On the study of medicine : the introductory address at Surgeons' Hall, session 1855-6 / by John Struthers.

ON

THE STUDY OF MEDICINE:

THE

INTRODUCTORY ADDRESS

AT

SURGEONS' HALL—SESSION 1855-6.

BY

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INTRODUCTORY ADDRESS.

Gentlemen,—In discharging the duty with which my colleagues have done me the honour to intrust me, the chief difficulty lies in selecting from among the many topics connected with medical study, which deserve notice on an occasion such as this. I think it better not to detain you with remarks on the various sciences which medicine includes, or on their relation to each other. The curriculum is already laid down for you; and the order in which the different classes should be attended is now well understood. You all know that we begin with Anatomy and Chemistry, not with Medicine and Surgery. Besides, most of you are already more or less advanced in medical study, and those who are but beginning will hear of each science tomorrow in the introductory lectures of the various teachers. I shall therefore leave the more common topics, and, as more befitting this general meeting of the school, pass to questions of more general interest.

I. Let me first glance, chiefly in the way of estimation, at the means by which you will learn your profession. These are three in number, lectures, practical study, and private study or reading.

You cannot place too high a value on *lectures*, provided you recollect that they are only one means, and that not the most essential. Probably very various answers would be given to the question—In what does the benefit of lectures consist, on what principle are they useful as lectures? There cannot be much in the circumstance that it is easier to listen than to read, or even that the attention is more aroused. If the lecture consisted simply in pronunciation from a text-book, would it be as profitable as an hour's private study of the same book? Supposing, again, that the lecture, as delivered by us, could be read by you in a book, what difference would there be? It would want a characteristic feature in most medical lectures, the demonstrative or practical element; practical in the sense that things themselves are seen and pointed out, not merely spoken about. The amount of this element varies in the different classes; there is more of it, for instance, in anatomy than in physiology, and in surgery than in medicine. It varies also in different parts of the same course, the recollection of which may be useful in guiding a lecturer when he is under the necessity of shortening his course.

But yet, important as this is, the essential benefit must lie in something which is common to all lectures, whether on physical science—admitting of demonstration, or not. It is not merely that they guide the student systematically through the science; nor that they present a complete or exhausted view of it; nor that they convey the teacher's peculiar opinions and experience. But these also are advantages. You do hear much that is peculiar to the teacher. It is allowable to him to speak of his favourite views and the results of his own researches; if he does not, no one else is likely to do it; but he must be careful not to overdo this, not to be too much the hero of his own lecture. In a systematic view of an entire science, embracing the additions by all past and all living observers, you will not suspect him of want of originality, if he only occasionally speaks about him-

self and what he has done. Nor will you expect that a course of lectures should exhaust the whole science. I do not mean that it should stop short at a certain stage, but that a lecture is not to be measured by the number of details which may be introduced. A teacher is at first unsatisfied if he has to leave anything unsaid; but, as sessions roll on, his stores multiply. Beginning in the compact condition of a text book, if I may offer the comparison, he passes each session through a new and enlarged edition, until having grown to the condition of the cyclopædia, he finds that he must select, as well as that it is best to do so. Experience tells him what it is best to lecture on and what to leave, what to dwell on and what to touch lightly; while the numerous details, arranged in groups round clear centres, serve as a large reserved fund, available when there is need. There is no readier way of spoiling a lecture than by putting too much in it, I mean too many details. The geographer who has the world to describe, gives the mountains and the rivers, but leaves out the mole-hills and the ditches. The value of the lecture does not lie in the number of little things mentioned, but in the way great things are illustrated and enforced. All the elements above mentioned, especially the demonstrative one, have their share, but the true or essential advantage of lectures, lies in the way the teacher is able to present the subject to the student's mind. He describes or states, illustrates and explains; then discusses, rejecting doubting or admitting, and concludes by enforcing; and the subject thus distilled through and bearing the stamp of the teacher's mind, produces a similar impression on the mind of the student. The true test of all oral instruction or discourse, is the effect it produces on the average listener. It is not enough that the matter be good; besides this, it must be presented illustrated and enforced in such a way as to make an impression.

A distinction must be drawn between lecturing and teaching, for the one does not necessarily imply the other. It is one

thing to discourse and another to instruct. The method and depth of instruction must be varied according to the maturity of the mind to be instructed, the nature of the information to be given, and according as the listener is a beginner or more or less advanced. The information which the medical teacher has to give, embraces much fact and the closest reasoning, requiring clear arrangement and forcible expression; and while those he addresses are usually mature enough to be able to follow any reasoning, and to receive and appreciate the most profound views, they generally require in the first place, or at the same time, to be instructed in the elementary facts of the science. The medical professor or lecturer, then, requires constantly to bear in mind that he has not merely to discourse but at the same time to teach. He is apt to err through feeling as if he were addressing a critical audience of surgeons or anatomists or chemists, instead of recollecting that he is addressing those who are as ignorant as he was in his student-days, and are sitting before him because they are so; a consideration which adds much to his comfort as well as his efficiency. I do not mean that he is to run into the opposite extreme; we may be as deep and as philosophical as we can, provided we are first and also simple and clear. A teacher profits by experience in a variety of ways; he grows in knowledge but still more in appreciation of what the student needs, of what should be taught, and how it can be most efficiently presented; and he gets that confidence, and that familiarity with his subject, which has led to the common remark that the best way to know a subject is to teach it. There is a great difference between one lecture and another, more between a good lecture and an indifferent one than between an indifferent one and none at all. Unless medical lecturing is well done, which involves no small amount of trouble and devotion on the part of the teacher, the student might occupy his time more usefully; but if thoroughly done it would not be easy to overestimate the advantages. I do not make

these remarks as critical on the teaching of the day, but that you may know what to look for, and may also appreciate the difficulties and exertions of your teachers.

