Medical work and medical education : an introductory lecture delivered at Surgeons' Hall on the opening of the session 1867-8 / by T. Grainger Stewart.

MEDICAL WORK

AND

MEDICAL EDUCATION:

AN

INTRODUCTORY LECTURE

DELIVERED AT

SURGEONS' HALL ON THE OPENING OF THE SESSION 1867–8.

BY

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GENTLEMEN,

When we examine some of the lower forms of the animal kingdom, we find all the vital functions performed by one and the same structure. Each part of the organism can fulfil any of the simple functions which the exigencies of the individual require. With the same structure it feels, it moves about, it seizes its food, it absorbs. That portion which has been its outer covering becomes folded in, as occasion requires, to form a stomach; and when its work in that capacity has been accomplished, it again opens up, and the insoluble remnants are discharged. There is no differentiation of structure and function, no adaptation of structure for particular work. But when we advance to higher forms, we find that such differentiations do exist. Appropriate organs are set apart for particular functions. The animal moves, breathes, feels, sees, hears, prehends, digests, excretes by distinct structures, specially adapted for each of their functions, and each one fitted for one only. And the higher we advance in the animal series, the more marked does this become. Thus the special powers of the individual parts of the organism are increased, while the sum of the powers of each is diminished.

We find the same principle exemplified in communities. In the simplest social condition there is no separation of offices, no setting apart of individuals for particular work. Each rudely performs for himself all the simple duties of life. Each man does all that his neighbour does, grows or kills and prepares his own food, fights for himself, clothes himself. But as civilization advances, all this becomes changed. Individuals devote themselves to particular occupations. They do certain work for the community, and in return, more or less directly, get other work done for them. It

might be interesting to inquire in what order the different occupations came to be developed. This would probably differ according to circumstances; but we may perhaps find the type of it all in the old Mosaic record—that Jabal became the father of such as dwell in tents and have cattle, and his brother Jubal, of such as handle the harp and organ. Whatever the order may be, it is very certain that as civilization advances separation of trades becomes more marked, and they even become subdivided.

Take as an example of this what we see in our own profession. The country doctor is called upon to act in all departments of professional duty. He is at once physician, surgeon, and accoucheur; he is oculist, aurist, dentist; he knows the diseases of children and of old age, and the maladies peculiar to women. He has to manage difficult and anxious cases of mental alienation; has to act for the Crown in medico-legal matters, and sometimes is officer of public health. And, gentlemen, let me say that it is wonderful, considering their variety, with what skill all these functions are in general performed. Take, on the other hand, the state of the profession in the great centres of civilization. Each department has there its special cultivator. Each of the branches I have mentioned, and many besides, are practised as specialties, and thus the profession is greatly subdivided. This arrangement is of course beneficial, for the specialist has almost of necessity special skill in his own department, and has good opportunity of contributing to the advancement of knowledge regarding it; but, as a rule, their general professional acquirements do not equal those of the country doctor.

Thus, gentlemen, you see how in communities, as in the animal series, a gradual differentiation of work takes place.

This consideration may, in some degree, help us to realize the relative duties which the individual members of a community owe to one another, and, in particular, may be useful to us as enabling us to perceive what we as medical men undertake; and as we would not have those who work for us do it ignorantly or carelessly, so must we thoroughly prepare ourselves for what we have to do, and being thoroughly prepared, earnestly do it.

It is not my purpose here even to glance at many of the departments of human labour; but it is well that, in any of them, work well done earns a noble reward. There are, however, four departments which stand out prominently from the rest, which are worthy of special notice, and may suffice as examples of the whole. There

is first, a class whose office it is to defend the community; secondly, one whose aim it is to maintain justice between the different members of the community; thirdly, one which cares for the health of the bodies and minds of the members; and, lastly, one devoted to the highest interests—the relationship of the members of the community with God. Now these professions of Arms, Law, Medicine, and Divinity, are in their nature noble, and in their exercise well fitted to inspire with enthusiasm any generous mind. Although our work is the very opposite of his, we can all sympathize with the ardour of the soldier, stimulated alike by love of country and the memory of the achievements of those who have gone before him. Who can fail to enter into the feelings of self-forgetful devotion with which he is ready, when occasion requires, to march

"To the death for his native land!"

