Some observations on medical education / by Andrew Wood.

SOME

OBSERVATIONS

ON

MEDICAL EDUCATION.

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The subject of Medical Education which was so largely discussed during that thirty years' war for Medical Reform, which found a truce rather than a termination in the passing of the Medical Act of 1858, has been again brought prominently before the public by Professor Syme. In the paper which he read at a recent conversazione at the Royal College of Surgeons of Edinburgh, and which he has since published with additions in the form of a pamphlet, he brought under review the present system of medical teaching and examination. This he most unsparingly censured as redundant, irritating, and unprofitable to students—not sufficiently practical, and ill-calculated to supply the public with good and well-trained practitioners. The very high position which Professor Syme occupies in the profession, and his long experience as a teacher, extending, as he states, over a term of no less than forty years, obviously entitle any remarks of his on the subjects indicated, to respectful attention and deliberate consideration. There is, in fact, less risk of his failing to receive such, than of the magic of his name leading to the too hasty and indiscriminate approval and adoption of suggestions which contain, doubtless, much that is valuable, but contain also, as appears to me, not a little that, with the appearance of simplicity and practicability, is really impracticable, or, if practicable, not desirable. We must not, because there are defects in our present system, come to the unjustifiable conclusion, that, in respect to it, "all is barren;" that the labours of those zealous and intelligent men who, for many a long year, devoted themselves to the laudable task of endeavouring to elevate the medical profession, have been labours in vain; that nothing, or less than nothing, as

those who have not attended to the subject might possibly infer from the tenor of Professor Syme's remarks, has been achieved for the cause of medical progress; that we have been, in fact, sailing, as it were, on a wrong tack, and must now veer altogether round; that the tendency of much of what has been done is in no small measure to deteriorate instead of to improve the quality of medical men; and, in fine, that not gradual and moderate reform, but a sudden and complete revolution in our notions as to medical teaching and examination is now loudly called for.

Before endorsing a view of the state of matters so unfavourable as this, it is right that we should inquire how facts really stand. If I mistake not, the result of such an inquiry made without prejudice will be to demonstrate that, whether in spite of the system which has obtained of late years, and to which so much objection is made, or, whether in consequence of it in large measure, as I am inclined to believe, medical men as a class are vastly improved in almost every respect from what they were less than half a century, ay, or a quarter of a century ago; that they are more literate, as becomes the members of a learned profession; that the practice of the healing art in its various branches of hygiene, medicine, surgery, and midwifery, has been rendered more simple, less bloody, less druggy, less meddlesome, and more successful; that we now-a-days know better, not only how to discover and distinguish disease in its various phases, but how to treat it; that we have discarded for the most part those farragos with which previous generations of practitioners delighted to puzzle themselves and their patients alike, a change no less palatable than beneficial to the patients; that the remedies of the present day are less numerous, less nauseous, less severe, less indiscriminately applied than formerly; that our faith in the *vis medicatrix naturæ* has increased in wholesome proportion to the decline in our confidence in the powers of wholesale bleeding and drugging; that our surgical armamentarium is much less complicated, much less formidable, and, being wielded by better instructed hands, is far more efficient than it used to be; and, in short, that medicine and medical men, whether in town or country, despite of abounding quackery and its legion of dupes, are more worthy of that public confidence of which the *isms* and the *athies* would attempt to deprive them, than in times gone by.

These things I mention, not as reasons for declining to look into the important subjects of medical education and examination, with a view to their progressive improvement, whether by supplying proved defects, or by lopping off proved redundancies, but in order

to bespeak caution in the application of the amputating knife, even when wielded by the hands of a master of his art, lest, peradventure, the operation of removing diseased or redundant, and, consequently, useless or hurtful parts, should infer the injurious sacrifice of not a little of that which is sound and useful, if not indispensable to the vitality of the profession. We all know what the conservative surgery of our day has done in the way of obviating operations which were formerly the opprobria of surgery, and in the way of saving parts which, in less conservative days, were wont to be needlessly sacrificed; let us apply the same principles to the reform of our system of medical teaching and examination, going forward indeed, but forward in the spirit of cautious conservatism, and not of rash radicalism. It is right, at all events, that the subject should be fully ventilated in the press and amongst the members of the profession, as, indeed, it has been in large measure already, before it occupies, as it doubtless will, the attention of the Medical Council at their approaching meeting.

