

REPORT  
ON A SURVEY OF  
MEDICAL EDUCATION  
IN CANADA AND THE UNITED STATES

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#### PREFATORY NOTE

This Report was prepared on the instructions of the Board of Governors of the University of British Columbia, and submitted for their consideration on May 3, 1946. I desire to express to the Board of Governors and to the President of the University my deep appreciation and thanks for the opportunity to conduct the survey of medical education upon which this Report is based. I wish to thank also the Honourable the Provincial Secretary of the Government of British Columbia, and the Director of Connaught Medical Research Laboratories, for granting the necessary leave of absence from my other duties while conducting the survey.

The experience will have profound and lasting value for me, in terms of friendships made, of broadened vision, and of strengthened faith in the necessity to be well-informed before proclaiming the truth, and then to speak it fearlessly.

The Report could not have been made shorter without sacrifice of essential completeness. As it is, by no means all the possible minor points of debate, dispute and confusion have been clarified or even considered. But I believe the main principles which should govern the authorities in their decisions have been explicitly and convincingly set down. Further, I feel confident that my recommendations will not be found wanting in soundness and foresight by those who read the whole of the Report conscientiously, or by men of more knowledge and experience of medical education than mine.

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INTRODUCTION

I am writing this Report in personal terms, because it bears upon what was necessarily a personal adventure, and will read more easily if informally written. As far as is humanly possible, it carries no illogical bias or prejudice; but represents a scrupulously objective attempt to bring to bear upon the problems of medical education in British Columbia the cumulative knowledge and wisdom of the leading authorities in North America. As a matter of fact, apart from one having been at least trained as a scientist, objectivity has not proved as hard to maintain as might have been expected. At a distance from the scene of local pressures and influences, it became comparatively easy to view and analyze them with detachment. Moreover, although opinions expressed about many of the curricular minutiae were divergent to a degree that seemed almost absurd—until one recalled the extreme individualism of the medical profession, the great scope of its objectives, and the wide range of its specialties—the main principles and prerequisites governing the establishment of a first-class medical school were defined with an emphatic, and to me absolutely convincing unanimity.

I feel it necessary to make this preliminary comment because I am only too well aware that surprise, disappointment, and in some quarters resentment, are bound to be aroused by my recommendations. These reactions have to be faced, not only by myself, but also by the University Administration. The sole alternative is a poor medical school, a demoralized University, and betrayal of a unique opportunity for service to the whole Province.

## METHOD OF CONDUCTING SURVEY

### *Geographic Scope*

In the course of the survey, I visited all of the 11 medical schools in Canada (including the 2-year school at the University of Saskatchewan, and the school recently launched by the University of Ottawa) and 22 leading and representative medical schools in the United States (including the 2-year school at the University of North Carolina). The total of 33 places visited are arranged in Table I, according as their budgets derive mainly from private endowments, or from Provincial or State Government funds. The survey covered examples of medical schools at state universities operating on generous budgets, and at provincial universities struggling along with inadequate budgets. Among privately-endowed institutions, the splendid amenities of the medical schools at certain universities stood out against the cramping improvisations apparent at certain others. Yet another interesting contrast was furnished between, on the one hand, the medical schools of Columbia, Cornell and New York Universities, attached respectively to the enormous Presbyterian, New York and Bellevue Hospitals, and situated in the midst of what is probably the largest and noisiest city in the world—and on the other hand, the medical schools of the Universities of Iowa and Michigan, which are located in Iowa City and Ann Arbor, towns of only 18,000 and 35,000 population.

### *Persons Interviewed*

More important than inspecting the physical plant of the various types of medical schools was the holding of discussions with informative people at each place visited. In the course of the 12 weeks trip, which lasted from January 16th to April 9th, 1946, some 270 persons were interviewed for one-half hour or more. These persons have been classified, according to their departments or executive ranks, in Table II. Since the Deans and Assistant Deans almost invariably had some departmental affiliation, they have been classified in a separate column. The table illustrates not only the fact that executive positions may be held by members of any department in the Faculty of Medicine, but also that all the main medical science and clinical departments were fairly represented among those interviewed. A list of many of the persons interviewed will be found in the Appendix.

No attempt was made to keep count of the many hundreds of staff members of various ranks to whom I was introduced, and with whom only brief conversations were held. Nor did I make special efforts to seek interviews with University Presidents or medical students—at the extremes of the range!—although when such opportunities came my way, I used them. Most of my talks were with departmental Heads, selected on the recommendation of the Dean, of their colleagues, or of some authority elsewhere; and in many instances the task was greatly simplified through previous personal acquaintanceship. Others were sought out, irrespective of rank, when reputed to have particularly constructive views on relevant problems. Some of the shrewdest observations and most valuable advice came from representatives of the Rockefeller Foundation, from Hospital Directors, and from others connected in some capacity with medical education, but not currently on any Medical Faculty.

