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President's Address

THE PRACTICE OF MEDICINE

BY

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Until last year I had occupied for 17 years the Regius Chair of Practice of Medicine in the University of Glasgow. This is an unusual definition of a Chair, only duplicated, so far as I am aware, at Trinity College, Dublin. I do not know when or why this special description was adopted in Glasgow—it was not always so. On my appointment, however, I took the words to mean exactly what they say and that my main duty, but certainly not my only duty in the University, was to train students for medical practice.

Medical practice is a broad term, but by far the majority of our profession are actively engaged, directly or indirectly, in some form of practical work involving the health of individual patients or of the community. The largest group are family doctors, but many work in hospitals, in various branches of the public health service, and in the numerous specialties chiefly but by no means entirely concerned with diagnosis—radiology, pathology, bacteriology, biochemistry, and others. In what our President of 1948, Sir Lionel Whitby, described as "The Changing Face of Medicine," all of us have new problems to face, and particularly the blending of the old with the new in the practice of medicine. It is about such matters that I wish briefly to speak.

Previous Meetings in Glasgow

The British Medical Association, founded in 1832, has twice previously held its Annual Meeting in Glasgow during its 122 years of service. The more recent meeting, in 1922, was presided over by one of my own most distinguished teachers, Sir William Macewen, whose address on brain surgery was a wonderful exposition of a branch of surgery in which he was a pioneer. The first meeting, in 1888, was under the presidency of a great scholar and physician, Sir William Tennant Gairdner, my predecessor from 1862 to 1900, and twelfth-in-line in the ancient Chair first founded in Glasgow University in 1637. I naturally did not know Gairdner, but I have known many of his pupils, and some of them were my teachers. All were agreed about his wide classical learning, his great clinical knowledge and experience, and also (in his later years at least) about his astonishing absent-mindedness.

Gairdner chose as the subject of his presidential address "On the Physician as Naturalist," and the deep meaning of these words impressed me long ago as they

have impressed others. Almost the same words were used, with due acknowledgment, and different aspects of the same idea were developed, by John Ryle, of Guy's Hospital, Cambridge, and Oxford, in his book *The Natural History of Disease*, first published in 1936. Recently, Sir Macfarlane Burnet, one of our great modern exponents of the viruses, has published a new edition of his book on the *Natural History of Infectious Disease*, and there are many other examples illustrating the merits of Gairdner's theme.

Why did Gairdner choose this title for his address? His choice clearly derived from two sources—the scope and character of his professional work as a physician of his time, and his love and knowledge of the classics. Let me remind particularly the lay part of my audience that when Gairdner addressed the B.M.A. in Glasgow in 1888 the cause of most of the acute infective diseases was quite unknown. Gairdner, therefore, with his contemporaries, watched the natural course of an illness, and, being a trained naturalist, he noted the differences between this and that illness. From previous observations on many patients he could thus arrive at the correct diagnosis; but in his day, as we all know, effective treatment was sadly limited. His early training in Edinburgh no doubt influenced him greatly, for there he had been deeply involved in the clinical differentiation of typhoid (enteric) from typhus fever—one, as we now know, due to a bacillus and the other to a rickettsial virus. In the absence of all knowledge of the essential cause, Gairdner could only watch the natural history of the outbreaks in the crowded and insanitary tenements, and observe that in their spread to other sufferers each disease bred true.

Gairdner also in his address laid stress on the classical derivation of the word "physician," and acclaimed him as essentially a student of Nature, in fact a natural philosopher, although the use of this term has changed and limited itself with time. In Glasgow, at least, our Professor of Natural Philosophy is now a physicist much concerned with the problems of atoms and atomic energy.

The Physician as Naturalist

Is it necessary still for the physician—and for my purpose to-day I can obviously include all the many branches and specialties in our profession among the physicians—to study the natural history of disease so closely? I wish to emphasize that for many reasons, only a few of which I can touch

on, it is as essential as ever, and remains the basis of all good medical practice.

It is true nowadays that in the practice of medicine must be added, but never substituted, all the new scientific discoveries about causation, methods of accurate diagnosis, and especially of treatment with which we have been blessed in the last fifty years. I shall return to these additions presently.

But first things still come first, and nothing should precede the careful clinical history of the patient from all aspects, then of his present illness, and finally the close search for symptoms and signs of disease. My long experience as a teacher of medical students, especially in the out-patient department of a hospital, has shown to me over and over again how frequently we can arrive at a complete and accurate diagnosis, which must necessarily precede treatment, by using the simple observational methods of the trained naturalist. I do not exclude here the simple instruments which every doctor carries, such as a measuring tape, a stethoscope, and a blood-pressure apparatus, for these only add precision to the clinical observations.

