r more simplicity of structure. There are some rules of such proportion among animals, but they are very partial, and the rule fails completely when we compare the reparative processes in plants with those in animals.

Let me revert to this comparative defect of healing powers in plants, though it may be only to tell my ignorance of all relations between it and any other of their properties or the conditions of their life. It is not related to any immunity from injuries enjoyed by them, for they are far more exposed to injuries than are animals; nor to any absence of necessity for healing, for, after wounds, they suffer severely, and often fatally, from the attacks of parasites of all kinds. It is not because of any lack of productive power at the injured part, such as we might be disposed to refer to the want of circulating blood or of nerve-force; for from many wounds of plants, as the art of grafting and of multiplying by slips or cuttings may show, entire new plants may grow; and yet these are not reproductions; they may, in one sense, replace that from which the slip was cut away, but they do not reproduce it; they are not continuous with its remains, and they commonly become much more than that which was lost would have become. Again, the increased growths, which injuries may produce in plants are not to their own advantage, though they may be so to that of a successor or a parasite; and on many wounds of wood hard and heaped-up masses of new wood may form, such as may be roughly compared with our cheloid scars and excesses of bone-callus. Neither can the defective repair be ascribed to any general tenacity in the regular methods of growth in plants, or to any general want of pliancy or of ability to adjust themselves to new conditions; for the art of horticulture abounds in instances of changes in methods of growth completely adjusted to changes of condition. There are in plants ample powers for enlarged growth and ample range of pliancy in method; but that special change in method of growth, which is familiar to us in ourselves and other animals, and which, as with design and on purpose, is adapted to the speedy healing of injuries, is in them comparatively defective. Which of you will work so as to find the explanation of what seems so strange an inconsistency?

(To be continued.)

ABSTRACT OF A

Lecture ON THE

DESIGN AND SCOPE OF LECTURES ON THE PRACTICE OF MEDICINE,

Introductory to that Course given at Westminster Hospital,

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JOINT LECTURER ON MEDICINE.

GENTLEMEN,—The lecturer on medicine in the present day has unusual difficulties to encounter. Most that he has to say is already written in books. There are the seventeen volumes of Ziemssen's Cyclopædia, each as big as a family bible, and together weighing half a hundredweight and too bulky to take in a cab, and there is the vade-mecum which may be easily carried in the pocket. With so wide a range of choice, the student can learn just as much, or as little, as suits his purpose, at his own time, and in his own manner. What, then, is the justification for systematic lectures, especially when it is considered that we have in addition a teacher of practical medicine to demonstrate the methods of physical diagnosis, and a medical tutor to direct the pupil's study and test his knowledge? The lecturer on medicine, thus hedged in on all sides, must confine himself strictly to the terms of his undertaking—to the formal discussion, that is to say, of the various diseases of nosologists in a regular order. What is the use of it?

The question is one which is never absent from my mind at this season. Every student gives a practical answer to it by the regularity, and still more by the manner, of his attendance. We, on our side, all of us, it may be presumed, satisfied that our labour is not in vain, are probably not altogether at one as to its proper place and object. Some will

say, for example, that by this oral teaching, which is more enduring than the silence of print, the lecturer conveys to his hearers, not a mere transcript of the books, but an enlarged view of the subject derived from long experience and a wider reading than the student can procure for himself. But there is the obvious reply, that this comprehensive treatment of the subject, like all the rest, soon gets into print, and is to be found in the books. When a teacher, by felicity of language or description, or any other unusual gift, succeeds in imparting knowledge more clearly or comprehensively than heretofore, the whole world is soon in possession of it. The case of the lecturer is thus continually getting worse, for he has to contend with the ever-increasing force and ability of that which is written.

And yet, I cannot but think, more and more with every year, that there is a service in these lectures which nothing else can supply. Granted that what we have to say is already better said in books, granted that what is curiously called the "practical" part of the subject is now taken out of our hands, yet still, as I believe, there remains a purpose to be fulfilled by the occupant of this chair which becomes the more pressing as the subjects for medical study multiply. I will endeavour, in as few words as possible, to make this appear.

