in the cases of measles which have come under the writer's notice.

The cases of lobar pneumonia following measles to which this paper refers were marked by the same characteristics as are present in ordinary lobar pneumonia in children—(1) sudden onset without preliminary bronchitis; (2) a generally favourable termination.

The cases occurred during two epidemics of measles in 1900 and 1902. They were 13 in number. The ages of the children varied from 1 year to 5 years (10 out of the 13 being under 3 years); the pneumonia began in 7 of the cases at the time the rash appeared, and in several of these it was possible on first seeing the child and noticing its rapid breathing to suspect that pneumonia was beginning. In all the cases the pneumonia appeared before the rash had died away.

One or both lower lobes were in all cases affected. In 5 cases one side only was involved, and the duration of the disease was in these from five to eight days; in the eight others both bases were affected, either simultaneously or consecutively, the duration being from eight days to three weeks. The disease terminated in some instances suddenly, in others gradually. The temperature rarely exceeded 102° F., and was, as a rule, fairly evenly raised throughout the attack. The physical signs consisted in diminution of resonance on percussion, and the presence of crepitations, which persisted to the end of the attack, and were not replaced by tubular breathing, though this was heard with the crepitations in one case. The persistent crepitations are such as are generally found in lobar pneumonia in young children. In one child they were present for six weeks, although the general health was quite good for the latter half of the time. Slow resolution of this kind is not very unusual in the lobar pneumonia of children.

All the cases recovered except one boy of 18 months, who died of convulsions two days after the crisis. Bronchitis was not present in any case. Two babies in one house had measles; both had pneumonia, possibly owing to infection. During the period in which the 13 cases occurred, only 3 cases of bronchopneumonia following measles were seen, and they all died, thus showing the very different severity of the two affections. The proportion of 3 cases of bronchopneumonia to 13 of lobar pneumonia coincides very closely in the writer's experience with the proportion obtaining between these affections when not following measles. In hospital practice bronchopneumonia seems to be of more frequent occurrence, and this is probably to be explained by its greater severity.

Measles may, therefore, be accompanied by lobar pneumonia, having its onset about the time at which the rash appears. Such cases nearly always recover, hence it is important to recognize the affection, to distinguish it from bronchopneumonia, and thus to be enabled to give a favourable prognosis.

THE VARIOUS PHASES OF A HOSPITAL'S WORK.*

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[AFTER giving a detailed account of the progress of the Mater Misericordiae Hospital since its foundation, its intern and extern work, and its various special departments, the lecturer proceeded as follows:]

The aspect which I have put before you of the work that is being done in the hospital represents what may be considered as its primary function. There are, indeed, some who would regard it as its exclusive function, that the object of a hospital should be to have its patients comfortably housed, fed, nursed, supplied with skilled medical and surgical advice, whilst scant, if any, encouragement should be given to what is spoken of as experimentation in the wards, the teaching of students, or the carrying on of the work of scientific research. On the other hand, the professional view with regard to hospital work is, that whilst its primary and fundamental object should be the well-being of the patient, the nature of the professional work undertaken in the wards, the giving of clinical instruction, and the employment of all the scientific methods elaborated in our time for the purposes of investigation and research, were so far from being antagonistic to the

welfare of the patient that they should be regarded as important adjuncts in ministering to his wants. A few words will justify the professional claim. It must be freely admitted that the treatment of every case in hospital is more or less experimental in its nature. Just as no two individuals are exactly alike, so likewise is there a dissimilarity in cases of disease and of surgical injury. In other words, in every case there exists a factor of uncertainty, in some cases so insignificant that the treatment is carried on along routine lines, but in others the uncertainty is so great that to save the life of the patient a leap in the dark must be taken—a choice exercised between two evils—with the most satisfactory result, a result which is chronicled for future use. How many cases are there in which the arcana of the *Pharmacopoeia* have to be explored to bring relief to suffering, to arrest the progress of disease, or to avert impending death! It may, indeed, be said that the art of medicine consists in trying by repeated experiments to diminish as much as possible the condition of uncertainty so as to make our practice sure and effective. We may put it that the increment of knowledge gained by each experiment is a decrement of human suffering and pain.