And let me say a word for the profession of Law, which I think scarcely holds the place in public estimation to which it is entitled. This arises, doubtless, partly from the delays which appear invariably to attend its administration, partly from the great difficulty which is often experienced in arriving at a just conclusion, and the diversity of opinions and decisions which necessarily flows from this; and not a little from the fact that in all litigations, one, and in many both parties, are dissatisfied with the result; but, gentlemen, when rightly fulfilled, the Law is a god-like profession, for it is devoted to the maintenance of justice between man and man. Few, again, can fail to recognise the nobility of the clergyman's office. Careful students of men, seeing them closely at the crises of life, when conventionality breaks down and the real nature stands revealed, thus versed in the mysterious workings of the human spirit, and, on the other hand, walking closely with God, they strive to make their own experience helpful to their fellow-men, to instruct them in the divine word, and to lead them to a higher life. Of the profession of Medicine I must speak more in detail, for it is that with which we have specially to do; but first, let me say, that as you would not have the soldier neglect his preparations or fail in his duty in the day of battle—as you would not have the lawyer neglect your case or disregard the interest of his client—as you would not have the clergyman carelessly and indifferently trifle with the sacred interests intrusted to him—so must you, as

medical men, prepare yourselves thoroughly, and honestly and laboriously perform your work.

And now let us look more minutely into the nature of the duties undertaken by the members of our profession. These duties seem to me divisible into four departments—viz., protection from disease, the cure of disease, the relief of suffering, and the affording satisfaction to the minds of the patient and his friends.

Protection I have placed first, as it is at once our noblest prerogative and most productive field of effort. It presupposes a knowledge of the causes and laws of disease, for unless we know them, how can we ward it off? Now, these causes are of two kinds—external and internal—the external operating from without, the internal from within the system. Every malady arises from a combination of both these causes, while in different instances the proportion of the two elements varies. Protection thus naturally divides itself into two classes—viz., the warding off of injurious influences in the surroundings of man, and the combating the morbific tendencies of man himself. The former is the special department of those intrusted with the public health, in which, however, every medical man ought intelligently to participate. The latter is in the domain of the family doctor.

In the former of these departments splendid triumphs have already been achieved. Diseases once prevalent and fatal have been made to disappear, while others which still linger among us have been deprived of their virulence. These results have been effected, in some cases, by eradication of the cause; in others, by the discovery of special prophylactics; in others, again, by the adoption of measures which prevent the propagation of the malady. A hundred years ago agues were common in this country; now they are scarcely known, their causes having been eradicated. By means of vaccination there are saved every year, in the United Kingdom alone, between 80,000 and 90,000 lives. In the end of the last century, the deaths from smallpox annually were 3000 in every 1,000,000 of the population; the mortality is now under 200, and even that number is diminishing year by year. As an example of the results of attempts to prevent the propagation of maladies, I may mention the fact that, notwithstanding its immense trade, and the constant influx of immigrants from all quarters of the world, the colony of Victoria has never been visited by smallpox. The laws which regulate the propagation of this disease

being well ascertained, and an efficient quarantine having been established, the disease, although it has often reached the coast, has never been allowed to establish itself on land. Once only, by the dishonest misrepresentations of the captain and surgeon of a ship, a case was smuggled through, and one individual affected with it landed. From him about twenty caught the infection. The authorities then interfered; all the affected were isolated in an inland quarantine establishment, and not another individual took the disease. From that time till 1864, and so far as I know to the present moment, not a single case has occurred. Among the recent achievements in the way of protection from danger, it seems to me that the introduction of carbolic acid as a dressing for surgical wounds is entitled to take a high place. The evidence with regard to it is not yet by any means complete, but experience appears to prove its value.