It is quite obvious that no man should be licensed to practise medicine unless he has been adequately taught by competent teachers, and adequately tested by competent examining boards; the safety of the public no less than the honour and credit of the medical profession require this. This can only be properly secured by enforced curricula of study, and examinations conducted by qualified boards. To ensure as far as possible efficiency as well as uniformity of education and of testing on the part of the licensing bodies, which, by the way, are far too numerous, and ought to be concentrated, the Medical Council, under the Medical Act, have been invested with the power of establishing and of enforcing a minimum curriculum of study and a minimum system of examination. Unless they exercise this power, they abnegate what is in fact their chief and most important function, and the profession must suffer. Some, erroneously as I think, deny this power to the Medical Council. If they do not possess such a power, I can only say that, in my opinion, the Medical Act is to a great extent a dead letter, "a mockery, a delusion, and a snare," tending rather to foster than to prevent that injurious competition which is apt to spring up amongst the licensing bodies, and which cannot but act prejudicially to the public interest. If such be the case, that Act needs amendment without delay. I, for my part, have little faith in the power of what, in phraseology fashionable in some quarters, is termed "moral suasion." Whilst human nature continues to be what it is, and I know not that corporate human nature differs in this respect

from individual human nature, excepting, indeed, that the former being shared by numbers, whilst no less inclined to selfishness, has less feeling of responsibility; whilst human nature, I say, continues to be what it is, statutory enactment is absolutely necessary in order to carry out salutary changes which infer interference with real or supposed corporate interests. Even were the debates of the Medical Council reported for the press, as they certainly ought to be, and as I confidently trust they will erelong be, the "moral suasion" thereby exerted would, I fear, prove inefficacious. As long as these debates are carried on as hitherto in secret, the amount of "moral suasion" or of influence of any kind that the Medical Council can expect to exert must be infinitesimal. Most unquestionably, important changes in reference to medical study and examination ought, before being carried out in action by any of the licensing bodies, to be brought under the notice of the Medical Council, where all interests are represented, to be by them considered and decided on. Especially is such a course necessary where these changes infer reduction of the curriculum of study or diminution of the stringency of the examination. Having premised these few observations as to the regulating powers of the profession under the Medical Act, I proceed to make some remarks on the several subjects of medical tuition and medical examination, and the improvements upon these as at present existing, which seem desirable.

There are various ways in which knowledge may be acquired by the medical student, chiefly these; 1*st*, Attendance on lectures in recognised medical schools; 2*d*, Private reading; and, 3*d*, Practical observation in the dissecting-room, in the hospital, in the dispensary, in the laboratory. Under this last category, we may also place apprenticeship, which, in Scotland at least, of late years, has been gradually disappearing, though, perhaps, it may be questioned whether apprenticeship when properly conducted might not still be considered a useful adjunct to medical education. Each and all of these methods of learning, lectures, reading, and practical observation, are important, even essential; no one of them can supersede the other, nor ought any one of them to be magnified at the expense of the other. To ascertain the right place, and order, and due proportion of these is the Q. E. D. of the present agitation, and it is a problem which seems hardly to have been solved as yet, and is certainly by no means so simple as might be thought by those who have not attempted its solution. Professor Syme says, that too much lecturing is an evil, one into which, especially of late years, we have run. He is probably

right in the main, yet we must take care lest we fall into the opposite extreme of depreciating too much the usefulness of lectures, and of arguing against their use from their abuse. In shunning the depths, we may run some risk of grounding on the shallows. Even when lectures are of excellent quality, clear, concise, logical, and demonstrative, there is, doubtless, a point beyond which they cannot be carried with advantage. Even the most industrious and praiseworthy student who imbibes greedily all that the lecturer tells him, runs a risk of becoming crammed to repletion with excess of mental food beyond his powers of digestion, and may thus, instead of being mentally nourished and growing thereby, become a martyr to mental indigestion. Too much of a good thing, they say, is good for nothing; too many even good lectures may not profit a student any more than sixteen sermons read in the course of one day (and that a Sabbath day) could benefit an esteemed friend of my own, whom I once heard boast with the utmost complacency of such a herculean feat.

