The medical school of the future / by John Struthers.

Contributors

Struthers, John, 1823-1899.
Royal College of Physicians of Edinburgh

Publication/Creation

Edinburgh : Oliver and Boyd, 1896.

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THE

MEDICAL SCHOOL OF THE FUTURE.

Dr Robert S. Aitchison
with the Author's Compts

THE MEDICAL SCHOOL OF THE FUTURE.

By JOHN STRUTHERS, M.D., LL.D.,

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(*Reprinted from the Edinburgh Medical Journal for October* 1896.)

It is with pleasure that I comply with the invitation I had the honour to receive from your teachers to address you on this occasion.[1] The pleasure of re-appearing once more in my old school is not without the tinge of sadness as memories arise of former colleagues passed away, and of your youthful predecessors, full of life and hope, who have sat before me on these benches, some happily risen to high distinction here or elsewhere, but mostly scattered over the wide world, and not a few passed away before their teacher. Among these mingled memories it has been a new pleasure to me to resume active connexion with the venerable College under whose wing we are met, into whose Fellowship I had the honour to be admitted fifty years ago on beginning to teach anatomy. Although the large building visible to you is but of some sixty years, the successor of the ancient building in the square to which it gives the name, the College of Surgeons of Edinburgh has a long history. The most ancient of all the medical Incorporations in Her Majesty's dominions, it is now within ten years of completing its fourth century. These old Surgeons of 1505 began in the right way by requiring a previous education in advance of the age and by recognising the fundamental importance of anatomy. Before Vesalius, usually styled the Father of Human Anatomy, was born, these early Edinburgh Surgeons had secured the means of dissecting the human body by arrangement with the Town Council. The medical school of Edinburgh thus arose and grew in the College of Surgeons, and from it sprang the medical teaching in the University, when, 173 years ago, their Professor of Anatomy, the first Monro, moved from the Surgeons' ancient theatre to the University buildings; doing so for greater security from the mob in the troubles that arose through the proceedings of your predecessors in their eagerness to secure a more plentiful supply of subjects for dissection.

[1] Introductory Address at the Medical School, Surgeons' Hall, Edinburgh, October 1895 not hitherto published.

These things are worth your knowing who now have only to step into well-provided dissecting-rooms, and it is something to belong to a College not only full of modern activities, but which can look back on such a long and honourable history. We all owe a debt of gratitude to the College of Surgeons not only for the valuable contribution it makes to medical education in Edinburgh in the great Museum of Anatomy and Pathology for which it had the foresight to provide and which it continues to maintain and extend, but in that it has persistently kept alive in Edinburgh the liberty to teach.

You expect me to speak to you of medical education. One who has spent his life in intimate and friendly relation with students should have much he would like to say on that subject, and very earnestly, to those who hope to enter the medical profession. I would begin by asking you to think of the bearing of the great truth that, as in the words of Gibbon, "Every person has two educations,—one which he receives from others, and one, more important, which he gives himself." No kind of reading is more interesting, none more likely to inspire and encourage the perhaps friendless student, than that of the lives of self-taught men. I do not mean the lives of men who have what is called got on in the world, perhaps from humble life, to be fashionable doctors amassing wealth; but of men who, whatever their rank in life, have relied on themselves and have left their footsteps on the sands of time.

In the natural sciences you may take the life of Linnæus as an example of one who rose to that amid the dire struggle with poverty; or, on the other hand, the life of Charles Darwin, who never knew the *res angusta domi* but who chose to live laborious days. In our profession you may take the lives of Harvey, John Hunter, or Edward Jenner, the country surgeon who made the great discovery in preventive medicine; and here, in Edinburgh, you may take Cullen or Charles Bell. Harvey had no teaching except that which was calculated to blind him. Hunter looked on things around him as a traveller looks on a new country. Cullen had the courage to tell his students when he found he was wrong. Every milkmaid knew the fact that led Jenner to think and experiment. Many apples had fallen to the ground before the one that led Newton to ask himself Why? Anatomists knew that the spinal nerve arises by two roots, and had year after year repeated the fact to their students, but Charles Bell asked himself Why?—worked on alone, and Nature answered him in the greatest revelation in physiology that has been made since the time of Harvey. Everybody knew that species resembled each other, but Darwin asked himself the great question, Why is it so? and the answer of the oracle has been such as to have, within my time, changed the point of view towards almost everything, physical and metaphysical.

