

DALHOUSIE MEDICAL SCHOOL - PRESENT AND FUTURE.

You, who are attending this 30th annual Dalhousie Refresher Course, have a full schedule of lectures, clinics and demonstrations, touching upon many aspects of the practice of Medicine. May I ask you to pause for a few minutes to consider the subject of medical education, and in particular the role of Dalhousie University's Faculty of Medicine.

Each spring before the graduation of a new class of medical students, I discuss with them the content and import of the Oath of Hippocrates. I always like to quote the following section, which comes near the beginning of the Oath:

"By precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons and those of my teachers and to disciples bound by a stipulation and oath according to the law of Medicine."

I like to point out that this ancient Hippocratic Oath mentions teaching as one of the first duties of the new physician, before it makes any reference to the basic principles of ethical practice. This is only one indication of the awareness of the physician, since time immemorial, of his role in maintaining and transmitting medical knowledge. Few professional groups are more aware of the desirability, and indeed the absolute necessity, of a sound education in fundamental principles of medicine, of adequate practical training in the Art and Science of Medicine, of continuing education throughout a full lifetime of service, and of sharing one's knowledge with one's confreres. Taking for granted your interest in the subject of medical education, I therefore asked for a few minutes at this meeting to tell you about some of our problems, our plans, and our dreams at Dalhousie Medical School.



Furthermore we are deeply indebted to the physicians of these four provinces for their generous response to our alumni appeal last winter. I feel that we owe you some explanation of what we are attempting to do with the gifts you so generously provided. In addition, I would like to suggest that you who are in practice, can help us by constructive criticism of our methods and of our end-product - the graduate.

It has sometimes been said that the smaller medical schools such as Dalhousie should aim primarily at the training of general practitioners. I do not agree. I do not think that any modern medical school can or should attempt to produce specialists at the undergraduate level and by specialists I mean the fully trained practitioner whether in a limited field or in that largest of all specialties, general practice. Up to the end of the fourth year we are attempting to give a broad basic medical education to produce what has been called an "undifferentiated medical graduate" - one who is prepared to branch off into any specialty, including that of general practice, after a further period of practical training. That then is our basic aim.

There are many aspects of the Medical School which I would like to discuss, the physical facilities, the pre-medical studies, medical curriculum, interne training, graduate and extension programmes, and medical research. In the available time I can only skim the surface and I must apologise for the superficial nature of these remarks. Nevertheless may I make a few comments on each of these subjects.



First let us consider the physical facilities of the Medical School. Not because they are first in importance. We are more concerned with quality than with quantity at Dalhousie and more interested in the teaching and the teachers than in the architecture of our buildings. However, this is the only medical school in the four Atlantic Provinces and we must consider the adequacy of our School to meet the needs of this area.

The capacity of Dalhousie Medical School has not been changed appreciably for many years. The determining factor has been the size of the basic science laboratories. These were originally designed for sixty students, fifty medical and ten dental. The Medical Sciences Building and the Pathology Institute were both constructed in 1923. The only appreciable increase came after World War II when facilities for ten additional students were installed in these laboratories, allowing us to take a first year class of fifty-eight medical and twelve dental students.

Construction is now underway on a new building to house the clinical departments of a larger Faculty of Dentistry. There can be no question of the need for this expansion. These four provinces have the worst ratio of population to dentist of any region in Canada. The new building will provide for a class of twenty-five to thirty students per year. It is therefore obvious that an enlargement of the basic science laboratories in the medical buildings will be required to take care of this increased enrollment in Dentistry.



This has posed the question whether some increase in the medical class is also desirable.

After careful study our Faculty concluded that a minimum of sixty-four medical graduates per year would be required from Dalhousie University to meet the replacement needs caused by retirement and death and to serve the growing population of these provinces, taking into account the loss of Dalhousie graduates to other areas and the reverse inflow of graduates from other medical schools to practise in these provinces. To provide for sixty-four graduates instead of the present fifty we would have to admit a first year class of at least seventy-five. We are therefore planning to expand our facilities as rapidly as possible to take care of a first year class of seventy-five medical and twenty-five dental students, a total of one hundred.

Do we have the clinical facilities to train a larger class of medical students? I believe the answer is an unqualified "yes". Halifax is not a very large city, but the hospitals serve as referral centres for the Province of Nova Scotia with a population of almost 700,000. Forty per cent of the patients in the Victoria General Hospital and a considerable proportion of those in the Children's and Grace Maternity hospitals are from beyond the confines of Halifax city and county. In fact, approximately ten per cent of all patients hospitalised throughout Nova Scotia, excluding the Halifax district, are eventually referred to Halifax hospitals. Another point which is not generally appreciated is that the Victoria General Hospital has a very much larger proportion of ward beds under supervision of the active staff than most of the teaching hospital in Canada. Two years ago 68.4 per cent of the total patient days of hospital care in the Victoria General Hospital was for ward patients, who <sup>are</sup> ~~were~~ cared for exclusively by the teaching staff.