In many cases, however, further investigations are imperative both for complete and accurate diagnosis and for correct treatment. These essential additions must be made fully available to our patients, and constitute the great and fundamental difference between Medicine in Gairdner's day and in our own.

Thus both the old study of the natural history of disease and the new scientific discoveries and methods of the past fifty years must be carefully blended for the benefit of our patients, but *in their correct order*.

I mention here, to illustrate this point, the awful but no doubt apocryphal story of the interns who, when dealing with a very sick man, said, "Let us put him on sulphonamides for three days, and if he isn't well by then we had better examine him."

I would add that opportunities for the discovery of new diseases and new syndromes by the simple observational methods of the naturalist are not yet over, although of course they are more limited. I quote, simply as examples, my own experience with trench fever in the first world war, Q-fever, German measles during early pregnancy and its effects on the offspring, Bornholm disease; and there are others. I would remind you that it is to general practitioners and to men in different branches of the public health service that favourable chances of this kind are often first available.

I am well aware, in reference to what I have been saying, that the practitioner's reiterated complaint is of lack of time to examine his patients thoroughly, and in much of general practice as it exists to-day this is only too true. I personally cannot take a full clinical history and examine a patient in under half an hour at the very least, and in the final examination at the end of his training we always allow the student a full hour for his "long case." When the young graduate enters practice he will shorten this, as his experience and skill increase, but the few minutes' time which may only be possible for the first examination in a crowded surgery to-day in Britain portends bad practice of medicine. It leads to slipshod work and slipshod thinking, and to the family doctor's responsibility being shelved in favour of expensive hospital investigation. This fault is no longer confined to general practice, for, as is inevitable, it has been infecting consultants with their increasingly busy hospital departments and clinics. This state of affairs cannot be allowed to go on, for it undermines the whole foundations of sound practice of medicine. The remedy is not easy, but many of you must, like myself, have been thinking hard about how to deal with it.

The Practice of Medicine and Modern Discoveries

The advances in medicine of the past fifty years have chiefly been derived from increasing knowledge in what are often called the basic sciences of medicine—*anatomy and*

physiology, pathology and bacteriology, chemistry and biochemistry, physics, pharmacology, psychology, and others. This period naturally coincides with the great expansion of laboratories for teaching and research in our universities and medical schools; and I would like to add here, for it interests me so greatly, of laboratories and institutes of clinical investigation, mostly under the charge of university professors, but attached closely to the hospitals and to patients. It coincides also with the rise of the great research institutes for medicine, and those administered by the Medical Research Council may simply be quoted as an example.

It would be ungracious not to refer at this point to the abundant and fruitful research work undertaken in the laboratories of the great manufacturing and trading houses, which has provided us with so many new and valuable drugs. It is to them, indeed, that we finally owe our indispensable supplies of insulin, of antisera, of penicillin, and the control of their effectiveness and sterility.

The great scientific advances in modern medicine have recently been very fully described by two distinguished members of our profession, Lord Horder and Sir Henry Dale, and I myself have witnessed quite a large part of this golden age of progress. Many, but by no means all, of the triumphs of bacteriology had preceded me, but I must point out that one of its earliest triumphs, and certainly its greatest practical triumph, resulted from the work of Lord Lister, then Professor Lister, at the Royal Infirmary, Glasgow, from 1860 to 1869, which led to the safety of modern surgery. X rays were also discovered well before my time, but their progress as a handmaid of medicine has been revolutionary. I can easily remember the discovery of vitamins, and how we quickly learned to prevent rickets, of notorious frequency among the children in this city of Glasgow. These are just a few examples taken from a great era, and I can do no more than mention the many new laboratory methods which have advanced both our real knowledge of disease and our accuracy in diagnosis.

Our patients, however, apart from their knowledge of the safety of surgery, would naturally claim, sometimes from their own experience, that the greatest progress of all has been in the curative treatment of acute disease. The slow and gradual development of the work leading up to the appearance of our recent remedies is often forgotten, but we have recently been reminded of our facts by the centenary celebrations of the birth of Paul Ehrlich, the father of the whole conception of chemotherapy in disease. Salvarsan came into practical use about 1909, just as I was entering the medical profession. Then came a period of great therapeutic discovery, not to be classed as chemotherapy, including, for example, insulin, liver in pernicious anaemia, blood transfusion, followed by a return to pure chemotherapy with the sulphonamide drugs, penicillin, and the more recent antibiotics.

