Summary

The historical background of the Hadassah Medical School of the Hebrew University is reviewed.

Visits to several of its departments are described.

Its curriculum and its attitude to selected topics in medical education are discussed.

The following three aspects of its work are emphasized: (1) the tremendous enthusiasm of both staff and students; (2) the acceptance of full responsibility by the University for the students it selects; and (3) the innovations and the interest shown in the field of medical education.

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THE STUDENT AND THE CLINICAL CURRICULUM

BY

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In 1956 and 1957 the British Medical Students' Association conducted inquiries into the pre-clinical curriculum. The reports were published in November of 1957, and the comments reaching the association have nearly all been complimentary. This year a survey of the clinical curriculum has been begun, and the first part has been designed to produce a broad outline of teaching methods throughout the country and to find what the students think of them. Nearly all the people concerned have been most co-operative and helpful, but at least one dean has refused to allow the questionnaires to be answered in his school, apparently because he considers the work "audacious."

From this, many questions might arise, but there are probably two which stand out prominently. Firstly, what is the students' place in the clinical curriculum? and secondly, Can students make a useful contribution to medical education? One way of considering these questions is by examining the part each teaching unit plays in the curriculum.

One hundred years ago the student's place was clear-cut and exact. He spent most of his time learning direct from his teachers and the remainder in reading his books. This system was reasonable at a time when the teachers could know most of their subject and therefore knew what to teach the students. To-day the situation is vastly different, and no consultant, let alone a student, can hope to know more than a small proportion of Medicine as a whole. While a cardiologist may master his subject he certainly cannot master the whole of clinical medicine; and yet in many, if not all, teaching hospitals the specialists admit general medical cases to their wards and teach general medicine. This method is essential if the specialist is to retain a balanced view of medicine, and to some extent this type of teaching is very good; but we may find the consultant whose specialty is cardiology teaching on a case of ulcerative colitis when it is not inconceivable that the student may

know more of this subject than his chief, having been instructed in it by a gastro-enterologist. Many consultants realize this and concentrate most of their teaching on cases of their own specialty, leaving the diseases with which they are less conversant to registrars and other consultants. As a result, a large bulk of the teaching falls on the shoulders of the registrars.

The second major factor in the student's education is the reading he does. This varies tremendously, as in fact it should, but under the present methods of teaching and examinations it is easily possible for a student to pass all of his final examination, at the first attempt, without looking at a textbook for the first half of his clinical course, and certainly he need never open a medical journal. At one time there may have been many arguments in favour of a situation such as this, but to-day a textbook is often out of date by the time it is published, and it is only by constant, carefully selective reading of both books and journals that a doctor can keep abreast of medicine. At how many medical schools in this country is the student taught how to read? It is very easy to say that this is something that every student must learn for himself, but all too often one meets a student who proudly boasts that he has twice read his textbook of medicine from cover to cover before entering his final examination. While this may be a very effective method of passing examinations it is neither an adequate nor a correct preparation for professional life.

It is my belief that too much is left to chance in medical teaching, and as a result, particularly in the London teaching hospitals, the training is far too vocational. This is not to suggest that spoon-feeding is required. It is very easy to criticize, particularly when one is young, but in many ways the student is closer to the curriculum than are his teachers, and as the newly qualified doctor prepares to enter his first professional appointment he may be all too aware of the deficiencies in his teaching.

The Place of the Medical School

The primary function of the medical school is to produce a doctor with a good basic training in all parts of his profession. No matter what branch he will eventually specialize in he must have a good understanding of all the major aspects of medicine. This must include an adequate training in psychiatry, and the emphasis might well be on the neuroses rather than on the more sensational but considerably less frequent acute conditions. Social medicine, general practice, and marital relations are three more subjects which are so important and yet occupy such a small place in the curriculum.

The medical school should aim at giving the student a broad university background. In London, owing to distance alone, he is almost completely cut off from his university, and five or six years at a place training for only one profession must, in many instances, tend to give him a narrow and biased outlook.

A good doctor must have a thorough understanding of normal family life and the influence of illness and disease upon it. If it is necessary to know the normal anatomy before learning surgery, how much more important it is to understand the normal person before trying to understand the ailing one. It is basically wrong to teach diseases as biochemical reactions or separate entities when so much of any disease lies in the mind.

I do not propose to discuss the many ways in which a student may be helped to gain this understanding, but one effective and fairly uncomplicated method, used in some

American schools, is to attach him to a family during his entire clinical course and to whom he pays regular visits.

This, then, is a brief outline of what the medical school can give the student; but what can the student do to help the medical school achieve its aims? The basis of a good medical school is good teaching by those who are interested in their subject and alive to the needs and problems of the students. There is only one person really capable of assessing teachers, and that is the student, who is on the receiving end. One method is for each student to write a short report, anonymously, at the end of each firm on each of his teachers. Those who are consistently reported upon adversely should be relieved of their teaching duties. They could then spend their time in the other two functions of a teaching hospital—namely, to provide a good hospital service for the community and to undertake or encourage research. Nearly always the bad teachers are those who are not interested and undertake the work because it is part of the appointment.