A comparison at that time with other teaching hospitals in Canada showed that in many other centres the proportion of patients under direct staff supervision and available freely for clinical teaching was 20 to 30 per cent of the total. The hospitals are larger but the teaching beds are not so numerous.

The clinical facilities then should be adequate and the bottleneck in expanding the medical class is in the basic science laboratories. I am happy to report that we now see our way clear to removing this obstacle.

During the past winter and spring the heads of the three departments of Physiology, Pharmacology and Biochemistry gave one of the finest illustrations of co-operative work that I have seen for some time. Each department had its own teaching laboratory differing markedly in design, particularly with respect to the laboratory benches and other equipment. The three Professors decided that with careful planning they could design a laboratory bench that would be satisfactory, to all three departments, and they were prepared to co-operate in using the same teaching laboratory for all three courses. During the past summer, therefore, the teaching laboratories of the Medical Sciences Building have been re-designed and re-equipped to make much more efficient use of space at present available. In the two laboratories which were formerly assigned to Physiology and Biochemistry we can now house forty-eight students each, or a total of ninety-six. All courses in Physiology, Biochemistry and Pharmacology are held in these two laboratories. The former teaching laboratory of Pharmacology has thus been set free and has now been re-designed to provide four offices and four research laboratories for the staff members. Since research is an essential part of the work of the Medical School this



increase in facilities will greatly improve our opportunity of obtaining highly qualified personnel and of improving the output of research from Dalhousie.

May I suggest that while you are in Halifax you might be interested in looking at the changes that have been made in these teaching laboratories. We are particularly grateful to our Dalhousie Alumni whose donations covered the total cost of this very economical but very valuable re-design of the Medical Sciences Building.

When the present Dental School moves into its new quarters there will be additional space in the Forrest Building to allow expansion of the Department of Anatomy and Micro-anatomy. The Provincial Government has also decided to enlarge the Pathology Institute. The plans are now being drawn for an extension to that building. It will greatly improve the laboratory services in Pathology, Bacteriology, Virology and Haematology and will also enlarge the teaching laboratories to allow us to train approximately one hundred medical and dental students.

We therefore expect that within two years we will have all the facilities that will be necessary to allow for an increase in student enrollment to a size that should be adequate to take care of the needs of the four Atlantic Provinces. There will be need for additional facilities in the Medical Library, for more research space for the clinical departments of Medicine, Surgery, Obstetrics and Paediatrics and for offices and research laboratories for the additional staff which will be needed to train the enlarged class. We hope that these facilities will also be available in the near future although the means of obtaining them is not so clear at the moment as for those already described.



The pre-medical course should be discussed briefly. Dalhousie Medical School was one of the last on the continent to increase pre-medical requirements from two to three year. The students who entered Medicine this September were all required to have completed three years of university work, instead of two. This change has created considerable discussion. With the greatly increased demand for specialty training of four or five years after the M.D. degree, physicians sometimes question the desirability of also extending the pre-medical requirements. They say that there is a danger that the long training period will frighten off some good candidates.

I think one basic fact must be kept in mind. Medicine is a profession of educated men. It is not a technical trade. The increasing demand for four or five years of technical training in a specialty and the recommendation for at least two years of practical training in internship before a graduate enters general practice, are all aimed at improving the practical proficiency of the graduate. We should be very careful that this fetish for longer periods of so-called practical training is not permitted to reduce the quality of the educational programme which must precede such technical training if Medicine is to remain an educated profession.



university work, which will then make him eligible for an Arts or Science degree.

In the Medical School itself our course has been completely revised during the past two years. A committee studied all aspects of the curriculum, as well as the various experiments in medical education which have been conducted in other centres. The new curriculum went into effect last year and in the spring it was again thoroughly reviewed in the light of our experience. Certain features may be worthy of mention.

The year is now divided into three terms of equal length of eleven weeks each. An interval of one week elapses during which examinations are held. A shorter term allows more freedom in re-allocating the courses and this in turn changes the emphasis on some courses. For example, a student in first year is now introduced to Biochemistry as the major subject in the first two trimesters. We feel that modern medicine requires emphasis on the functional aspects and that Biochemistry and Physiology serve as a better introduction to the study of Medicine than Anatomy, important as this subject is. The study of Anatomy and Micro-anatomy is emphasized more in the latter part of first year and the beginning of second year. We have attempted to break down departmental barriers to a considerable degree. A part of the time formerly devoted to departmental teaching has now been assigned to interdepartmental or co-operative programmes. We have also attempted to break down the barriers between years. The students see a few patients in the first year to give them some indication of the application of the sciences which they are studying. Students in third and fourth years are in turn given review courses in the basic sciences in co-operation with the teachers of the clinical departments. Co-operation is the keynote of the teaching programme. A highly individualistic



teacher may have many admirable characteristics, but Medicine is too complex to be taught by one man. Team work is more and more essential to success.

We have also been able to free a certain part of the time in each year for individual projects such as Library work, research, and for various cultural activities. We are making plans to develop a comprehensive medical care programme in an effort to give our students more clinical experience in the home and out-patient departments. I think it is a valid criticism of all medical schools today that the practical training is too much centred around the hospital, and hospital patient. We are attempting to organise a programme which will correct this defect. The details have not yet been worked out completely, but we believe that this will provide an excellent opportunity for a broader practical experience for the students and also for the participation of general practitioners in the teaching programme.