Ehrlich, as I have said, was the founder of modern chemotherapy, but at the centenary of his birth we recalled that he and his great contemporary von Behring were equally interested in the problem of immunity to disease—*natural and acquired*. Practical results of this pioneer work came from many hands, with results such as the introduction of antitoxic sera for diphtheria and tetanus, and the subsequent development of preventive inoculation which has almost rid us of lockjaw in war and diphtheria in our country in peace.

The recent triumphs of chemotherapy and the activities of the chemists in producing more new and synthetic drugs must therefore not be allowed to blind us to the great therapeutic possibilities of immunity, the natural way by which the body of itself, and by its own activities, overcomes disease.

If we knew—and many are actively trying to find out—the secrets of the natural process of immunity, we might add much more to our therapeutic array. Some of the results of passive immunity—that is to say, of antisera prepared from animals—in actual diseases such as tetanus and diphtheria have already been mentioned, but I cannot help

praising here the campaign launched by our Ministry of Health only one decade ago, which has resulted in the great majority of our children being actively immune to the terrors of diphtheria. This is indeed a perfect example of the applications of immunity in preventive medicine.

There must presumably be a limit to the number of the new and successful synthetic drugs which the chemist can provide for us, and, as we all know, these remedies are not without their dangers and difficulties, both from sensitization of the patient and from drug resistance—in a sense an acquired immunity of the invading microbes themselves.

There seems, however, no limit to the way in which research may increase our knowledge of the natural process of immunity for our therapeutic use. It may be remembered that at the present time many have turned to immunity in trying to find some safe and efficient prophylactic "vaccine" against influenza and poliomyelitis, diseases which are untouched by any drug or antibiotic which we at present possess.

In the ordinary practice of medicine the doctor cannot invent new drugs, but when watching the response of the body to disease he can still actively look for clues which might be of the utmost value to those of his brethren whose work keeps them within the walls of their laboratories.

So far I have been discussing mainly our greatly increased control over acute and infective disease, and I have also referred, but far too briefly, to the wonderful effects of replacing or restoring secretions of the normal body which have failed or gone wrong—insulin in diabetes, thyroid extract in myxoedema, and vitamin B₁₂ in pernicious anaemia are a few examples.

Those of us engaged in the practice of medicine, however, do not need to be told that there are still many diseases, especially chronic diseases, in which we have so far made much less progress towards prevention and cure. Cancer obviously comes first into this category, but the chronic rheumatic diseases, chronic diseases of the nervous system, and even the ubiquitous chronic gastric ulcer are examples. Whether prevention or cure of each or all of these, when it eventually comes, will be from the chemist's laboratory, or by restoring to normal some natural functional activity of the body which has become deranged or "diseased," or by some development in immunity, we simply cannot foresee.

The Physician as Teacher

It might at first sight be thought that not all physicians are teachers, but only professors of medicine and consultants or specialists working in hospitals where medical students are taught. This, of course, is quite untrue, for every general practitioner is essentially a teacher, instructing his patients during illness and also, I would hope, on how to keep well. The courtesy term "doctor" by which we are addressed by our patients indeed implies that we are teachers, for that is the original meaning of the word. The status of the physician as teacher in general practice has become difficult, for medicine is news, and it is sad to see advertisements in the daily newspapers usurping the family doctor's place. It is therefore sound policy that the B.M.A. has founded the successful publication *Family Doctor* so that practising doctors themselves can provide authentic and unbiased information about health.

Other branches of the medical profession do not receive adequate recognition as teachers. The public health service, competent, unobtrusive, and therefore sometimes forgotten, has important duties in teaching and protecting the public as a whole. Its successes in preserving the public health are almost taken for granted until we compare our good fortune with what happens in less-developed countries.

We now come to the hospitals, and the teaching which doctors so constantly undertake within them. The teaching hospitals are mainly concerned with the training of our future doctors (and also doctors returning for further experience), but it is often forgotten that doctors are responsible, in part at least, for the training of nurses,

almoners, dietitians, physiotherapists, radiographers, and laboratory technicians of many kinds.