To receive the benefit of a lecture the student must, of course, be an attentive listener; be present in mind as well as in body. You hear very different opinions as to note-taking. In the early days of medicine, when the student had not the assistance of systematic books, he was mainly dependent on the great man to whom he listened, as to an oracle. Even the elementary facts could often be had only through oral instruction; and, besides, opinions and dogmas were more in demand in those ancient days, when medicine was young. Systematic note-taking was then of great importance, and lectures were so few that there was time to make use of the notes afterwards. Hence lectures held a much more important position relatively then than now, though now in reality more valuable. But in what science is there not now a choice of systematic books, good and indifferent. Teachers have now no anxiety lest their lectures be taken down and published surreptitiously. But the student should always be ready to note down what is striking, or new, or peculiar to the teacher, either in fact or illustration; and in every able lecture such occasions will often occur. Do not be disappointed if you feel as if you soon forgot the lectures; he would be a wonderful man who could recollect several lectures a-day, several hundred each session, some two thousand in four years. I do not say you will not carry away many facts and details, but that the value lies in the general idea it gives, which is to be secured by following the lecture attentively and thoughtfully, with occasional note-taking. Thus, when the lecture is finished the benefit is already secured, the essence of it is assimilated; while the systematic note-taker, like the reporter, carries it away only in his pocket, in place of his head; the indifferent student, it may be added, having it in neither.

The next part of your education of which I have to speak is

the practical part—*practical study*—and I wish to direct your attention to it in an especial manner.

The word practical, is variously used. Sometimes it means the departments connected with practice—as Surgery and Medicine, distinguishing them from the foundation sciences—as anatomy and chemistry. Again, in surgery and medicine, it means questions which concern the patient as distinguished from those which merely interest the scientific inquirer; two things which are not to be separated but yet always distinguished; and it is the clear perception and constant recollection of this which distinguishes, more than anything else, one educated medical man from another; which characterises what are called clear-headed practical men. But in education we mean by the term practical, a familiarity with things themselves, by which we not only know about them, but know them. You might hear and read much about a salt or a nerve, and yet be unable to recognise it if you saw it; you might speak very positively about an operation, and yet be unable to perform it; you might write an essay or a book about the symptoms of a disease, and be quite unable to recognise it in a patient; and you might, as examinations are generally conducted, be able so to answer questions as to obtain the degree or diploma of any university or college in this or any country, and yet be ill qualified to detect and treat disease. We are apt to rest contented with that unsubstantial kind of knowledge which books and lectures can do no more than furnish. You may have heard the story of the student in the botany class, who appeared in the prize list as the author of an essay on the cultivation of the potato, but was much perplexed when an honest farmer, thinking the opportunity a great one, came to town to consult him about it. It is chiefly the neglect of the practical study of disease—clinical study—of which we have to complain, for it is now well understood that a real knowledge of anatomy and chemistry can be had only by dissection and

by experiment in the laboratory, and the ample opportunities now afforded for these pursuits are, generally speaking, well embraced and profited by. What I mean is, not that we want opportunities for the practical study of disease, but that those we have are not sufficiently appreciated and sought after by the student. A student, well known to me, was remitted at the examination for the diploma. He knew his anatomy well, so well as to be conscious that he had still much to learn, and he supposed, accordingly, that he had been rejected on this account. It was, however, for deficiency in practice of medicine; and in telling him so, I inquired what experience he had had —he said "not much;" if he had ever been a dresser or clerk in the hospital? "no;" ever a dispensary pupil? "no;" ever an assistant to a medical man? "no;" if he ever had a patient? "no." I need hardly say that his rejection was not only a duty to the public, but a benefit to himself. I told him to go at once and get experience of disease, and on the next occasion he passed without difficulty. Another gentleman had taken his degree, and then engaged in dispensary practice. I inquired one day how he was getting on. He said, very well, but he was astonished, he had made a discovery; diseases, he said, were not so clear as in the books, and some of them he could not make out at all! He had expected to find them as plain and distinct as the chapters of his text-book or the coloured counties in his map. It is right to add, that such flagrant cases are rare and exceptional; and, probably, fully as rare in Edinburgh as in any school.

I am quite aware of the vital importance of a thorough knowledge of the foundation sciences, and of the principles of our profession. This is so evident that I may almost take it for granted, but let me just say that without this all-important preliminary, you will never be truly practical men. Unless you are well informed in the foundation sciences and principles, you may practise your profession but you will never understand

disease and its treatment; your practice will be routine, the unintelligent application of the dogmas and directions of your text-book or teacher; without self-reliance, and unable to give a reason either for the faith that is in you or the deeds you do. The true practical man, recollect, is not the man who despises anatomy, physiology, chemistry, pathology—or who neglects everything which does not directly concern his patient; but who has the foundation and the principles, and then adds the practical. I would say to the student, above all things get a knowledge of the fundamental sciences and principles, get hold of what can be got only at a medical school—anatomy, surgery, pathology, physical diagnosis. I would add, that the young medical man, who has as yet only this knowledge, is in every way more hopefully situated than the other who has neglected it in the endeavour to grasp prematurely at a knowledge of the living phenomena and treatment of disease. But both are quite within the student's reach, and I am therefore desirous of impressing you with the importance of clinical study, the one which we are most apt to neglect.

In advising you to attend as much as possible the clinical lectures, I will qualify my recommendation with the remark that it applies only to lectures which are truly clinical; for a lecture delivered in an hospital, though ostensibly clinical, is not necessarily so, and it would appear that the term clinical is variously applied in different schools. Here you will find that clinical instruction consists, first, of lectures delivered twice a week in the theatre of the hospital, the lecture consisting of a series of short expositions of the cases which are under the student's observation in the wards; of the facts of the cases, and the general principles of medicine or surgery which they illustrate; the patients being introduced as often as possible. Second, of the short demonstrations or lessons delivered at each bedside during the daily visit in the ward. In the latter the demonstrative element enters still more largely into the instruction, and the

student is trained to examine and observe for himself. These two methods variously combined and carried out in detail by each teacher in his own way, form what I would define as the true system of clinical instruction. Of these two, the second is not the least important, and every physician and surgeon who has wards in an hospital where there are students, is or may be a clinical teacher whether he delivers clinical lectures or not.