### *Recording of Interviews*

In these interviews, my custom was to outline briefly the main purposes of my visit, giving an account of our local situation, and requesting opinions on such major problems as the location of the medical school, hospital affiliations, part-time versus full-time clinical staff, trends in medical education, budget, and so forth. Then we

TABLE I  
UNIVERSITY MEDICAL SCHOOLS VISITED IN CANADA  
AND THE UNITED STATES

JANUARY-APRIL, 1946

(Arranged according to order of visit)

OPERATED MAINLY ON PRIVATE ENDOWMENTS	OPERATED MAINLY ON STATE GRANTS
McGill University, Montreal	University of Alberta, Edmonton
Queen's University, Kingston	" " Saskatchewan, Saskatoon*
University of Ottawa, Ottawa	" " Manitoba, Winnipeg
Dalhousie University, Halifax	" " Western Ontario, London
	" " Toronto, Ontario
	" " Montreal, Montreal
	Laval University, Quebec
	TOTAL CANADIAN: 11
University of Rochester, Rochester, New York	University of Minnesota, Minneapolis
Harvard University, Boston	" " Wisconsin, Madison
Yale University, New Haven	" " Michigan, Ann Arbor
Columbia University, New York	" " Pennsylvania, Philadelphia
Cornell University, New York	" " North Carolina, Chapel Hill*
New York University, New York	" " Iowa, Iowa City
Johns Hopkins University, Baltimore	" " Colorado, Denver
Duke University, Durham	" " Utah, Salt Lake City
University of Southern California, Los Angeles	" " California, San Francisco
College of Medical Evangelists, Loma Linda	" " Oregon, Portland
Stanford University, San Francisco	" " Washington, Seattle
	TOTAL UNITED STATES: 22

\*Two-year schools now considering expansion to a 4-year course.

discussed questions of a more pedagogical nature, relating to the work of the department represented. Full notes were taken at the time, to be rewritten at nights on returning to one's hotel.

A truly embarrassing degree of kindness and hospitality was shown me everywhere, on both sides of the border. Although desperately short of staff, and overburdened with accelerated curricula, refresher courses, veterans' problems, final examinations, and preparation of manuscripts for scientific meetings, my hosts showed unfailing courtesy and helpfulness. Far from being made to feel an intruder and a nuisance, I never seemed anything but welcome—a striking testimony to the fact that the hope of developing a good medical school has only to be expressed among those in the field, and friendly counsel and sympathy will be gladly given. So many mistakes have been made by other schools, and so few ideally-located communities are left with the opportunity to profit from these mistakes from the beginning, that the anxieties and enthusiasms evoked by the mere prospect of a new medical school, spread far beyond the local scene.

Those readers to whom this Report may seem couched in unduly emphatic and argumentative terms should bear in mind that its primary purpose was to illuminate

TABLE II  
CLASSIFICATION OF PERSONS INTERVIEWED  
ACCORDING TO DEPARTMENTS, ETC.

<i>Title of Department or Executive Position</i>	<i>Department Heads, Etc., Interviewed</i>	<i>Departments of Deans and Asst. Deans</i>	<i>Total</i>
Anatomy	15	2	17
Bacteriology	31	1	32
Biochemistry	12	2	14
Dentistry	2	—	2
Histology	3	1	4
History of Medicine	1	—	1
Hospital Directors	7	—	7
Medical Research	4	1	5
Medicine	16	10	26
Neurology	2	—	2
Obstetrics and Gynæcology	5	—	5
Ophthalmology	1	—	1
Orthopædics	—	1	1
Otolaryngology	1	—	1
Pædiatrics	5	2	7
Pathology	11	4	15
Pharmacology	8	1	9
Physiology	19	4	23
Psychiatry	4	1	5
Public Health and Preventive Medicine	19	4	23
Radiology	1	—	1
Surgery	13	3	16
Therapeutics	1	—	1
	181	37	218
University Presidents and Vice-Presidents			9
Rockefeller and other Foundation representatives			8
Directors, Schools of Public Health			3
Medical students			13
Unclassifiable	17	4	21
<b>TOTALS</b>	<b>198</b>	<b>41</b>	<b>272</b>

and as far as possible clarify the turbulent problems confronting the Administration of our University in connection with the proposed establishment of a Faculty of Medicine.

Only minor emendations have been made in the text prior to its printing for wider distribution. Any of my statements can be readily amplified and embellished with quotations.

Included in the Appendix is a short bibliography of pamphlets, reports and texts, which may prove as illuminating to others as they were to me. I now propose without further preamble to list and discuss the main conclusions resulting from the survey as regards the prerequisites for a first-class medical school at the University of British Columbia. At the end, I shall submit recommendations.



