In connection with the subject of nasal deformity, I take this opportunity of describing and illustrating a plastic operation which I performed a few years ago in order to cover over an ugly opening resulting from the loss of the entire nose and surrounding textures of the cheeks (Fig. 1). This patient

Fig. 3.

had been subjected to several operations for recurring rodent ulcer, which had necessitated the removal of the whole nose

Fig. 4.

and a large portion of the cheeks. The tissues all round the deficiency exposing the nasal cavities were cicatricial, and could not be used to cover over the gap. As the patient was very anxious to have the opening closed, I performed with

success the following procedure. One flap (Fig. 1 A) was cut from the forehead, and left attached at its upper end. A second flap, B, was cut from the tissues of the upper lip, its base towards the lip was not carried down through the margin, but terminated a little above the position of the coronary artery, and was left attached there, so that the nourishment of the flap was not interfered with. The edge of the opening were then pared, and the two flaps having been separated from their attachments except at their bases, were brought together over the opening and secured by stitches. When the flaps were stitched together the centre of the upper lip was drawn up so as to expose the front teeth of the upper jaw, but when the circulation in the flaps had been thoroughly established a second operation for relieving this was performed by cutting through the lip on each side of the drawn-up portion, and then bringing together the divided surfaces of the lip, as in a case of harelip.

In Fig. 2 the result of this operation, which was entirely successful in closing the opening, is shown. One trouble remained, and it was that the lower flap, having been taken from the upper lip, was covered with hair, but the patient preferred this to the unsightly gap which had previously existed.

INTRODUCTORY LECTURE

ON

TEACHING & LEARNING MEDICINE.

Delivered in the Author's Winter Course of Lectures on the Principles and Practice of Medicine.

By BYROM BRAMWELL, M.D., F.R.C.P.ED., F.R.S.ED.,
Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine and on Clinical Medicine in the School of Medicine, Edinburgh, etc.

GENTLEMEN,—It is not my custom to give a formal introductory lecture. I am usually in the habit of plunging at once into the subject, for the amount of work that we have to do is so great that it is essential to economise time as much as possible; but this year I mean to make an exception, and before commencing the proper work of the course I propose to direct your attention to the method of teaching which I follow, and to the method of study which I would advise you to adopt.

The subject which we are met to study (the principles and practice of medicine) is, as you know, a very extensive one. It is probably the most extensive subject in the medical curriculum, and it is continually and rapidly increasing. Five-and-twenty years ago, when I graduated, our teachers used to tell us that a hundred lectures on the practice of medicine were insufficient, and we students used to think that the amount of work which the subject required of us was very great. Since then enormous advances have taken place in every department of the subject, more especially in the department of nervous diseases and in the subject of bacteriology, which is of such immense importance, and about which little or nothing was known at that time; and there is every reason to hope that during the next five-and-twenty years at least an equal advance and extension will take place.

After hearing this statement some of you may perhaps be tempted to pity the student of the future, and to congratulate yourselves that you have commenced to study the subject to-day, before this further great development takes place. If any of you reason in that way, I venture to think that you are making a mistake, for although the gross extent of the subject which we term "the Practice of Medicine" will undoubtedly have enormously increased in the course of the next five and twenty years, that very increase will facilitate teaching and learning. Every fresh development and addition to our knowledge enables us to see more clearly the "whys" and "wherefores" of things, to systematise, classify, and intelligently explain the phenomena of disease. In short, with each advance it is possible to make order out of chaos, and to bring facts and phenomena, which before were isolated and disjointed, into intelligent relationship with one another. As our knowledge becomes more certain and more advanced, we need no longer be content with the mere

enumeration of dry facts and bald phenomena; we can then study the subject in a more philosophical, easier, and much more interesting manner.

But although the advance in knowledge facilitates learning and makes teaching easier, since it enables the lecturer to be more intelligible, you must remember that it by no means shortens the subject as a whole. To-day our subject is so large and extensive that it is impossible to deal exhaustively with it in a single course of lectures. I reckon that there are at least one hundred major (large and extensive subjects) and probably at least as many more minor subjects included under the head of the Principles and Practice of Medicine. (By the term major subjects I mean such diseases as typhoid fever, pneumonia, pericarditis; and by the term minor subjects such affections as chicken-pox, hydrothorax, gall stones). Some of the minor subjects are quite as important as the major ones, but, being smaller, much less time is required for their discussion.

