

Papers

DALHOUSIE MEDICAL SCHOOL

PRESENT AND FUTURE

By C.B. Stewart, M.D.

Other writers have described the history of Dalhousie Medical School, and I shall make an effort to summarize briefly some of the present features which are worthy of note, and to outline future plans. Before doing so, I wish to pay tribute to my predecessor, Dean H.G. Grant, whose work ~~who worked~~ for Dalhousie Medical School ~~from 19~~ for more than twenty years did so much to shape both the present and future of this institution. It was largely through his efforts that the Medical School was saved from being closed during the depression of the 1930's. He carried the Medical School through the stormy years of wartime when the staff was depleted and the teaching programme accelerated. Finally in the huge burden of the large classes of veterans and at the same time the inflation which robbed the Medical School of much of its income. During his term of office Dalhousie Medical School grew in strength in spite of the fact that it had to weather one storm after another.

Dalhousie University has the only Medical School in the four Atlantic Provinces. Most of the young men and women of these four provinces who elect to study Medicine do so at this University. The population of the four provinces is approximately one million, eight hundred thousand, and is growing more rapidly than at

any time in Canadian history. There seems little question therefore of the need for this Faculty of Medicine to educate the sons and daughters of our residents and to provide most of the physicians who will serve these four provinces in future years. The question might well be asked, however, as to how large the Medical School should be to meet these demands.

The Medical School has been limited in size in the past primarily by the capacity of the laboratory facilities in the basic science departments. The Medical Sciences Building constructed in 1923 to provide laboratories in Physiology, Pharmacology and Biochemistry, was designed to house sixty students. The Pathology Institute, enlarged to its present size in the same year, also provided for sixty students in one laboratory shared by Pathology and Bacteriology. All of these laboratories and those of Anatomy and Micro-Anatomy in the Forrest Building, have been shared since their construction by the two faculties of Medicine and Dentistry. Originally the division was fifty medical and ten dental students in the first year class. After World War II additional facilities were added to accommodate ten more students in each of the laboratories and a total of seventy students have been admitted to the two faculties, usually fifty-eight medical and twelve dental.

No one has yet worked out an exact formula for estimating how many physicians are needed to provide adequate services to a given population. However, there are some criteria which give a rough approximation. The ratio of population per physician in the three Maritime Provinces was one doctor for every 1232 persons in 1911 and it is today one doctor for every 1280 persons.

~~We have barely kept pace with the population growth.~~

In providing physicians we have barely kept pace with the growth of the population. Taking into account this ratio, the estimated ideal ratio of general practitioners to population, the proportion of Dalhousie students who remain in the Maritime Provinces and Newfoundland, the number of graduates from other universities who settle here, the growth <sup>in</sup> and population, and various other factors, it has been estimated that a minimum of sixty-five medical graduates per year would be required from Dalhousie University to meet the needs of this area.

Construction has just been completed 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, since these four provinces have the worst ratio of population to dentists of any region in Canada. Enrollments in Dentistry will go up from twelve to at least twenty-five students per year within the next few years. Since the basic science training of the dental students is given in the ~~same~~ <sup>XXXX</sup> laboratories of

the Medical School it is obvious that an enlargement of these laboratories ~~will be~~ <sup>is</sup> required to take care of the ~~expanding~~ <sup>expanded</sup> enrollment in Dentistry as well as the proposed enlargement in Medicine. We are therefore planning to expand our facilities as rapidly as possible to take care of seventy-five medical and twenty-five dental students, or a total of one hundred in the first year class.

Do we have the clinical facilities to train a larger class of medical students? The answer is an unqualified yes. Although Halifax is not a very large city, the hospitals serve as referral centres for the Province of Nova Scotia. Approximately forty per cent of the patients at the Victoria General Hospital are from areas outside Halifax City or County. To put it another way, approximately ten per cent of all patients hospitalized throughout Nova Scotia are referred to Halifax hospitals. A considerable proportion of patients are also referred to the Children's Hospital and the Grace Maternity Hospital from areas outside the Halifax region. These teaching hospitals therefore screen ~~the~~ <sup>the</sup> more difficult patients from a population of approximately 700,000. Sixty-four per cent of the total patient days of hospital care in the Victoria General Hospital are for ward patients who are under the care of the active staff jointly appointed by the University and Hospital. Although other teaching

hospitals in Canada may be considerably larger, they do not have as high a ratio of patients in the teaching units. Dalhousie University is second only to the University of Toronto in the number of public ward teaching beds available to students. The opportunity for clinical experience for our students is therefore very adequate. Furthermore the opportunity for graduate training in the specialties is also exceptional.