## MAIN CONCLUSIONS FROM SURVEY

1. THE CHIEF PREREQUISITES FOR A FIRST-CLASS MEDICAL SCHOOL AT THE UNIVERSITY OF BRITISH COLUMBIA MUST BE:—
  - a. A stable and flourishing parent University.
  - b. A large list of applicants, of fine intellect and character, from which to select the students.
  - c. An adequate budget.
  - d. A carefully picked staff, whose main interests and abilities lie in the fields of both teaching and research, and who can work together for the greater welfare of the Faculty and of the whole University.
  - e. That the Heads, and a number of additional persons in each of the main clinical departments, be full-time.
  - f. That the University, through the Faculty of Medicine, be granted complete control of a sufficient number of hospital beds, of the right categories, to ensure proper teaching facilities; and exercise the right to nominate the teaching staff for its affiliated hospitals, and to close its wards to all others. Further, that the Heads of the University's clinical departments be Chiefs of the appropriate hospital services.
  - g. That quite apart from such teaching affiliations with local hospitals as may be feasible on terms satisfactory to the University, there should be a University Hospital staffed entirely by the Faculty of Medicine.
  - h. That the whole medical school be located on the campus as the only satisfactory means of assuring the desired physical contiguity and spiritual affinity between the medical science and clinical departments within the Faculty of Medicine, and also between the Faculty of Medicine and other Faculties at the University.
  - i. That the school should from the beginning be planned as a long-term project, so that it may be able to grow spatially and functionally, and may thus prove the nucleus for a Medical and Health Centre of the highest possible calibre and renown.
  - j. That the Dean of the Faculty of Medicine be selected with utmost care, be assured the full confidence and support of his Faculty and of the University Administration, and be endowed by the latter with explicit and adequate powers.
2. WHEN THE UNIVERSITY INVOLVED IS ALMOST ENTIRELY DEPENDENT UPON GRANTS FROM PUBLIC FUNDS, AS IN OUR CASE, THE FOLLOWING FACTORS AND OBJECTIVES ASSUME ADDED IMPORTANCE:—
  - a. The community to be served by the school must be intelligent, progressive, prosperous, and sympathetic to the project.
  - b. The school must extend its influence to all parts of the Province, by providing various types of post-graduate training for practitioners, and by helping to improve standards of outlying hospitals; and must develop the closest possible relationship with City and Provincial Health Departments, so that numerous reciprocal advantages may accrue, with the public health the ultimate beneficiary.
  - c. The Faculty of Medicine must be prepared to share its resources to the fullest possible extent with the University at large, as e.g. by offering courses in certain of the medical sciences to non-medical graduate students; by helping to train students for vocations ancillary to Medicine; and by taking charge of, and developing, the University Health Service.

## COMMENTS ON FOREGOING CONCLUSIONS

### 1. CHIEF PREREQUISITES FOR A FIRST-CLASS MEDICAL SCHOOL

#### a. *Status of parent University*

To launch a Faculty of Medicine is the most costly, complicated and troublesome responsibility a university can undertake. The days are long since gone by when a group of doctors could run a profitable proprietary school on students' fees alone. Nowadays, despite the fees for a medical course being nearly twice as high as for other courses given at the same university, they seldom meet more than one-third, or in some schools even one-sixth, of the cost. The generally higher salaries paid to medically-qualified persons; the need for a relatively large staff in terms of student enrollment, so that the tutorial system may be developed, and time for research be available; and the heavy outlays for equipping and operating the medical science departments and the teaching hospital, are the main reasons for such disparity. This disproportionately high cost of educating a comparatively small student body often leads to intra-university grumblings at even wealthy institutions; and some of the oldest, wisest and greatest universities have had their finances jeopardized, and their harmony disturbed, by the apparently insatiable demands of their Faculty of Medicine. The expedients adopted to overcome these fiscal problems range from acceptance of legacies or research grants with "strings" attached—which curtail not only freedom of speech, but the equally important freedoms of thought and of action!—to the appointment of large numbers of part-time clinical teachers recruited from the local profession, which submits the Faculty to the foibles of the practitioner, whose obligations as servant of his patients usually outweigh those of instructor to his students. Then too the financial and political complexities incidental to the arranging of proper teaching affiliations with local hospitals, and even to the operation of a university hospital, are staggering. Small wonder that most of the long-established medical schools passed through many decades of frequent reorganization in their earlier years, although the curriculum was then far easier and cheaper to arrange than now; and that some of the more famous and successful schools, such as Johns Hopkins, Duke and Rochester, were the brain-children of devoted men who planned their buildings, laid out their time-tables, and settled their objectives during a period of some years before any student was accepted. I do not believe our University is sufficiently old, wise, or great to saddle itself with these immense responsibilities until it has given more time and thought to preparation for the task.

The administration of any first-class university would admit that its Faculty of Medicine provided a wholly disproportionate number of severe headaches, assuaged only by the glamour attaching to this Faculty, and by its capacity to entice endowments. I found plenty of evidence that a second-class university cannot hope to have better than a second-class medical school. I do not say that our University is second class. It is first-class in setting, in hopes and ambitions, in potentialities, and in a few departments. And it is now handling an emergency situation under increasing difficulties with good spirit and efficiency, to an extent unsurpassed in North America. But the average staff member carries far too big a teaching load to permit any serious and sustained researches, and many newcomers have had to be recruited urgently in the face of limited choice. Moreover, many of our buildings are among the least attractive and satisfactory to be found in the major Canadian universities. All these handicaps will no doubt be overcome in time. The new structure arising from a hole in the ground behind the Science Building symbolizes some of our hopes for the future, but it does not represent an adequate foundation upon which to build at once a Faculty of Medicine.