Now it is extremely difficult—in fact, impossible—to deal with many of the major subjects in a single lecture, and it is quite impossible to consider all the two hundred subjects with any degree of fulness in a single course. The problem, therefore, which the lecturer on medicine has to solve, namely, how to best treat his subject, is a very difficult one. Some would settle it very easily by giving no lectures at all. Those who think in this way say that there are any number of good textbooks at the present time, and that lectures are therefore unnecessary. That is not my opinion. I am a firm believer in the value of systematic lectures; and I do not think that the hundred lectures required by the Scottish universities for a course of practice of medicine are at all too many when you look at the great extent of the subject and its immense importance from a practical point of view. Nor do I think that attendance on a course of one hundred lectures on medicine need entail any undue burden upon the student. I shall take an opportunity of referring in more detail to the comparative value of systematic lectures and textbooks as methods of learning and teaching in some future lecture.

Now, since it is impossible to deal exhaustively with all the subjects included under the term "Practice of Medicine" in a single course of a hundred lectures, the lecturer has to decide what is best to be done. I have tried several plans. One was to map out all the subjects in a syllabus, to apportion a certain amount of time to each subject in proportion to its extent and importance, to adhere rigidly to the prescribed programme—in short, to cover the whole subject in a single session. This plan was unsatisfactory to myself, and I believe also to the students. It is simply a race through the subject at top speed; it necessarily consists too much of mere enumeration of dry facts; it prevents sufficient explanation of the reason of things; and it does not allow of the teacher impressing his individuality upon the subject, enlivening it with timely anecdote, or enriching it with the records of his personal experience and with practical suggestions as to how the student should grapple with the multifarious difficulties which arise in the management and treatment of disease, and in dealing both with his patients and his fellow practitioners—in short, with the whole method of conducting his professional life.

Such a course of lectures, even if delivered extemporaneously, is necessarily dry and uninteresting, and if merely read from the MS. is a terrible infliction on the student. It resembles a textbook rather than an ideal course of lectures; it is, in fact, not nearly so good as most textbooks, for, however good the matter of the lectures may be, it is impossible for the student to commit it to memory or to paper with anything like the same degree of exactness and completeness that is found in a good textbook.

Another plan which I have tried was to treat some portions of the subject in great detail. One year, for example, I selected for special consideration the diseases of the heart and the thoracic aorta. I published these lectures in the form of a book; it makes, you see, a large volume. If I were to deal with the whole course in the same complete way, I should probably have to publish at least ten volumes of the same size. Another year I gave special attention to the diseases of the spinal cord. These lectures also make a volume of some 650 pages. A third year I treated, with even greater detail, some of the more important acute infectious diseases

—namely, typhoid, typhus, relapsing fever, small-pox, chicken pox, scarlet fever, whooping-cough, mumps, influenza, dysentery, and Asiatic cholera. Thirty-six lectures were required for their consideration. They have not as yet been published. In order to treat the whole of the Principles and Practice of Medicine with anything like the same degree of fulness, 350 or 400 lectures at least would be required.

This method was eminently interesting, instructive, and advantageous to myself, for it necessitated an exhaustive study of each subject; and I understand it was highly appreciated by the senior students and by the few graduates who did me the honour to attend the class; but it was not well fitted for the ordinary student. It was far too full and detailed. It necessitated the omission of some important subjects, and obliged one to deal with all the remaining subjects (those which were not elaborately discussed) with an amount of hurry which was very undesirable. Such a method of dealing with the subject would have done very well in olden times, when men took more time to study medicine than they do to-day. Years ago it was, I believe, no uncommon thing for the student and young graduate, before attempting to settle down and practise on his own account, to spend eight or ten years in preliminary study. He was not merely content to study in one school, but he went from place to place to perfect his knowledge under all the great masters and teachers. One has only to look at the students of those days as they are depicted in Rembrandt's great picture, "The Dissection," to see that they were very much older men than the average student of to-day.