My own activities as a teacher have chiefly been concerned with medical students, and many others like myself are gravely concerned with the problems of medical education for practice. In Gairdner's day the undergraduate course was four years, in mine five years, and now it is six years, plus one year in an approved hospital, plus (for males) two years in the armed Forces. The limit has clearly been reached and even surpassed, for the period of preliminary training is now longer than for any other profession. The extended time is of course due to the great increase in medical knowledge, and the question arises of how much the average medical student intending to enter practice must know and learn in his undergraduate career. To know all would require a lifetime, and much thought is at present being given, not in our country only, to finding the right answer.

The Physician as Investigator

Medical research interests all of us, and I want to say something about it with particular reference to the possibilities of research for those actively engaged in the practice of medicine. The word "research" must not be regarded as a fetish—all it means is search and research for the explanation of natural phenomena and how to control or alter them.

In medicine, it is now true to say that many of the problems of fundamental research are so difficult that they can be undertaken only in universities or special research institutes where the complicated and expensive apparatus is available. In most hospitals facilities for less intricate research are available, particularly, of course, in those closely attached to medical schools and universities. Research in general practice is a much more difficult problem.

I leave out the universities and research institutes and come first to the hospitals. I have no doubt that every teacher of medical students should, if possible, have passed through the discipline of research, for it is he who will keep alive the flame in his students. The modern clinical teacher, moreover, must know thoroughly the language and techniques of the laboratories, not only because he is so dependent on them in his work, but still more to interpret to his students the relative and absolute value of the results for diagnosis and treatment.

For many years I was actively engaged in research work, and later in directing and encouraging younger men to do it. I made no epoch-making discoveries, but I am not disappointed; for that privilege is given to few—perhaps, sometimes, with a little luck to help them.

It is instructive, I think, to meditate on how some of the great discoveries in medicine are made—very few of them come in a flash of inspiration. Consider insulin, and the many years between the fundamental work of Minkowski and Claude Bernard and the final discovery by Banting and Best. The wall of research which culminated in insulin was built up stone by stone by many splendid workers, and could not be hurried until finally it was ready in 1922 for the last coping-stone. It should give great satisfaction to anyone to have built in firmly even one stone in the wall and thus to have contributed to the final success.

I turn now to the problems of research in general practice. It is heartening to see the new College of General Practitioners has already taken such an interest in this matter; and in one of their publications they have set out very clearly the present position, as follows:

"There was a time in the history of medicine when all research was general-practitioner research, for there were none but general practitioners to undertake it. Advances were made through careful observation of one patient, or of several patients, by a doctor in practice who drew his conclusions from facts observed during the routine of a day's work. In this way Jenner recognized the relationship between cowpox and smallpox, and Withering observed the diuretic effect of the foxglove leaf. Then

came a change in the pattern of medical practice. Institutional care of serious illness and research in hospital developed on an increasing scale. The quest for more facts in the field of general practice slackened, and family doctors devoted their energies to relaying to patients the new knowledge that their hospital colleagues had gained. The flame of general-practitioner research burned low, to be fanned into occasional brilliance by such men as James Mackenzie and William Pickles. Now, once again it is being realized that opportunities to undertake research into conditions encountered in general practice are unique and wide, and that general practitioners have a duty to work on many problems which might otherwise not receive the attention and observation that they deserve."

Can the flame of research in general practice burn brightly once more? It is not easy, and very few have the real genius and will of men like Mackenzie and Pickles to do it. I knew Sir James Mackenzie well, and used to visit him in his later days at St. Andrews. I was young and actively engaged in research, and between strenuous foursomes at golf I used to argue with him. I fear I annoyed him by maintaining that the group of doctors he gathered round his institute could only carry out the observations which he himself devised and suggested, and could not begin to do real research work on their own. I think I was right, for when Mackenzie died the institute, having lost the mainspring of its activities, soon came to an end. I am glad, therefore, to see that the new College has already appointed a Research Advisory Panel of men trained in research methods to direct general-practitioner research into suitable channels.

There is a point here, based on my experience as a university professor, which is worth notice. Every good general practitioner rightly covets the higher degree of M.D., which in by far the greatest number of universities is now awarded on a thesis based on personal and original work. The word "original" must not be taken to mean too much, for, as I have explained, the firm placing of one stone alone in the wall of advancing knowledge is a fine thing to do. I am glad to say that I have more than once advised the award of an honours M.D. for work undertaken in general practice.