But yet this is merely the teaching, only the teacher's part; the student must himself engage in clinical observation. Let us not commit the fatal error of confounding clinical instruction with clinical study. I may illustrate this by comparison with anatomy. Clinical lectures resemble the lecture-room anatomy, and the clinical demonstrations in the ward cannot be more practical than the anatomist's lesson to a group of students round a dissection; both are only teaching, and teaching to numbers not to individuals. But every one knows that besides this the student must engage in dissection for himself. So is it with true clinical knowledge. The student must not merely present himself at the hospital as a clinical listener, but must go there as a clinical observer. He must take a concern in the cases, and get connected with them in some capacity as dresser or clerk. These appointments are within the reach of all who will seek after them, but I would like to see considerable improvement here, and in medical schools generally, increasing these opportunities, by attaching a greater number of pupils to the cases as non-resident clerks or clinical pupils. There I would recommend you strongly to write out the cases, for the principal benefit is to the party who keeps the hospital journals; he is trained to observe carefully, to inquire and cross examine, so as to bring history to bear on diagnosis, and to record accurately; and this I would have systematically carried out, not merely for the procuring of records, but as the best method of training the pupil in clinical study. It is scarcely possible to place too high a value on this kind of hospital experience. In one year of such hospital study you

may gain more real experience, than by many years of general practice. Our young men who have industriously filled the hospital clerkships, go forth in reality experienced practitioners. It is true, hospital practice brings you in contact chiefly with serious cases, and requires to be supplemented by some of that experience in smaller matters which dispensary or general practice supplies. Steele says that "a man endowed with great perfections but without good breeding, is like one who has his pockets full of gold, but always wants change for his ordinary occasions." Hospital experience is the gold. It is in this direction chiefly that medical education or study admits of improvement, by furnishing the individual student with opportunities for practical clinical study. It requires, I think, no prophet to foretell that ere many years have passed, the clinical element will enter more largely into medical education than it has hitherto done.

The third and remaining means is *reading*, or *private study*. In the others you have the guidance of your teachers, but the disposal of the evenings is left entirely to yourselves, and herein accordingly lies the great difference between one student and another. We ask—is he studious?

How much of this is needed I will not say, except that it must be the great business of the evening; and, besides, that it will depend very much on how it is done. Reading and study, especially in the case of medical books, are very different things. Lord Bacon divides books into three classes. "Some books," says he, "are to be tasted; others to be swallowed; and some few to be chewed and digested;" and our books dealing as they do in facts and details and close reasoning, more than any belong or should belong to the last of these classes. Study can be measured by time only when other circumstances are equal. There are different degrees of earnestness or intensity in study; the languid or careless mind finds itself wandering to other matters, or the subject is enveloped in haze; while the eagerly applied mind carries point after point of difficulty, and, absorbed

in the keen intellectual pleasure, is surprised at the end to find how time has fled. "There is nothing," says Sydney Smith, "so horrible as languid study, when you sit looking at the clock, wishing the time was over, or that some body would call on you and put you out of your misery. The only way to read with efficacy is to read so heartily that dinner time comes two hours before you expected it. This is the only kind of study which is not tiresome; and almost the only kind which is not useless; this is the knowledge which gets into the system, and which a man carries about and uses like his limbs, without perceiving that it is extraneous, weighty or inconvenient."

But fortunately our studies are so interesting in their nature, that there are few who do not love them, and the true student follows them eagerly. The model student holds his room and his evenings sacred to himself and his studies; he does not need Dr Johnson's advice to "sit down doggedly," he goes head and heart into it; he knows what it is to burn the "midnight oil;" the morning finds him on his accustomed front bench; he hears and sees only the lecture and the lecturer; he is busy with his scalpel and busy in the wards, doing every thing eagerly as if he were born for that only; and the evening finds him again alone. It is an idle thing to discuss the relative merits of the reading and the fancied practical student, for, with few exceptions they are one and the same; the busy evening student is also the busy day student, and you may go about hospitals and dissecting-rooms as much as you like, and attend lectures without number, you will never get on without regular evening study.

My model student is sure to get on. He lays a fourfold foundation for ultimate success—1st, In the good opinion of his fellow-students. All students have the same work to do, and the same means of doing it; nowhere is there a nearer approach to equality, at no time can merit better prove itself, and nowhere, perhaps, is there more generosity and frank acknowledgment

of merit, than in the medical student's commonwealth. The hard-worker is known, discussed, respected, and heartily applauded when honours descend on him at the end of the session. Time scatters his fellow-students, and his good name goes wherever they go. 2d, In the notice of his teachers. Teachers soon come to know who the hard working students are; they know who usually sit in the back seats, and who near the front; they know who work and who do not work at night, by the knowledge they exhibit or do not exhibit next day; teachers talk to one another about the working students, and know well who are likely to rise to distinction, and who may be recommended to fill vacancies. If other teachers feel as I do, they not only admire, but have a profound respect for the hard working student. It is a fine spectacle to see a young student, a stranger to science and everything around him, setting himself patiently down to a student's life, without yet seeing his way to the end, and possibly without a friend to encourage him. The teacher cannot fail to take a warm interest in such students, even although their position did not remind him of similar circumstances in his own history. 3d, In the extent of his knowledge. The industrious student gathers and assimilates a great store of knowledge, much more than he needs to meet the examination, and much that appears superfluous, as far as patients and practice are concerned. But he will reap the advantage of it in after years, when there is less time for the study of elementary science, and little inclination for it among those who have not been well grounded in their youthful and student days. And 4th, In habit, the habit of industry. He has gained not only a store of knowledge, but the means of keeping it up and adding to it. The habit of systematic study is a most valuable one, is soon acquired, and, like all habits, becomes easy and pleasant. It is a great mistake to think of a hard-working student as one who does not enjoy himself; his business is his pleasure, and at the end of a day,

a week, or a session, he enjoys a satisfaction which is unintelligible to those who make pleasure their business. The habit of the student lives in the man; he is always busy, and night after night sits down to it with ease and pleasure, and is able to accomplish what is matter of wonder to others. All these advantages my model student secures; he has both the fulcrum and the lever, and may overcome all difficulties. While to others, time and chance may happen to bring success, he alone has a right in human certainty to calculate on it.