The University should in my view not hasten to institute the most elaborate and expensive form of graduate school at a time when it cannot satisfactorily handle a still proliferating undergraduate enrollment. The proverb "Nothing venture, nothing

have" may be put forward, and likewise the observation that "every medical school had to start some time". But one does not gamble with a medical school as stakes, and nowadays schools are not started as they used to be. Our University may not be too young or too poor to consider the venture, but it is certainly too inexperienced to start in a hurry what Princeton has not yet cared or dared to do. *The sooner we start to plan the better, but no time could be more unpropitious to plan to start than the immediate future.*

**b. Number and type of student applicants**

The graduate of a medical school, no matter whether he finally becomes a research worker, a teacher, a general practitioner, a hospital administrator, a health officer, or a surgeon, is a servant of the public health, trained largely at public expense. *Medical education is therefore not a right, but a privilege.* Only the very best, in mind, heart and physique, should find entry into medical schools. The natural resolve of every Faculty Committee on Admissions to select only an *élite* is both fortified and complicated by the enormous list of applicants. Even when there are three times as many applicants as vacancies (the minimum ratio I encountered) the task of selection is difficult enough; but when the ratio of applicants to vacancies is 30:1, as at some of the most famous schools, the problem becomes a very grave responsibility, taxing the time and patience of many of the most conscientious members of the Faculty. For not only are there no infallible criteria for ensuring that the best will be chosen, but various kinds of pressures, of political, professional and racial origins, are liable to be used upon the Dean and his Admissions Committee. The consensus is that few mistakes will be made if the academic record in arts and science courses in previous university years is a major consideration, and if the candidate's general suitability for Medicine be assessed by several experienced staff members, on the basis of references from reliable sources and of personal interviews wherever possible. *Merit, and not influence, must be the deciding factor.*

Certain further observations on this matter of applications for enrollment seem relevant to the local situation. In the first place, if at every centre of medical education all over the country many hundreds of young men and women are disappointed in their hopes of gaining admission to their chosen school, the 100 or so students at this University allegedly qualified to enter medical school next autumn need neither stir up special pangs of conscience in us, nor drive us to desperate expedients to placate them. Secondly, the experience everywhere is that a large number of applications can be eliminated promptly on the score of poor academic rating, or of insufficient prerequisites in arts and science courses. When the results of the current Final Examinations are available, it will be interesting and desirable to determine how many of our avowed premedical students have obtained first-class, or high second-class standing. Many of the members of the Premedical Undergraduate Society are not of high academic calibre; and I doubt if we could find 50 among the present group who have shown sufficient excellence in required courses to warrant admission to our own school, if we had one. Surely it is unthinkable that we should hastily set up a school for the accommodation of students many of whom are not good enough for acceptance elsewhere.

Thirdly, although for many years past only relatively small numbers of applicants to North American universities have found acceptance by their schools of first choice, the numbers which finally gain admission *somewhere* are much higher. For example, in the United States before the War, each year an average of 15,000 students made around 36,000 applications—some of them writing to a score or more universities—and of these around 6,200, or over 40 per cent, were eventually taken. In other words, the great majority of potential medical students everywhere are destined to be frustrated in efforts to enter their *preferred* school; but in any given year little more than one-half of those applying are altogether rejected, and no doubt some of

them find places in later years. These circumstances are likely to prevail so long as medical education remains both costly and popular, and despite a certain clumsiness, function as a reasonably effective deterrent to unconditioned enthusiasm and academic mediocrity gaining access to the profession.

When we finally have our medical school at the University of British Columbia, it will be as impossible and undesirable for us, as for other schools, to accommodate all applicants for admission. Meantime, so long as a medical career is not being denied to any appreciable number of outstanding students because of lack of such a school, it cannot be argued that young men and women in British Columbia face a situation of unique fairness. A similar situation obtains in the States of Montana, Idaho, Wyoming, North and South Dakota, Nevada, Arizona, and New Mexico. Moreover, I was assured by the Deans of all the Canadian schools which have taken our better students in the past, that they would continue to accept at least as many as in previous years. The rumour that the University of Toronto has closed its doors to our fourth year or graduate students is falsely founded; while McGill University has, I gather, already notified a larger than usual number of applicants from here of their acceptance for the coming session.

One cannot avoid a final comment that the greatest agitation for an early start of the Faculty of Medicine arises from the veterans group. Nobody can criticize the policy of facilitating in every possible way the higher education of veterans eligible for it; and one cannot blame them for urging an early start. Everyone is keen to see a medical school started at our University as soon as a *good* school is feasible; but a *premature* start could only bring penalties rather than benefits to both the veterans and the University at large.

### c. Budget

*To have a good medical school, one must have money, men and materiel.* Money can (in normal times) purchase the materiel, and to a very large extent the men. Medically-qualified men who engage in full-time educational activities do so at considerable financial sacrifice, but this does not mean they are insensitive to salary differentials. Further, a good staff must have adequate apparatus and facilities for research, and these things are not only highly expensive, but soon outmoded. Hence no medical school ever seems to find its budget adequate.

In 1943, the annual operating budgets of the medical schools in the United States lay between \$160,000 and \$1,565,000, while the annual cost per student varied from \$600 to \$3893. In other words, some approved schools in the United States managed on approximately one-tenth the budget of other schools of comparable size, while the annual expenditures per student were more than six times as high in some universities as in others. This extraordinary disparity raises these questions: What do students at the poorer universities miss? What is deemed a minimum budget for a first-class medical school of 200 undergraduate enrollment, in the United States? To what extent may lesser provision be reasonably made for a similar school in Canada?