Nor must the general practitioner any longer consider himself at a grave disadvantage in research compared with his hospital colleagues. Medicine, as I tried to emphasize earlier in my address, still remains in many ways an observational science, and that is why the man in practice can find his problems for investigation just as easily as in a laboratory. Gregg's outstanding discovery of the effects of German measles on the unborn child during early pregnancy arose directly from simple clinical observations, and I have no doubt that ample opportunities of this kind are still ready for those who are prepared to see.

Conclusion

The advances which I have described have made modern medicine very costly—so much so that the State has been inevitably compelled to step in, with changes for our profession which we must not resent but legitimately strive to improve or modify for the benefit of all.

As the new and important methods and techniques and remedies have become available, specialism in medicine has inevitably developed, and it has come to stay. No one man can nowadays be an expert in everything, and the value of expert treatment for the patient has proved quite conclusive.

Brilliance in research and in advancing medical knowledge must, and indeed does, receive the recognition which it deserves. Fortunately, research institutes, including those devoted to clinical research, are rapidly increasing in number, and a man with the special attributes and abilities has now reasonable opportunities of devoting his whole life to medical research of many kinds.

This has created, however, a new problem in our universities and medical schools, where the future practitioners of medicine are trained in their formative years. The

professor or clinical teacher, whose range as a teacher embraced most of medicine or of surgery, is gradually becoming extinct; and we must think carefully how to fit in specialists as professors and clinical teachers while still retaining a correct balance in the training. It has been said so often, and with truth, that the family doctor is now the only non-specialized member of our profession with a general but not expert knowledge of all branches of medicine. I do not regard general practice as a specialty—it is essentially the opposite.

I would claim, from my experience, that the training of our future doctors in their formative undergraduate years—and even when they return for postgraduate courses to bring their practical knowledge up to date—is an important task, the correct methods and scope of which need urgent attention in this time of change.

A broad view is required, and specialism is perhaps not the best way in which to acquire it. Men with a broad view of medical practice, derived from experience, will be urgently required in future years to steer a proper course of medical training. This must not be left to professional administrators in offices, whose tidy methods may not be the ideal ones for the practice of medicine and the best possible treatment of our patients.

The practice of medicine is now very complex, but it is our bounden duty and service to make available to our patients the very best that we know. This, I have tried to show, is a combination of the old observational skill in which we have been trained and the application of all the new and beneficial discoveries with which we have been blessed. All this makes—I am not afraid to say it—the practice of medicine a noble profession and a good life.

BIBLIOGRAPHY

- British Medical Journal* (1950). "Fifty Years of Medicine." 1, 1.
Burnet, Sir Macfarlane (1953). *Natural History of Infectious Disease*. Cambridge Univ. Press.
College of General Practitioners Research Newsletter, No. 1 (1953). *Practitioner*, 171, 307.
Dale, Sir Henry H. (1950). *British Medical Journal*, 1, 1.
Gairdner, W. T. (1888). *Ibid.*, 2, 275.
— (1889). Presidential Address, B.M.A., Glasgow, 1888. James Maclehose and Sons, Glasgow.
Horder, Lord (1953). *Fifty Years of Medicine*. Duckworth, London.
Ryle, John A. (1936). *The Natural History of Disease*. Oxford Univ. Press, London.
Whitby, Sir Lionel (1948). *British Medical Journal*, 2, 2.

The highlight of the recent annual meeting of the Royal College of Nursing was Mrs. CECIL WOODHAM-SMITH's lecture on "Florence Nightingale—the Greatest Victorian." Miss Nightingale, she said, was very much more than just the founder of modern nursing. In two other spheres, both too little appreciated, her work had been remarkable. Although no admirer of her own sex, Florence Nightingale had made it possible—and respectable—for women from decent homes to engage in any type of work they pleased. This revolution in the status of women had not yet ended. Her second great achievement had been for the British Army. With the help of Sidney Herbert she had transformed the living conditions of the British soldier. When they started their work, the mortality among soldiers in barracks was double that in the civil population. They set themselves to improve the standards of barrack accommodation and sanitation throughout the country, and in large measure they succeeded. Then came her "culinary campaign." She agitated for ovens, drew up diet sheets, and started the first corps of army cooks, where the art of cooking for large numbers was taught. At Scutari, during the Crimean war, she had been appalled by the lack of recreational facilities for the troops. There were only the gin shops and brothels. Against strong opposition she opened a reading room for the soldiers. Many were illiterate, so she had schoolmasters sent out to teach them to read and write. Paymasters were corrupt, so she acted as the soldiers' banker to ensure that their remittances reached home. In a word, Florence Nightingale created Army Welfare.