Remarkable as these achievements are, I do not doubt that equal triumphs yet lie before us. Other causes may be uprooted, other diseases may be prevented by prophylactics, a more efficient guarding of our coasts, and more complete isolation of those affected with contagious diseases at home, may diminish our mortality to an extent which we can now scarcely conceive.

The best means for obtaining this desirable result is a careful investigation of the morbific agents which are occasionally present in the three great surroundings of men—viz., the atmosphere we breathe, the fluids we drink, and the food we eat (if the two latter may be called, for convenience sake, by this name). Morbific conditions of the atmosphere, whether originating in itself, emanating from the soil, resulting from chemical or vital changes in plants or vegetable matter, from the products of human industry, from excessive accumulation or chemical alteration of natural human emanations, or from pathological processes—all these we shall, doubtless, on ascertaining their nature or source, be able to prevent or remove. Morbific conditions of water and other fluids, and of food, if once ascertained, might probably also, in many cases, be eradicated.

I doubt if the value of quarantine and isolation of those suffering from infectious diseases are sufficiently appreciated among us. The single fact I have just mentioned should impress upon you its value on the large scale, but another instance may better show how much may be effected by judicious arrangement in limited out-

breaks. A ship sailed from China for Melbourne with 500 unvaccinated Chinamen on board. An Englishman, who had secured a passage, took smallpox a few days after they had set sail; and although he was ill all the time he was on board—at least thirty days—by carefully keeping him isolated, no other case occurred. What was done on board that vessel might be done among us at home, and thereby many outbreaks of contagious diseases might be prevented. Instead of patients being allowed to go about and sow the fatal germs everywhere, they might be separated, and the spread of the malady arrested. I was lately informed, on high authority, that a woman had been seen selling sweets to children in Glasgow, while a smallpox rash was distinctly visible in her face and hands. Surely such a case indicates the desirability of compulsory isolation.

Another question as to protection from disease has lately been mooted by an eminent medical authority—viz., Ought we to protect our patients from hospitals? in other words, is the mortality in hospitals relatively greater than that from corresponding diseases in corresponding classes of the community beyond their walls? The question is of much importance, and deserves thorough sifting; and I hope, ere long, to contribute something to this end in regard to our own city. In any inquiry we must, of course, distinguish four classes of hospitals—viz., Maternity, Surgical, Fever, and Medical, and satisfy ourselves as to the merits of each of them independently. We must also distinguish between accidental and preventable, and essential or unavoidable disadvantages. It appears from M. Lefort's statistics that the results of maternity hospitals are eminently unsatisfactory. It were premature, with the data before us, to pronounce as to the other kinds of hospitals, but I trust that, ere long, the subject will be looked into, and abundant facts supplied.

The protection which lies within the province of the family doctor, though less obviously important, is also well worthy of notice. The skilful medical man, well acquainted with the constitution of his patients, can, by careful management, fortify them in their weak points; and, warning them of danger, induce them to avoid influences which, though innocuous to others, might be hurtful to them. To help patients in the selection of residence, in the regulation of education, in the choice of profession, to watch for and combat the first insidious beginnings of constitutional disease, are, I think, among the noblest offices of the physician.

Cure of disease is the second of the departments of professional work. This must always be our aim when disease has become established. You will find that it is accomplished in two ways or by two methods—viz., mechanically, by the employment of mechanical appliances, and vitally, by the administration of agents which modify the vital processes of the organism. When the former class of agencies can be employed, as is commonly the case in Surgery and Obstetrics, and to a more limited extent in Medicine, the results are often obvious and speedy. Whereas with the latter, our results are less certain and striking, and often more tardy in their manifestations. This is mainly in consequence of the exceedingly complicated character of the processes of life, and of the difficulty which we experience in influencing them. As an example of cure by mechanical means, the ordinary treatment of a fracture may be mentioned, of cure by vital agencies, that of ague or of periodic neuralgia by quinine; of convulsions by chloroform, or, to take a slower instance, of inflammatory Bright's disease by diuretics.