I do not need to discuss here the pedagogical advantages of the tutorial and seminar method of teaching, only possible where the ratio of instructors to students is high, as compared with the spoon-feeding, didactic lecture courses inevitable when a small staff must cope with large classes. Neither is it necessary to elaborate on the totally different atmospheres which prevail in one institution where research is an honoured and official activity, and in another where it is an intermittent and clandestine indulgence; nor to contrast the freedom and enterprise of a school having its own hospital and a large nucleus of full-time clinical staff, with the compromises and inhibitions characteristic of a county or city hospital affiliation, and of dependence upon part-time clinical instructors. Let it suffice to say that two alternatives face the graduates of poorly financed medical schools. Either they are unaware of what they have missed, in which case the public in the long run suffers; or they realize the deficiencies in

their training, and have to supply these at their own expense. It should be added that schools with inadequate budgets are not merely defective in undergraduate teaching. They are also badly hampered in attempts to fulfil important functions as centres of post-graduate education for practicing physicians and health officers throughout the State or Province; and are often unable to make the desired contributions towards the training of personnel for vocations ancillary to medicine.

The optimal enrollment for a medical school\* is generally regarded as around 50 students in each year. To ensure a proper balance between administration, teaching, and research in any department, it is necessary to have a certain minimum staff, distributed among the various academic ranks. Such a staff can cope with 50 students just as well as with 40; but if the class appreciably exceeds 55 or 60, it may have to be split into sections, and a disproportionate number of additional instructors provided. Further, the larger the class, the less opportunity is there for building up those personal relationships between Instructor and student which are especially valuable in Medicine. Among students at e.g. the University of Toronto (which enjoys the doubtful distinction of having one of the highest enrollments among North American medical schools—around 150 students in each year), a frequent complaint is their anonymity to their professors. Certain other considerations, such as the size of medical science laboratories, the types of service rooms required, and the most satisfactory number of beds for a university teaching hospital, point to 50 students per year, or roughly 200 in the 4-year course, as the enrollment at which we should aim.\* The Association of American Medical Colleges, and the Council on Medical Education and Hospitals of the American Medical Association, claim that to operate a good 4-year school with this enrollment, a budget of between \$400,000 and \$500,000 is required. The Deans of all schools visited in the United States agreed with the soundness of this estimate, although a few were making do with appreciably less, and others had very much more. The poorer schools manage in ways outlined in the preceding paragraph, but none of them advocates that any new school should emulate its example. In fact, it is significant that of three university medical schools in the United States which have recently started, or which plan to start in the near future on a 4-year basis, the Medical College of Alabama at Birmingham has a budget of \$400,000; the University of North Carolina Medical School at Chapel Hill has submitted annual estimates of nearly \$440,000; while the recently-appointed Dean of Medicine at the University of Washington, Seattle, informed me that in his view "a budget of \$500,000 will be required to run a medical school properly." The foregoing figures do not include special grants for research projects, nor any sum for the operation of the university hospital (which may or may not be self-sustaining—usually not).

The question now arises whether in Canada it is feasible to run a good school on a much smaller budget than is regarded as necessary by the best opinion in the United States. Eliminating Toronto and McGill Universities from consideration—not specifically on the grounds of having budgets which meet the United States requirements, but because their enrollments are each nearly three times that envisaged here, so that no true comparison is possible—we find that *not one school in Canada has a budget within measurable distance of the figure stipulated above.* The University of Western Ontario at London has markedly increased its budget in the past year, upon the insistence of a new Dean, but even now operates on little over one-half the amount regarded as desirable across the border. Of the remaining four English-speaking and two French-speaking 4-year schools in Canada, two have a budget somewhere around one-third of the higher figure quoted above, viz. \$500,000; while the four others

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\*Footnote:—If students are as carefully selected as they should be, failures during the course are comparatively few, and the policy is not advocated of accepting an enrollment for the First Year more than say 10 per cent higher than the numbers expected to graduate four years later.

have to function on one-quarter of this amount, or even less. The University of Saskatchewan, which hopes soon to expand its 2-year medical course to a 4-year course, has planned a budget not exceeding \$200,000.

As Chairman of the Sub-Committee on Costs and Organization of the Joint Committee on Medical Education of the British Columbia Medical Association and the University of British Columbia, I was responsible for the estimated budget of \$200,000 which was submitted to the Provincial Government: a figure subsequently increased to \$200,000 plus students' fees, by President MacKenzie. These estimates were based on information from the Deans of the other medical schools in Canada, only one of whom complained really bitterly of the serious inadequacy of his budget. If the medical schools at Manitoba, Queen's and Dalhousie Universities could operate (as they did two years ago) on a \$100,000 budget, it seemed a fair supposition that we could do quite well on twice this amount; and if at the University of Alberta the school was managing tolerably well on less than \$150,000, it did not seem at the time necessary or expedient to ask for more than \$50,000 in excess of our neighbour's needs. The proposed budget for the University of British Columbia was unanimously endorsed by the Joint Committee. But it is now apparent that we were not then sufficiently familiar with the prerequisites for a good medical school, or with the difficulties besetting all the Canadian schools, to warrant our regarding this budget as adequate. Having seen the Canadian medical schools, and also some of the best ones in the United States, I am convinced that we should not commit the mistake in British Columbia of starting another insufficiently financed school.

