Observations

ON

RATIONAL EMPIRICISM AND SCIENTIFIC MEDICINE: THE BOUNDARIES DIVIDING THEM.

BY

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THOSE who can recall the practice of medicine as carried on by the best physicians forty years ago and contrast it with that of the present time must be forcibly impressed with the fact that many alterations, both in method and detail, have been made.

Despite the opinion of Hooker that "alteration hath in it inconveniences," such changes, for the most part, may be safely regarded as evidence of progress both in the science and art of medicine.

I am not concerned here to refer to the remarkable advance which has been made in surgery during the same period, and in all that I may state with regard to medicine I shall endeavour to keep an open mind and in no degree to pose as a praiser of past days, for that standpoint is sometimes apt to signalize approaching or accomplished senility.

It cannot be disputed that it has been difficult, and sometimes impossible, for those fully engaged in practice to keep pace with the progress of medical knowledge in the last twenty-five years. Discoveries and new methods for diagnosis and treatment have been laid before us with unceasing rapidity, some of the greatest value, others of little or none; and amongst the latter are the novelties which are almost daily pressed on our attention after the manner of a Parisian *modiste* with the gentler sex. To acquire any practical knowledge of these would make a heavy claim on the attention of those who ventured to adopt them, and the result would be almost inevitably to displace some well-acquired and certified methods of practice and to upset principles which have been well established by long clinical experience.

Such novelties as I refer to have sometimes been presented to the general public and exploited by an over-active and not always disinterested lay press. Much harm has ensued in consequence of this, one result being to promote a widespread and unwholesome credulity amongst the public, and to render patients more difficult to treat and manage. Another outcome has been to encourage a vast amount of self-drugging on the part of the public, closely akin to dram-drinking, with mischievous and not seldom fatal results. Drug habits have thus been induced which were practically—save, perhaps, in the case of opium—unknown in civilized communities thirty or forty years ago. The full extent of this practice, and of the demoralization and danger entailed by it, in both sexes, is probably only known to the medical profession, and this matter is so grave as to demand vigorous and authoritative reprobation.

We must note that many of the novelties alluded to are alleged to be the results of scientific research and skill, largely conducted in foreign laboratories, and each one is introduced with an array of confident assertion as to its proved value. In about three years, or less time, we find that most of them disappear from notice, having been disregarded or found to be unworthy of confidence; yet some of them are in repute for a time, although urged on our attention with the flimsiest of recommendations. There would thus appear to be a fascination for novelty-hunting on the part of some members of our profession in respect of remedies. Where this exists I may at least give my experience that in such instances as I have met with there has been a lack of accurate knowledge of the *materia medica*, and no less of the clinical art of prescribing appropriate and well-certified remedies. Novelty-hunting is therefore chargeable with promoting an unwise scepticism as to the value of drugs and a veritable decay

of faith in rational therapeutics. To employ newly-introduced remedies with too great frequency is to be engaged in frivolous experimentation, and such a practice is as little creditable to the intelligence of the prescriber as it is little beneficial to his patients.

This may appear a rather severe indictment to prefer, but I am strongly of opinion that it is justified by proceedings which are too prevalent at the present time. Such practice is no part of scientific medicine, nor does it indicate true progress, and it cannot be reckoned for rational empiricism.

It is needless to add that these remarks have no bearing on the employment of such modern and approved remedies as have been certified by careful and prolonged research. It must be noted, however, that progress of this kind is made but slowly, and that novelties hurried out of the laboratory cannot promptly be pronounced as safe and effective for use until they have been brought to the touchstone of clinical experiment and repeated observation. A due recognition of this fact would render negligible many of the hasty and unwarrantable opinions on new remedies which are laid before us so frequently.

Such considerations bring us to realize the great fact that a large part of our best practice of medicine is still, and probably will be for a long period, an *art*, although founded on many branches of *science*. If we are disposed to wait until all our therapeutic efforts are founded on principles of exact science, I much fear that our patients will not wait, and that they will have recourse to the medical *artist* in preference to the medical *scientist*. Human nature is very human, especially when it is diseased, and it knows what it wants.

