheltered, and, if possible, elevated situation. That the treatment should be essentially hygienic and dietetic, medicinal treatment and specific remedies being assigned a very subordinate place; that only early cases, or those offering a fair hope of cure, permanent arrest, or at least substantial benefit should be eligible for admission; that strict medical control, and the most vigilant supervision of the patient's habits, occupations, and amusements should be enforced, and that every precaution should be taken to destroy the virus and limit the dissemination of the disease. It is to be observed that the sanatoria in which these principles have been successfully carried out present many variations as regards situation and climate. Görbersdorf the parent institution of the kind, is at an elevation of 1,700 feet; Falkenstein, 1,300; Hohenhonnef, 776 feet; Rehberg, in the Harz Mountains, 490 feet, and others at still

lower levels. The climate of the Silesian Mountains, or of the Taunus range or of the Harz Mountains, or of the Rhine valley cannot be considered as specially favourable for consumptives, yet, as we shall see, the results of treatment obtained in these localities are, on the whole, encouraging, and show that in a certain considerable proportion of cases the disease can be successfully combated without removal to the Alps, Egypt, South Africa, Colorado, Australia, or any of the other localities which have obtained a special repute in the treatment of consumption. There is the more need to emphasise this point, as our efforts to provide ampler accommodation for consumption in this country are sure to be met with the objection that the climate is unfavourable, and that therefore nothing can be done.

This is one of those half truths which are often so much more dangerous than actual falsities. The best answer to this objection is to be found in the example of Germany. Without denying or minimising the considerable influence which climate exercises upon consumption, it is important to recognise that good results may be obtained, even where the climatic conditions are only moderately favourable. It is obvious that for the great mass of consumptive patients a distant and expensive journey and a residence in a foreign country are quite impracticable. Germany is now giving us an object lesson to show that such measures – however desirable for those who can afford them – are not always indispensible, and that much may be done to make the most of the good points of an indifferent climate, and to neutralise its defects. It will be well, perhaps, to enter a little more fully into the general principles and methods which have guided the erection and administration of the German sanatoria for consumption. The site selected is one usually characterised by a dry soil, free exposure to the sun, shelter from cold winds, moderate elevation, good facilities for drainage, ample opportunities for fresh air exercise, and in general by all the conditions of a sound hygiene. It will be observed that these conditions are in no way exceptional and are all capable of reproduction upon British soil. The buildings are lofty and well arranged, special pains being taken to procure thorough ventilation and absolute purity of air. Verandahs and summer houses or "Liegehallen," in which patients spend the greater part of their time, are a leading feature of these institutions.

These 'Leigehailen' (says Dr. Ruffenacht Waiters in a recent number of the *Lancet*) are of various shapes and sizes, built substantially of wood and provided with cane lounges or sofas, as well as with little tables and other simple furniture. Each patient has his own place, which he can decorate with flowers, pictures, &c., according to taste. Even some febrile patients lie out in those places from morning to night regardless of rain cold or fog, and apparently with great benefit. Patients with acute exacerbations or complications are, however, kept in their bedrooms." Great care is taken with regard to the disposal of sputum, spittoons or hand flasks being provided for the patients and spitting on the ground being strictly forbidden. The diet is generous but simple, milk being a leading constituent. The hygiene of the skin is carefully attended to, cold or tepid baths, douches, the wet pack, the wet sheet or sponging the skin with spirits of wine being usually employed.

The above methods of treatment have now been in vogue in Germany for more than a quarter of a century, and the number of cases thus treated has been very large. There should be no difficulty in forming a correct estimate of the value of these methods and whether they are suitable for imitation. The authority and reputation of Dr. Brehmer and Dr. Dettweiler stand so high that their reports may be regarded as conclusive, but it is only fair to add that those institutions have been repeatedly visited by British physicians who have fully corroborated the favorable reports of these gentlemen. Dr. Hermann Weber has given valuable and emphatic testimony in this sense. Dr. Dettweiler writes to me (Falkenstein, October 10th, 1897) as follows:– "At the Falkenstein sanatorium we reckon about 30 per cent. of absolute or relative cures. In the latter class are comprehended those cases, which, although restored to good general health and capability for work, still show some slight signs of remaining disease. The proportion of patients who derive signal benefit from the treatment and who are able to return for a longer or shorter time to their labours in the world is fully 45 to 50 per cent. Even severe cases often obtain surprising benefit, but it is not desirable to send cases characterised by hectic fever, much diarrhoea, amyloid degeneration and great loss of flesh." These statements touch the very kernel of the subject of any national provision of hospitals or sanatoria for consumptive patients. Is it true that a certain proportion of cases can be cured, and that a much larger proportion can be restored to years of useful and fairly comfortable life? The whole case stands or falls with these propositions, and therefor I shall ask you to consider with me for a little the evidence which is available regarding the cure of consumption.