At each of these Canadian schools there are to be found a few persons making admirable, but often rather pathetic efforts to carry through some research problem, or at any rate to maintain the investigational attitude; but too many departments are sterile and uninspired, imposing upon the student a certain dreary mental discipline. At each of these schools there are devoted senior men in the medical sciences whose earlier hopes for substantial promotion in salary and rank have been too often frustrated, whose plans for departmental expansion have been crushed by niggardly appropriations and frequent resignations among their brightest junior staff, and whose desire to retain their best students for graduate training is liable to be set aside by the reflection that their efforts can only end, in many instances, in such graduates accepting better-paid positions in the United States. At each of these schools there are fine clinicians giving up part of their day to teaching students, either voluntarily or for a ridiculous honorarium, who are perpetually torn between their patients' and their students' needs, and distracted by decisions about whether to fill a given hospital bed with a sick person able to pay a good fee, or with someone more suitable as "teaching material"; and it is perhaps surprising, in an age of materialism, that the lure of Mammon does not always prevail over the Hippocratic tradition. *In so vital an issue as medical education, a spirit of self-sacrifice, and an atmosphere of hope deferred, should not have to be predominant.*

Some persons may be moved to defend our Canadian schools by referring to the excellent students and renowned men they have graduated. But such men in most instances have been great despite rather than because of their environment during training. These statements are not intended as disparagement of the intelligence of the Canadian university student, or of the soundness of our college educational standards in the arts and sciences, which are at least comparable with their counterparts in the United States; but simply as a condemnation of a system which refuses to recognize that good medical education is by far the most expensive form of graduate study, and should not be embarked upon at all, if it cannot be undertaken properly.

The reason for the inadequacy of budget so characteristic of our medical schools lies not only in the lesser per caput wealth of Canadians as compared with citizens of the United States, but also, and more especially, in the fact that we have established and operate our schools with too small a unit of taxable population behind them. Thus, *there are around 70 schools in the United States, and about 140 million population, or 2 million people to each school*—and this ratio obtains to a remarkable degree throughout the country—*whereas in Canada there are 11 schools for fewer than 12 million inhabitants, or 1 million people to each school*. If our nation needs this number of medical schools, and they cannot be properly supported by Provincial revenues, then surely a Federal Government which can assign over \$200,000,000 for Family Allowances, can afford to distribute \$2,000,000 for improved medical education. Such a sum, divided equally among the 10-12 schools now in existence or in prospect, would more than double the budget of most of them, and would permit them all eventually to compare favorably with the best schools to be found anywhere. Valuable help in this direction is now afforded by the National Research Council, through its Associate Committee on Medical Research. But these grants do not go nearly far enough, nor do they strike at the root of the problem; and their effectiveness is greatly reduced through having to be assigned for the most part as mere maintenance allowances to recent graduates, who can rarely obtain during their tenure much more than an introduction to a given problem, and a smattering of research techniques.

There can be no gain to anybody if yet another medical school in Canada should perpetuate this custom of budgetary inadequacy. Some slight reduction may be conceded below the figure of \$400,000-500,000 regarded as necessary in the United States, in view of the prevailing salary differential between the two countries for equivalent talent and responsibility in all walks of life—to which medically-qualified persons could hardly expect to be the sole exception. However, since the health of the nation ultimately depends upon not losing our best medical talent to a wealthier neighbour, the present trend constitutes a national emergency, and these differentials in salary (and in research opportunity) should be reduced to a minimum. Having this in mind, and recognizing also the counterbalancing effect of the higher cost in Canada of laboratory apparatus and supplies, in my opinion we should not plan to commence with a budget (for the Medical School, apart from the University Hospital) of less than \$350,000.

#### d. Staff

The preceding section has dealt at some length with budgetary questions. By far the most important reason for an adequate budget is that while it does not guarantee first-rate staff members, it greatly facilitates their procurement. Certainly *without plenty of money one cannot hope to get good men*: a truism which especially holds in the medical field. And just as a medical school, according to its quality, can make or break a university, so does the calibre of its Faculty determine the success or failure of a school. No school ever has a better opportunity for selecting a well-trained, well-integrated and enthusiastic Faculty than at its commencement. These arguments clearly impose a solemn obligation upon any university seeking to launch a medical school, to give due time and the utmost care to selection of only the best possible staff. To ignore this obligation, deliberately or otherwise, would be *to jeopardize the reputation of the school for a generation or more in order to satisfy a current clamour*.

The staff problem is not simplified by the fact that in North America at present there are few really first-class young men available in the medical sciences, or for full-time clinical professorships. Across the line, at least four Chairs and numerous Assistant Professorships of Anatomy are vacant, and in Canada there is likewise a critical shortage of anatomists. Good pharmacologists are perhaps even harder to find. Biochemists are more numerous, because there are so many alternative careers for them, and because there is far less necessity that they should be medically qualified.

Yet we would experience the most serious difficulty in selecting a suitable Head for a Department of Biochemistry, who would not only promote the requisite cooperation with the Department of Physiology and Pharmacology, and with the existing Department of Chemistry, but would also be competent, if need be, to direct certain aspects of clinical laboratory work in the University Hospital. Such a limited choice furnishes no excuse for an accelerated decision.