*No paragraph* Although it is only a few years since additions have been made to the Victoria General Hospital, the Children's Hospital, and the Grace Maternity Hospital, all of these and the Halifax Infirmary will be enlarging their facilities within the next few years.

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It is clear therefore that the bottleneck in expanding t

It is clear therefore that the bottle-neck in expanding the class is not in the clinical departments, but in the basic science laboratories, and the correction of this problem is now well under way. Two years ago the Departments of Physiology, Pharmacology and Biochemistry gave one of the finest illustrations of co-operative work in re-designing their teaching and research facilities. Each Department Head since the building was constructed had his own teaching laboratory for seventy students. The three laboratories differed 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. Relatively few changes were necessary in the scheduling of classes to permit one laboratory to be used by all three departments. Two of the existing laboratories had ~~have~~ therefore been re-designed, each to house forty-eight students, a total of ninety-six. They will operate simultaneously and they will be used for all courses in Physiology, Biochemistry and Pharmacology. This released the space which was formerly used by the laboratory in Pharmacology and this has been re-designed to provide four offices and research laboratories for the staff members. Since research is an essential part of the work of the Medical School this increase in facilities <sup>has</sup> ~~will~~ greatly improved our opportunity for obtaining highly qualified personnel, and improving the output of research from Dalhousie.

With the transfer of the Dental School to its new building a few weeks ago, plans were made for changes within the Forrest Building which will be completed this summer. The Departments of Anatomy and Micro-anatomy will enlarge their **teaching** facilities and research facilities to take care of one hundred medical and dental students and to provide research quarters for a larger staff. The only other departments requiring new quarters are those of Pathology and Bacteriology which are located in the Pathology Institute.

The Government of Nova Scotia has approved an addition to this building which will more than double the size of the Institute. This will include new teaching laboratories and lecture rooms as well as increased research facilities for both of these departments. It is hoped that this building will be available ~~within~~ in a ~~approximately one year~~ little more than one year. These expanded facilities will take care of larger student classes and should meet the needs for the education of medical students in these four provinces for a number of years. It must be emphasized however, that the provision of additional facilities for the students ~~has not met~~ <sup>will meet</sup> all of the requirements. Added staff will have to be taken on to train the new classes, and such personnel cannot be obtained today unless research facilities are also provided. An addition to the Medical Sciences Building will therefore be required, not only to provide for the basic science departments, but to include research facilities for the clinical departments of Medicine, Surgery, Obstetrics, Paediatrics, etc. The limited life expectancy of the Forrest Building will also make it necessary to look for additional quarters for the Medical School within the relatively near future. In addition, demands are continually made on the Medical School for the extension of training programmes in fields which are related to Medicine. For example, there is considerable pressure for the development

of a school for physiotherapists and occupational therapists. The clinical facilities in the new Rehabilitation Centre are adequate to permit the training of such people in Halifax. However, the space required for such a school is very considerable and at the moment is not available. The ~~Dental School would like~~ Faculty of Dentistry would like also to develop a programme for training dental hygienists. The hospital insurance programme will require the training of a much larger number of senior nurses, some of whom may take such training in the Dalhousie School of Nursing, presently located in very inadequate quarters in the Dalhousie Public Health Clinic. The School of Pharmacy needs new quarters. All of these needs will have to be met in any future construction programme. An addition to the Medical-Dental Library will also be needed to provide more reading room space and additional stacks for journals and books.

Leaving aside the question of the physical plant, I should like to comment on the teaching programme in all fields including pre-medical, medical, interne, graduate, and postgraduate fields.

Pre-medical requirements were increased a few years ago from two years to three years. Approximately half of the students now entering Medicine have a Bachelor's degree, and half their four years of university training or three years following senior matriculation. The additional courses were

for the most part in the Arts ~~and~~<sup>or</sup> Humanities. Dalhousie, like other medical schools is concerned that we prepare students to be ~~well~~ educated professional men, not simply technicians.