But, gentlemen, if in the field of prevention much remains to be done, there is very much also in that of cure. It is comparatively little that we can do in this, but we have already accomplished so much that we are warranted in confidently expecting, one day, to attain to much greater discoveries.

Relief of suffering is in the individual case of less value than cure of disease, but it is much more widely applicable. It is effected by the same two classes of agents—viz., mechanical and vital. Of the former class, we may select as examples, paracentesis abdominis, which so often relieves pain in hopeless cases; or that invaluable instrument, the catheter, by which so much suffering is obviated: of the latter, the vital, we may mention sedatives in painful diseases and in operations.

To afford satisfaction to the minds of the patient and his friends is the last of our four departments. Many a time you will find yourselves, in practice, questioned with profound anxiety as to the nature of an ailment and its probable result, and to your questioner your verdict is of an importance that you can only know when you, in turn, occupy his position, and make the same inquiries as to one you love. Be your opinion favourable or unfavourable, it is, for the most part, welcomed, as dispelling fear or letting the worst be known. Depend upon it, gentlemen, that if cure, or even

relief, were out of our power, the whole science of Medicine would be worth maintaining for the sake of diagnosis and prognosis alone; or, as we have expressed it, for the satisfaction of our patients and their friends.

Such are the very important duties which, in adopting the profession of Medicine, you undertake to perform in the community. I shall not refer in detail to higher and nobler offices still which our profession gives us opportunity of fulfilling, but I cannot pass them over in silence. I would, indeed, commend them to your most earnest consideration as at once a sacred duty and a lofty privilege.

Such being, in outline, the work which you propose to undertake in your future lives, it is all-important for you now to ascertain how you are to fit yourselves for it.

Looking forward from the position which you now occupy, I would have you recognise three points which may be kept specially in view—three points which may be likened to successive eminences rising above one another. The nearest of these is the examination—a point of no little importance, but which often usurps too prominent a place in the minds of students. I can scarcely wonder, indeed, that as one approaches this ridge, it should shut out from view the more lofty eminences which lie beyond. But I would warn you against confining your attention too closely to it. Remember that there are more important heights to scale beyond it, and that honest, steady work, though not particularly intense, will carry you through your examinations easily, provided you do not indulge your taste for certain departments to the neglect of others. On the other hand, you must remember that your examinations require earnest work. It is true that some men struggle through after a hasty grinding process, but attempting to pass with such a preparation as that affords is at best uncertain and is always unsatisfactory. Even if, by a dexterous concealment of ignorance and show of knowledge, you do elude the examiners, you will discover that you have only surmounted one difficulty to find yourselves at the foot of another ascent much more arduous, and in which your conduct concerns not yourselves merely, but others. I would, therefore, have you keep in view, even now, the second ridge, that of competence for, and—its consequence—success in practice. It is true that, in practice also, some succeed after a quackish fashion, without competent knowledge, but their success is at best precarious and insecure; for, conscious that they

do not understand the cases they treat, they uneasily grope their way along, constantly exposed to the risk of being found out by intelligent patients. Remember, then, that, in order to success, you must aim at making yourselves competent practitioners. But I would have you raise your eyes to the third ridge, which, though less obvious, towers far above the other two—viz., the honest, efficient performance of the work you undertake in the community. Happily a recognition of this, and steady working with our eyes set on it, renders comparatively easy the passage of the other heights, and ennobles the whole life-work.

