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ADDRESS
TO
MEDICAL GRADUATES

OF THE
UNIVERSITY OF EDINBURGH

DELIVERED ON 1ST AUGUST 1889

BY
ALEXANDER CRUM BROWN, M.D.
PROFESSOR OF CHEMISTRY

EDINBURGH: DAVID DOUGLAS
1889

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*Address delivered at Medical Graduation in
the University of Edinburgh, August 1, 1889.*

GENTLEMEN,—It is my pleasing duty to welcome you as graduates of this University, and as members of the medical profession. A very important stage of your life has come to an end; you have now come to one of those points where, for a moment, we can look back and look forward.

You look back over the last four or five years,—years I believe most of you can testify of quiet and happy work, disturbed by no anxieties except those, which you can now smile at, of impending examinations. You can now think of the time when you began your medical studies, and recall the ideas, the hopes and the fears of that now distant day. How differently things look now. The change is not in medicine—though since you began your studies progress has been made—it is in you. I do not refer to the knowledge you have acquired, to the store of facts treasured in your memories, but

to the change which has come over your mode of thinking and acting. Ways of thought then untrodden have been converted by frequent use into intellectual highways—forms of thought and action then unfamiliar have become habitual. It is this mental and bodily road-making that is education. I say bodily as well as mental road-making, for just as the muscles of the blacksmith's arms, and not only his muscles but the whole nervous apparatus connected with them, are strengthened and made more fit for their work by constant use, so no doubt a great material change takes place in the whole nervous system in the course of a complete education. The formation of habits, even habits of thought, is not a purely mental process; the material organ of thought is essentially involved, and this is of course still more distinctly seen to be the case with these habits, and they are the great majority, which are not simply habits of thought but involve elements of sensation, or of action, or of both. When we do a thing for the first time, we have a free and unbiased choice as to how we are to do it, but the second time our mental and bodily machinery has been so affected by the thing having been already done in one particular way that it is easier for us to repeat our action than to try another way, and after we have done it often the arrangements for doing it in the old familiar way have become so much a part of our organisation that it requires a great effort to make even slight changes in our method. Such habits have come to resemble very closely reflex actions, if indeed they are not in their nature of the very same kind.

You know that the mechanism which gives rise to reflex action is essential to the life of an animal. Man has fewer of these instincts, or ready-made roads, than most animals. He has to make good this deficiency by education. To take another metaphor, our garden, as we inherit it, contains comparatively few plants. It is, in the first place, for those who have charge of us in our infancy, and as we grow up more and more for ourselves, to decide whether we shall plant there evil trees bringing forth corrupt fruit, or good trees bringing forth fair fruit. The lower animals have no such responsibility. What with them corresponds to our garden is a wilderness, with wild plants, with all the beauty of untended nature. We cannot have that. Our conscious responsibility brings with it the possibility of weeds, of mean and vulgar attempts at order, of pretentious imitations of beauty, but it also brings with it the possibility of cultivated excellence, of fruits greatly exceeding in fairness and in use the crab apple or the sloe of the natural forest. It is in our choice to fall far below the lower animals in everything that concerns morality and taste; it is also in our choice to rise far above them. We cannot if we would be mere animals, our choice is between the devilish and the godlike. The beast has no such choice, he does what his Maker designed him to do, he has not eaten of the tree of the knowledge of good and evil. This essential difference between man and all other organisms makes all arguments derived from the principle of the struggle for life and the survival of the fittest inapplicable to man. The

existence of our profession is a standing protest against the idea that the weakest must go to the wall. We recognise that in the weakest there is a potentiality of strength, in the worst there is a potentiality of good—and it is our business to see that nothing is lost that we can help to save.

Our education consists then to a great extent in the formation of habits which at last acquire the fixity of instincts or innate reflex actions. We are responsible for the character of these acquired instincts ; but how are we, starting from ignorance, to judge whether a particular habit of thought or action is good or bad ? After we have acquired it we may judge of its goodness, but beforehand we know too little to enable us to form a sound opinion. Are we on this account the less responsible for our habits ? By no means. If we consider how habits are formed we shall see how our responsibility arises. We do not consciously aim at building up a character. Our character is shaped by a multitude of individual acts, in the case of each of which we can quite well judge of the right or wrong. In this, as in most things, what is best and most desirable is not to be had for the seeking—it comes incidentally. He that will save his life loses it ; do what your conscience tells you is right, and the other things, really good and desirable things, will be added. But if you seek those other good things in an abnormal way, in any other way than by the doing every piece of work in the way best fitted for it, you will fail in attaining your end, and will injure your character—your character will be made poorer and meaner by every