Gentlemen, I think the time has come when we

should cease to speak of the cure of consumption with bated breath, as if it were a vain pretence or a mere hallucination. Evidence is accumulating both on the clinical and on the pathological side to prove that a considerable number of persons pass through an attack of pulmonary tuberculosis, recover their health and live to the average period, ultimately dying of some other malady. I take the following statistics from Wilson Fox. In the first Report of the Brompton Hospital, which included 535 cases, cure or complete arrest was recorded in 5.6 per cent. In the second Brompton Report, which included 6,001 cases, cure or complete arrest was recorded in 4.1 percent. Williams records cure in the case of 3.1 per cent. of 700 patients who remained in England. Flint records cure in 12.1 per cent. of 74 patients who tried various climates, especially the sea voyage. Hermann Weber records cure in 24.5 per cent. of 75 patients who tried the high altitudes. Clifford Allbutt's proportion of cures among patients resorting to the high attitudes was 22.5. Spengler, of Davos had 21.3 per cent. of cures in 342 cases. These figures cannot be dismissed with a smile of incredulity. The writers in question are among the very highest living authorities upon pulmonary disease, and if we cannot accept their figures, there is an end to all statistical evidence in medicine. I should like especially to emphasise the fact that 4 or 5 per cent. of cures were obtained among patients who had no change of climate. We may contrast this proportion with Dr. Dettweiler's claim of 30 per cent. of cures at Falkenstein. Much, of course, turns upon the selection of cases for treatment. The clinical evidence of the curability of consumption finds reinforcement from a somewhat unexpected quarter. The motto of the Pathological Society – *Nec silet mors* – finds here a singularly appropriate application. It has been found that quite a large proportion of persons dying from various diseases, of accident, or of old age, bear traces in their lungs of having passed successfully through an attack of pulmonary tubercle. Coats, in his well known manual upon Pathology, states – "The frequency of healing of tuberculosis of the lungs has been estimated by the author, Harris and others on the ground of post mortem observation in cases which have died from non tuberculous disease. The result is, that in about 20 per cent. of persons dying from other diseases there has been at some period of life a tuberculosis of the lungs which has become obsolete." How often do we meet in practice with elderly patients suffering from various maladies who tell the story of repeated pulmonary haemorrhages in youth, or of having been supposed to be "far gone in consumption," and yet recovered. It has been too much the habit to put these cases down to errors in observation and mistakes in diagnosis. The newer light which we have obtained upon the subject justifies the belief that no inconsiderable proportion of these cases are instances of arrest of the disease owing to tubercle becoming obsolescent. The actual disappearance of physical signs from an affected apex and co-incidently of bacilli from the sputum is no doubt a rare event, but I have known such cases. We must remember, moreover, that recovery may, and probably does, often take place in patients who have had apical disease without any gross physical signs.

The utility of special institutions for the treatment of consumption does not depend solely upon the consideration that a certain number of cures are effected in them. We must remember the large proportion of patients who cannot, unhappily, be cured, but who can be restored to comparative health and well-being, and enabled to resume, for a longer or a shorter period, their place in the world. No one who has studied the subject will deny that this class is a considerable one. To prolong life when it is doomed to suffering and uselessness may well seem a doubtful benefit, but the patients who rally from an attack of consumption are not always, perhaps not usually, in this sad plight. Often they regain a very considerable enjoyment of life, and the difficulty is to persuade them that their condition is precarious, and that a relapse is probable. Not infrequently, if they can be induced to select healthy occupations, a considerable period of useful existence is before them.

The very important subject of how far these special institutions may be made available for preventing the dissemination of the infective material of the disease and so limiting its propagation must be considered in a little more detail. There are few subjects upon which it is more necessary for the medical profession to make up its mind and to speak with united and emphatic voice. Many have been the fluctuations of popular and professional opinion upon this important subject, and although we are probably nearer unanimity at present than we have ever been before, we are still far from having attained to it. A belief in the contagiousness of consumption has long prevailed in Italy and Spain, more, perhaps, as a popular opinion than as a scientific doctrine. The contagionist view, which received a great accession of strength from Koch's discovery, is widely prevalent upon the continent, especially in Germany, but never seems to have taken deep root in this country. The results of the enquiry instituted by the Collective