I had some of these lectures taken down in shorthand, but the result was anything but a success. One of my objects in having these lectures committed to writing was that I might teach myself; for there is nothing which teaches one so much, or shows one how little one knows of a subject, as the attempt to put one's ideas on paper. The late Dr. Hilton Fagge once told me that one of his main objects in writing his splendid work on the *Principles and Practice of Medicine* was that he might teach himself. I took the hint, and one of the reasons why I have been such a voluminous writer is that I have been anxious to crystallise my ideas, and to make my own knowledge accurate and thorough.

I may say, in passing, that it is difficult to get a shorthand writer who is able to report a medical lecture with anything like accuracy. There are so many terms with which they are unacquainted that they are constantly getting into difficulties and making mistakes. They either omit to report a term altogether, or they make an attempt which is very confusing when you come to read the lecture, and they often make one say a great deal of nonsense and rubbish. Being frequently at a loss themselves, they fail not only to take the medical terms but the context accurately, and they fill in the sentences as they think they ought to have been filled in, often making the lecturer say things which he never could have said, and would never have wished to say. Certainly the reporting of these lectures on fever was anything but a success. It reminded me of the proverbial Scotch dish—sheep's head—which has been described as "a fine mass of confused feeding." You may, of course, say that this was not the fault of the reporter—that it was my own fault. No doubt that is partly true, but I venture to think that it is only in a very minor degree correct, for I have recently had experience of shorthand reporter who is thoroughly familiar with medical terms, and I find that my lectures, when accurately taken, do not read so badly after all.

But this is a digression. I will not ask you to excuse it, for I shall make frequent digressions of the same kind during the course. It is these digressions which give the lighter touches to the subject, which help to set it off and to illuminate it—to soften its hard and dry details. Such digressions, especially if they have a practical bearing on the subject in hand, are often eminently instructive to the student. By means of such sidelights the lecturer is enabled to impress his individuality upon his students and to describe his personal experiences of men and things, and to give the student much valuable information as to how he should deal with and avoid the many pitfalls of professional life.

Of late years I have employed a third method, which is in reality a compromise between the two which have been previously mentioned. It is to consider all the more important

subjects and all the common and everyday diseases in a sufficiently thorough manner to be really useful to the student and at the same time interesting; and to pass very quickly over the unimportant matters and rare diseases. This is the plan which I propose to adopt during the present session.

My object in this course of lectures will be: 1. To give you such information as will be most useful and valuable to you in your future career as practitioners of medicine. 2. To give you as much information of this kind as it is possible to give in the time which we have at our disposal. 3. To try to give it you in an impressive and at the same time pleasant and interesting way.

You must remember that the information which you will manage to acquire during your student curriculum will be your stock-in-trade—the capital with which you will have to trade when you enter practice. It will not, of course, be your whole stock, it will be merely the foundation with which you will have to start. But you must remember that most men who are very successful in business begin in a small way; little by little they extend their operations, and gradually add one department to another: in short, from what is often a very small beginning they slowly but steadily build up a big business.

Now to be successful they must be thorough, and they must begin in the right way from the very start. No slipshod, haphazard plan will do. The same applies to medicine. If you want to be really good practitioners and really good physicians you must follow the same plan. You must first make yourselves masters of the fundamentals; you must not merely learn what you have to learn by rote; but you must bring your intellect and reasoning powers to bear upon it, you must study it intelligently so that you thoroughly understand it. Knowledge acquired in this way will become part and parcel of yourselves.

Further, let me beg of you to remember that your knowledge must not be a mere book knowledge, it must be a practical knowledge; and this leads me to say that your study of the subject in the lecture room and in the hospital should go hand in hand. It is only by combining the practical with the theoretical that you can get a real and sound knowledge. Never be content merely to read in a textbook or in your notebooks a written description of disease. Invariably try to see and study cases in the hospitals in order that they may serve as illustrations of the text.