attempt, foolish and futile as it may be, to grasp directly those good things which only come as incidents, necessary incidents, in the course of honest good work. You may, perhaps, think that my address is taking very much the form of a sermon, that I am usurping the office which belongs to another faculty ; this is unavoidable, if I am to do what I feel called on to do on this occasion. My object is to point out to you the line which you ought to take in the exercise of your profession. There are many honest occupations which a man may adopt. These honest occupations are all equally honourable. We require food and clothes and houses ; we must have the means of moving from one place to another ; chaos would be upon us if we had no one to look after our business relations to one another ; there are thieves and cheats about, and we cannot all be looking after them ; most of us like to have a scholarly intelligent man who will speak to us at least once a week upon those matters which we are apt to forget in the hurry of life ; we need heat and light, somebody must go down into the depths of the earth to get us coals and ores, somebody must work them up into the gas and metals we want ; everybody's business is helped by the diffusion of news, and somebody must look after our newspapers. I might go on for hours enumerating the honest callings necessary for carrying on the work of the world ; let us recollect that, as these businesses are necessary, they are proper occupations for able and honourable men, and we ought to be thankful that there are such men willing to undertake them. But each man can only

have one profession or trade, one kind of work in which he is an expert. You have chosen the profession of medicine, and you must be perfectly at home there. All real work is serious, but there is a special seriousness in your work. And when you come to see how in times of extreme anxiety your patients and their friends hang upon your decision, watch for your visit, and expect from you far more than any human being can give, you will feel that it would be a shameful thing for you by forgetfulness or want of attention to deprive them of any help you might have given them. You are stewards of a great fund of knowledge and skill ; you must not only be always willing to dispense it, but in order to do so you must be thoroughly acquainted with it. You must not only have this knowledge stowed away somewhere in the magazines of your memory, you must have it ready, and there is only one way of securing that familiarity with your knowledge which makes it always available, and that is by constantly taking stock, rearranging your knowledge, and bringing the old and the new into relation to one another. You thus avoid the risk of forgetting that you know things. We cannot always be using every piece of knowledge we have ; the occasion for using some particle of it may very seldom arise, but we must be ready for such an occasion, and we can keep ourselves so by passing, so to speak, our knowledge often through our hands. We thus get it thoroughly indexed, and indexed in all sorts of ways. I may illustrate the necessity for this multiple indexing of our knowledge by some familiar cases. We all of us, I suppose,

can read French fairly well, when we see a French word we know what it means; but if some one asks us what is the French for so-and-so we are often at a loss, although the French word we cannot recollect is quite familiar when we see it. We know our French-English dictionary much better than our English-French one, although they contain exactly the same matter, because we read French far more than we speak or write it. Perhaps you will allow me to give another instance from experiences of which you and I can now speak to one another without embarrassment. At oral examinations I have not unfrequently found candidates who could give only a very vague and inaccurate account of the action of nitric acid on copper, but about a minute after gave a full and correct statement of the usual way of preparing nitric oxide. They had the knowledge, but could only pull it out of its cerebral pigeon-hole by the one end. Now a frequent overhaul of our mental treasures, sometimes beginning at one point, sometimes at another, helps us both to know what we have, and also to find it when we want it. There is a way open to you all of rehearsing your knowledge, and that is by reading the accounts of actual cases of disease as these are published in medical journals. Read these cases, and as you proceed stop, and consider what conclusions would you draw from the facts, what further evidence would you desire; then read on and see what further evidence is given; does that modify your judgment? go on step by step, putting yourself in the position of the medical man in charge of the case.

Bring your own knowledge of similar cases to bear on it, and see how far your opinion agrees with or differs from that of the reporter as to the treatment. Make up your mind at each step as the drama develops, and you will be able to judge by the result how far you are right. Some men read merely for information ; they gather in new knowledge and stow it away in their memories : some do not even do that, but read in so inattentive a way that the impression made is too slight to produce a permanent mark even on the memory. But a careful and intelligent reader—and this is of course true not only of reading, but of every mode of getting knowledge—not only ingests the information, but assimilates it, makes it a part of his arranged and organised knowledge. It is not merely so much added, but it affects what is there already. The difference between mere ingestion and assimilation is very well put by Epictetus, who tells us that the shepherd does not expect his sheep to give him the grass they have eaten, but wool and milk ; undigested knowledge, like undigested food, becomes an emetic ;—but we need not pursue the unpleasant simile further, let us see that we do not make ourselves offensive as the writers and speakers referred to by Epictetus did, and as perhaps some writers and speakers do now. Let us see that our new and old information is worked up by our intellect in such a way that whatever we communicate will correspond rather to the wool and milk of Epictetus's sheep.