In order to a satisfactory fulfilment of the office of the medical practitioner, it is essential that we thoroughly master many departments of knowledge. You are assembled here for the purpose of entering on or pursuing these studies, and I desire to explain to you how they may, in my opinion, be best conducted. Tracing down from the completed edifice to the foundation, we shall see how the different branches of knowledge stand related to one another. Professional work is commonly divided into the three departments, Medicine, Surgery, and Obstetrics. In special courses of instruction, you have the opportunity of becoming acquainted with each of these. In order, however, to a competent knowledge of them, we must be acquainted with pathology, the science which treats of the nature of disease, and with therapeutics, that which treats of the nature and action of remedies. Now, on the one hand, pathology,—including, as it does, morbid anatomy, the structural changes induced by or constituting disease, and pathology proper, the abnormalities of function connected therewith,—demands a previous acquaintance with normal anatomy, the healthy structure of the body, and physiology, its normal functions. Therapeutics, on the other hand,—including, as it does, the appearance and character of the different articles of the materia medica, and the actions they produce on the body,—renders desirable a knowledge of botany, and demands a study of chemistry, and, in so far, also of physiology. But chemistry you will find is also essential to a knowledge of physiology and pathology, and still more of another department—viz., medical jurisprudence, which treats of the application of our professional knowledge to legal questions and to questions of public health. Look with me more in detail, for a little, at each of the departments to which we have thus referred, and let us take them in the reverse order—the order in which you study them—that is, from the foundation upwards.

I shall not refer to the preliminary branches which are now so properly required by the examining boards, but shall pass at once to the professional departments.

Botany, although not entitled to a foremost place, is, if rightly taught and understood, very valuable to the medical student. The anatomy and physiology of plants throw light upon the corresponding departments of the animal kingdom ; and a knowledge of systematic botany,—of the different classes of plants, of their general characters, habitats, actions, and uses,—is very useful in the study of therapeutics, and, under exceptional circumstances, may prove of special practical value. But apart from all these considerations, botany is of importance as a simple, and, to most minds, an agreeable observational science. It affords an excellent opportunity for the cultivation of the faculty of observation, which is so essential to the medical practitioner. But I have no word of praise for that kind of botany which consists merely in burdening the memory with long and useless names. It is the botany of the field and garden, rather than of the lecture-room, that I would commend. Other departments of natural history are well worthy of study, and may be commended to students who have time and opportunity for their investigation.

Chemistry is of great importance in relation to therapeutics, as affording an intelligent appreciation of the nature of drugs, of the suitable combinations, of the changes they undergo in the system, of the modes of counteracting them when taken in injurious quantity or form; in relation to medical jurisprudence in the detection of poisoning and other crimes ; in relation to physiology and pathology, and through them to practical Medicine and Surgery, affording important information as to the nature of the changes which are taking place in the body in health and disease, both in its structure and its secretions, and many indications for diagnosis and treatment. Surely, gentlemen, a science which can yield so much is worthy of assiduous cultivation. To become an accomplished chemist requires almost the labour of a lifetime, and it is not to be expected that the ordinary medical student can do more than attain to a general knowledge of it; but its principles should be understood by all, and the more complete your knowledge of details, the better. For the study of chemistry you will find three separate courses : one of systematic lectures, one of practical, and one of analytical instruction. The two former are required by the boards, and should be carefully attended by all. The latter I would commend to

those who have leisure, or who desire really to excel in the department.

Anatomy is the essential foundation alike of Medicine, Surgery, and Midwifery. It includes the naked eye and microscopic appearances of the different parts and structures. It is taught by means of systematic lectures, demonstrations, and dissections. I beg you to avail yourselves most earnestly of the opportunities thus afforded. Do not expect that the subject is to be easily mastered, or, having been mastered, is to be easily retained; but by diligence you will find that, after a time, it is easy, and when you come to connect it with practical points, you will find it more memorable. Always, when you are working at dry details of what seems to you useless information, bear in mind that it will have its uses, and that it will some day stand you in good stead. Look forward to the practical application. Above all things, be careful in your dissections. Be sure that you see the structures which you find described in your books. Dissect thoughtfully and never hastily, and you will find delight not merely in the acquisition of knowledge, and in the use you hope one day to make of it, but in the recognition of the marvellous beauty of the arrangements by which the functions of the economy are subserved.