With regard to clinical teaching it is not difficult to see how, quite apart from its absolute necessity for the training of students, the stimulus of a class, carefully noting the physician's prognostications, his analysis of symptoms and physical signs, and the effects of his treatment, must largely tell to the advantage of the patient. The interest taken in the case cannot be perfunctory. The teacher is exposed to the fierce light of the students' criticism, and, apart from considerations of humanity, of which the members of my profession can, I think, claim their share, it is not merely the duty, but the obvious advantage, of those in charge of the sick that they should be successful in their efforts. The hospital is not to be regarded as an asylum or a lazaret-house. It is rather a sanctuary in which we all, students and teachers alike, learn to pity and bring succour to the distressed. The extent of that relief is measured by its efficiency, and this efficiency is, I maintain, materially stimulated by clinical teaching.

But it is with regard to the last point—the utilization of the hospital for the purposes of research—that I am specially concerned to-day, and I have to ask you to bear with me for a few moments whilst I endeavour to put forward this claim as strongly as I am able. The progress of hospital work in its relation to the prevention and treatment of disease may be said to have been slow and uneventful until the time of Lister. It is true that physicians like Addison and Jenner made record discoveries by pursuing cases of disease from the clinical standpoint to the *post-mortem* room, and no doubt many interesting problems in the biology of disease were made clear by these and other observers. But the stimulus to laboratory investigation dates from the discovery of Lister, who utilized to the fullest extent the labours of Pasteur. That discovery was altogether the result of his observations in hospital, for nowhere except in a large general hospital could he have found materials for that method of treatment which has revolutionized not merely surgery but the medicine of our day. As an illustration of the effect of the Listerian treatment of wounds I believe I am correct in stating that the mortality after major operations has been reduced from forty to three per cent.

Who can estimate the gain to humanity of the result of this one instance of hospital research work? It is almost entirely to research work undertaken in the laboratory that pathology may be said to have attained its present position. A comparatively few years ago the work of the pathologist was left to the assistant medical officers—indeed largely to the senior students. There existed, no doubt in an imperfectly organized form, the machinery for recording notes, and compiling facts in connexion with the biology of disease, of comparing these with conditions found after death, and for making generalizations from both data. But there were no means of pursuing inquiries into the modes of origin of disease, nor was any attempt made to determine the nature of obscure conditions which could be investigated only by the use of instruments of precision not then employed. In Dublin in 1894 the first step was taken in the United Kingdom to place pathology in its legitimate position. The Royal University, at the instigation of Sir William Thomson and myself, made the regulation that pathology and bacteriology should be made a special subject of the medical curriculum, and, at the same time, a professorship was

* Being part of an address delivered at the Mater Misericordiae Hospital introductory to the Winter Session, 1904-5.

created in the Medical School of the Catholic University, and the professor was appointed pathologist to the hospital. Since then the clinical physician and surgeon have had the advantage of his services. Those who are familiar with the work of the clinician can fully appreciate how much it is bound up with that of the pathologist. In many cases not merely does the diagnosis of the existing morbid condition depend upon the report furnished from the laboratory—a report most frequently made as a result of some bacteriological or chemical investigation—but the line of treatment to be pursued is based upon the conditions which this investigation has determined. There is no difficulty in realizing why this should be. The physician studies the disease almost exclusively from its biological aspect; the pathologist, in addition, investigates it, with all the modern instruments of precision at his hand, from the physical, chemical, and bacteriological standpoint. In many, if not most, cases it is impossible to divorce the two methods of observation; hence the clinician and the pathologist may be regarded as the complement of each other. Let me illustrate my meaning by an example. There is frequently considerable difficulty in diagnosing between two severe forms of anaemia, a profound chlorosis, and progressive pernicious anaemia. There are no special signs or symptoms by which the physician can distinguish one from the other, and it is only when the blood has been subjected to a physical and chemical examination that a correct conception of the existing condition can be formed—a conception which carries with it the knowledge of the death of the patient or of his recovery.