While your main business will be the looking after the health of others, you ought not to neglect your own. What

lies nearest us is often apt to be forgotten, and many a medical man does what he would greatly blame one of his patients for doing. From even the most extreme altruistic point of view, you are bound to keep yourselves in such a condition of bodily and mental sanity as will enable you to do your work well. No one needs so much as a doctor does to have the *mentem sanam in corpore sano*, and no one ought to know better how to keep body and mind in good order. I do not speak of such ordinary errors as eating and drinking too much, or eating and drinking things because you like them, although you know they don't agree with you, or of any other hurtful indulgences—nothing that I can say is likely to have the least effect upon those who have not sufficient common-sense and sound judgment to avoid follies of that sort,—I refer not to pampering, but to neglect. You know that it is best that we should have our meals at approximately regular intervals, and that we should sleep in bed at night for a time varying with different persons from six to eight hours. Medical men cannot always secure this: the door bell and the dinner bell may ring at the same time; you may be called in the middle of the night, and you must go. You must accustom yourselves to get your meals and your sleep when you can. You may do much, you ought to do what is possible, by arrangement and forethought, to keep the unavoidable irregularity within reasonable limits; if the worst comes to the worst, you can take a sandwich in your pocket, and sleep on a chair in your patient's house. By the neglect

of such precautions many valuable lives have been cut short ; and it is the best men who are most likely to forget themselves ; they do not notice or think of their own health till it is too late. Such unavoidable risks make it all the more necessary that you should in other matters attend to your health, and, in particular, to the use you make of your leisure, for in the busiest life there are intervals of leisure. How you employ those intervals will depend much on your individual taste. But one general rule can be laid down. Our recreation should differ as much as possible from our regular work. No one would think of recommending a blacksmith to spend his evenings with dumb-bells, or a country postman to take long constitutional walks when he is off duty. Our amusements should not put a further strain on those bodily or mental powers already fatigued by work. And it is well to choose such amusements as really, for the time, absorb our attention, and so relieve the anxiety incidental to our work, and give the mind time to recover tone.

Our profession is one of those known as learned and liberal. That does not, of course, mean that every member of it is either learned or liberal. It means, I take it, that the sort of education best fitted to make an efficient medical man is also, necessarily, fitted to give a truly liberal culture, and that therefore if, in any case, it fails in the latter, it has also failed in the former. A man is unfit to practise our profession if he is not in the true sense a gentleman, and his professional training, even the most practical and technical parts of it,

tend to make him one. No one is born a gentleman. One becomes such by the growth of noble and generous habits. To some, originally gifted with a frank and honest soul, early surrounded by those who hate everything mean, unjust, or cowardly, this growth is easy, but it is impossible for none. We can shape our character as we please. But we must remember that character grows. It cannot be made by abrupt methods. It is here as with the seed in the field, we do not see the change going on, but from time to time we can note that it has occurred, and we can see how what we do affects it. A Chinese philosopher tells us of a man who was vexed because his neighbours said his wheat was very short, and therefore, with great toil, went over his field pulling each plant to make it long. That was not a successful piece of work, but, our philosopher adds, some men don't weed their fields. We cannot make the wheat grow, but we can do what will make our field either a laughing-stock and a nuisance, or a source of pleasure and profit to ourselves and our neighbours. If we do our part, the miracle of growth will be performed for us.

But, perhaps, when I said that a true physician must be a gentleman, some of you may have called to mind very skilful and successful medical men whose manners were not exactly what we like. We must take care not to judge our neighbours from a purely society point of view; at the same time I may remind you that we ourselves should conform in all lawful matters to the usages of polite society.

If your lot is cast among rude and uncultivated people, as it may be, you will not imitate their manners, but you will not ostentatiously and offensively display your superior elegance. You will not do anything wrong because your neighbours do, but you will not send round the town-crier to tell the world that you pay your debts and live like a Christian. Good sense, modesty, and courtesy will best guide you in such matters.

I have spoken of the change which education has made on your modes of thought and action,—how habits, bodily and mental, have been formed and have become part of your nature, and how you have thus become fit to take your place as members of a great profession,—how your knowledge as well as your skill has grown,—how your powers of memory and, still more important, of recollection have been cultivated. This process of education does not now come to an end, it must be continued as long as you live, but it will henceforward be carried on under new conditions. You will now be directly and individually responsible for what you do. Hitherto you have always had some one to direct and help you, some one to whom you can appeal when in difficulty, some one to bear the responsibility of your actions. That will not always be the case now. You will often be alone as the representatives of medicine. You will often have to make up your mind without help and without appeal. Your teachers and examiners have to-day declared that in their opinion you are fit to undertake this

solemn duty. Do not set about your work with a light heart; remember that a very precious thing has been entrusted to your care.

“ Above all price of wealth,
The body's jewel—not for minds profane,
Or hands to tamper with in practice vain—
Like to a Woman's Virtue is Man's Health—
A heavenly gift within a holy shrine !
To be approached and touch'd with serious fear,
By hands made pure, and hearts of faith severe,
Even as the Priesthood of the One divine.”