But if the mental digestion of the student is liable to be marred by too much *good* food, what must be the case when he is necessitated to imbibe a like quantity of food whose quality is the *reverse of good.* Professor Syme tells us that there have been lecturers in the past who have taught what, in plain language, he terms "nonsense," and that there will be such in the future. Some lecturers set their students to sleep by long elaborate essays, read, it may be, in a monotonous tone, and unrelieved by apt illustration. Others, aiming at the exhaustive, become exhausting. Mistaking the object of lecturing, they seem to think it necessary to include in their prelections everything that has ever been written or said by everybody in every age upon every item of the subject they profess. I can remember (*horresco referens*) the pain I had myself to undergo when a student in listening to the lectures of one who had much learning—who was, in fact, full to the brim on his own subject and on many others beside,—but whose style of giving vent to his vast accumulation of information was so tedious and incoherent as to weary and perplex his auditors; the result being an amount of what Lord Derby would call "muddle" difficult to conceive. Other lecturers treat their subject under a multiplicity of complicated, artificial, wiredrawn, even fanciful, divisions, which luckily no student can remember, for if he did, he would, I suspect, prove but an indifferent practitioner. There is another evil under this head which requires notice,—to wit, that the student under one lecturer has often to listen to a mere *rechauffé* of what he has already heard more than

once, it may be, under other lecturers; as, for example, regarding the doctrines of inflammation, which lecturers on surgery treat at great length, which lecturers on physic treat at little less length, and which even the lecturer on physiology may occupy some lectures regarding. This requires amendment. I believe with Mr Syme, that the number of courses at present demanded might with advantage be to some extent reduced, and, still more, that the number of lectures in each course might be considerably diminished, in order to afford the student that time for reading and reflection, and for practical observation, which, in consequence of the large number of lectures at present squeezed into the comparatively short period of professional study, he cannot possibly enjoy.

But whilst we thus war against the abuse of lecturing, let us not be blind to its great utility when duly proportioned and properly conducted. There is a cry in the present day amongst some men that practical observation is the be-all and the end-all of medical education: some even go so far as to maintain that a young man may with advantage commence his education by an apprenticeship quite apart from a medical school, in order that he may have the earliest opportunities of practically observing what, it is clear, he can know nothing about, and what, therefore, he cannot intelligently and profitably observe. They call to their aid the oft-quoted —oft inaptly quoted—Horatian rule—

> "Segnius irritant animos demissa per aurem,
> Quam quæ sunt oculis subjecta fidelibus, et quæ
> Ipse sibi tradit spectator."

Far be it from me to deny the immense importance of practical observation, and the evil of interfering unduly with the golden opportunities for practical observation which the student during his course of study has it in his power to avail himself of under the most able masters,—opportunities which lost then, or neglected then, may never recur. But this I must maintain, that, *per aurem* no less than *per oculum*, much valuable information may be imbibed which cannot in any other way be so well obtained. The power of eloquence is great and universal; the power of a clear and interesting lecturer in conveying knowledge, and in inspiring his students with the love of it, is undoubted. It is his duty to collect, from various sources inaccessible to the student, important information which he (the student) may have neither time nor opportunity to obtain for himself; to arrange and condense it; to enunciate it in such a manner as may at once interest and instruct

the student; to state and discuss the principles upon which scientific practice is founded; to guide the student in weighing opinions regarding controverted points, and to help him to separate the grains of wheat from the bushels of chaff. It is hardly possible to over-estimate the value of tuition such as this in the hands of a competent lecturer,—one who not only knows his subject thoroughly, but has the faculty of teaching it,—qualities which are not always combined in the same person,—and who takes care to aid the words which he addresses to the ear, by illustrations addressed to the eyes, when these are available. Such lecturing is invaluable to the student; it not only serves to guide and give precision to his studies, but it also supplies him with a large quantity of information which he could not so well obtain, if at all, in any other way, and saves him much valuable time and labour. It supplies him with principles whereon to found sound practice; it supplies him with the means of observing practically with advantage, and saves him from that mere empiricism which practical observation, unguided by correct principles, tends to engender.