But the work of the physician and pathologist does not stop here. The case of chlorosis is quite clear. Employing the known remedies, the patient, almost as a matter of certainty, recovers. But quite different is the case of pernicious anaemia, in which the accuracy of the diagnosis is attested by the inevitable death of the patient. Since Addison and Biermer drew attention to the condition in 1867 a great deal has been learned in connexion with the life-history of the disease and with the changes produced by it in the various organs and tissues of the body. But as yet the primary condition which produces the blood change is unknown. We are unable to say whether it is caused by some chemical disturbance which interferes with cell nutrition and so disturbs the uniform composition of the blood, or by some ferment or toxin which affects the vitality of the blood cells and leads to their excessive destruction. How are these obscure points to be cleared up? As yet every form of treatment of the disease has proved futile because of our ignorance of the primary disturbance of health. It is only by carefully noting each case under observation, observing every sign indicative of functional and organic disturbance, experimenting with medicines that favourably affect the course of the affection, but, above all, by employing the physical, chemical, and bacteriological methods of investigation at our disposal, that we shall be able to solve the mystery that at present envelops the origin of the disease. Such a condition is quite as hopeful for solution as was myxoedema but a few years ago. The clinical investigation of this disease led us to recognize a blood state which reduced the patient to almost a state of imbecility; it was capable of being produced by removal of the thyroid gland, whilst further investigation established the identity of the disease with cretinism, the condition represented by those deformed and stunted specimens of humanity which the traveller meets with amongst the inhabitants of Switzerland and northern Italy. After a certain stage the steps of inquiry passed beyond the domain of the clinical observer, and the work of investigation was undertaken by the chemist and experimental pathologist. The brilliant results obtained by Horsley by removing the thyroid gland in monkeys, and the adoption of a line of treatment suggested by him and Murray of supplying thyroid gland substance to animals and human beings in which the gland was absent, is perhaps an instance of as great a triumph of the art of medicine as it is possible to record. Not alone is the cretinoid condition removed in adults, but even cretins, those creatures who seemed so little removed from mere animal existence, became bright and intelligent, and, if treated at an early age, had their bodily growth and normal configuration restored. I dwell upon this condition because it affords an illustration of what the experimental mode of investigation is likely to lead to. It would be altogether beyond the scope of this address to advert at any length to what has been achieved by experimental research, or to state in detail how much mankind owes to it in connexion with

the treatment of diphtheria, tetanus, rabies, and in the investigations of the various diseases caused by parasitic micro-organisms. It is this method which, in the study of immunity, has led to the artificial production in the blood of those substances, toxins, which will, without doubt, protect the individual against the poison of typhoid fever, pneumonia, the deadly tubercle bacillus, and, perhaps, from that dread disease, cancer. When we consider how many morbid conditions there are which the physician comes across daily in his wards, in which there is the most intimate knowledge of the functional disturbance and organic changes which exist—where the biological history is carefully compared with the changes noted after death, and where only one link is wanted to explain the disturbed mechanism—one can realize how limited in usefulness would the clinical observer be if he were content merely to register his failures, and make no attempt to solve the riddles that daily present themselves. Let me mention some common instances of disease the obscurity of whose origin still remains to be solved. We are all familiar with the symptoms and signs of diabetes mellitus, of the pathological changes produced by it, but we are yet in absolute ignorance of the initial point of departure from normal function. A similar difficulty presents itself in exophthalmic goitre, every symptom-complex of which has been made the subject of detailed and elaborate investigation. Subtle nervous conditions like paralysis agitans, chorea, and epilepsy are yet inexplicable as to their mode of origination. We cannot presume to more than theorize upon their etiology. In pneumonia and acute rheumatism we are equally in doubt. We do not know the conditions which in the one disease make the individual a suitable host for the pathogenic micro-organism, whilst in the other we are unable to determine whether a chemical agent or a microbe sets in motion the morbid state. It would be easy to multiply instances of disease, of the common forms of disease, in which we physicians have to play the rôle of empirics as regards treatment, and in which this humiliating position of empiricism must largely predominate until some advanced degree of certainty is reached by an accurate knowledge of the true nature of the morbid condition. But until that time comes I am afraid we must in many cases be content to accept humbly the old definition of a physician—that he is a satisfaction to the mind of a patient. The public are not given, even granting their mental capacity, to analyse the methods of investigation and treatment employed in any case of disease. An individual has some particular ailment, and he wants to get cured of it. There is not much use explaining to him that we are not as yet certain of the way in which the disturbance of his health is set up, and that his condition can be dealt with only symptomatically. We may talk to him very learnedly, and look wiser than even a physician could really be, but the patient tells you he came to be cured, and he expects you to work a miracle on his behalf. Such an instance is an answer to the distinguished physicist who some days ago addressed the students of a London hospital. He very truly pointed out that the fundamental studies of medicine were of a strictly materialistic nature, that they belonged to a different world from that which constituted the main object of a student of medicine, and that we should not deal with living men and women as if they represented a mere physical mechanism, as mere laboratory or chemical specimens. But unfortunately, as we know nothing of the problem which constitutes life, we have no other methods of analysis of processes of disease except those of noting physical and chemical phenomena, and comparing these in any given case with a normal standard, and that normal standard is one which is conditioned by the principle of life. What is meant to be conveyed by the lesson is, that we are not to regard our patients as merely a piece of very fine mechanism, constructed by a skilled artificer, which will not bear rough or unintelligent interference, but as a type of the most supreme specimen of delicate structure endowed with the unknown principle of life, and therefore to be dealt with on a plane apart from ordinary physical and chemical methods of investigation. I venture to think this line of argument may be considered to be what is known as a schism—*a battle with a shadow*. Where, I ask, is there the slightest ground for believing that a single thought or act in connexion with the sufferer in any hospital is not associated with his well-being, and in what instance is there any advance of knowledge that is not utilized for his benefit? In all obscure cases it is our duty to unravel