These men went to Nature. The value to medicine and science in Harvey's life is not merely the discovery he made but the

lesson he taught his contemporaries, and to us, and for all time, that we must go to Nature. The man of to-day says, Why should I trouble myself to read old Harvey's treatise, don't we all know the circulation of the blood? But that epoch-making treatise, short and modest, carries a profound lesson to us all, and, like the Sermon on the Mount, bears reading again and again.

But while it is quite true that the education we give ourselves is the more important of the two, it is a great thing to have a good teacher, one who will start us in the right path, who will give us our method. Time is our most valuable possession, and to have had such a teacher may save us years of our life, the bitter feeling as we near the end that perhaps half of even a constantly busy life has been wasted. Though we are not here from the point of view of trying to make you Harveys and Hunters, it would be a poor compliment to you not to hope that some of you will be found in the honoured rank of those who have exploded error and extended the boundaries of knowledge, or that there may not be now on these benches some one youth, not yet kindled, whose name shall go down to posterity. But we have to bear in mind that every medical practitioner has to be an observer and thinker at every bedside to which he is called, whether in the mansion or the hovel.

It will enable us to answer the question, What constitutes a good teacher? if we bear in mind two fundamental considerations. The one, that all our knowledge is derived from the observation of Nature; the other and consequent one, that such knowledge is constantly on the move. These may at this time of day seem mere platitudes, but I ask, Do we bear them in mind in our teaching, and do we train and indoctrinate our students in accordance with them?

How was it that fourteen hundred years elapsed after the time of Galen till Harvey came and discovered the true course of the blood? Many eminent men, whose names have come down to us through the ages, lived and worked. But they believed in Galen, the Divine Man, as he was called, as infallible. Galen himself seems to us to have stood on the brink of the discovery, but his own theory and his vanity stood in the way. The blood moved from the liver, out and back again, like the flowing and ebbing tide, a plausible theory if you look at a good diagram of the veins of the liver. To reach the left ventricle, where the lamp of life burned, the blood was assumed to pass through "porosities" of the septum, although he must have seen the great pulmonary orifice gaping open. Harvey went to Nature, made countless dissections of animals and experiments, over thirteen years, all the while practising his profession, and step by step arrived at his great demonstration. The famous Fabricius, Harvey's teacher, still taught that the blood went outwards in the veins, and that the valves are a wise provision to moderate the outward flow. From

the time of the immortal Aristotle it had been taught that the egg-shell is soft till after the egg is laid, and Fabricius taught the youthful Harvey that that was a wise provision to save the bird the pains of parturition. Such is the fate of men who are so ready to patronise the wisdom of the Almighty. It was left to Harvey to settle that dispute simply by opening the recently killed laying hen.

You will say that these were old times, but are we sure that we too are not under the influence of authority? Cullen, in a graduation address, said—"To me it appears probable, that from the practice of medicine, as it is at present exercised, there arises much more mischief than advantage, and that it would perhaps be better for mankind if no medical practice existed at all." It is small consolation to think that medicine is not the only profession of which that might have been said. That was spoken by Cullen in the latter half of the last century, but on to the middle of the present century I can recollect the great bloodletting controversy. The theory was set up that disease had changed its type, that patients could not now bear the copious bloodlettings that had been so useful. You may smile at that, but our most respected physicians, including the Professors of the day, taught us that doctrine. It reminds one of the controversy between Sylvius and Vesalius. Young Vesalius, dissecting the human body, taught that there are five pieces in the human sternum. No, said old Sylvius, there are seven, as Galen has described. But look here, replied Vesalius, don't you see there are only five? to which the reply of Sylvius was—that may be now, but in ancient times, the days of heroes with noble breasts, there may very well have been seven.

Abundant illustration that our sciences are ever on the move, rising on the proverbial stepping-stones of their dead selves to better things, could be given from my own recollection if I had time. It has been a half century of extraordinary progress, an age of inquiry, in which all that had been accepted as truth, physical, metaphysical, and historical, has been subjected to the crucible; an age of inventions that have revolutionised our locomotion and our means of communication with each other; and much has been done to alleviate suffering and for the saving of life. Sanitary science and preventive medicine, largely new developments, have produced great results and raise hopes of still greater. In therapeutic medicine one might have expected changes; less so in more matter-of-fact surgery, but in it the changes have been still greater than in the medical side of practice. Not only painless operation, but, as regards the saving of life, the still greater boon of aseptic practice. If the great surgeons of our old Royal Infirmary—the Bells, Liston, Fergusson, Syme—could cross the bourne and see what is now done with safety, they would hold up their hands in amazement. The progress in surgery since my day in the great old Royal Infirmary reads like a romance. The ophthalmoscope

and the laryngoscope, both new in my time, have done much in their limited sphere; but it is mainly to the improvement and the general use of the microscope that we owe the great progress, opening a new world to us into which the naked eye could not penetrate. Thus one new instrument may bring an era in medicine. In short, I may say in regard to the half century I have seen, that almost everything in surgery and medicine has changed. What discoveries may come in your lifetime we cannot predict, nor the source from which they will come, but you may rely on it they will come.[1]