The Place of the Consultant

The consultant's place in the teaching hospital is well demarcated. To-day he is a specialist, often in a narrow field which is tending to become more and more narrow. His main task is to provide medical care for his patients. Having done this, he has two subsidiary jobs in that he is responsible for teaching on his firm and he usually undertakes research. Only the professor of the department, if one exists, can give a great amount of time to teaching, but even he is often hampered by research. In this country the appointment of a consultant or professor often depends largely on published work or research rather than on ability or desire to teach. If this method of selection is to be used then it seems logical for him to confine his teaching to his specialty.

This can be done in four ways. It is doubtful if long courses of formal lectures on every subject are a good method of teaching; but a specialist lecturing on interesting features or aspects of his work is more likely to inform and inspire students than would long and exhausting lectures on basic fundamentals, repeated each year. The second method the consultant may use is the ward round. This is a time-honoured and excellent way to teach if properly done, and there can be no substitute for a living patient. It is impossible, and unnecessary, for a consultant to prepare a lecture on each patient before the round so long as he confines himself to serious teaching only on cases of his own specialty. It is asking too much for a consultant to become an eminent specialist in one field and remain a general physician in teaching. While some of the older physicians can still do this, it will be increasingly difficult in the years to come, and it is not giving the student the best of the consultant's teaching. Of course, any doctor should be able to teach on the basic symptoms and signs of any disease, but my submission is that the consultant wastes time in teaching things that a registrar can do as well.

In the out-patient department students should be able to take histories and examine the patients so that they can be presented to the consultant in the presence of the firm. This method is indeed time-consuming, but if one undertakes to teach it must be done properly, and it is all too easy to doze through clinical demonstrations in a hot and stuffy out-patient department.

There is a fourth method of teaching, which could, to great advantage, be more widely used. That is the system of conference—either the clinico-pathological conferences or conferences between firms, or even hospitals, each firm demonstrating difficult or unusual cases. Whereas one consultant may act as chairman at these meetings, I believe that specialists, pathologist, registrars, housemen, and students should be heard equally. The student may be poorer in knowledge and experience, but at the time he qualifies he is probably at the peak of his intellectual ability. The motive in teaching must always be to make the student think, not

to see that he knows the mean corpuscular haemoglobin or ten causes of Addison's disease. These will come naturally at a later stage, and, although a student should be familiar with the majority of common diseases, he must also see many of the rarer and more obscure ones.

The Place of the Registrar

The registrar is a vital instructor, if not the most important one, in the whole clinical curriculum, for a good and keen registrar can do much to influence the student. He is the person largely responsible for teaching the fundamentals of medicine. He is the one who has, or should have, enough time to ensure that every student on the firm fully understands every case he is assigned. No one is better placed to carry out teaching by small group tutorials—and this is, without doubt, one of the most effective methods. A registrar is bound to be closer to the student than the consultant, and he should be more aware of the possible problems. It is up to registrars to teach the students how to learn, and how to read both textbooks and journals. If they are too busy to carry out this work, the medical school is placed under an obligation to provide more registrars. There are certainly enough of them available.

The Place of Research

Research, from the students' point of view, may be broadly divided into two groups. The first is research into a particular subject by reviewing the literature. The ultimate goal is the production of a paper which summarizes the present-day knowledge or development of a subject. This paper may be read to the firm in the presence of the consultant, or to a medical society, or, rarely, it may be published. A paper of this sort every three months soon teaches a student how to use his books and journals.

The second type is, of course, original research, and I am certain that many students could make valuable contributions if they were given support and encouragement. This is already done in some departments of some medical schools, but there may well be a case for extending this method of teaching. It does, however, require sympathetic consultants and registrars who are interested in teaching as well as medicine. Research is one of the methods of keeping a doctor's interest alive, and in many ways it is a question of habit. Surely it is during student days that this habit should be developed.

The Place of the Examination

That examinations are a necessary evil is unquestionable. Whether the present system is the best is another matter. If a student can spend three years at a medical school and then take two years to pass his final examinations something is wrong. In America a student is examined regularly throughout the course, and the results are considered along with his teachers' opinions. If, without good reason, his reports are consistently bad he is forced to leave. The result is that a student approaching finals knows fairly well what his chances of passing are, and the majority do pass. Few people would like to see the fierce competitive struggles of America introduced to this country, but some modification of the American methods of examination might provide a fairer consideration of a candidate's knowledge and ability. A corollary would be the abolition of non-university examinations. Too many students are not at their best when faced with the absolute hurdle of an examination which may be taken as the only proof of ability to practise medicine.