The early rise to fame of the Johns Hopkins University Medical School was undoubtedly due mainly to the great discrimination shown in selecting its original staff members, which resulted in the conjunction of a brilliant, enthusiastic group of young men, sharing a new vision. Another exceedingly helpful factor was the long delay between appointment of the first professors and opening of the school. Dr. William H. Welch, a pioneer bacteriologist, was appointed Professor of Pathology in 1884; the famous Canadian physician, Dr. William Osler, was named Physician-in-Chief to the Johns Hopkins Hospital, and Professor of Medicine in the University, in 1888; while Doctors W. S. Halsted and H. A. Kelly became Professors of Surgery and of Gynæcology and Obstetrics respectively, in 1889. Yet the School of Medicine did not open until 1893, with Doctor Welch as its first Dean, nine years after his appointment to the Faculty. If we profited from this example, we might rival the Johns Hopkins Medical School in lustre.

Apologists are always to be found, who are prepared to use the argument of *youth* in defence of shortcomings in Canadian medical education. But the University of Manitoba Medical School is 10 years older than the Johns Hopkins, while the Halifax Medical College, which after a few years became affiliated with Dalhousie University, began its long and difficult career as a proprietary medical school in 1875, nearly 20 years before the Johns Hopkins School opened its doors to undergraduates. Moreover, in Canada there is no 4-year school of medicine so young as that of the University of Rochester, which although founded as recently as 1920 is a very fine institution, owing its greatness not merely to splendid endowments, but also to the trouble and foresight exercised in the selection of its staff. This reference to youth incidentally evokes the observation that the average age of departmental Heads in Canadian medical schools appears to a visitor obviously higher, by and large, than in United States schools. Too many of our best young people in Medicine, as in other fields, are across the border.

There have been, of course, a number of enquiries about, and applications for, positions in the Faculty of Medicine. In the course of the survey, I interviewed some of those persons who had already written, either to the President or to myself, and I talked with many others who expressed an interest in the prospects of a position at the University. Some men of possible assistant professorial rank made a very good impression, but none of those most keen to come was worthy of serious consideration for the headship of any of the important medical science departments. Obviously the proper policy is to select the Heads of those departments first, since they should have a considerable voice in the selection of their junior staff. This task will prove exceedingly difficult. We must expect, and spurn, some applications from older people seeking to spend their last years of teaching activity, and then to retire, at the Coast; from very recent graduates, hoping perhaps to hide their inexperience in the inevitable confusion of a new School's first years; from disgruntled, middle-aged failures or mediocrities; and from exiles or transients of all ages. *The really good men will not come unless offered a satisfactory salary. It is also true that excellent men will sometimes make financial sacrifices for the privilege of helping to build up an institution having thoroughly sound planning behind it, and the promise of orderly fulfilment and expansion.* So far we appear to have contemplated mostly improvisations; and the past history of this University is hardly calculated to inspire confidence in outsiders that so complex and costly an organization as a first-class medical school would develop out of such beginnings. What we need then is a forward-looking, comprehensive plan, based on probable future techniques, attitudes and trends in



medical education, *as visualized by the leading international authorities*, and not as recollected by local practitioners, who since graduating many years ago, have seldom taken the opportunity to keep abreast of developments in this intricate field. Having prepared such a plan, we should obtain its endorsement by a committee of outside experts, seek the official approval of the Government, and promote its general acceptance by the people of the Province. With these preliminaries accomplished, first-class men in Canada, or outside it, may confidently be invited to form the nucleus of the staff . . . Men young enough to fight the inevitable oppositions, and to struggle energetically with the many other difficulties ahead; able enough to ensure notable departments; and like-minded enough in their enthusiasm to enjoy working together as a team for the translation of a vision into reality.

#### e. *Full-time Clinical Staff*

One of the most obviously valuable trends in medical education is towards full-time clinical staff. Already, in nearly all leading schools in the United States, the Heads and certain other members of the main clinical departments are full-time. By contrast, in Canada at present not one school has more than 3 full-time Heads of clinical departments, while among the smaller schools, only the University of Western Ontario has any full-time clinician on its staff. This state of affairs is mainly due to the budgetary inadequacies already discussed. It is deplorable because it deprives the student of teachers whose main allegiance is academic, and provides instead men driven by competitive urges, and prey to their patients' vagaries and demands. It is also deplorable because it robs the school of sound research in the clinical fields, since practitioners can rarely find the time to carry through an investigation at the university level. Further, part-time arrangements are perhaps more responsible than any other single factor for the tragic cleavage in sympathies, attitudes and objectives so often prevailing between the men on relatively meagre salaries in the so-called "preclinical" sciences, and their more opulent clinical colleagues. In the opinion of most Deans of Medicine, the disproportionate emoluments of many surgeons, for instance, has a very unfortunate influence upon medical education. The paraphernalia, ceremonial, and glamour of surgery fascinate many students, and help to lure a number of the brighter ones away from channels often more suited to their talents. Again, part-time clinicians are always liable to urgent calls from patients, which cannot be postponed, the students being dismissed or left waiting. Yet only too frequently such persons exercise an influence upon the policies of the school which amounts in fact to a tyranny.