the web, and in doing this by the finite means at our disposal we are steadily pressing onward to the goal which marks the limit of human progress in medicine. It is only in this way we may hope to satisfy those who come to us for relief.

And here I think it my duty to freely acknowledge the thoroughly progressive spirit in which the Sisters of Mercy have administered the affairs of this hospital, their readiness at all times to accede to the recommendations of the Medical Board in all matters which are essential to the welfare of the patients and of the institution generally, and to their never-failing consideration and courtesy towards both the staff and the students.

It was this spirit of progress which impelled those responsible for the management of the hospital to provide the necessary facilities for carrying on those researches which will lead to our more accurate knowledge of disease and its treatment. They have provided us with a laboratory which, under the direction of the Pathologist of the hospital, Professor McWeeney, will be utilized for the progress of the science and art of medicine.

The encouragement given by the managers of the hospital to the employment of scientific methods of investigation of disease necessitated an encroachment upon its slender resources. But the enlightened spirit which provided those facilities for research is bound to have its reward in perfecting our means of combating disease and alleviating human suffering. To me, personally, the opening of the new laboratory is an occasion of extreme interest. I have been connected with the hospital for thirty-six years; I have noticed its steady development and progress, and now, in the forty-third year of its existence, it may be said to be entering upon a new career of usefulness. It has, as you are all aware, an intimate connexion with the Catholic University School of Medicine, and I venture to express a hope that the bond between the two institutions will be even more strongly cemented in the future. A great school of medicine—and the Catholic University School, with all its drawbacks as to position, structural proportions, and lack of endowment, can claim to be by far the largest school in Ireland—a distinction which many will regard as of some importance—should be in the closest relation with a great hospital, so that the research work of each will be facilitated and augmented. In this way the tone and status of medicine in Ireland will gradually reach the level of that attained by the great Continental schools. There should be no hesitation in accepting this view. Before the introduction of the modern methods of precision in the diagnosis of disease the Dublin school was, in many instances, in advance of the great schools in Germany, France, and Austria. Graves, Colles, Corrigan, Stokes, and Adams constitute a quintette of original observers, each one of whom is handed down to posterity as the discoverer of the special disease which bears his name. But just as the sister country has fallen so much behind in scientific work, and as her industries have been to a large extent monopolized by America and Germany, so medicine in Ireland has not held its own in the domain of research. Yet it may be asked, Is there any quality of brain power in Ireland which, under favourable conditions, would prevent it from successfully competing with that of the Germans or the French? To have signal results I hold you must have a combination of a great hospital with a great school. Given a completely-equipped school of medicine, having each department thoroughly organized, manned by a competent staff of professors and assistants, and collaborating its work with a great hospital, which the spirit of the time has made ideal in all its departments, then, I do not say I believe, but I feel confident, the genius of Irishmen will make their country a home for scientific progress in medicine. It is scarcely possible to conceive, with the encouragement that is being given to the various conditions bound up with industrial and agricultural life in Ireland, and with such indications as are presented of the dawning of prosperity and progress, that no consideration will be given by the State to a profession from which it extracts so much profit. I say this notwithstanding that the opportunity which was recently afforded to the Government of settling the University question in such a way as would provide a school of medicine commensurate with the requirements of students of the country at large was not, unfortunately, availed of. The report of the Royal Commission on University Education in Ireland appears likely to share the fate of most Royal Commissions, the reports of which, so far as Ireland is concerned, result in vitalizing the conditions they were appointed to remedy. It is stated that the present Government has fallen