Conclusion

This short paper may seem very presumptuous, but as a student who has just undergone three years of clinical teaching as well as having the opportunity to compare the teaching in many schools, I feel that some ideas, purely personal, may be placed before our teachers, who are at present reviewing the curriculum.

The General Medical Council has virtually given a free hand to the medical schools to reorganize the curriculum, and while experimenting there can be little harm in trying methods used in other countries.

The time has come to realize that the clinical student is no longer a schoolchild but an adult at one of the most impressionable periods of life, and, while the majority of teachers appreciate this, there are still many people who believe that those on the very bottom rung of the ladder should be seen and heard only when spoken to. The transition from student to doctor should be almost imperceptible, not suddenly on obtaining some letters after one's name.

Nova et Vetera

GRAY'S ANATOMY THE FIRST HUNDRED YEARS

Biologically, survival for a hundred years is sufficiently rare to be regarded as a curiosity, but in the world of books there are creations so timeless as to be unaffected by a century more or less of human regard. *Gray's Anatomy*, which was first published on September 1, 1858, can by no stretch of the imagination be included among these immortals. In earlier times, when age lent authority to medical as well as theological doctrine, it was commonplace for students to be examined on texts almost as ancient as their own civilization. That the same work should have served so many generations of medical students in a century which has seen greater advances in medical knowledge than had the thousand which preceded it is so extraordinary a fact as to rank with the curiosities.

What is the reason for it? Has anatomy stood still while all else has been on the march? Or is it so little regarded that the same manual which instructed our great-grandfathers will serve for our sons? What is so special about this book, that, in an age and in a department of knowledge where the very latest information is eagerly sought, it should reach the solitary eminence among current textbooks of celebrating its centenary? The answer must be that, like other centenarians, it owes its survival to the intelligence and skill with which it has been treated, at critical times, by its medical attendants, in this case a succession of distinguished editors and gifted draughtsmen. They have amputated, excised, grafted, and injected to such effect that Gray himself would regard with amazement the prodigy which has grown from his own modest offspring, although a closer inspection would enable him to recognize its original features.

Henry Gray

The son of a Court Messenger, Henry Gray was born in 1827 and enrolled as a student at St. George's in 1845. Painstaking industry, rather than brilliance, won him an important prize from the Royal College of Surgeons in 1848, and at the age of 25 he was elected a Fellow of the Royal Society, a distinction less notable than it is to-day. For a dissertation "On the structure and use of the spleen" he was in 1853 awarded the Astley Cooper prize of 300 guineas. He was, then, a young man of promise and some achievement—but not the greatest or even the most knowledgeable anatomist of his day—when he set out to provide the student, within the covers of a single volume, all that he needed to know of human anatomy in order to pass his examinations and to practise competently as physician or surgeon.

His duties as demonstrator and lecturer on anatomy at St. George's, and as curator of its museum, gave him the experience and material necessary for such a work. Within his own circle of friends and colleagues he was fortunate in

having a first-class draughtsman, Henry Vandyke Carter (1831–97),¹ who had also held the post of demonstrator of anatomy at St. George's, and an unusually skilled literary mentor, Timothy Holmes (1825–1907),² who was also a surgeon-anatomist. Gray's debt to his illustrator is plain for all to see, and the early success of the book has been attributed to the excellence of Carter's drawings. Of these there were 363 in a volume of 750 pages. The greater part of them were entirely original, but some were borrowed—with acknowledgment—from the works of Quain, Arnold, Breschet, Mascagni, and others, the black-and-white of the woodcuts being relieved by colour only in the sections on the blood vessels, where blue and red indicate veins and arteries. The order is similar to that of modern editions,

FIG. 1.—Henry Gray (1827–1861), from an original photograph taken by Henry Pollock. By courtesy of the Wellcome Historical Medical Museum.

but sections originally dealt with separately are now grouped together under the comprehensive headings of angiology, neurology, and splanchnology. Notable by their absence are the now familiar introductory sections on histology and embryology.

The publisher, John W. Parker, included many of the great Victorian authors in his list. He was printer to Cambridge University and is remembered for the introduction of the steam-press against considerable opposition, especially when it was employed in printing Bibles, a proceeding regarded as faintly sacrilegious. His imprint also appeared on the second edition in 1860, but in 1863 he retired and sold his business, with all his copyrights, to Longmans, whose name is found on the title-page of Gray's third edition in 1864.

Work must have begun on a second edition almost immediately, for it was published at the end of 1860 with a number of revisions and corrections by Gray and with 32 additional illustrations, 27 of them from new and original drawings by John Guise Westmacott (1811–84). This was the last edition for which Gray himself was responsible. In June, 1861, while attending a nephew suffering from small-pox, he contracted the disease and died within a week. He was 34.