You must remember that the object which the student has in attending a course of lectures on the practice of medicine is not merely to gain a knowledge which is sufficient for examination purposes. Of course, you should and must necessarily think of your examinations, for you must pass and become qualified before you can enter practice. Your examinations are, therefore, the first thing which you perhaps not unnaturally think of; but examinations are not, remember, the end and object of your training. When you have passed your final examination you have not reached the goal; you have only then got into training and taken your preliminary canter. It is only when you have become "qualified" and when you have done with examinations that you are in a position to make a fair start. The real struggle comes after that; all before has been merely preliminary training. Up to that point everything is, believe me, plain sailing. Provided you are steady and that you work honestly and well, you should have no real cares, no anxieties during your student curriculum. It is very different after you are qualified and when you are about to start in practice. In my time it was difficult enough to get an opening; it is much more so now. The profession is everywhere overstocked; in almost every small village where formerly there used only to be one doctor there are now two. The struggle for existence is so keen that it is difficult for men to live. In Edinburgh, perhaps more than anywhere else, this is the position of matters at the present time. During the last fifteen or twenty years, owing partly no doubt to the phenomenal success of the medical school and to the fact that a young man can make a small income by teaching, coaching, or taking boarders during the earlier years of his career, a very large number of young practitioners have started in Edinburgh. In every department of the profession the number of young practitioners is so great that it is difficult to see how all can survive and live. You may, of course, say that the matter

will right itself, that the weak ones will go to the wall. Fortunately or unfortunately, there are few weak ones; the great majority are able, very able men; it is a case of diamond cut diamond; it is difficult to foresee the result, for the field for practice which Edinburgh affords is, comparatively speaking, a very limited one.

But this is another digression. I was speaking of examinations and the objects which I would wish you to have in view in studying medicine. I repeat that the passing of examinations, though very important, is not the chief end and object of the curriculum, and I would urgently advise you so to arrange your work and conduct your studies that you always keep the broader, truer, and much more important object in view. Do not concentrate too much attention upon examinations. Endeavour to lay a solid foundation of permanent knowledge. You may, of course, say, "That is all very well for you who are an examiner, but it is very different for us who are to be examined." If any of you reason in that way you are reasoning wrongly. It is because I am an examiner and because I have, since the first year after I graduated, been a teacher in close contact with students; it is because I know your wants, appreciate your difficulties and sympathise with them, and because I am anxious to help you to overcome them, because I desire to advise you for the best—for your future as well as your present good—that I speak so strongly upon this point.

There is, however, one piece of comfort, one assurance, which I can give you. In my experience, a man of average ability who works honestly, steadily, and well, and who does his best to obtain a sound and real knowledge of the subject, has seldom any difficulty in passing his examinations. I do not go so far as to say that such a man never fails; but I will say that an honest worker of average ability, who looks to his future good and does not concentrate his attention merely upon examination work, very rarely indeed fails; his failure is quite exceptional. Of course a man may break down through illness or nervousness, or he may happen to be so unfortunate as to come before a dyspeptic, a crotchety or an unfair examiner, but such circumstances are exceptional. There are, of course, examiners and examiners; but the great majority of examiners are, you may rely upon it, neither dyspeptic, crotchety, nor unfair. Do not believe all the "cock-and-bull" stories which rejected candidates tell you about examiners. Lazy men, ignorant men, those who are rightly rejected, necessarily try to excuse themselves. It is an easy way to lay the blame of their failure upon their examiners. Such "explanations" may satisfy their admiring friends and relatives, and may serve to make things pleasant for the poor unfortunates when they return to the bosoms of their distressed and sympathising families; but you and I, Gentlemen, who understand the "ins" and "outs" of these matters, do not accept all these stories as gospel. In many cases they are mere idle tales. In this, as in so many other departments of medicine, you have to look to the personal equation; before attaching any value to such stories you have to take into account the character and reputation both of the student and of the examiner.

I look upon examinations as conducted at the present day as necessary evils—necessary, because the public must be protected (we cannot of course allow "all and sundry" to try their hand at "killing and slaying;" we must have some sort of guarantee that a man is qualified to practise before he is let loose upon the public)—evils, because the present examination system tends, I think, far too often to engross the attention both of the student and the teacher upon the examinations themselves, to make both learning and teaching subordinate to examination, to cram and narrow the teaching, to foster cram, to concentrate the attention of the student upon minute details, and to interfere to some extent with his pursuing that method of study which is best calculated to give him a sound and true foundation of real and permanent knowledge.