We have therefore to affirm boldly, and without any misgiving, that much of the best medical practice is still empirical, and that a great physician is a great artist. It has always been so, and is likely to remain so for many a day. One result of this has been to deter some men of great mental ability from entering the profession, finding themselves dissatisfied with any methods of treatment which may not be placed on a mathematical or scientific basis. Such sceptics have not the faculty for acquiring an *art*, and could never become useful practitioners. The field for their capacities lies elsewhere. They have certainly no *mens medica*, and could make no progress in medicine.

It is necessary in discussing the question before us to have a right conception of the term "empirical." It is sometimes applied in a wrong sense as signifying a pretender to knowledge, or one who stands outside the ranks of an educated profession. Yet in its essence it is the product of "experience founded on observation alone," and in these terms we have the definition of no less an authority than Sir William Hamilton. As applied to a legitimate practice of medicine in these days, it cannot be said that "empiricism is experiment or experience without science," for the phenomena of disease are now carefully studied by many men well trained in scientific methods, and the results of treatment are no less rigidly noted as a scientist would note them.

We may fairly conclude that rational empiricism has never held a higher place in the history of medicine than it does to-day, and further, ask if it would be prudent or justifiable to throw aside forthwith all that it has secured for fruitful knowledge, and our guidance, in deference to the modern claims of scientific medicine.

We take note of dogmatic opinions issuing from the laboratories in regard to the action of drugs and articles of diet, which in some cases completely contradict the experience of clinical experts. For example, we find a condemnation of alcohol both as food and remedy at the hands of physiologists who have no clinical practice or experience of the treatment of morbid conditions in their fellow creatures. To such researches, the physician replies that he is sadly aware of the ill effects of alcohol when improperly used by man, and perfectly conceives that large doses of it are toxic and deadly for small animals, but that in clinical practice he finds it extremely useful in appropriate quantities for his patients in certain conditions.

In like manner we are told that strychnine has no action whatever on the heart, and that aconite is of no avail in reducing the frequency of the pulse, but in clinical practice we are familiar with good results resulting somehow from

the use of these agents, and we cannot afford to discard them until the precise *modus medendi* is revealed to us. We have to save life and to relieve suffering as we best can in the meantime, and if such practice is empirical it is certainly rational and beneficial; and we may at least be thankful for the advantages which are distinctly obtained by it. We may not forget that empiricism has often anticipated science in medicine. Clinical experience has certified the value of some drugs whose action the scientist has long subsequently learnt to explain, and there are still many remedies of which the efficacy is well assured whose exact action remains to be explained on a scientific basis. Empiricism thus aids scientific medicine by affording suggestions and indications for research.

At this point we appear to reach the boundary line which divides rational empiricism from scientific medicine. There is no room for the former in pathology. Minute study in pathogeny, histology, and in etiology have largely illumined the field here, and are extending our knowledge daily. So much so is this the case that increasing exactness in diagnosis has actually been one of the causes of a diminished faith in the efficacy of many remedies which have been in repute for morbid conditions whose nature and progress are now well ascertained, and therefore afford more precise indications for treatment by other measures. It may be noted in this respect that there has been some tendency to neglect the older means for affording relief to many symptoms during the progress of specific treatment in combating the original malady. Hygienic measures and varied environment have replaced much of the drugging which was the only resource in former days, but these by themselves have by no means covered the whole field of treatment of disease, as is sometimes fondly imagined, nor do they justify us in withholding other therapeutic agents, already well approved by experience in conjunction with them. A good deal of the present loss of faith in drugs is therefore unjustifiable, and no small part of it is due to modern inexpertness in the use of them.

In respect of scientific progress relating to diagnosis and therapy, it must be conceded that we are absolutely in the hands of the expert, and must demand from the laboratory nothing less than exactness and precision. Imperfect research can only be misleading.

In so far as modern medicine is scientific, it stands by itself with problems before it which no other science has to face and unravel. We have often to act, sometimes promptly, on probabilities, with no scientific indications to guide us. The personal factor in the individual, not always easy to recognize, has to be reckoned with, and each patient is a new and special problem for us at the bedside.

Empiricism gives way gradually to the clearly ascertained results of to-day which illumine for us so many parts of the body by radiation and other exact measures, and yields to the disclosure of biological conditions of the blood, serum, spinal fluid, urine, and other secretions. As we employ these methods, our work becomes more and more scientific, and the therapeutical indications more precise.