II. I have next a broad advice to give you, applying to all your studies, but more especially to those in the laboratory, dissecting-room and hospital—it is, that you must not content yourselves with learning what books or teachers say, but use your own observation; use your own eyes, ears, hands, and thoughts; be active, not passive agents in your own education. There are two kinds or parts of education; one is from without, is put into us by the teacher or book, we commit it to memory, and as long as we recollect it, we are able to repeat it as if we knew it. The other is what we work out for ourselves. They are quite distinct in principle, though often confounded, or rather, I may say, the first is considered as the entire educational process, and the second remains dormant, or is choked by the first. Why is it that self-educated men distinguish themselves so much? In one sense, it is because they had no teachers; they had, therefore, to help themselves, they had to observe and think for themselves, and thus became possessed of a mighty instrument. It is strange to observe how the principle of self-reliance remains dormant, until some occasion awakens the possessor to the full consciousness of his own inherent power. A student may give a perfectly correct answer, yet, when asked how he knows, he looks puzzled and hesitates, and can only say, the book says so, or, I heard you say so. If he is then made to examine the thing for himself, he is pleased

to discover that he has within himself a power by which he may be as good an authority as his book or his teacher. Knowledge thus acquired has a simplicity and reality about it, which memory knowledge cannot have; in fact, in physical science we really do not know until we have observed and thought. The true school is the school of nature, which is everywhere, common to all schools where opportunities exist. I do not undervalue books, they are the best things we have, after nature, but the very best of them are only guides, only speak about things, do not contain things themselves, in fact, books are only books.

This advice applies to the study of things which can be seen, heard, and touched, but likewise to book study, and listening to oral instruction. Do not commit it blindly to memory, but examine the facts and scrutinize the reasoning, that is, think about it and consider it; and the result is, that, instead of being a burden on memory and liable to escape, it undergoes mental assimilation, and becomes part of yourself for ever. I may add, that we never know a subject, of whatever kind, thoroughly, until we have thought about it.

You must not think that this advice, to observe and think for yourselves, is included in the common saying that anatomy is to be learned only in the dissecting-room, surgery only in the hospital, and so forth; it is not the study, but the way to conduct the study that I mean; it is, that you are not to rest contented with committing to memory what others say about nature, but to study nature herself. There is no reason why you should not do so as well as others, as well as your teachers, who are only more advanced students; you may begin with the first bone that is put into your hands, and the first patient you see. It is not only the true system, but the easiest too. If those of you who have grown up under the mere memory system, will change to this one, you never experienced a happier emancipation, not less than that of the man who has hitherto walked on crutches, discovering that he is no lame

man, but the possessor of a pair of excellent legs; after which he will not likely seek the aid of his crutches again, but rather advise others, as I now do you, to cast away theirs likewise.

Closely associated with this method, indeed part of it, is the true spirit in which all study and investigation should be conducted—the desire for truth and reality prevailing over all others. To be partisans of no teacher or school, to have no blind attachment to any system or theory, to have our minds perfectly free and open to new facts and evidence, to weigh them carefully and impartially, and be ready to acknowledge when we are wrong. It is hard to abandon a favourite opinion or theory, we prefer rather to shut our eyes to the real facts, catching at the straws which seem to support it, and make up in temper what we want in reason. How much better to abandon it; the sentence of death having been passed upon it, we cannot keep it up, though it may drag us down; to be fairly delivered of it is attended by a peculiar satisfaction, and a man never loses in the opinion of others by acknowledging his error. Let us never be alarmed when our opinions are called in question, but rather invite discussion of them, never afraid of truth, being assured that it must benefit us either way; either on the one hand by ridding us of error, or on the other giving greater security to our belief, by assuring us better of the foundation on which it rests. Constituted as we are it must be granted that this frame of mind is not easily maintained, that we are in constant danger of forgetting it ourselves while we require it in others. There is perhaps no better way of securing it than by calm reflection on the nature of truth, its existence irrespective of us, its stability and eternity; that "whatever we talk, things are as they are, not as we grant, dispute or hope; depending neither on our affirmative nor negative."

The true philosophical spirit is admirably defined in the golden aphorism of Bacon—that, "We should read, not to contradict and confute; nor to believe and take for granted; nor to find

talk and discourse; but to weigh and consider." If we are imbued with this spirit, and pursue this method—the spirit of candour and the method of self-reliance—we are in the true way for progress, whether as teachers or pupils. I shall only here add one remark regarding our duty to you, that it is twofold; that the teacher's duty is not merely to instruct the student, to teach him in the ordinary sense, but that his duty is less than half done, if he does not also train him to do his own part in his own education, stimulate him to it and see that he does it, and that he understands the true spirit as well as the method; —the one process merely transfers the teacher's knowledge to the student's memory,—the other puts the instrument into his hand by which he can teach himself, and develope the powers with which nature has endowed him.