There are, however, several things which seem essential in order that lecturing may produce all the benefit of which it is capable. One is, that the lecturer should, as recommended by Professor Syme, put into the hands of his students a well-constructed and copious syllabus of his course,—a well-adjusted skeleton, as it were,—which the student may, during the course, from the lips of his teacher, be enabled to fill up and complete, even give life to. Class-examinations, too, I consider absolutely essential. These should be frequent, at least once a-week. They should be written and oral, according to circumstances, and they should have reference not only to the subjects on which the lecturer descants in his lectures, but also to those, for information on which he refers them to specified books. The value of class-examinations can hardly be over-estimated. Yet how long were they neglected. Even now they are by no means so general as they ought to be, and as they will be. I am glad to know that for years they have been adopted by many —I believe most—teachers in the Edinburgh School, as well as in various other schools; and that though hitherto permissive only and not obligatory, they have been taken advantage of by very many of the students, with the best possible results. But I would say emphatically, that they should be made imperative on all teachers and students alike, at least on all students who intend becoming candidates for degrees or licenses. Make attendance on class-examinations imperative, and establish a minimum of profi-

ciency to be ascertained by these examinations, as necessary in order to entitle a student to a certificate of attendance, and you may then, I think, dispense with the irksome system of roll-calling at present in force in some of our schools,—a system demoralizing in many instances to students,—may we not with truth say, in some instances, to teachers also. Enforced attendance on class-examinations would be no hardship to students, but a great boon. It would act as a continuous and wholesome stimulus to work from the very commencement of their course of study; it would thereby save the pockets of students no little expense in the shape of fees for grinding, cramming, or coaching, as at present, before going up for their professional board-examinations, and it would save their nerves much of that apprehension, vulgarly called "funk," which, amidst vain regrets, embitters too frequently the last year of study, and which, by drawing off their attention from important branches of study at a critical part of their course, does away to no small extent with the benefit which the ordeal of examination is intended to confer. Time for these all-important class-examinations can easily and with advantage be found, by reducing the number of lectures. Three, or at most four, lectures a-week on each of several subjects are quite as many as a student can properly listen to, digest, and read up to; nor would more be required under a system where the lecturer, as he ought to do, refers the student to private reading for much that is at present unnecessarily and wearisomely treated of in the lecture-room. The weekly class-examinations would be worth many cancelled lectures. As to the method of conducting these examinations, they may be partly written, partly oral, according to circumstances. Some subjects, as, for example, demonstrative anatomy, practical surgery, etc., do not admit of written, but require oral and demonstrative examinations. Most subjects will probably be best tested by written examinations. The question as to class-examinations being taken in lieu of board-examination I leave for the present, as I shall have something to say regarding it afterwards.

I cannot help thinking that sufficient attention has hardly been paid by lecturers to the important subject of the direction of the student's private reading. That is a subject which should certainly be guided by the counsel of the lecturer. For want of good advice on that head, the reading of students, even the most industrious, is apt to become too often excessive, diffuse, and distracting on the one hand, or on the other shallow and unedifying, especially when it is confined, as it often is, to those superficial manuals of which we have too many in the present day. We should be glad to see the attention

of students more directed than it is to those exhaustive monographs or separate treatises on the various important subjects embraced in the curriculum of medical study,—the result of deep thought and experimental research by the great master-minds of the profession. Carefully studied, these not only remain better impressed on the memory, but become highly suggestive, leading the student to thought and reflection calculated to bear excellent fruit in the future.

But, further, in order that lecturing and reading may produce their best effects, it is necessary not only that lectures should be diminished in number, that the subjects of them should be treated in the discriminating way which we have referred to, that they be associated with a judicious but ample syllabus, and a regulated course of reading, and tested, from week to week, by class-examinations; but it is no less necessary that the student's attention should not be occupied by too many subjects at the same time. To mix up, for example, anatomy, chemistry, and natural history at the same time, or even more classes equally dissimilar, as some students do, either from compulsion, owing to the present system, or, as in some instances, from erroneous guidance, is obviously perplexing and highly inexpedient. It is, therefore, I hold, absolutely necessary that the system be reformed altogether; that systematic chemistry, botany, and natural history should be included in the list of preliminary subjects, and that the teaching and testing on these subjects should be taken before the student is allowed to commence his proper medical curriculum. I should rejoice, then, were Professor Syme's suggestion carried out, that the preliminary studies and examinations, including the courses I have mentioned, should be made, as they ought to be, strictly preliminary; that in order to facilitate this, the age of commencing the medical curriculum be not sooner than eighteen, and that no student shall be henceforth registered as a student of medicine who cannot produce evidence of having completed his preliminary education and examination. The result of this would be every way good. In the first place, these, like other preliminary studies, which are meant to train the mind, and prepare it, as in a gymnasium, for grappling with the labours of the professional curriculum, as well as to communicate to it a store of knowledge calculated to be useful otherwise, to a greater or less extent, would then fulfil their object,—a thing which they cannot do if they are allowed to be taken, *pari passu*, with the medical curriculum, or at least to be completed after that course has been commenced. In the second place, being thus put in their right place, and the student's mind having thus been disembarrassed of much

of that which at present distracts it and interferes with that attention to his strictly professional studies which their importance demands, he will be able to apply the whole powers of his mind to those studies, and certainly not the less effectively, because of his preliminary training and the large stock of information which he has thereby acquired.