Unlike most medical schools we still retain the fifth year internship. Most other medical schools give the degree at the end of the fourth year, but the student is required to take a rotating internship before he is eligible for the examinations of the Medical Council of Canada. Our students obtain the medical degree and Licentiate at the same time. The difference lies in the fact that our internes are assigned specific rotations while graduates of other medical schools have freedom of choice in the hospital in which they will interne.

With the growing demand for universities to take more responsibility in the field of specialty training it seems incongruous that this most important year of practical training should be completely divorced from university supervision. The hospitals and hospital staff members must



of course take major responsibility for the day-to-day teaching programme, but we feel that the university has an important role to play in maintaining the standards of such teaching programmes. We have reviewed all of the available internships in the Maritime Provinces and Newfoundland and have chosen what we consider to be the nine most suitable services for teaching in each of the following fields.

Two months in Medicine, two months in Surgery, two months in Obstetrics, two months in Paediatrics, two months in a specialty of Medicine and two months in a specialty of Surgery. The last two may be provided in a second general medical or general surgical service. We are quite convinced that we have been able to work out a more balanced rotation by using a number of hospitals, than could have been obtained by most of the students if they had received their full training in one institution.

The training of specialists is not primarily a responsibility of the universities in Canada. The Royal College of Physicians and Surgeons accredits certain hospitals to carry out this function. Most of the hospitals affiliated with Dalhousie University are accredited for training in one or more specialties. One of their problems, however, has been to obtain adequate experience in the basic sciences for the specialists for the specialty students. The hospitals and the University have been well aware of this problem for some time, but the staff members have not been available in the basic science departments to take on additional responsibility. We hope that some programme will be worked out shortly. We have just received notification within the past two weeks of a grant from the W.K. Kellogg Foundation of \$50,000.00 to be used for this purpose.

You are all well acquainted with the programme of Post Graduate work for general practitioners of which this Dalhousie Refresher Course is a part. I will not take time to review this programme except to state



that it is one of the most extensive that has been developed in any Canadian medical school and we believe that its success is assured,

No University in the modern world can serve its highest function within the ivory tower. It must seek actively to serve its community or constituency. This extension programme is one of Dalhousie's efforts to continue to serve its medical graduates and all practitioners in this area. I wish to pay tribute to Dean Grant for his vision in starting this, and to Dr. A.E. Ross and his P.G. Committee for its sound organisation.

The role of research in a medical school cannot be over-emphasised. The idea was once all too prevalent, that research was merely a privilege which might be granted to a teacher if time could be found from his teaching duties. This has long been outmoded, and at this Medical School is now permanently interred. Research is not only a privilege accorded to the teacher, it is considered an integral part of his duties.

I wish I had time to outline for you some of the extremely interesting and widely varied research programmes which are now underway at this Medical School. I believe many of you would be very surprised to know of their extent. One indication, although a very rough one, is the number of research projects that have been approved by national organisations and have been accorded a degree of financial support. The number of projects receiving grants from the National Research Council, National Cancer Institute, Department of National Health and Welfare, Defence Research Board, and other national and provincial fund-granting bodies has increased markedly in the past three or four years. The dollar value of such grants is of course no index of the value of the research projects, but the money is not granted unless the project has received favourable recommendations from a group of experts in the field. Last year research grants increased from \$70,000 to \$96,000 and this year they are \$162,000. I regret the time does not permit me to mention any of the specific projects.



Dalhousie has maintained high standards in the past and has achieved an enviable reputation. We are going forward as rapidly as we can, attempting to keep pace with the developments in other centres and occasionally setting the pace. We owe a tremendous debt of gratitude to the practising physicians in various specialties and in general medicine in this Halifax area. This Medical School could not have functioned at all without the voluntary support of these men. Most have been unpaid or have received such a small honorarium that it is little more than a gesture of gratitude. We will continue to be dependent to a very large extent upon these clinicians. Although the great expansion of our undergraduate work, graduate teaching and research require at least one staff member in each of the clinical departments, on a full-time basis, the University recognizes and acknowledges its debt to the clinicians who give so generously of their talents to the education of our students. If it were not for the ever-growing complement of the teaching programmes and the consequent heavy demands on the time of busy practitioners, we could readily continue in the established pattern, because we have I am firmly convinced, as well trained and highly talented a group of clinical teachers as can be found in any university centre in Canada. However, the University demands should not be too exorbitant no matter how generous the response, and a few full-time appointments are being made.

What has been done in this Medical School, in the past, what is being done today and what will be done in the future will depend upon co-operative effort for which no one person can take the credit. The Faculty is working together on a fine harmonious basis. Only through the strength of such co-operation can advances be made. Furthermore, and in conclusion, may I say that we depend more and more on the support of our Alumni, upon your suggestions, criticisms, advice and active assistance. Teaching is your responsibility according to the Oath of Hippocrates, just as much as it is our responsibility.