And here let me say that I am strongly of opinion that the amount of knowledge which is required of candidates for the ordinary pass examination should, in such a very extensive subject as the practice of medicine, be limited. The student should be examined on the common and important diseases, the diseases of every-day life which he is likely to meet with in practice, and upon the great principles of the subject.

He should not be examined upon the rarities and curiosities of medicine.

For the same reason the lecturer on the principles and practice of medicine should not, in my opinion, attempt to describe in detail every rare and recently discovered disease. What is the use of asking a student to cram up the clinical characteristics of a disease which he will probably not see for years after he has entered practice, and perhaps not even then?

And this leads me to speak in passing of the difference between systematic lectures and clinical instruction. It is the business of the systematic lecturer to describe average typical cases, and to teach the great principles of the subject. He should not overburden his descriptions with too much detail; his object should be to draw the main outlines and essential characteristics of the clinical picture, and to draw them boldly and with a firm hand. It is the business of the clinical teacher, on the other hand, to study individual cases of disease, and to contrast and compare the features which they present with those which are typical and characteristic. The clinical teacher should show his students not only the common but also the rare diseases. The more rare cases which you see in hospital practice the better: only do not concentrate your attention on, or attach undue importance to, these rarities; and, whatever you do, do not undervalue the common and every-day things of medical practice. Try to see everything.

The proper plan of studying medicine is, as I have already indicated, to prosecute clinical and systematic study together, to try to illustrate every systematic lecture with at least one actual case in hospital or dispensary practice, and to read up the systematic description of each disease which you happen to come across in your clinical work.

In such an extensive clinical field as our magnificent Royal Infirmary, our large Fever Hospital, our splendid Mornington Asylum, to say nothing of the numerous dispensaries, afford, you should find it easy to see all the more common diseases at all events. It is a perfect disgrace that any man should go into practice who has not seen and made himself practically familiar with such common diseases as measles, scarlet fever, chicken-pox, quinsy, etc. Teaching and teachers are sometimes blamed for this. In my opinion quite as much, in fact more, blame attaches to the student. Every man who gives sufficient time to hospital and dispensary work can, if he chooses, see all the common and everyday diseases. You must remember that there is such a thing as making opportunity for oneself, not merely taking advantage of them when they are put before you.

I would beg you to remember that the practice of your profession is to be the business of your lives, and that it is your duty to see to it, not only for your own sakes, but also for the sake of the public—your patients—that you are properly prepared to enter into practice.

I have said that in this course of lectures I will endeavour to give you as much information as possible; to give you the information which will be most useful to you; and to try to give it you in a pleasant form and lucid manner. I shall make it my business to describe all the more common and important diseases, and to lay before you the great principles of the subject. I shall endeavour to make the course as practicable as possible, and to illustrate the lectures with the details of my own personal observation and experience.

We shall commence with the diseases of the circulatory organs; then take up the diseases of the respiratory system; for these two classes of diseases are those on which you will have to concentrate a large amount of attention in the early days of your clinical work. We shall then successively study the diseases of the blood and blood glands, the diseases of the alimentary, urinary, integumentary and nervous systems, and the general and febrile affections.

In connection with each subject I shall endeavour to emphasise all the more important points, trying as far as possible to make the different facts hang intelligently together, and endeavouring to teach you the "whys" and "wherefores" and the reason of things, illustrating everything as we go on by cases drawn from my own practice and by the help of drawings, photographs, diagrams, and lantern slides. What I want to try to give you is an intelligent knowledge of dis-

ease, not a mere cram knowledge, not a mere parrot knowledge. And here let me say that whenever it is possible I will make the pathology of the disease the basis of my description. The term pathology, remember, is not synonymous with the term morbid anatomy. Morbid anatomy is only a part—a very important part I allow, but only a part—of pathology. By the term pathology I mean not merely the morbid anatomy of the affection, but the etiology and pathological physiology, the processes—mechanical, chemical, and vital—by which the lesion produces the symptoms.