Well, what is the lesson of all this to teachers and to students? To teachers, is it not that our duty is to take our students to Nature, to what we call practical work, and there to train them to observe and to think for themselves, and that all our teaching should be imbued with the spirit of inquiry? To students, is it not that they should seek and appreciate that kind of teaching, in preference to the kind that feeds the memory with verbal knowledge; that they should keep an open mind, and that whatever they hear should be received with what has been called "the slow consenting academic doubt."

This training of the student to observe and think for himself is by no means so easy a thing as may be supposed by those who know him only in the crowd or when he is somewhat advanced. It is the teacher of anatomy who is struck with that. Set the beginner down to a bone with his book, or let him hear a lecture of the usual kind; examine him and you will find he has not really seen anything. He has followed his previous habit at school, has learned his lesson and is ready to repeat what he has read, or more or less of what he has heard. He has to be taught to look and see at every statement that it is so. He has heard the customary lecture on or has been reading about the vertebral column. He will give you off the number of vertebræ in each region, but is pulled up at the question, How do you know? He replies that he heard it, or that his book says so. To the question, Have you counted them? he replies No, with a look of surprise. You hand him a spine and ask him to count. To train him in comparison and to make him think, you send him to the museum to observe how many vertebræ there are in the neck, long or short, of the various mammalian skeletons there, and to come back and tell you what he has found. He has a sacrum before him, and you ask him whether its length or breadth is the greatest. He had not thought of that before, but readily says its length. You put into his hand that useful training instrument, a little foot-rule, and ask him to measure. He finds that his eye has misled him, and learns the value of measurement. If it is a foramen called oval, you ask him whether it is oval or ovoid? if the latter,

[1] Since the above was written the Röntgen rays discovery has come. This is the dawn of a new era in surgery, a resource probably as yet only in its infancy.

Which end is the sharp one? Which side is the most concave? What is its direction? etc. That may be of no moment for its own sake, but it trains him to observe, and he will have a sharp eye in his clinical work. At the very first, fresh from his school method, he seems to think this a waste of time, but you see that soon he has discovered a new power within him and that he delights to exercise it.

I should like to impress upon teachers of anatomy the responsibility that rests with them in giving the student the right start in method. It has been said that, besides its intrinsic importance, the value of anatomy is that it trains the memory. That is exactly what I deprecate as an entirely erroneous method of teaching anatomy. Although the dissection may be on the table or even in the lecturer's or demonstrator's hand, the teaching is too often verbal, addressed to the memory. That has struck me, shocked me shall I say, in the course of my duty as examiner in anatomy, and of candidates from various schools. They readily spin off answers from memory without being able to recognise the object when handed to them. For instance, I have known such a thing as a candidate giving quite a beautiful account of the characters of the typical cervical vertebra when the bone handed to him was a typical dorsal vertebra with the request to say to which group it belonged.[1] Much time, I am sure, is wasted in the anatomical lecture-room in putting for the memory details for which the practical rooms are the right place, while the opportunity is lost of directing the student's eye and thought to the really important and interesting things of anatomy. And if that is to be said of the customary lecture on a subject so demonstrative as anatomy, I ask what is to be said for details addressed to the memory in the customary lecture on subjects in which there is so much less, or little, to present to the eye, instead of leaving them to the laboratory or the bedside, and to the printed page?

As bearing on the present system of the medical schools, you will have perceived that these views imply that there should be more practical work, that is, more going to Nature, and less time consumed in the lecture-room. In, say, this last quarter of a century the amount of lecturing has not been lessened but increased. Special departments have been split off, with the inevitable addition of special courses of lectures, while the general courses have not been shortened. Classes more or less "practical" have been added in nearly every subject in the curriculum of study, without the corresponding diminution that should have taken place in the time occupied with lectures. The result is congestion. The student is pulled about from class-room to class-room; hardly settled to his dissection or to some other laboratory work when he is summoned off by the lecture-room bell. It has not been a case of the venerable illustration of putting new wine

[1] See Appendix.

into old bottles, but, if the simile may be continued, of trying to put two pints into a one pint bottle.