Investigation Committee of the British Medical Association were equivocal. A large majority of the medical men who responded had seen nothing to warrant a belief in the contagiousness of the disease, but a respectable minority took the opposite view. The cases which were chiefly relied on in support of the contagionist view were those in which the disease appeared to have been transmitted from husband to wife, or from wife to husband. Dr. Longstaffe in his work *Studies in Statistics* has, however, shown that these cases of consumption in husband or wife when the other partner had been previously affected are not more numerous than would arise on the general principle of averages, without postulating any theory of contagion. I have not time at my disposal to discuss in any adequate manner the other evidence available on this important subject, so I must content myself with giving my opinion that the direct transmission of consumption from one individual to another is a rare event. Not the less, however, is the disease in all probability infective. All the facts of the case seem most easily explicable on the theory of Koch and Cornet that consumption is chiefly disseminated by means of dust rendered infective by the drying and pulverisation of the sputum from consumptive patients. According to this view the infectiveness resides rather in the rooms occupied by patients than in the patients themselves, and the disposal of sputum becomes a question of the first importance. That the inhalation of infective dust is the usual method by which consumption is contracted is at least a highly probable theory, but the report of the recent Royal Commission on Tuberculosis gives ground for believing that the use of tuberculous meat and of milk derived from cows with tubercle of the udder is at least a possible mode of origin of the disease. If we adopt the views of Koch and Cornet, the argument in favour of special institutions for consumptives is much strengthened. The best prospect of arresting this scourge of humanity lies in preventive measures, and no preventive measure is so hopeful as one which would tend to enable us to limit the *materies morbi* to institutions where it could easily be deprived of all infective properties.

The amount of accommodation which would be required to grapple with the huge mass of consumption existing amongst us would, no doubt, be enormous, and we may well stand aghast at the extent and difficulty of the problem. All we can hope to do at present is to facilitate the maturing of professional and popular opinion upon this subject, and to indicate the lines upon which progress, to be effective, must proceed. In that halcyon future

> "When wealth no more shall rest in mounded heaps,
> But smit with freer light shall slowly melt
> In many streams to fatten lower lands,"

some such scheme as the following may be adopted:– Every city, town, and commune above a certain rate of population will have a central hospital for consumption with smaller branches in the most suitable adjacent locality, either in the hills or at the seaside. The function of the central institution will be to receive cases in the first instance, to treat urgent symptoms, such as haemorrhage; to select the cases suitable for transference to the various co-ordinated sanatoria, to promote research, and to educate the community in preventive measures. No cases will be received except such as hold out some prospect of decided improvement, advanced and hopeless cases being relegated to homes for incurables. The actual treatment of cases will be undertaken chiefly in the various sanatoria, and will probably follow the lines adopted at Görbersdorf and Falkenstein. The following results may be fairly expected:–

1. Cure or complete arrest in a certain proportion of cases, which will probably be somewhere between the 4 or 5 per cent. hitherto obtained in this country and the 30 per cent. claimed by Dr. Dettweiler at Falkenstein.

2. Material improvement, permitting the patient to resume his work in the world, and restoring him to fairly good health for a longer or shorter period. This proportion will probably be a considerable one.

3. The relief of suffering in cases which fail to respond to treatment, or make any definite rally.

4. The education of patients in hygienic and dietetic principles, and in preventive measures, especially the disposal of sputum.

5. The prevention of infection.

In a valuable letter which I have received from Dr. Huggard, of Davos, the following passage occurs:– "The question arises whether curable cases – which, of course, alone should be taken into sanatoria – should be allowed to remain until nearly well, or whether they should be allowed to remain only for a very short time – say two months. By a long residence the individual would no doubt benefit greatly; but the mass of invalids would have but little advantage. A short residence might start a great many on the road to recovery, and would probably, therefore, in the end secure as many recoveries as the long residence system. The short residence system would have a high educational value. Patients, on returning to their homes, would practise more or less the precautionary measures needful to prevent infection. Only by the

practical training of the poorest classes in the necessity of avoiding infection, and in the means of doing so, can tubercle ever be stamped out."