In teaching medicine, in studying disease both at the bedside and in the lecture room, in trying to master and thoroughly understand diseased conditions, and in trying to acquire a real and intelligent knowledge of the symptoms and physical signs produced by organic diseases, both teacher and learner should endeavour to picture to themselves the exact nature of the primary and fundamental lesion which is present, and to realise the alterations in function (manifested externally as symptoms and physical signs) which it (the primary lesion) and the secondary pathological (structural and functional) changes which result from it are calculated or likely to produce in the various organs and tissues of the body.

Knowledge of this kind, knowledge which is acquired in this way, knowledge which is based upon an anatomical, physiological, and pathological foundation, combined with accurate and painstaking clinical observation, is never forgotten; it becomes indelibly fixed upon the memory, and is readily recalled for future use; for, in consequence of the law of association of ideas, the different items of a knowledge which is thus intelligently acquired—the individual and separate facts, which, when taken in combination, go to form a knowledge of any subject—are indissolubly bound up together; they hang together like the links of a chain; the recollection of the fundamental or basal fact (the pathological substratum of the disease), the vivid stimulation of the cerebral cell mechanisms in which the central or basal fact is stored, becomes the starting-point for a fresh stimulus or series of stimuli which, almost of necessity, without effort, reflexly and automatically, as it were, pass on to other associated cell groups, until at length all the cerebral cell groups connected with the basal or fundamental cell groups are vividly stimulated, and until all the facts connected with the subject are revived and recalled in consciousness.

The man who is able to picture to himself, clearly and distinctly, the morbid changes which constitute the pathological substrata of diseased conditions, and who, by reason of a sound and accurate anatomical, pathological, and physiological knowledge is able to realise (by what Mr. Goschen would term the faculty of scientific imagination) the alterations in function which such changes are calculated to produce, has no difficulty in acquiring an intelligent knowledge of the symptoms and physical signs which go to constitute the clinical pictures of disease. And what is still more important, knowledge which is acquired in this way, provided always that it is supplemented by the careful observation of disease in the living man by a wide practical bedside experience, sticks to a man; it is never forgotten; it becomes part and parcel of the individual; it is always ready for future use, and is readily and easily remembered. Further, by reason of the sound intellectual training which is involved in its acquisition, it not only strengthens the intellect, but, in consequence of the power of intelligent comparison which it enables its possessor to bring to bear upon fresh and allied subjects, it enormously facilitates the acquisition of new knowledge; in short, it fits the man who possesses it for making original observations for himself.

It is very different with mere parrot (cram) knowledge, for cram knowledge consists, be it remembered, of a number of isolated facts which are not intelligently connected one with another. In order to revivify and recall (remember) each of the individual and isolated facts of which a cram knowledge of a subject consists, a separate and distinct effort of memory is required. It is perfectly true that if a number of isolated and individual facts are sufficiently frequently conjoined in consciousness, the stimulus which is excited by the repetition of the first fact (or word in a sentence, for instance) will excite the production of the second, and so on, until the whole series is fluently and easily repeated. Any average

healthy brain, any series of cell groups in the cerebral cortex which is sufficiently frequently stimulated in this parrot fashion, may get into the habit of discharging, after the fashion of a barrel organ. But the labour involved in committing to memory a series of facts in this (parrot) way is, for most of us, enormous; few brains, and probably no old brains, are capable of acquiring, and much less capable of retaining, even if they could acquire, a cram knowledge of this kind of the multitudinous facts which go to constitute a knowledge of systematic medicine. And even if a knowledge of medicine were acquired by dint of prodigious labour and innumerable repetitions in this way, it would be of little or no real use in dealing with disease in the living man. In order to recall a series of isolated facts or sentences which are learned by rote in this manner, the repetition must commence at the beginning, the individual links in the chain (the facts or sentences) must follow one another in a definite and constant order. In repeating such a series of facts or sentences, the less the consciousness is brought to bear upon the matter the better. Should the reciter be nervous, should he be interrupted in the middle of his task, the cortical discharge ceases or the association becomes deranged; he is unable by a voluntary effort to recall the next fact, and he has ignominiously to begin again at the beginning.