III. Glancing now at the profession in general, let me first congratulate the beginner on the choice he has made. In a business point of view, it is an easy one to enter, as the capital required and the period of service to it, are very moderate. It presents many openings, either to the man of science or the practitioner; there are few who cannot find in it some department or walk suitable to their taste; it is the same profession over the whole world; and as our stock is chiefly knowledge, it is easily carried with us, and cannot be parted from us. If the medical man has, in his earlier years, to labour chiefly among the poor, he is rewarded for it in many ways; if the bread he has thus cast upon the waters should not return to him even after many days, he knows that what is given to the poor is lent in another quarter; and if he has to struggle hard as a young man, it is only what other young men have to do. While "time and chance happeneth to all" in our profession, as in other callings, it is one in which merit, on the whole, is perhaps more rewarded, may push its way better, than in any other occupation. It is not the profession for the man whose mind is set on riches, nor for

the man who will use it only as a business, without loving it, or caring to advance it, or to preserve its purity. While there are exceptions in either direction, we may say the medical man who likes his profession, and works at it, may generally get on pretty easily, but that as to wealth he is most likely to have the answer to the ancient prayer, "give me neither poverty nor riches."

As to his estimation in the public, his professional merits are no doubt often very unequally and unintelligently recognised. He may perform a delicate and difficult operation, without which the patient must die, or he may save his patient's life through a skilful diagnosis, and have little credit for it; while for some trifle or venture, he may receive gratitude and praise. But putting one thing against another, he has, on the whole, little reason to complain; and if he does sometimes or often see public favour descend rather on the unqualified and the unworthy, he must view it as the philosopher standing on the heights of truth contemplating human nature. He will not lament what he cannot help, and surely he would not change places with these men for their gains. If it is not always "palmam qui meruit ferat" we are at least more likely to succeed if we deserve than if we did not deserve, and at any rate "it is better to suffer for well-doing than for evil-doing."

Although he has often reason to complain that his time is not his own, he has for this the compensation, that his business is generally also his pleasure, calling into exercise the highest faculties of the mind. He feels that his day's labour has not merely procured his daily bread, and perished, but that he has likewise done something for others, or for science, and for his own future. His daily rounds, too, are not without their entertainment; he sees all grades of society, above his own, as well as below it; and more than any he sees true human nature, unlike his brethren of the legal profession, seeing both sides of it, the good as well as the bad. On the whole, therefore, his position

is about as favourable as any for the enjoyment of cultivated life; and, although his position in society will depend on himself more than on his profession, he has a good passport to it, and there he is in no way bound to be a pedant or otherwise to be distinguished from, or refrain from enjoying himself like other people. "There is perhaps no greater mistake," says a late eminent professor in our university, "than the supposition that intellectual development is inconsistent with a keen sense of enjoyment. There are, it is true, a considerable number of grave, dull, would-be sages, moving at a snail's pace, with a snail's gravity, through society. But they are shams. Nine out of ten of them maintain a philosophic fame only on the credit of an ominous and unbroken silence. Your real philosopher is neither uncommunicative nor dogmatic; he utters his words of wisdom at the right time and place, but on ordinary occasions is like other men, and enjoys himself perhaps even more intensely when enjoyment is afloat."

It must, however, be admitted that the nature of our studies, and their engrossment of our time, is such as to give a bias to our minds and narrowness to our views; that we are occupied so much with physical science and professional pursuits, that the other side of our nature is in danger of remaining undeveloped, and we are apt to make the profession our world. Now what is the best method of correcting this, of liberalising the medical education and mind? Some recommend the study of the less utilitarian sciences, which lie on the borders of our curriculum, or altogether beyond it, as Natural History, Comparative Anatomy, Botany, Geology. Such studies form the proper corrective to narrowness of scientific view; they wonderfully enlarge and strengthen a mind which has been before occupied only with strictly professional details; they admit us to view the boundless profusion and beauty of creation, and some of them fill us with sublime thoughts. But we must not forget that these are still physical sciences, each

involving us, as much as our own anatomy and chemistry do, in a world of technicalities and details; and after all, adding but another volume to the load of physical knowledge by which we medical men, students, teachers, and practitioners alike, are already oppressed.

Others, again, recommend the study of languages. We all know how much is implied in an acquaintance with the ancient languages, and also how much refinement is usually connected with a knowledge of modern tongues; but we must not forget that a language is only a means to knowledge, only a key by which we may unlock other stores. How common it is to mistake this means to education for education itself, and how strange to observe, amid all this, how many there are who make little use of their power to read their own language in its rich and varied stores of literature. While the latter furnishes the true, as well as an easy and agreeable, corrective to the tendency of scientific studies, whether these be narrow or liberal —it is by studies in mental philosophy, that we will more exactly balance the one-sided influence of material or physical science, for our nature has a side for metaphysical quite as much as for physical truth.

Time will not permit me to say what I would wish regarding the special importance to us of these studies, which are so wonderfully neglected in ordinary medical education, and by some ignorantly condemned. Our metaphysical nature has an existence no less than our bodily nature has, and no less an anatomy and physiology, that is, a constitution and laws of action; and our intellectual and moral being is surely no less worthy of study than our animal nature. If nonsense has been sometimes written by persons misnamed metaphysicians, if the thing has been abused by dreamers and persons deficient in common sense, that is no reason why it should not be used by sensible men, who can treat it by the only true method, the inductive one, as strictly as they can physical truth; no more than we

would think of shutting our eyes to the realities of life because of fictions, or to the existence of serpents, crocodiles, and the manati, because a deal of nonsense has been written about sea-serpents, dragons, mermaids, and other creations of the fancy. And as to logic, which is not the art of wrangling, but rather the art of cutting short wrangling, if professors of it occasionally do not reason any better than other people, it must be their fault and not logic's, keeping it for their lecture-room, or for certain times, just as some do still higher matters, forgetting to practise and use it in daily life. What confusion, too, there is in the common remark, that common sense is better than logic, or in the other remark, that common sense reasons while logic argues; what confusion of use and abuse; for true logic is nothing else than common sense divested of those prejudices with which crude knowledge and fancy have blinded it. Fortunately we have our reason from nature, as we have our digestion, but the comparison does not hold good when we look to the results of our study of them. The physiologist indeed knows better what is good to be put into the stomach, and is more to blame if he breaks through dietetic laws, but his stomach is not a better stomach after he has studied digestion than before. But in studying the mind, we use and improve the instrument itself. The study of logic will in no way put reason or common sense into us; it merely clears away the rubbish, warning us of the pitfalls of prejudice, temper, and interest; for, as Bacon says, "the light of the understanding is not a pure light, but drenched in the will and the affections." Logic is to natural reason what grammar is to our language, and our study of it consists merely in tracing its laws or endowments, and of being made aware of, and put on our guard against, the errors into which our haste, our interests, our feelings, our prejudices, are otherwise certain to make us fall; it enables us to understand the laws of reason in addition to using them, and also, if we wish, to reason cautiously and soundly.