It is often said of medicine that it is becoming every day more precise in its language and more scientific in its methods; and if the ground of the improvement be sought, it will be found to depend in large measure upon the fact that the various appliances of more exact sciences have been pressed into its service. It is not that we have become more shrewd in observation or more logical in inference, but that we get more help from without. Accordingly, much time must now be spent in learning the use of instruments and the application of physical and chemical tests. And it happens inevitably that the student, observing the exactness and penetration of these aids and their close connexion with medical progress, learns to despise the vagueness of old medicine, and to regard this preliminary and manual part of his work as though there were nothing beyond. It is the function of these lectures to show him how greatly he is mistaken in this belief, to point out all that yet remains beyond the view of his instruments, and to make him understand how much higher than any manipulative skill or application of physical science is that faculty of judgment and discrimination which has yet to come, and cannot be learnt by rote, or by any other means than actual contact with disease. It is customary, I know, to speak of the results of such contact in very general terms, as though by association with the sick some mysterious virtue kept flowing, which, under the name of experience, should give to every man, from the mere efflux of time, a capacity in proportion to his years. I have no such meaning. On the contrary, I believe that accuracy in observation if not practised early is not practised at all, and that "experience" often comes to mean no more than the habit of superficial examination. What I would imply is that the time of your career has now been reached when you can no longer be guided solely by the strict letter of printed instructions—when you must either become the servants of routine, or else begin to exercise higher powers of intellect than have hitherto been appealed to.

The course of medical education is, in fact, always the same, but all do not pursue it to the end. There is, first, the recognition of the separate phenomena of disease—that period of training when isolated signs and sounds are much insisted on and discussed, as though they possessed an intrinsic and independent value. Next comes the faculty to appreciate these signs aright, as acquiring significance in their several combinations. Lastly, and in varying measure as the great acquisition of all, comes the capacity to interpret, not physical conditions merely, but all that these imply in their various relationships. That these are, in fact, the several stages of the journey may be known by the numbers that are to be found resting at each. Some pass their whole lives content with bare words; others go no further than to determine the physical conditions of disease, leaving or guessing the rest; only a proportion gather the facts together and press them home, perceiving that their task is incomplete until the whole of the phenomena have been reviewed and arranged.

And what I would have you observe of this progress is the danger that besets the passage from a lower and routine learning—which nevertheless is seen to be the most exact and the most directly informing—to that higher knowledge which, while it employs the best powers of the mind, is not

of the same certain and assured value, or to be appraised and measured with the same facility, as the other. It is this sense of insecurity that makes so many halt at this point, rehearsing for ever their tables and formularies, dealing in a jargon which they mistake for learning, and decline to exchange for it.

Here then, I repeat, is a definite object to be aimed at in lectures upon medicine: the actual exhibition and demonstration of disease, in all its complexity and variety, by means of living illustrations—exercise under a master in the very same problems which must presently be solved alone, with that sort of help to the solution which comes from the possession and the study of “worked examples.” We need fear now no competition of the books, for we know that ours are better. I know for myself with what personal satisfaction, after labouring to describe some morbid sound or other aspect of disease difficult to reach by words, I have led the puzzled listener to the thing itself. Whatever is best in the verbal description gets thus fixed indelibly, while every such diversion is for the student a fresh contribution to that aggregate of experience which is to determine in the future, other things being equal, his relative merit amongst his fellows.

Such teaching must, indeed, always be incomplete, inasmuch as it depends for its illustrations upon the actual material that we have at hand. We cannot, like the books, discourse with the same fluency of hydrophobia and the plague, as of acute rheumatism or pneumonia. Yet the main purpose is not the heaping up of facts, but rather practice in arranging and interpreting them, and even this incompleteness of illustration is not without its use, for it gives the student a correct view of disease in its true perspective, exposing the unreality of that dead level of official description where every affection is depicted in its turn as though all were equally distinct and well defined.

You will say, perhaps, that by this treatment the course of lectures in medicine becomes a course of clinical lectures. And so truly does it, yet not in such manner as to interfere with the lectures we now call clinical. These latter are occasional and unconnected, they deal with some particular case, and point out unusual features of disease. They are controversial and speculative. Systematic lectures, on the contrary (in the strictest sense *clinical* if they are to be of any use whatever), follow a definite course, from which they only diverge occasionally, when attracted by the nature of their material; they point out not so much the exceptions of disease as its common rule, and show in the flesh in a series of living pictures all the chief articles of the syllabus.