In this place it may not be irrelevant to say a few words as to what should be embraced in the preliminary education of those intended for the medical profession. In our days it is one great feature of educational progress, that entrance is barred against the admission of illiterate men into all professions, whether civil or military. Too long the medical profession, which ought, *par excellence*, to be a learned profession, has been accessible to men of very rude and imperfect education. A man might even become *doctor* though in no measure *doctus:* a very puny test, in the shape of the translation of a passage from some Latin author (and that not even a classical author), was till recently all that used to be required even in some of our Scottish universities. All that is now changed. Already the new regulations of our universities and colleges are acting on the lower schools of the country, and awakening teachers and scholars to the necessity of a systematic liberal education (in the best sense of the term), in order to admission into the learned professions, including medicine amongst the rest; and erelong the medical profession will, as it ought, include none but those who have higher claims than that merely of the courtesy of a past age, to the title of learned. In laying down a minimum of preliminary requirements, it seems to me that a well-marked and decided distinction should be established between the requirements essential for those who are candidates for the higher honours of the profession, as the university degrees ought to be, and those who are candidates for a simple license to practise. This distinction cannot very well lie in the professional curriculum, seeing that in whatever station a man is to practise, he must know thoroughly all the branches of his profession, after having gone through as complete a course of study and as thorough a testing on professional matters as possible. Whilst, therefore, it might very well be laid down, that the higher qualifications should embrace one or more additional years of professional study, the chief distinction ought to be made, as, indeed, it can only rightly be made, in the amount of preliminary education and testing. The doctor should certainly not only be absolutely *doctus*, but also relatively *doctior*, than the man who has not gained the higher title, else why is he specially registered doctor? why, as such, does he claim precedence?

If this title is not meant to point out to the public a man of higher literary and scientific attainments, it is nought—it only misleads. The distinction, then, ought undoubtedly to be kept up. Any system that would endeavour to level such distinction, and to keep down the standard of degrees in order that they may be enabled to compete with ordinary licenses to practise, is a false and retrograde system. But I think the tendency of public opinion is to maintain the distinction, and most unequivocally this view has been fostered, and more than once expressed in their minutes, by the Medical Council. Without presuming to lay down dogmatically the very items of distinction which seem advisable, perhaps I may be allowed to sketch out generally something like the following scheme :—

For the simple license to practise, it might be provided that every candidate be tested in English composition, writing to dictation, Latin, arithmetic up to decimal fractions, and chemistry; and in any two, at his option, of the following subjects,—viz., geometry, algebra, mechanical philosophy, Greek, French, German, botany, and natural history, including zoology and geology.

For a degree every candidate ought to be tested in English composition and writing to dictation, Latin, arithmetic to decimal fractions, Greek, chemistry, botany, and natural history, including zoology and geology; and in any two, at his option, of the following subjects,—viz., geometry, algebra, mechanical philosophy, French, German, and logic and metaphysics.

It will be observed that I have included chemistry amongst the preliminary subjects, as well as botany and natural history, all of which have been hitherto included in the professional curriculum for the degree. With regard to botany, it ought to be looked on as, to a considerable extent, a training study, forming an excellent item of preparation for the study of medicine, by its teaching the student the diagnosis of plants, and by its making him familiar with classification. This cannot but be useful to the student who is by and by to apply analogous principles to the study of disease; besides it prepares him, by the physiological teaching which it infers, for the more easily understanding and mastering that most important basis of rational medicine—Animal physiology; prepares him also for the more efficient study of the materia medica, and fits him for occupying, with credit to himself and advantage to the cause of science, many important positions in the public service, especially abroad and in our colonies. The same may be said for natural history, including zoology and geology. Chemistry, I also consider, might with great advantage be studied before the strictly professional course