Physiology, the science which treats of the functions of the body, ranks alongside of anatomy in importance, and before it in interest. This science is advancing with astonishing rapidity, and each discovery is bearing practical fruit. It is but a few years since Sir Charles Bell demonstrated that sensory and motor nerve fibres are distinct, and what wonders have been accomplished since then! Marshall Hall has taught of reflex action; John Reid, of the functions of the eighth pair of nerves; Claude Bernard, of the sympathetic; and Brown-Sequard, of the spinal cord; and each of them has immensely contributed to the advance, not only of the science, but of the art of Medicine. Surely such a department of study will at once delight and benefit you.

Pathology properly includes morbid anatomy and morbid physiology. The former branch of the subject I would specially commend to your notice, for if it be neglected during student days, you will find the loss irreparable. When engaged in practice you may learn many things which you discover you have neglected, but morbid anatomy you never can study except in connexion with a great hospital. You should therefore attend diligently at the post-mortem theatre. But

the benefit to be derived from such attendance is comparatively slight, unless you have systematically studied the subject. You may go to the theatre, hear the specimens named, see their general features pointed out, and yet find it "stale, flat, and unprofitable." But when you have learned to understand the value of the lesions, every dissection becomes replete with interest, and you are prepared intelligently to compare the pathological conditions in every case with its clinical history. I should greatly like to see this study carried out more fully than it yet is in this school. I should like to see every student acquainted with morbid histology, in order that he might thereby more clearly apprehend the real nature of the structural changes. Morbid functions you will find partly taught in the classes of pathology, and partly in those of Medicine and Surgery. Its importance is so obvious that I need not enlarge upon it.

Materia Medica and Therapeutics includes a study of the nature, action, and uses of the different articles of the pharmacopœia, and deserve the most careful attention. In this study I would advise you to work as much as possible with the specimens before you, as you may do in the museum of my colleague here, or of the Royal Medical Society; and very specially I would recommend a more zealous use of the opportunities afforded by the practical pharmacy departments of the dispensaries, or of the druggists' shops in which you may be seeking experience.

Beyond these there arise the practical, or directly practical subjects. Those which we have considered constituting the science, we now turn to those which treat of the art of Medicine.

Surgery and Practice of Medicine are taught systematically and clinically. By the one plan the whole series of diseases are discussed in succession; by the other, individual cases are selected from those under observation in the hospital, and are made the subjects of careful comment. I would not underrate the value of systematic lectures, but I believe it is almost impossible to overrate clinical instruction. Under careful and judicious surgeons and physicians, you have opportunity of acquainting yourselves with the features and management of disease, and thereby you acquire more information in a few months than years of reading could confer. All of you should aim at dresserships and clerkships. They bring you into personal contact with patients on the one hand, and with your teachers on the other, and render doubly valuable clinical instruction.

Among other means of acquiring practical experience, I would recommend dispensary practice. It brings you into contact with other phases of diseases than those met with in hospitals—phases which, however, approach more nearly to those occurring in general practice. In that way you study also under special advantages, seeing that at any time you can call in as consultant the medical man under whom you are acting, and from whom you may ascertain the nature of your patient's complaint, and the appropriate treatment. Most earnestly I beg you to make sure of understanding your cases. Do not acquire a habit of slurring them over in an unsatisfactory manner. To ascertain their nature fully you will find arduous at first, but after a time it becomes easy, and is alike pleasant to you and profitable to your patients.

Obstetrics also must be studied, not merely theoretically and systematically, but clinically. Make good use of the opportunities of gaining experience which our medical charities afford. Strive to make yourselves thoroughly masters of this department, for it is the best means of introducing you to practice.

Medical Jurisprudence must be studied systematically, and deserves your closest attention; but here, also, I would impress upon you the value of practical work. You should embrace every opportunity of witnessing and taking part in post-mortem examinations; and you should learn to draw up formal reports, so that, when some day you are called upon to conduct a professional inquiry, you may not be at a loss, nor be ignorant of the precautions which you ought to take, and of the form in which your report should be drawn up. Study this, so far as possible, practically.