Granting that the problem of combating consumption among the masses of the people is one of gigantic difficulty and magnitude, we may, perhaps, derive some encouragement from the success which has attended the efforts made to stamp out a kindred disease, viz., leprosy. This subject has been worked out in a very interesting and instructive way by Dr. Ransome in his Milroy Lectures. The two diseases present many points of resemblance. The bacillus of lepra is with difficulty distinguishable from the bacillus of tubercle. In their mode of attack, clinical course, pathological products, distribution, and in their relation to the question of heredity and contagion, the two diseases present a striking anology. It is not chimerical to suppose that measures of prevention which have to a large extent succeeded with the one disease might have a similar success with the other. Leprosy was formerly endemic in Europe and was common in the British Islands. It is now practically unknown in England, France, Germany, and Switzerland, somewhat rare in Italy, Spain, and Portugal, and only moderately common in Norway, the Baltic coasts, and on the shores of the Black Sea. But if we compare the provision made for the treatment of leprosy in the Middle Ages with the provision made for the treatment of consumption at the present day, we are confronted with a startling and unwelcome contrast. According to Matthew Paris, quoted by Dr. Ransome, there were over 19,000 leper asylums in Christendom, and no less than 2,000 in France alone. I have not been able to obtain the figures indicating the number of these institutions in the British Islands, but it was certainly large. It must be admitted that the present day provision of special institutions for the treatment of consumption makes, in comparison with such facts, a very beggarly show. Nor is it easy to find a plausible explanation of this contrast. Consumption claims far more victims than leprosy ever claimed. If the symptoms of the former malady are less offensive than those of the latter, it may yet be questioned which in the long run causes the greater amount of suffering. Perhaps an explanation is to be found chiefly in the fact that during the Middle Ages no doubt existed regarding the contagiousness of leprosy, although this doctrine has been strenuously opposed by many of the most eminent modern authorities on the subject. It the civilised nations of the world are ever to rouse themselves to a resolute crusade for the prevention of consumption, the argument most likely to have weight will be this – viz., that consumption, though not strictly speaking a contagious, is nevertheless an infective disease, that pulverised sputum is the chief mode by which it is propagated, and that special institutions afford the only means of preventing the diffusion of the virus. If these views were once universally adopted and proclaimed by the members of the medical profession, the dawn of a brighter day would not be far distant.

We may derive much encouragement in the fight against consumption from the fact that the disease is already steadily on the decline. In the quinquennium 1855-59 there died from consumption in England and Wales 2,648 persons per million living. Twenty years later in the quinquennium 1875 79 the number of deaths per million living had fallen to 2,117, a decrease of no less than 20 per cent. in 20 years. The latest available figures show that this decrease is, happily, going on. As during the same period there has been an increased mortality from respiratory diseases, other than consumption, it might at first sight appear that the apparent decline in mortality is due to greater precision in diagnosis, and the transfer of cases from one column to another. Dr. Longstaffe and Dr. Newsholme have shown conclusively that this explanation will not harmonise with the facts. The mortality from consumption has decreased at all ages, while the mortality from respiratory diseases has only increased under 5 and over 35 years of age. We may take it as certain that consumption is sensibly on the decline in the British Islands, and there is the more encouragement to perfect our weapons and urge on a more active warfare against it. Other measures, in addition to those advocated in this address, will be required, such as improvements in the dwellings of the poor, the regulation of unhealthy occupations, the dissemination among all classes of sound views on hygiene and the means necessary for the prevention of infection, the inspection and control of our meat and milk supply, the special nurture of children of tubercular ancestry and the like. But I regard the adequate provision of special institutions for the treatment of the disease as an indispensible item in the programme of preventive measures. The present system of treating consumption in general hospitals is on many grounds to be condemned. It is certainly bad for the consumptives, probably bad for the other patients. It was strongly condemned by the International Congress on Tuberculosis a few years ago, and it is quite time for all hospital physicians, and those interested in hospital administration to make a resolute stand against it. No consumptive ever recovers in a general hospital, and his treatment

there, with the exception of the relief of urgent symptoms, is little better than a farce.

Medical science and advancing civilisation have practically stamped out the plague, kept cholera successfully at bay, and robbed leprosy, smallpox, and typhus fever of most of their terrors. They are slowly beginning to make headway against a greater foe than all – tuberculosis. That its gradual arrest and final extinction are not only happy possibilities but practical certainties, I for one firmly believe. I believe, further, that the means for attaining this end are already known, and that we see the road which must be followed in order to reach the desired goal. That road is long and toilsome, worse still, it is extremely expensive, but the call to follow it is imperative, and will some day become irresistible. The duty laid upon the medical profession is to point the line of advance and to lead the van. The result may not fully appear in our day, but "*arbores seret diligens agricola quarum aspiciet baccam ipse nunquam.*" If we are told that these proposals are vain and chimerical, and that their realisation would put an intolerable load on the back of already overburdened humanity, let us reply in the glorious paradox of the great prophet-critic of this age – "You tell me what we ask is impossible. That may be so. I can only answer that it is indispensible."