is commenced. It may in part be considered a training study, but a knowledge of it is, I need not say, essential to the medical man, both for the understanding of the principles of medicine, and for assisting him in its practice. There can be no doubt that it is, in a very important measure, to the discoveries of chemistry in the future, as has been the case in the past, that we are to look for some of the greatest improvements in the science and art of medicine. A student who has had the advantage of making himself acquainted with chemistry at an early period of his studies, and before beginning his professional period, will find himself greatly aided in understanding many points in physiology which he will meet with early in his professional curriculum. Doubtless there are also many points in chemistry bearing on medicine which the student could not well understand at the early period I have indicated, and will, therefore, require to study later in his course ; but a short supplementary course, when his studies have somewhat progressed, will easily supply this desideratum. But besides these advantages, which, as I believe, would be gained by throwing botany, natural history, and chemistry into the preliminary course, another most important object will be gained, viz., that thus you will make them subsidiary to the professional course, and not, as at present, hindrances, for thus you will disembarrass the student of classes and examinations which occupy his time and attention, and fluster and worry him just at a time when it is of the utmost consequence that he should be at liberty calmly and uninterruptedly to devote his whole energies to the study of a difficult profession. Above all, you will prevent that which doubtless is an evil and a grievance under the present system, viz., the intercurrence, during professional study, of examinations on subjects not strictly professional, such as botany, natural history, and chemistry, which are of vast extent, so vast, as Professor Syme has well observed, as hardly to be compassed in a lifetime, even by those who have little else to attend to, and which embody such a myriad of facts as no memory, however good, can be expected to retain,—the very attempt, indeed, to retain a sufficiency of which, to satisfy even a reasonable examiner, must seriously and injuriously interfere with important professional studies. I say, then, clear the student's way of these studies at an early period, let them take their own proper place and order, and let me add, their own due proportion,—let the examinations on them be more limited as to the area embraced than hitherto, and let them be completed before the commencement of the professional course proper. Supposing these arrangements to be carried out, then it is

clear that the student will have more ample scope, if not verge enough, in his course of professional study, whether that extend to three years, or better, to four years, to devote himself to subjects more strictly professional, comparatively limited in number, and standing to each other in a more unbroken connexion than at present. His professional course will then embrace these subjects,—viz., demonstrative anatomy and dissection, anatomy and physiology, materia medica, including dietetics, surgery, physic, midwifery, medical jurisprudence, hospital attendance, with clinical surgery and medicine, morbid anatomy, medical chemistry, practical pharmacy, dispensary practice.

In regard to the sessions of study, it would be very desirable that instead of having, as at present, a long winter session of nearly six months, and a short summer session of three months, there should be two equal sessions in each year, of four months; the first session might commence on the 1st of November, and end on the last day of February, and the second session might commence on the 1st of April, and end on the 31st of July. The interval of a month between the winter and summer session would give the teacher and student needful relaxation, and the long holidays would, as at present, embrace August, September, and October. Some of the subjects lectured on might very profitably occupy two continuous sessions of four months—such, for example, as anatomy and physiology, which ought to be combined, and no longer, as at present in Scotland, dissociated, and ought to embrace histology, and such an amount of comparative anatomy as is essential for the proper understanding of many points in physiology. Surgery, also, might thus be made to embrace a larger amount of operative surgery than can be achieved in the present limited session. Practice of physic, too, might thus be made to embrace a course of morbid anatomy, given in the hospital. This would, in my mind, be a better arrangement than the present one of repeating systematic courses. Others of the subjects might be amply overtaken in a four-months' course, such as materia medica, midwifery, medical jurisprudence; and these ought to be summer courses, so as to leave more time for dissection in the winter, which is obviously the best season for the study of anatomy. Clinical lectures, both on surgery and medicine, which are of such importance, might, in my opinion, be rendered with advantage both less formal and more frequent than they are at present—a certain portion of the time occupied by the daily visit at the hospital being occupied by practical remarks on the cases which the students have just had the opportunity of seeing in the wards.

If the lectures are carried on in the way I have indicated, if the attention of the student is kept up by imperative attendance on class-examinations, if he is guided by his teachers as to his course of reading, then I would say that the professional course should not be interrupted, nor the student's attention diverted as at present from continuous study by intercurrent professional board-examinations. The examinations in all branches should be reserved till near the termination of the last year of study.