The courses in the Medical School have been completely revised during the past two years. A committee studied all aspects of the curriculum during the preceding year and a half and reviewed the various experiments in medical education which have been conducted in other centres. A great deal of effort and thought was given to the revision of the curriculum by this committee and by the Faculty as a whole. The result has been that during the past two years the revised curriculum has been in operation with a very considerable degree of success. Only a relatively few minor changes have been required. Some of the changes which were made and which have now become an integral part of the programme are described below. The year is now divided into three terms of equal length, each of eleven weeks. An interval of one week elapses ~~before~~<sup>while</sup> the examinations are held in November and February. In the first year the emphasis has been considerably changed by beginning with Biochemistry as a major subject in the first two trimesters, with Anatomy and Physiology gradually increasing during the year. Some of the time formerly devoted to departmental teaching has been assigned to interdepartmental or co-operative teaching. 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. This teaching is arranged ~~for~~ by

the basic science departments, but the clinical departments co-operate. During the third and fourth years the reverse is true, with the basic science teachers co-operating in clinical presentations with the teachers in Medicine, Surgery, Obstetrics, Paediatrics and the other clinical departments. The teaching in the first two years is primarily in the basic science courses, except for the teaching of Methods of Physical Examination. In third year ~~the~~ basic training in the clinical subjects is given and the courses in Pathology and Bacteriology completed. The fourth year is the clinical clerkship in which the students spend two months in Medicine, two months in Surgery, ~~two~~ one each in Obstetrics and Paediatrics, and two months divided among the various specialties in Medicine and Surgery. The student works in small groups during this year and almost all of his time is spent in hospital ~~bedside~~ <sup>bedside</sup> teaching.

~~XXXX~~ Unlike most Canadian medical schools, Dalhousie still retains the fifth year internship before granting the degree. This does not place our medical students at a disadvantage since the graduates of other schools who receive the degree at the end of the fourth year are still required to take a rotating internship before they are eligible for the examinations of the Medical Council of Canada. Our students obtain the degree and the Licentiate at the same time. The only limitation is on their choice of hospital for internship. Dalhousie has arranged nine rotations including what are considered to be the most suitable teaching

services in the various hospitals throughout the Atlantic Provinces. Each rotation includes two months in Medicine, two months in Surgery, two in Obstetrics, two in Paediatrics, and two months each in a specialty of Medicine or a specialty of Surgery, or in some instances a second general medical or surgical service.

The Faculty is quite convinced that a better balanced rotation can be worked out by using a number of hospitals than by having the students obtain all training in one institution.

The training of specialists is not primarily a responsibility of the University. ~~Most~~<sup>All</sup> of the hospitals affiliated with Dalhousie University are accredited for training in one ~~or~~ or more specialty fields. One of their problems is to obtain adequate training in the basic sciences for the specialists working in these departments. The University is now working out arrangements whereby our basic science departments may work with the hospitals in this important aspect of training. The continuing medical education of practitioners in the four Atlantic Provinces has also been accepted as a responsibility of the Medical School. During the past seven years the Post Graduate Programme has grown to be one of the largest associated with any medical school on the continent. Before that time of course, the Dalhousie Refresher Course had been in operation for more than **thirty** years, but this has been

supplemented during ~~the~~ recent years by short courses for practising physicians in various specialties, by lectures, demonstrations and clinics held at various centres throughout the four Atlantic Provinces, by members of the staff of the Faculty of Medicine, or by visiting lecturers. This programme was sponsored initially by the ~~the~~ W.K. Kellogg Foundation and is now supported in part by the Medical Societies of the four Atlantic Provinces, ~~and~~ the Provincial Medical Board of Nova Scotia, and the College of General **Practice** of Canada.

One of the major changes in the Medical School in recent years has been the ~~addition~~ **appointment** of a number of full-time staff members in the clinical departments. This has been started in ~~the~~ **the Departments of Psychiatry,** Medicine and Surgery and will shortly be extended to the Departments of Paediatrics and Obstetrics. ~~It has~~ ~~been recommended by the Accreditation C~~ This development is in line with modern practices in other medical schools. It is fully recognized ~~by the~~ **that a** tremendous debt of gratitude is owed to the practising physicians in the Halifax area who have carried the tremendous burden of teaching medical students over many years. Their contribution to ~~the~~ ~~the~~ medical education will continue to be just as important as it always has been, but a number of full-time staff members are required to assist them in carrying the administrative responsibility of the greatly extended programmes ~~both~~ ~~for~~ teaching, research, graduate teaching, and the clinical programmes of the hospital.