In no kind of investigations is this more required than in those of medicine, in which there are so many sources of fallacy. Medical men may claim the merit of being more cautious than any other class of educated men, in the reception of those novelties which are every now and then presented to the public. We are accustomed to ask and wait for facts and proofs; and our acquaintance with physiology, enables us to perceive physiological absurdity. It would be wrong, however, to confound this "slow consenting academic doubt," with what is commonly called "scepticism." It is that habit or quality of mind which is the readiest to believe when there are good grounds for believing, and which doubts or suspends judgment when there are not, or rejects when the facts are the opposite way. The state of mind to which the term scepticism is usually applied, is a very unenviable one; it is to be found among those who either cannot or will not reason. Yet, while we claim this credit for our profession, it must be admitted that many of us do not carry this caution into our daily therapeutical, or sometimes even physiological reasoning, in witness of which we have only to glance at the periodical press of medicine. How frequently do we see a conclusion drawn from one observation, one case; how many sources of fallacy have been unattended to, even in that one case. A medicine is given, and the patient gets well. It may have been one of three things; it may have assisted in the cure, it may have had nothing to do with it, or it may have retarded it; which of the three was it?

The advantages of such study, as applied to the medicine of the past as well as of the present, are too great to be more than indicated here. To see how the ancient physicians reared their now ruined but majestic systems, disputing about "the names of things which have no existence;" and how the medical atmosphere cleared up under the disinfecting agency of the Baconian or inductive system—not its invention, but its recognition and employment. And, now, to be able to recog-

nise the varied sources of fallacy and error; premature reasoning, one-sided reasoning, and bad or unmathematical reasoning; to be able clearly to distinguish reasons from wishes and fancies; facts from opinions, facts from theories, and bad theories from good ones; to understand the depth of Cullen's famous saying, that "there are more false facts than false theories in medicine," and his other saying, that men may be merely "the dupes of experience;" these, besides all the pleasure and enlightenment, are among the utilitarian benefits which such studies confer. Let me conclude these imperfect remarks on this important subject by recommending to your notice Dr Abercrombie's works on Mental Philosophy. They have the double recommendation of being thoroughly practical in their character, devoid of all fruitless speculation, and of having been especially intended for students and young medical men.

You will not, I trust, infer from these remarks that I recommend you in any way to neglect or slight your professional studies, to be great readers but poor surgeons, great philosophers but bad physicians; nor that I undervalue the man who has devoted his life to his profession, or to his one favourite science. This much may be said for such a man, that he at least knows that. There are wonderful differences in the amount and quality of knowledge concealed in different men's minds, although all use the same words; some men have literally laid up stores of knowledge, which they can call up and use when there is occasion, while others are like those merchants whose whole stock is displayed in the windows; and one solid substantial and profound man, is worth a whole troop of those who, with only "a mint of phrases," can talk about everything and know everything and yet know nothing. If you ever allow your profession to come second, you will deservedly lose your position in it. Always know at least one thing well, one thing that you are master of and feel confident in, and are looked up to for; and that thing must be what it is your duty and business to know. In these days of com-

petition and struggle, and rapid growth of science, to do this, it must be admitted, is no small thing; none but a very industrious man can do it. The time he can spare for more general and philosophical studies is small and interrupted, stolen as it were, but besides its own advantages, it gives, you will find, increased power and relish for professional labour.

IV. Next, let me say just a few words as to how you should aim at success. We sometimes hear the question raised whether it is talent or industry that is required, but this is not a practical question. Whether we have talent is a thing settled for us long ago; those who think they have it are often mistaken, and those who have it, and are aware of it, should be thankful for it rather than boast of it. In this aspect there is no merit in the possession of talent, although its value is not the less; but it is in industry that the merit lies; for, although we may say the power of being industrious is a gift also, yet it is in the power of most of us to be industrious or not as we choose. Talent or no talent, there can be no doubt industry is required, and a great deal of it too. Talent is the soil and industry the cultivation; and cultivation has just as much influence in developing abilities, as it has in developing often a very poor soil. The comparison holds farther in regard to those who trust to conscious talents, and neglect to train and use them, for although a rich soil left to itself is productive enough, it is for the most part weeds that spring up. All eminent men are, of course, men of talent, but it is not considered how hard these men have worked, and work. You are dazzled by a great reputation as by a great building, but the one has been made up, like the other, by hours and half hours of labour, beginning with the foundation, and for a long time, years of labour and obscurity, not showing much beauty or greatness. Do you think Harvey or Hunter were either idle or lazy men? How do the great men around you spend their days and their evenings? There is a great distance

between you and them; a great difference between John Hunter as a first-year's student, learning the bones, and the John Hunter that we think of; there is a great distance between a man at the bottom of a hill and a man at the top, but the way to get up is not to lie at the bottom and wish for wings, or wait for some one else to carry you. There is no royal road to knowledge, no way of giving industry the slip, no other way than to face it resolutely and go on with it patiently; work is both our doom and our safety; it is, as Dr Arnold expresses it, "the appointed calling of man upon earth, the end for which his various faculties were given, the element in which his nature is ordained to develop itself." Bacon, in his essay on youth and age, says, "A man that is young in years may be old in hours." I would have you think of that saying, and the application of it, both to the growth of the student in knowledge, and the ripening of the practitioner in experience. In the four years usually allotted to medical study, some will have studied two years, others eight. So it is with knowledge and experience in practice; years may be taken as the measure of it in the same individual, but not in different persons. It is thus that in our profession we so often see old heads upon young shoulders—"His years but young, but his experience old."