Grinding and cramming will have been discouraged by the imperative class-examinations; and the knowledge on the part of the student that the certificates of his appearances at these class-examinations will be submitted to the examining board at his final examinations, will act as a spur to diligence in study, from the commencement even to the end of his course. Class-examinations, thus used, are calculated to prove supremely useful: useful to the teacher, as showing him how far his pupils are understanding or profiting by his lectures; useful to the student, both as an incentive to and as a test of his diligence in study. To the good student they will prove a boon which he will prize highly; upon the student who is tempted to neglect his studies, especially in his early course, and to trust to his being able by intense cramming in the latter part of his course to prepare for his pass-examinations, they will constitute an excellent check. But ought class-examinations to supersede in any case final board-examinations? in other words, ought the power of granting licenses to practise to be virtually taken from conjoined boards, comprising the teachers of the students associated with experienced practitioners who are not teachers, whose duty it is to sit at the end of the course of study, and to take into consideration, at one time, the whole circumstances of a student's proficiency in the different branches of professional knowledge, taken together, and in connexion, with a view of judging how far he can safely go forth to the practice of his profession with or without the higher titles? Ought this power, so taken away from boards, to be transferred to individual teachers, even when aided by assessors, examining their own students in their classes on detached parts of these studies, and at different and detached times? Are licensing bodies, I ask, whether universities or otherwise, prepared or entitled thus to abnegate *pro tanto* their proper corporate functions, and to commit to the teachers of the students the licensing power? How are teachers to be controlled in the use of this great and responsible power? Where there are competing teachers, either in the same school or in different

schools, would you not by such a system be actually holding out temptations to them with the view of attracting students, to exercise the power with undue lenity: a course which might please the student, but be unsafe for the public? On the other hand, would the student have a sufficient guarantee in such a system against a capricious and puzzling rather than a fair system of testing? Were the system desirable, which, I think, it is not, it might possibly be practicable in its working were students to take their whole course, which they seldom do, in one school and under one set of teachers; but how can it be worked in the case of that vast majority of students who take their course at different schools, and under different teachers? Where are you to get assessors to be associated with the teachers, who are a numerous body? and how are you to remunerate them for the enormous labour which will be thrown upon them? and how are you to exercise a general control over the multiplicity of detached examinations which you thus propose to hold? What great object, after all, it may be asked, are you to gain, sufficient to induce you to try this experiment—for such even Professor Syme must, I think, admit it to be—which infers a complete *bouleversement* of a system under which the status of medical men has been steadily, and in a marked manner, raised? You say that the present system of examination is very irksome to the student, and that it interferes with that due attention to practical studies which is so necessary, and thus mars in great measure the very object of the test you apply. But is there not a fear that the applying of so sweeping a remedy, in order to relieve the student, may be fraught with danger to the public, whose safety ought to be with you the *suprema lex?* Are there not safer remedies within your reach more in consonance with the milder practice of the age, than one so violent as the virtual superseding to a considerable extent, for to this it amounts, of board-examinations? I have endeavoured to show that your object may be fully attained, more safely attained, by rearrangement and modification of the curriculum of study and readjustment of the tests; and that this can be done without such violent change of machinery as is proposed by those who have initiated this new movement. I have shown, I trust, how this can be done with the effect of proving a boon to the student, at the same time that it preserves inviolate the functions of the licensing boards, and thus, as I believe, best guarantees the safety of the public.

Let me briefly recapitulate the view I have presented. Make the preliminary studies and examinations in truth preliminary; for this purpose raise the age of commencing strictly professional study

to eighteen; prune the professional course so that the student may have fewer courses of lectures to attend, and fewer lectures in each course; rearrange the sessions; make class-examinations imperative on teachers and students; see that ample time is left to the student for reading and reflection, and that his course of reading is properly directed; see that he has ample time and opportunity to avail himself of practical instruction in the dissecting-room, in the wards of the hospital, at the dispensary, in the laboratory; see that, while the class-examinations be as minute and searching upon all points connected with the subjects taught as may be desirable, the final examinations be chiefly based upon the requirements of practice, and be directed to ascertain whether the student retains that knowledge which he ought to retain, and without which he cannot practise safely; see that a distinction, as is right, be made between the curriculum and examinations for a simple license to practise, and those for a license to practise accompanied with a title of honour such as the degree of a university; let these things be properly provided for, and regulated, and enforced by a code emanating from the Supreme Council of the profession, and, I believe, that every desirable object for the profession will be better gained than by rash and necessarily partial innovations of an experimental character, which may, and in my humble opinion will, prove detrimental rather than beneficial to the cause of medical progress.