Medical facts which are crammed up by dint of much repetition, and without the aid of the intellect, are acquired and remembered very much in the same manner. The labour involved in acquiring them is (comparatively to that involved in the true and intelligent method of learning by means of the understanding) enormous; the result is eminently unsatisfactory, for few brains can retain for any length of time and recall (remember when required) a large number of isolated facts. Cram knowledge, as everyone knows, is essentially temporary and evanescent; it may and (shall I say unfortunately?) it often does, enable a student to scrape through his examinations, but it is of little or no real use in future life.

Now, as I have already told you, what we teachers have to aim at is not merely to supply the student with the information which will enable him to pass and to get qualified, but what is infinitely more important, we should endeavour to give him such a knowledge of the subject as will be of real and permanent use to him in his future career—in his daily life as a practical physician. Probably at least 90 per cent. of our students mean to practise medicine—to earn their daily bread by endeavouring to cure and relieve disease in general practice. And each individual lecturer, whether his subject be practical or scientific, should, I venture to suggest, keep this, the main object of the students' wants, constantly and prominently in view.

I repeat that what we have to aim at in learning and in teaching medicine is to make the facts hang intelligently together. It cannot, I think, be too forcibly and too emphatically stated that a knowledge of pathology (together, of course, with anatomy and physiology) is the true memory basis—the essential and fundamental key to an intelligent knowledge of the principles and practice of medicine; and that a large bedside experience—a first-hand acquaintance with the phenomena of disease as they occur in the living man—and practical knowledge of the effects of drugs in different diseased conditions and of the methods of dealing with disease and diseased men and women is the only sure foundation for true and genuine success—success in the proper sense of the word—in actual practice.

And here let me say that you will find it a most instructive exercise to try to work out for yourselves the clinical phenomena (symptoms and signs) which different pathological lesions produce. When, for example, you are commencing the study of aortic regurgitation, acute croupous pneumonia, poliomyelitis anterior acuta, or any other disease which has a definite and distinct morbid anatomy and pathology, first endeavour clearly to realise the morbid process, and then try to work out—to picture to yourselves—the symptoms and signs which the lesion will be likely to produce in the living man. If your knowledge of anatomy, physiology, and pathology is sound and satisfactory, you should be able to predict many of the leading clinical features of these diseases. After puzzling out the subject so far as you are able for yourself,

you should next read the textbook description. You will then read it with interest. If you find that it differs in any particulars—as of course it is sure to do—from the ideal picture which you had formed in your own mind, do not merely be content to note the fact and accept the correction, but try to find out not only where you were wrong, but why you were wrong. I assure you that if you will only conscientiously endeavour to study disease after this method, you will make great and rapid progress; that you will soon get an intelligent grasp of the subject, and you will find that the study of medicine is a pleasure rather than a toil.

FORCIBLE STRAIGHTENING OF THE SPINE IN POTT'S DISEASE.

(With Special Illustrations.)

By R. W. MURRAY, F.R.C.S.,

Surgeon, Liverpool Infirmary for Children.

FORCIBLE reduction of angular curvature of the spine resulting from Pott's disease is at present being extensively practised, and any facts that may help us in forming an opinion as to the ultimate benefits likely to follow this line of treatment should be recorded.

My experience has been far too recent to permit of any dogmatic statement as to whether forcible reduction of an angular curvature will or will not in the future be a recognised surgical procedure, but as two of my cases have died, and I have had the opportunity of seeing the condition of the spines of these children two and three months after operation, a short description of the condition found will no doubt be of interest.

The first case was that of a boy, 4 years of age, who had suffered from spine disease for three years. He was admitted into the Liverpool Infirmary for Children under my care in September last. There was a marked angular curvature in the lower dorsal region, but the child was otherwise in fair health. There was no abscess, nor was there any paralysis.

Fig. 2.—E. P., aged 3½ years, before operation.

I forcibly straightened the spine under chloroform on September 17th, and applied a plaster jacket. The child was sent home ten days later, and I did not see him again until November 6th, when he was suffering from pneumonia of the right lung, from which he died on the following day. The condition of the spine is represented in the accompanying photograph (Fig. 1), kindly taken for me by my friend, Mr. Robert Bickersteth. The disease had involved three of the