Besides these great departments, there are other subjects which deserve special attention. In the ordinary surgical wards you may acquire a competent knowledge of all departments of Surgery, excepting that of the eye. I would therefore advise you to attend the *eye wards*, and, if possible, also one of the eye dispensaries. I would also recommend careful attendance at the wards devoted to the *diseases peculiar to women*, in order that you may become practically acquainted with that important class of maladies.

Mental alienation should be studied by all medical men, and you will act very unwisely if you do not avail yourselves of the opportunities here afforded you of making yourselves acquainted with it.

Diseases of Children also require special notice; for you will find in practice that much of your time is devoted to them, and that in

their diagnosis you require a special skill, and in their treatment a special promptitude and a calmness, beyond what is needed in the management of cases in the adult. The Royal Hospital for Sick Children affords you ample opportunities of making yourselves acquainted with these affections. Attendance there is not required by any of the examining boards as yet, but you are made welcome to visit the hospital, and you will find that, on certain days, careful clinical visits are made, and the cases explained. Master the diseases of children, and you will secure a very important aid to success in practice.

From this hasty sketch of the work which lies before you, you will perceive that the information to be acquired is great and varied; indeed, if it were necessary to study only from books and lectures, I believe it would be impossible for you to acquire it all. But when they are studied practically, when you have to learn the characters and properties of objects, which you may handle and examine for yourselves, the difficulty is greatly diminished. Practical work renders the acquisition of knowledge easy, and at the same time confers a definiteness on our conceptions. How vague are our notions of the geography of a country which we have never visited, how easily are its features remembered if we have even once travelled through it. So it is with professional work. Merely to read descriptions of structures or of diseases is most purposeless; but to see things for ourselves, and to handle them, gives us an impression which is not easily effaced. I well remember my first attempt to conceive of a vertebra from Quain's description of it, and of the ease with which its main features were impressed on my mind when I had an opportunity of examining and handling it for myself. What amount of description could enable us to conceive of the rash of scarlatina or of measles? Yet how easily are their characters impressed upon us, and how readily are they recognised if they have once been seen.

I would urge upon you most earnestly to take advantage of all opportunities for practical work. But remember, gentlemen, that in it, as in reading, there are two very different ways of working. You may spend hours in reading, but unless you reflect upon and turn over in your minds what you have been reading, your reading will be in vain; and you may be outwardly a diligent practical student, much in the dissecting-room, the laboratory, and the hospital, yet you will learn little unless you observe and care-

fully consider the objects presented to your attention. Try so to economize your time that you shall have leisure in the evening to think over the work you have done, and the facts and ideas you have acquired during the day.

There is one other point to which I wish for a moment to refer—viz., the *tutorial system*. This system, if rightly applied, is of inestimable value both to students and teachers. Until lately, it was, perhaps, in some degree neglected in Scotland; it has now, however, come into general use, but perhaps, in some cases, it has been introduced somewhat unwisely. There dwelt in England a man whose proportions were such as to render his life a burden to him. He was, in fact, the Mr Banting of his day. Resolving, like his illustrious successor, to diminish his bulk, he devised a kind of pudding, on which he fed with the happiest results. The fame of this pudding spread, and it came into general use among those who were similarly burdened, but it did them little good, because they simply superadded it to their ordinary diet. This, I fear, has been to some extent the case with the tutorial system in Scotland. We had a superabundance of lectures. The student's time was already too much occupied with formal discourses. The tutorial system was introduced, but was superadded to that already in existence. Saturdays, which should be devoted to rest or to recreation, which is a better rest, were demanded also. The Friday evenings, which had formerly been spent in the instructive and delightful halls of the medical societies, were required for grinding purposes; and so, on the whole, perhaps matters were made worse than before. A lecture hour each week should, if possible, be devoted to examination. This is done in many classes, and in all with marked advantage.