In case you may think these views erratic, let me quote to you the deliverance of the General Medical Council, by whom these questions were fully discussed when the Council, four years ago, resolved to extend the period of study to five years. The Council gave the following definition of what practical work should consist, with an appreciation of its primary importance: —

"Due time should be set aside for Practical Work in the various subjects. By a Practical Course is understood one in which work is done by the student himself, under the direction of a duly qualified teacher."

Then as to the amount of lecturing: —

"The Regulations requiring attendance on Systematic Courses of Lectures need not require attendance on more than three Lectures weekly in any one Course."

They are before us in France in having thought out these questions. You may see the account of their system in the report which it fell to me to prepare for the Medical Council, as chairman of its Education Committee, when we were planning the new five-year course, after careful inquiry into the systems followed on the Continent. The system in Paris, stated shortly, is: — The first, the better, half of the day is set aside for the hospital and for practical work in the laboratories; no lectures allowed before 2 o'clock; and the number of lectures in any course are two or three a week, never exceeding three. No one will say that medicine is not well taught in Paris.

That may be taken as my ideal of our medical school of the future. There may be difficulties to overcome and the transition may be gradual, but it is manifest that the modern demand for more practical teaching in all the branches and for more clinical work will oblige the schools to move in that direction. It has been suggested to me that it would be well if all lecturing in our medical schools could be stopped for a couple of years, so as to throw us upon our resources for the giving and acquiring of real knowledge. Lectures will always deserve to hold a high place in medical education when they are of reasonable number and of a high order; the teacher going before his assembled class not as grinder but as commentator, guiding and inspiring his students, introducing more or less demonstration or experiment according to the nature of the subject and of a kind suitable before the crowd. In such a bi-weekly or tri-weekly lecture there will be more benefit from the "living voice" and more of the "intellectual atmosphere" than in the kind of lecture in which a stream of "information," nearly all of it already in the student's hands in the printed page, is poured from day to day upon the memory.

The very term "Lecturer" is unfortunate. The "Demonstrator" in the practical rooms is not satisfied until he has got to

the lifting up of his voice in the lecture-room, though his first office is really the higher one. The lecturing way is the easier way, and it gratifies human vanity to stand up before a class and speak. The young student, too, is said to like it, as yet knowing no better, but I doubt whether the advanced student relishes four hours a day in the lecture-room besides his clinical work. The lecturing system had its origin and rise in the absence of other means of obtaining a complete account of the subject according to the accepted knowledge of the period. That cannot be said now. It is not "book knowledge" I plead for. I deprecate trusting to verbal knowledge whether obtained from books or from lectures. I would say to the teacher, Leave to books what books can do, and do you for the student that which books cannot do. Take him to the Book of Nature. As to lectures, the question is one between use and abuse, between lecturing and over-lecturing. But the primary question is, Has sufficient time been set aside for practical work in the dissecting-room and in the other laboratories and for clinical work at the Hospitals? Until that is done there is no ground for discussion, and when that has been done the rest may be left to adjust itself.[1]

It would be an omission not to notice the changes implied in the institution of the five-year course. These affect especially the first and the last year of study. In regard to the studies of the *first* year, I wish to give a friendly hint to teachers of the new subjects—physics and "biology," so-called—that these studies are being pressed further than was intended by those who were responsible for bringing them inside the medical course for all students. It was a question with us in the Medical Council whether to do so or to place them in the preliminary examination. We expected that bringing them inside the course would secure their being more practically taught. But if this is to end, as would appear, in the student having to attend both a lecture-class and a "practical" class in each, interfering with more important work, it may yet lead to these subjects being relegated to the preliminary examination in general education. There was much to be said for the view that in the old four-year course the thorough beginning with anatomy, followed by physiology, was an excellent introduction to biology and to method. The student

[1] It may be here noted that the regulations of our Medical Boards do not now require us to give so many lectures as they did till a few years ago,—100 lectures in the winter courses, 50 in the summer courses, implying a daily lecture. The regulations of our Conjoint Board say expressly that systematic lectures need not be oftener than thrice a week; and under the new Ordinances of our Universities it is left open what the "number of meetings" in any course shall be, and "what proportion of the courses shall be devoted to lectures, practical demonstrations, examinations, and tutorial work respectively." Professors and Lecturers alike may thus reduce the number of lectures and give more time to practical and clinical work if they like. It will be interesting to see which of our schools will take the lead in this.

will get more insight from dissecting the limb of a man than the limb of a frog. I was quite aware, in taking my part in introducing these new subjects, that there would have to be some re-arrangement of the anatomical teaching in the first year, but it will not do to push anatomy out of the first-year studies. To say nothing of its inherent utility and the method it brings, how else is the student to be ready to study physiology in his second year?