back no less than 34 times on Royal Commissions, at a cost to the country of £392,000. In Ireland we have had several, and in most of them the outcome was uniform—no result. Indeed, in connexion with higher education in this country one would feel inclined to urge the friends of the University of Dublin to demand the appointment of a Commission to consider the present condition of the higher, general, and technical education available in Ireland inside Trinity College, Dublin. No matter what the Commissioners report it is almost a certainty that the *status quo* will be maintained, and the University will be able to repeat MacMahon's response at Malakoff—"J'y suis, j'y reste." Still, if a comment may be made upon the recent report on University education presented to His Majesty, it is to say that, prepared as we may be for the policy of *laissez faire* which, in regard to Ireland, appears to be a characteristic of our Government, still one would hope there is a limit which no self-respecting Government would outstep in dealing with a country which it professes to govern, and with a body of men to whom it entrusted an almost sacred mission. The condemnations and recommendations of the Commissioners are so destructive in their nature that, in face of them, to maintain an institution which, in the words of the Act establishing it, was to promote the advancement of learning in Ireland, appears to be "a mockery, a delusion, and a snare." The three main findings of the Commission were that the Royal University lowered the ideal of University education, that its system of making appointments to the Senate and officers of the University was indefensible, and that the system adopted by it of indirectly endowing certain colleges must be condemned. It is scarcely conceivable that no action would be taken upon this report, coming from a body of experts appointed by practically the same Government which abolished the Queen's University and substituted in its place the Royal University, or that any Government would be so inconsiderate, to say the least, as to continue to impose upon the members of the Senate the duty of administering the affairs of an educational body which was the subject of so strong a censure. Or is its policy to be represented by the lines—

I see the right; and I approve it too;
Condemn the wrong, and yet the wrong pursue?

There must be some change effected, and with the change I hope will come the realization of my ideal—a great and thoroughly-equipped school and hospital bound together by the closest bonds of union, and working for the common object, the progress of our profession.

I have only to add a few words to the students of what I am justified in calling a national institution. This hospital, if developed on the lines indicated in my address, cannot but be ultimately associated with the progress of medicine in Ireland. It may be that some of those whom I have the pleasure of addressing may play an active part in rendering it a pioneer in the advancement of that knowledge which is essential to the well-being of our race. With the most striking evidences presented to us of the almost illimitable power of man's productiveness in every department of physical science, especially during the latter half of the century just passed, in which the record of wonders appears to have been reached, it is not likely that the science of medicine will stand still. There are indications that we are moving in the direction of some great discoveries in connexion with the prevention and treatment of disease which will be no less startling than those of the physicist and chemist, with this distinction, that whilst they deal with material substances, our lot concerns alone the well-being of our own species—man. Our profession is not one that brings either ease or wealth in its train. To the vast majority of those who embrace it as a calling there is but little beyond a well-earned competence. But with its many drawbacks, it has within it elements of human interests which contrast favourably with the sordid and debasing elements of other pursuits. We certainly, in our profession, have a great incentive to live up to Sydney Smith's noble ideal—Let every man be occupied, and occupied in the highest employment of which he is capable, and die with the consciousness that he has done his best.

THE late Dr. James Burn Russell, M.D., LL.D., medical member of the Local Government Board for Scotland, and sometime Medical Officer of Health for Glasgow, has left estate valued at £10,675.