Having indicated the field of labour which lies before you, I need scarcely tell you of the necessity there is for diligence; but I will say a word of its reward. Master your profession thoroughly, and you will gain for yourselves esteem and affection; success in practice will almost certainly be yours; you may attain to positions of usefulness such as are enjoyed by the members of no other profession. Some men are born with powers which specially fit them for the work of the physician or surgeon, but happily this is not necessary. Any man may, by diligence, make himself a competent practitioner. None of you need despair of success, or even eminence. Poets are born, not made; no amount of diligence could

convert a Tupper into a Tennyson; but it is not so with doctors. The man who, like Astley Cooper, knows at first sight what it is best to do for a surgical injury, could never be great without laborious study; and the man who stands before his first case abjectly helpless, may, by diligence and perseverance, make himself in the end a reliable and ready practitioner—nay, may even become rich in resources. Of course this could not be the case if professional success demanded the highest mental endowments, if we expected as much of the ordinary doctor as we do of the poets who sing to us. Doctors who will command the attention of the world cannot be made by mere diligence. We cannot hope, by such means, to raise among us another Goodsir. But for the everyday work of the profession, noble as it is, such as I have endeavoured to explain to you, honest diligence will procure the fitness.

Ere I close this lecture I must remind you that, but for an unlooked-for event, another of your teachers would have occupied this place; other thoughts would have been brought before you; another voice would have spoken words of counsel and cheer. Death, as it seems to us too soon, has deprived us of one whom we deeply esteemed as a colleague, whom you valued as a teacher. Death has not broken the ranks of lecturers here since a teacher of Surgery, Richard Mackenzie, died after too arduous labour on the field of the Alma. Under different circumstances, less interesting to the public, but not less noble in our estimation, died Dr Scoresby Jackson. Well aware of the risk he incurred from the delicacy of his constitution, he day by day exposed himself unflinchingly, in the discharge of professional duty, to dangers from which the boldest are apt to shrink, and in the discharge of these duties he fell. He died at the age of thirty-five, but not before he had earned a wide reputation. He graduated in 1857, and after two years spent abroad, returned to practice in Edinburgh. He was appointed lecturer on Materia Medica here in 1862, and in 1865 became physician to the Infirmary. He was the author of three excellent works: a Biography of his uncle, Dr Scoresby, a book on Medical Climatology, and a Note-book on Materia Medica. The last is or will soon be familiar to you all, the others you will find well worthy of perusal. He was also a contributor to the "Transactions of the Royal Society," and to the medical periodicals; and it was peculiarly sad to notice that, on the morning on which he

died, two papers from his pen were published in the "Edinburgh Medical Journal." Of the many activities of his life I cannot speak, but let me say that he was untiring in his efforts for your benefit. He was warmly interested in the Medical Students' Christian Association, and a zealous upholder of medical missions. His character may be expressed in two words, which constitute almost the highest praise of which our language is capable,—he was a Christian and a gentleman.

I would have you learn from his career how much may be accomplished in a short lifetime by earnest work; but there is another lesson of deeper importance which it is fitted to impress upon all. Each of us is, in a sense, living two lives. There is the outward life of work, of effort, of achievement, of failure—the life seen of men; but there is also a hidden life—that of denying self and serving God, or of serving self and denying God—a life unseen by the mass, and perhaps little known even to our companions, but well known of God. While sedulous with the outer life, Dr Scoresby Jackson was ever watchful of the inner also; and worthy of admiration as was the one, still more admirable was the other. And though the outer life, abruptly ending in the midst of promise, might be fitly symbolized by a broken column, the inner, as we think of its completeness and its symmetry can be expressed only by the finished, perfect, pointed obelisk.

Gentlemen, I have already detained you longer than I could have wished, but the importance of the subjects must serve as my apology. One word in closing. Now, in the morning of life, as the shadows are long before you, and you look forward with joy and cheerful anticipation, live, I implore you, so that, when the evening comes, and the shadows are long behind you, you may be able to look back without regret, and forward with a brighter hope. Let your motto be—"οὗ εἰμὶ ᾧ καὶ λατρεύω"—"whose I am and whom I serve;" and you will find that you have solved the problem and difficulties of your calling, and discovered the true philosophy of life.

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