In regard to the work intended for the new *fifth* year, now impending, our purpose in the Medical Council was that it should be entirely devoted to clinical work, as thus expressed by the Council:—

"The fifth year should be devoted to Clinical work at one or more Public Hospitals or Dispensaries, British or Foreign, recognised by any of the Medical Authorities mentioned in Schedule (A) of the *Medical Act* (1858), provided that of this year six months may be passed as a pupil to a Registered Practitioner possessing such opportunities of imparting practical knowledge as shall be satisfactory to the Medical Authorities."

It is to be hoped that the medical schools will loyally carry out that purpose and abstain from endeavouring to induce the student to make it another year of lecture attending. With that view the fourth-year student should make a point of finishing off with all the courses of lectures he is required by the regulations to take.

A word of explanation I feel it due here to make in regard to the necessarily critical nature of these remarks in pleading for my ideal of the medical school of the future. Had they been intended for this school in particular, I would have felt myself in the position of the prophet in the venerable tradition, who was asked to come and bless, but who did something altogether different. To prevent any such misconception, I make a clean breast of it by saying, that any youth intending to study medicine would get from me without hesitation the advice to turn his face to Edinburgh, with in all probability the further advice to ask me when he got there what he should take and what leave. A well-equipped and ably-officered University; around its walls the Extra-mural Schools, with their large body of active teachers in useful and honourable rivalry with the teaching within the walls; dissecting-rooms and other laboratories unsurpassed; great museums; and, close by, the grand new Royal Infirmary, the true centre of the School, with its large and active staff of surgeons and physicians. Such a combination of opportunities and activities I know not anywhere else in Her Majesty's dominions. The school will not, I trust, take it amiss my having offered these criticisms and suggestions, which I submit respectfully to teachers and students alike, as coming earnestly from one who is near the end of a long life spent in medical education and in endeavouring to improve it.

Appendix.

On the present Examination System in relation to Medical Education.

The subject of Pass Examinations, though not suitable to be discussed in an address to students, has too important a relation to medical education not to be noticed here. The present system has, in my opinion, an injurious influence on education and requires the serious reconsideration of the Examining Boards.

It is a deplorable fact, as the annual returns made to the Medical Council show, that about one-third of the candidates are rejected, and that at some of the Boards, at the final examination especially, the proportion is even higher, approaching one-half. There is in that evidently something wrong either in the education or in the examination. Unless there is some exceptional want of ability, it does not appear why every student who has worked fairly well should not pass if he gets time to show what is in him, and if what a student can be reasonably expected to know is kept in mind. The uncertainty attending the examinations has itself a disturbing effect on the student and leads him to think of special methods of preparation, for which he has recourse to a grinder instead of trusting to his teacher and to fair steady work. From my long and intimate relation with students, I would say that the average student works fairly well. There is a small percentage of the Prodigal Son, and there are a few who have somehow got through the preliminary examination in general education at which they should have been stopped on the score of deficient ability; but these together are, according to my impression, far from amounting to one-third of the whole. It is the duty of the teacher to see that the student is kept at his work, but the average student needs little of that; he takes to his work readily and likes it, and works fairly well, not shirking class examinations.

The primary error in the present system is the number of the examinations. The student works for these examinations, in the dread of them, rather than to know his work; in short, grinds and crams for each successive bit of the examinations. There are not only the four statutory examinations, but these may be subdivided variously. The regulations of the Conjoint Boards allow of this subdivision to a large extent. It is especially injurious at the final examination, at which the subjects of Surgery, Medicine, and Midwifery may be entered for separately at even long intervals. By the time he enters for the second or third of these three parts he may have forgot what he had crammed for the first or first and second parts. It is clearly the meaning of the final examination that it should test a candidate's general fitness to practise his profession. The system is entirely indefensible. The English Conjoint Board is primarily to blame for this, and the Scotch Conjoint Board excuses itself on the ground that it must follow suit.

It appears that candidates like this system, which may be taken as further evidence that cramming is reckoned the safest way of getting through. The antecedent influence on the legitimate teacher is injurious. He has to bend to it and becomes a lecture-room grinder for the approaching bit of the examination. It may seem a hard thing to say, but the lecture-room teaching of the day has drifted largely in this direction. It will be found, I believe, on inquiry that many students in addition take out a grinder in the same subject, a grinder, observe, who has not the means of giving objective or clinical teaching, but who professes to prepare the candidate for the examination.