Before concluding, there are two points to which I should wish to allude, however briefly. These are, 1*st*, The importance of making the final examinations as practical and demonstrative as possible; and, 2*d*, The importance of the concentration of the at present far too numerous licensing boards, by combining them as provided for under Clause XIX. of the Medical Act.

That the examinations should be as much as possible demonstrative seems highly desirable. As you test a student on chemistry by means of chemicals and test apparatus—on botany by presenting to him specimens of various structures and classes of plants—on anatomy by making him demonstrate the parts on the subject—it seems surely rational as well as highly expedient that you should also test his knowledge of surgery or medicine at the bedside. Professor Syme, indeed, objects to this on the score of the inhumanity of subjecting patients to be made the subjects of examination by unpractised candidates for licenses. But surely, with discreet and practised teachers standing by, there could be little risk of injurious roughness or fatigue to patients any more than in the necessary examination into the cases of patients which

is made by the resident medical men, and which, indeed, a properly qualified candidate should be competent to do, if not with all the tact and ease and certainty which long experience alone can give, at least in such a way as to testify that he may be safely sent forth to practise on the lieges. Professor Syme's pamphlet contains a sentence which, I think, were it correct, would give ample justification to the Army Medical Board for submitting all candidates for army appointments to re-examination on subjects regarding their knowledge of which the degrees and diplomas they produce ought to be an ample and definitive guarantee. "Candidates," says he, "for a license do not profess to be practitioners, and therefore could not with propriety be submitted to an ordeal of this (*i. e.* a practical) kind." Now, it appears to me, that if degrees and diplomas do not testify to a man's fitness to practise his profession with safety, whether in the public service or, it may be, in some distant country locality,—or, it may, be on board an emigrant vessel, far away from any professional advice or assistance,—or anywhere else; then what is their value? Why are universities and colleges granted charters and high privileges, but that they may guard the public from unqualified, that is, unsafe practitioners? Why is there a register of medical men with various titles? But believing as I do that degrees and diplomas are meant to guarantee safe practitioners, and having myself for years kept that important fact in view in performing my duties as an Examiner in the College of Surgeons of Edinburgh, I cannot help here, as the result of my experience, expressing the hope, that erelong, as a very important aid in securing such a guarantee, no man will be licensed to practise any branch of the healing art without having been subjected to practical testing at the bedside.

And now, finally, in regard to the expediency of combining and concentrating the too numerous licensing boards, I must state it as my conviction, that there is no one measure which would do more to equalize and make efficient medical education and testing, than the formation of combined boards for licensing in medicine and surgery, composed, in England, of the Colleges of Physicians and Surgeons and the Apothecaries' Company; in Scotland, of the Colleges of Physicians and Surgeons and the Glasgow Faculty; and in Ireland, of the Colleges of Physicians and Surgeons and the Dublin Apothecaries. Thus there would be constituted only three instead of nine separate boards. And if, further, the Universities could in some way be associated with these Boards in examining for the license to practise, the work of concentration would be then complete. The power of regulating the higher titles, as for Doctors in

the Universities and Fellows in the Colleges, would still remain with these bodies respectively; these titles inferring higher qualifications, higher education, higher testing. The regulation of the profession by the Medical Council would thus be made more certain and more simple; uniformity of education and testing coincident with equality of privilege would be promoted; and the sources of division and antagonism between many of the licensing bodies which still, notwithstanding the Medical Act, exist, would be greatly diminished, if not removed. It would be well were the Medical Council to give their early attention to a matter so important. It is no new proposition; it is but a revival of what was proposed years ago by Sir James Graham's Bill. The circumstances which made shipwreck at the time of that most desirable measure are now altered; there has been in operation for upwards of five years a transition Act—for it is nothing more—which, though it may not have achieved in any large or successful measure what it was meant to achieve, seems to me to have so far paved the way to a better measure, by removing some of the obstacles which formerly hindered legislation on the broad and comprehensive and equitable principles of Sir James Graham's Bill.

In bringing these observations to a conclusion, I beg to say that I do not claim for them any merit of originality; much, nay, most of what I have said, is not new, having been said, and better said, by men of greater authority in the profession than I can claim to be. My object has been to put the subject in a plain, practical, may I add, common-sense point of view, which may perhaps be accepted as an additional peg on which to hang the discussion, now inevitable, of a matter of such vital importance to the interests of the profession.

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