All this implies, no doubt, much more than sitting at a lecture. The education I am thinking of is not to be got sitting or by any passive attitude whatever. The only question is as to the precise co-operation of teacher and learner in what must be a common work. Such difference of opinion as exists upon this point is partly explained and justified by considering that different orders of mind need different training. I cannot doubt that some have worked out this practical knowledge for themselves painfully and laboriously at the bedside, and have obtained their reward at last in a greater acumen and facility of diagnosis than often comes to those who give the hand and are shown the way. Yet for the great majority it is not too much to assume that our guidance and suggestion must go for something, provided only that the spirit of our teaching tends to educate and exercise the pupil's own judgment, not to bind him down to anybody's gospel. And while I am persuaded that no just conception of medicine can ever be conveyed in a series of dogmas, I have no fear whatever lest the frank exposition of the subject in all its ambiguity and incompleteness should disturb the proper relation between master and scholar. On the contrary, there comes to this latter of necessity, by the operation of the more liberal training, a conviction which both maintains the authority of the teacher, and in due season will form the ground of the student's own self-confidence—the conviction, I mean, that so long as the methods pursued are right and thorough, time and use continually make the way plainer and lessen the probability of error.

Such, then, is the ideal of that medical training which it is the chief business of these lectures to help forward. I am far from supposing that it is altogether realised. There is, indeed, a short reply to all that I have been trying to say, which I hear from you so often and with such little variation, that I cannot but think there is some substance in it. You say that there is no time for this sort of teaching, and

no need for it; that the student can pass his examination without it. It is not easy to say whether the irony of such a statement is the more bitter as it concerns our present system of medical education or the vigilance of our examining bodies: the importance we attach to that practical knowledge which is the grand aim and end of all medical study, or the pains we take that only those who possess such knowledge shall have authority to take charge of the sick.

CASES OF ANEURISM ILLUSTRATING DIFFICULTY IN DIAGNOSIS, AND THE USE OF ESMARCH'S BANDAGE.¹

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THE two following cases of aneurism in the lower limb present features worthy of notice. The first case was one of idiopathic aneurism of the anterior tibial artery—a rare affection, and attended in this instance with conditions which invested it with more than usual interest. Being of large size it raised a suspicion that it might be malignant disease, and having been originally mistaken, before it came under my care, for an abscess, and incised, it became the seat of secondary hæmorrhage, which, owing to the misguided refusal of the patient to submit to the necessary treatment, led indirectly to a fatal issue. The only means at my disposal for arresting the hæmorrhage, whilst giving the patient a chance of cure, was Esmarch's bandage, and it will be seen that, after one application for an hour without result, a second application for an hour and a quarter on the following day, when the hæmorrhage occurred, produced the desired coagulation in the tumour. This success, however, was itself unsuccessful, for the force of the arterial circulation was reduced below the point needed to return the blood through the already obstructed veins, and gangrene of the foot ensued. Amputation was persistently declined, and death resulted. The following is the outline of the case:—

CASE 1.—Arthur W—, aged fifty-eight, of rather a spare habit, was admitted into the London Hospital on the 8th February, 1877. His family history was very good, and he had always been a strong, able-bodied working man. He had been at sea for many years as a butcher, and for the last nine years had been a common labourer in London. He had always been a regular, temperate man. There was neither history nor appearance of syphilis, and the only severe illness which he had experienced was one attack of intermittent fever. He had never suffered from rheumatism, or been troubled with his leg. About six weeks before admission (the day before Christmas), whilst walking up stairs he felt a pain in his right leg, just below the knee, and on looking at it, he found a swelling not larger round than a halfpenny, and the same night he felt it pulsating under his fingers. Four days later he had medical advice, and was told that the swelling was an abscess. He was recommended to poultice it, and this he continued to do for about four weeks. The swelling enlarged rapidly every day, and the whole leg became larger and more painful. Two days before admission a small aperture was made in the tumour. The bleeding was free, and, according to the patient's description, “the blood spurted up in a stream like a fountain.” A compress and bandage were immediately put on, and the bleeding was checked.

The patient was advised to come to the hospital, and he did so two days later. There was then a large oval swelling commencing a few inches below the right knee, and with the long axis corresponding to the axis of the limb. It looked red and inflamed, and on palpation gave a feeling of semi-fluctuation. Over the centre of the swelling there was a small punctured wound which was closed and partly healed. On pressing the scab off a few drops of pus exuded. The house-surgeon introduced an exploring needle through the aperture, and blood came trickling along the groove. Being

¹ A paper read before the Hunterian Society.