I ask, What is to be said for an examination so conducted that such preparation is believed to be useful for it? Does it not show that word knowledge, not real knowledge, is at a premium at the pass examination? As an examiner in that matter-of-fact subject, anatomy, I again and again meet with

candidates who are painfully crammed, but who break down on the common dissections, or even on the bones, placed before them. One is quite sorry for them, in the method they have trusted to; half the pains they have taken would, if applied in the right way, have enabled them probably to get through.

A great encouragement to this cramming work is the importance now given to written examination. It tests cramming knowledge, verbal knowledge, only. Written examination appears to be a British specialty, and is a comparatively modern one. As far as I could learn, in preparing a report on the subject for the Medical Council, there is no written examination for passes in France or in Germany. Here they began in our University in the middle of my student time, and there was no such thing when I passed for the Licence and Fellowship of the College of Surgeons, nor was there at the London College. Now they have assumed great importance, and many students are rejected on them, not allowed to go forward to the oral and practical parts of the examination. Long and attentive experience in working my class satisfied me that written examinations often do great injustice to students. Some who write what is called a poor paper come to the front at the oral and practical parts, and *vice versa*. So strongly do I feel this that I have little faith in the lists of class honours gained, as they generally are, on written examination only; and for pass examinations I very seldom stop a candidate from getting on to the oral and practical part at which he may redeem himself.

That may not apply so much in subjects that admit of less demonstrative treatment than anatomy does, but there is no subject in which a candidate may not be fairly tested in an oral and practical examination if he is given time. That I hold to be a great blot on the present system; the candidate is not given time at the oral and practical examination to show what is in him. It requires patience and consideration to be an examiner. There are some wonderfully clever men who say they can decide in five minutes. I have been at that work for forty years, at various Boards, and have examined I would not venture to say how many candidates, but I confess to often being uncertain, in the time usually allowed, whether the candidate should pass, unless I had taught him and had often examined him orally in the class. It is a distressing position to be in, to have to say whether the public or the candidate should have the benefit of the doubt.

Then, there often is forgetfulness as to what can reasonably be expected from candidates. In the sciences, experts are set upon him who expect him to know the details they have come to know; and, clinically, experts again expect him to know what years have enabled them to know. The experts are for the most part teachers, and no examiner is so unreasonable in his expectations as the young teacher. I beg not to be taken as one who would lower the standard of examination. My object ever has been to raise it, and to do so by applying the kind of examination that will test real knowledge, the kind of knowledge that fits a man for the practice of his profession. I have alluded to teachers being examiners. I do not object to that. They, or those who have recently been teachers, know, or should know, best the kind of knowledge a student can possess; but they are apt to carry the examination too much into detail. The pass examinations have got too much into the hands of teachers. The aim of the examination should be to see that the candidate has such a fair acquaintance with the subject as may suffice for the practice of his profession, such knowledge of it as a fairly-working student can reasonably be expected to have, and, with that view, one of the two examiners present should not be a teacher of the subject.

I say, generally, that the aim of all pass examinations should be, not to test what a student can cram up, but what he has retained. I hold that our present examination system is doing the former and is not doing the latter; that the system is thereby discouraging the best method in medical education, while it fails to accomplish its own purpose. I submit, therefore, that the

examination system should undergo the following re-arrangement :—That the statutory examinations should be reduced to three, without subdivision and with definite intervals. That the *first* examination, including chemistry, physics, and biology, on a reasonable standard, may take place when the student likes ; that the *second* examination, including anatomy and physiology, may take place at the end of the second year, but not till at least a year has intervened after the first examination has been passed ; and that between the passing of the second and admission to the *final* examination, on the remaining subjects, there should be an interval of at least two years. I see no good reason for separating materia medica and pathology from medicine and surgery in a final examination, if the aim of the examination is to test what a candidate has retained, not what he can cram up. That view may not please teachers, but teachers have now got too much say in the framing of regulations as well as in conducting pass examinations. Their duty in examination is in conducting their class-work. I see no harm in exempting a candidate from re-examination in any subject in which he makes a decidedly good appearance, but that is a very different thing from admitting candidates to examination on individual subjects. Finally, that less, much less, importance should be attached to the written part of the examination, and more time given to the oral and practical parts.

PRINTED BY OLIVER AND BOYD, EDINBURGH.