Amidst all this, and looking forward to continued progress and fresh revelations, we shall do well to hold on by our past experiences and to beware that we, as practitioners, do not permit ourselves to be over-engrossed with any particular pursuits in these directions. It has now become difficult to keep a level head, and to see all the developments of modern times in the field of medicine in due proportion.*

Rational empiricism, together with slowly progressive scientific medicine, are now being carried on by the best practitioners. In the immediate interests of the sick this must be so, and there can be no antagonism between them so long as the whole field of medicine is not covered by science. The boundaries which divide them are sufficiently clear to all well-educated members of our profession. It is as possible to be too empirical as it is to be too scientific in daily practice. We have seen that some therapeutic methods urged on an alleged scientific basis have ultimately proved to be unscientific, and of little or no value. In the meantime, I venture to think that we need to be

*I desire to recommend the study of an admirable address lately delivered by Professor Chauffard, of Paris, "Du degré de Certitude de la Médecine" (*Conférence faite à la Société des Amis de l'Université*). It deals largely with the matters touched upon in this paper. *Revue Scientifique*, 4bis, Rue de Châteaudun, Paris.

both more prudently empirical, and more on the alert to avail ourselves of such knowledge as comes to us with the imprimatur of honesty and exact laboratory research. Such research must, however, be carried on with close and prolonged clinical co-operation. In that way only true progress lies.† The task is, indeed, a difficult one, and the outlook for all engaged in it appears likely to become more burdensome for each generation. Such seekers after truth must not expect much sympathy or support from the public, which looks for results quickly wrested from Nature, and is apt to be impatient with slow and persevering research. They know, however, that the true philosopher, who makes his mark for all time, reserves his results till he has covered the whole field of his research, and that he is the last man to seek untimely and sensational publicity for them.

Remarks

ON

FOOD AND FEEDING.

BY

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MANY medical and lay writers have contributed to popularize the subject of dietetics, and, as a consequence, a great change has taken place in the attitude of the public. In former times people ate what custom or their appetite suggested; now opinions are as diverse and views are as obstinately held as a couple of generations ago would have sufficed to heat a dispute about politics or religion. The result has not been in all respects bad, for many prejudices have disappeared, and simplicity and temperance in both eating and drinking are now more common. The difference may be noticed at any large club, especially at luncheon, at which meal many take no alcohol, not a few little or no meat, while fruit and vegetables are more in demand than they were a few years ago. It is recognized that obesity is in most cases the result of over-feeding, and it is no longer thought necessary to indulge the appetite to its utmost limits. It is to be regretted that some carry their principles to a ridiculous extreme, which may be a source of danger to health. On the other hand, there are conservatives in dietetics who in these wholesome changes see a risk of national degeneration, and express the fear that when we give up beef and beer we shall lose those qualities which have made the British nation what it is.

The campaign in favour of "standard bread" which has been carried on by a widely-circulated newspaper is a case in point. The view which the public has been asked to adopt and which has received the support of a much-advertised manifesto, signed by certain medical men, is that "white bread" is deficient in nitrogen and inferior to bread made from flour containing the whole of the constituents of the kernel of wheat except the bran. Flour of the latter kind is called wholemeal or Graham flour, while white flour of the best kind is called patent flour. No objection can be alleged against white bread, provided its whiteness be not due to any chemical treatment (bleaching) and that the bread contains weight for weight as good proportions of the nutritive elements, protein, carbohydrates, mineral matter, and fat as "standard" bread. The difficulty of proving this is that there is no such thing as "standard" bread apart from what certain bakers and biscuit makers are now advertising in response to the demand created by this journalistic agitation, a possibly unexpected and certainly undesirable effect of which seems to have been to facilitate the clearing out of large stocks of inferior flour.‡

† Il ne faut pas oublier qu'en matière de traitement, c'est l'observation clinique qui reste le souverain juge, c'est le médecin au lit du malade qui a le dernier mot, et contrôle toutes ces méthodes, c'est lui qui décide de la valeur des progrès réalisés; c'est par lui, c'est par l'observation clinique, que les acquisitions sont jugées durables ou fécondes, ou au contraire tombent rapidement dans l'oubli.—A. Chauffard, loc. cit., p. 30.

‡ See letter from Director of Hovis Bread Flour Company, Limited, *Truth*, April 12th, 1911, p. 907.