Set out with a general resolution to master your profession, and the general direction for the attainment of this, is, to make the best use of all your opportunities. Do not study merely to pass the examination; do not inquire how much, or rather how little, is needed; if possible, put the examination out of view altogether, till near the end; and having mastered the whole, or as much as you can, you will be prepared for all contingencies of which the examination is only one, and one which, whatever anxiety it may give him, the truly industrious student need not fear. Thus, deserving to succeed, you will, further, use only fair and honourable means to push youselves on. It is reckoned an excellent thing for a medical man to stand well with his pro-

fessional brethren; and very naturally so, as this implies, that they respect his knowledge, and have found him fair and honourable in his relations to them,—their reputation, their good name, their interests, their patients; and to rise by fair and honourable means is simply this, to work well and honestly at your profession, and do to your professional brethren as you would wish them to do to you.

There is just one other advice I would give you, as bearing on your professional life,—not to affect more knowledge than you possess, or qualities which you have not. This advice I give you, although to some it may seem not well suited for young men who have the world to go through, and although many proverbs and sayings might be quoted to the contrary. I am not afraid of your going too far in the opposite direction, and I speak of those who have accomplished all that can be reasonably expected at their time and in their circumstances, and have no occasion to be ashamed of not knowing more; to others, of course, silence is allowable. There is first the honesty and comfort of it, and then the fact that it is generally very well known what our qualities and extent of learning are, or at least what our deficiencies are; and that our estimate of ourselves does not make any difference, at least in our favour, on what others think of us; which is no less true than that, whatever our words may be, we will always be judged by our deeds. It is a common saying that honesty is the best policy, and it is a true saying, for it is always our interest to be open and straightforward; but it is not a nice saying, for it changes honesty into cunning, and implies what from the very nature of honesty is impossible. But it is satisfactory and encouraging to young men to know, that they will not be losers in the end by always following their generous impulses to do and say what they feel to be right; that, besides being a healthier and happier character, Mr Honest will generally also succeed better than Mr Worldlywiseman. Let us all try not merely to seem

but to be, leaving the seeming to take its chance; and let us adopt, at least, that part of Polonius' advice to his son

> "This above all,—To thine ownself be true;
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

V. In laying and following out our plans of life, instead of endeavouring to appropriate abstract truths and carry out maxims, we may try to follow the example of the great men whom we respect and admire. The practice is a good one, if we take care to avoid copying the externals and peculiarities, which being the visible signs, are apt to be confounded with or mistaken for the essentials, while the fact may be that they have retarded rather than assisted his progress. These models of excellence are, for precept, best taken from the pages of biography, as the excellencies of the departed appear in their pure light. There are few men, to borrow a forcible expression, whose "posterity has begun in their life-time," so that we may speak of them without jarring upon the interests, and arousing the prejudices and jealousies of others. I have somewhere read that one of the ancient philosophers, when asked whether he or his rivals deserved most praise, replied, "You must see us die first before that can be answered." The stimulus, however, is stronger and more direct if we can place before us a living model of excellence, and I shall venture, notwithstanding these difficulties, to present to you one, which will, I am sure, command the approbation of all; and as I am not one of those telescopic admirers who can see merit only at a distance, I do it with not the less pleasure that he is to be found without going far.

Even without having this object in view, the recent retirement of Dr Alison, at least from his position as an active teacher, is not an event which I could allow to pass unnoticed here. He has been the teacher of nearly all of us; he is universally known as a great physician, and no less as a public benefactor; his

reputation has long shed a lustre over, and contributed to give a high tone to, the Edinburgh School, by which we all benefit; and it is therefore with peculiar pleasure, and I trust with perfect propriety, that I embrace this opportunity of referring to him.

To discuss his qualities as a teacher and physician would be an uncalled for intrusion; but I may say he set us the example of a philosophical and true physician. I would define a philosophical physician as one, whose knowledge of his profession is profound, whose mind and views are, besides, enlightened and liberal, and whose love of truth made him a careful observer, a close and impartial reasoner, and candid in communicating his opinions to others. But still he is not in the truest sense a philosophical physician, unless, as Dr Alison also so well exemplified, the great practical element rises out of all this, asserting its supremacy as the culmination and object of the whole. No one more eager for post-mortem examinations, no one more ready and able to discuss a theory or a system; but amid all this, clearly distinguishing what concerned the patient; distinguishing between what might be said, and what was to be done; and always recollecting, to use one of his favourite expressions, which has a wide as well as a more exact application, that our object should be, not to treat the case on this or on that system, but always to "obviate the tendency to death."

To be a great physician necessarily implies great intellect or genius, and the exercise of industry, and besides these some heart too; for he who cannot enter into the feelings of a patient, or take an interest in him, is not likely to be acceptable or great as a physician. But the physician who has done this, is usually considered to have done his duty; and as he rises in his profession, nobody thinks of blaming him if he attends to his own interests, if he so shapes his course and so occupies his time, as to add to his profits, and lay up for himself treasure like other men,—while he leaves the less wealthy and the poor to his younger brethren, to take their turn of them as he has done before. But what we

all admired in Dr Alison was his singular disregard of his own interests in these respects; that it seemed to make no difference to him who the patient was; and that he spent a large part of his time in visiting those from whom he could receive no return.

Much as we may benefit the poor by our advice, there are ways in which we may benefit them still more; we may join with or lead others in efforts to prevent or alleviate their wants and miseries; to prevent disease is not less important than to cure it; and all medical men who have seen much of dispensary practice, whether at the institution or in the streets and lanes, know well, that what the great majority of the sick poor want, is food, and clothing, and comfort, more than physic, a friend rather than a physician. The labours of Dr Alison, in this direction, it is scarcely possible to overstate. It is to him that Scotland owes largely the introduction of her present poor-law, and, whatever may be said for the opposite views of another great philanthropist, as applied to thinly peopled districts, where neither the individual poor nor rich can well escape notice, there is no question of the necessity of the system advocated by Dr Alison as applied under all other circumstances, and especially in crowded cities. Those concerned in the disputes on this subject, now a good many years ago, know best the vast labour he took, both in collecting information and advocating his views, and probably none of his other writings cost him so much labour or interested him so much as those on this great public question.