During the past year the Medical School was visited by a team representing the Association of American Medical Colleges, the Association of Canadian Medical Colleges, the American Medical Association and the Canadian Medical Association. This Liaison Survey Committee is responsible for reviewing the programmes of all medical schools in Canada and the United States at periodic intervals. The report of the survey was very complimentary to Dalhousie University. A few useful suggestions were presented for consideration, but for the most part the ~~programmes~~ existing programmes ~~in~~ and the proposed future plans were approved. One specific recommendation was that the Departments of Medicine and Surgery should each have at least three full-time staff members and the clinical departments of Obstetrics, Paediatrics and Psychiatry at least two. This recommendation must of necessity bring <sup>us</sup> to a brief consideration of financial problems. The cost of operating a medical school is a very heavy one for any University to bear. In fact it ~~is~~ could not be carried if it were not for the support of governments. In round numbers the budget for the undergraduate training programme in Medicine at Dalhousie University is more than six million dollars. To this must be added an additional \$200,000 per year for research, most of which comes from the National Research Council, Department of National Health and Welfare, Defence Research Board, National Cancer Institute, and other fund-granting bodies. The cost of graduate medical education, the operation of the Dalhousie Public Health Clinic, and various other services are not included in these figures.

To meet the recommendations of the accrediting agency by enlarging the staff of basic science and clinical departments, will require an increase in this budget of approximately \$150,000.00 per year. At present the four Atlantic Provinces are providing ~~generous~~ <sup>XXXXXXXXXX</sup> grants to the Faculties of Medicine and Dentistry. In particular the grants from the Provinces of Nova Scotia and Newfoundland have been very generous. It is hoped that additions may also be obtained from New Brunswick and Prince Edward Island. A campaign for funds among the medical alumni and other practising physicians under the chairmanship of Dr. C.L. Gosse has also been very successful. This brought in gifts totalling almost \$150,000, which have provided the capital required for the changes in the medical science laboratories, the Forrest Building, and will go toward the furnishing of new laboratories for teaching and research in the Pathology Institute, when these are completed. Generous ~~grant~~ grants have also been obtained from the W.K. Kellogg Foundation for the Post Graduate Programme, and to add full-time teachers to the Departments of Obstetrics and Paediatrics.

In conclusion, the Medical School of Dalhousie University is, I believe, on the threshold of great advances. We have a staff in the basic science departments and in the clinical departments which is second to none among the medical schools in Canada. We have a ~~large~~ <sup>LXX</sup> sufficiently large body of candidates for admission to Medicine that we can screen out a highly qualified ~~group of candidates with a~~ <sup>who have a</sup> relatively small failure rate in Medicine.

The quality of our students received special commendation from the Survey team this year. We have clinical facilities for teaching which are second to none in Canada in the affiliated hospitals. The physical facilities in the Medical School laboratories are still very inadequate, but are being improved as rapidly as possible. The research programmes at the University have increased in the last few years more than fourfold, both in the number of research projects and in the amount of funds forthcoming from National research organizations. The generous support of <sup>the</sup> Governments of the four Atlantic Provinces has been assured to carry an appreciable portion of the cost of medical education without seriously burdening our students by excessively high tuition fees, which would otherwise have been necessary if the Medical School was to continue. What has been achieved has been done by a very high degree of co-operative effort <sup>for</sup> ~~in~~ which no one person can take credit. The Faculty has worked together on a fine harmonious basis, and it is only through the strength and co-operation of the whole Faculty, both part-time and full-time that future advances can be made. The support of the alumni has been most helpful. Campaign contributions have taken care of most of our immediate requirements for modification of the existing buildings. Many universities receive a large part of their support from alumni through annual contributions, often small in individual amount, but representing a very large and important total.

May I express the sincere hope that we may continue to depend upon the growing support of our alumni and other friends in the medical profession so that Dalhousie Medical School will

continue to be one of the outstanding centres of medical education in Canada.