Yet, although we may be interested in benevolent schemes, and relieve that poverty which comes to us, we may still not know much about the actual poor. It is to him who goes to them that they are truly known, and who gives unmistakable evidence of his motives and feelings.

> "His love sincere, his thoughts immaculate;
> His tears, pure messengers sent from his heart;
> His heart as far from fraud as heaven from earth."

Into private actions of this kind it is no man's business to

intrude; what is done in private must remain so, known only to the giver and the receiver and to Him who seeth in secret. But each of us may be permitted to allude to what he has himself seen. I recollect when we were hospital clerks, we were at first surprised, until we got accustomed to it, to find Dr Alison back upon us again in the evening, to see the more serious cases; and when we were students in dispensary practice, in the poorest streets and narrowest closes of the old town, we were at first rather surprised to come upon our professor of practice of physic in these regions. When we stopped him, he was always ready to go in with us to see our patient; and when we returned, we were not less surprised sometimes to find that he had been back again. In our attendance on such patients we not unfrequently found that some one had been there between our visits, and perhaps changed our young prescription for a better one; and who this benefactor was the patients did not always know, at least by name, until their description enabled us to tell them.

I recollect once going such a round with a young friend who had curious notions about physic, always doubting whether medical men believed in their profession. Coming out of the poor patient's house, my friend said, "Well now, I wonder if Alison really believes that that medicine will do any good;" and I said to him, "Well, I think he must, for you see, he has not only taken the trouble to come and give his advice, but you would notice they told us, he had paid for the medicine too."

I find an interesting circumstance recorded in that admirable book, the Life of Dr John Reid by my esteemed friend Professor George Wilson, a biography which all students of medicine will do well to look into. Dr Reid was thinking of beginning to lecture on physiology, of which Dr Alison was at that time the professor. Of course, every student in Reid's class would be one less in Alison's, but Reid went to Alison to consult him whether he should do it or not. "The result of the

consultation," says the biographer, "was foreseen by those who knew the parties. Dr Alison counselled Dr Reid to begin lecturing; and that he might be legally qualified to become his rival, the professor, in due time, proposed him as a candidate for the fellowship of the Royal College of Physicians." Few men would have given advice under the circumstances, and still fewer would have asked it; but you see there are people in the world who give unselfish advice.

Dr Alison's relation to the profession and his professional brethren, I would place particularly before your notice as an example. Although possessing too much individuality of character to permit of his being influenced by its conventionalities, he has always taken a lively part in its true interests and been influential in promoting these. I have heard it said he did not take sufficient interest in its affairs, but this is precisely what I have admired in him, because the "affairs" in question are best let alone for the true interest of all; for, intending to throw oil on the troubled waters, you will find you have only succeeded in adding fuel to the fire. Those who take part in these disputes and belong to what is called a party, are sure of two things; they will have some partisans, and they will have some enemies; whether they have any true admirers and friends, will depend, not on the side they take, but on their own personal and professional character. We may say of Dr Alison that the profession and the public could claim him as their joint property; that he has set us the example of living in a region far above that of party, and yet, and thereby, serving the true interests of the profession; and his life has taught us, in this respect, that large truth, that we shall best benefit our profession and our brethren, not by protesting and crusading against their real or supposed faults and errors, but by each of us, in his own sphere, setting the example.

I would refer also to his care of the good name of his professional brethren and colleagues, and may do so appropriately, by

quoting a passage describing the character of Cullen in this respect. The writer says "During three years that I attended his public lectures, and for upwards of thirty years that I was indulged with his private acquaintance, I can with truth aver, that, neither in public nor in private, did I ever hear a single expression drop from him that tended directly or indirectly to derogate from the professional character of any of his colleagues, or that could induce a student to think lightly of their talents as professors or of their abilities as physicians."

It is not easy to estimate the benefits of a life thus spent, whether to the profession or to the community at large. It is felt throughout the land wherever destitution exists, and the name of such a benefactor is known where scientific fame could never have penetrated. In this respect we may say of him, as was said of a great and good man long ago, that he "dispensed blessings by his life, and planned them for posterity."

The benefits to the profession extend in all directions. His lectures and writings have had, and will continue to have, an influence, not merely from the information and experience conveyed, but from the philosophical and true spirit and tone which pervades them. As practitioners, we have been taught, that, besides being learned, and deep, and philosophical, we must, above all, be practical. As students, we had before us the daily spectacle of greatness accompanied by perfect unconsciousness of it; and have seen, that scientific greatness is not incompatible with simplicity, and humility, and kindness, and moral worth, but receives dignity from them; uniting to create a character which no one fears, but whom all venerate and love.

But to none is the encouragement and lesson greater than to the teacher, who may see illustrated the influence which his mind and character may exert on the student; an influence, which, reaching into and multiplying itself in the future, it is scarcely possible to over-estimate. It is an influence which, they say, has sometimes been exerted for evil; now-a-days it

could scarcely be so, for the teacher who would thus prostitute his genius or knowledge, would be alike despised and avoided by the student. But his influence may still be negative, and if so, if his students recollect him only as a person who lectured science to them and signed their certificates, he has, to say the least of it, thrown away the best opportunity of doing good he is ever likely to have. It is well written—

> "The evil that men do lives after them,
> The good is oft interred with their bones;"

and while the teacher may recollect that to him the first thought strongly applies, he may console himself that the second does not; but that, in the practitioners he has sent practising, and the teachers he has sent teaching, his spirit may live long after he himself has passed away.

THE END.

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