To clinch the arguments for an adequate number of full-time clinical appointments, one cannot do better than quote the opinions expressed by authorities on the question. Dr. Alan Gregg, Director of Medical Sciences, Rockefeller Foundation, has summarized the advantages thus:—"I am of the opinion that the full-time plan of clinical teachers . . . has been one of the main reasons why standards of medical practice have improved and why the young graduates prefer and accept hospital and teaching connections. Indirectly, full-time has laid the ground-work of the spreading conviction that first-rate medicine can be practiced by physicians on salary in hospitals and at an enormous economic saving to the population as a whole. By so much as full-time teaching can be maintained, the distribution of medical care can increase in its width of application and still be held to a high standard of performance; by so much as full-time is maintained, the choice of any medical school when it comes to filling a teaching position is nation-wide, but if medical school teachers are obliged to develop private practice on the side they become immovable local practitioners with an interest in teaching but with no ability to accept a position elsewhere since they cannot take their patients with them." Dean Hall, University of Western Ontario Medical School, told me: "Our Professors of Medicine, Surgery and Obstetrics are all full-time men, and Chiefs of their staffs in the Hospital. We were the first school in Canada to have such full-time Heads of Departments. The policy has paid wonderful dividends."

The Assistant Dean at one of the large Canadian schools commented:— "I thoroughly deplore the multitude of part-time appointees here—none getting more than \$350 per annum, with no clinician of associate professorial rank learning the job as his Professor's future successor." A professor in one of the medical science departments at the same university stated: "The possibilities of improving clinical teaching here are enormous, and the probability of success depends upon the extent to which part-timers are replaced by whole-time people." At all the other schools in Canada, the need for at least some full-time clinical staff was admitted, and plans for a start in this direction were being laid at several of them. If the University of Utah Medical School, with only 600,000 population behind it, can manage to appoint a number of full-time clinical professors, every one of our Canadian universities should be able to do likewise.

Here are a few excerpts from conversations with others:— The Assistant Dean at a renowned university in the United States: "The atmosphere of our School has deteriorated ever since we reverted to the part-time system during the depression . . . when the Board of Regents tried to compare the Professor of Medicine with the Professor of German and lopped a large sum off his salary." The Dean of Medicine at Harvard: "The principle of full-time clinical professors is perfectly sound and inevitable." The Dean at Yale: "We have had the full-time principle since after the first World War. The Heads of 9 or 10 of our clinical departments are now full-time. The system really works, and we believe it is the only satisfactory way." The Dean of Medicine at Johns Hopkins: "If a man who is supposed to give his time to teaching feels he owes it to the public to 'serve' them, then the sooner he moves out of the medical school and into practice, the better. He cannot serve both masters." The Assistant Dean at Cornell University Medical School: "Our top men are all full-time, with 2-4 full-timers in each department. This I regard as very fundamental." The Professor of Surgery, University of Pennsylvania: "I believe firmly in the principle of full-time." The Professor of Surgery, Yale: "There must be no compromise on the issue of full-time clinical staff. We follow the Flexner-Welch definition of full-time: no private patients."

A few points require special comment. First, it is not enough to appoint a single full-time man in a given clinical department, leaving him entirely dependent upon part-timers or volunteers. The usual consequence of such a policy is that the full-time Head is loaded down with administrative details which his practitioner associates are unwilling to assume, and which leave him cast in the role of chore-boy. One or two full-time men should also be appointed to assist him, especially in the Department of Medicine.

Secondly, it should not be imagined that a significant number of such full-time staff would be locally recruited. Some younger men, who have had teaching experience, who have recently come here from centres of medical education, and who have not become immersed in competitive practice, might well be considered as possible candidates for a few of these full-time positions; but the University must of course be free of all sense of obligation or pressure to make these appointments on any basis but merit. Medical schools should pick their full-time teaching staff from among those trained as teachers, with research aptitudes and a definite vocational inspiration. Such people are rare indeed, even in centres of medical education; and it would be tantamount to belief in strictly secular miracles to suppose that when other schools have difficulty in finding suitable full-time clinical teachers, they should be disclosed, growing right on the vine, in Vancouver.

Thirdly, consulting privileges are generally deemed an essential prerequisite, even for full-time appointees. Fees earned thereby need not by any means necessarily revert to himself, but there are many non-pecuniary advantages to be reaped from such consultations. If the Professor of Medicine, for instance, is a real authority in his field, he will inevitably be sought sooner or later for consultation over some patient who may not only insist upon paying a fee, but may remain a loyal friend of the University thereafter. If the Professor of Surgery is not an able enough diagnostician or operator

to be fairly frequently consulted, his prestige will soon sink to a sad level among the local profession. Moreover, the medical school of the future should not be dependent upon indigent patients as the sole teaching resource. If the custom spreads, as seems inevitable, of using semi-private and private patients for teaching purposes, and if the current system of purveying medical care remains in force, some reservations will have to be made in contracts with full-time clinical professors respecting fees levied for attendance upon such patients. The various alternative schemes in vogue or in prospect for coping with these contingencies need not concern us now.

Lastly, the school should not expect, or even desire, that all its clinical staff be full-time. Valuable teaching contributions can be made by experienced men of consultant calibre, and the University should be glad to confer appropriate academic ranks, in return for definite teaching commitments, upon the more able and distinguished medical men in the Province. The number of such part-time appointees needed is a matter for later consideration. Meanwhile, the important point is that no privilege is more esteemed by the best in the profession than that of making useful contributions to the work and reputation of a medical school. These appointments, *made on a basis of merit only*, are ultimately the best guarantee of the goodwill and help of the profession at large; but made on any other basis, are a source of endless bickerings and lobbyings which clutter up the progress of the school with all the extraordinary ramifications of medical politics.

**f. *The Medical School must control sufficient hospital beds***

The great majority of medical school graduates become general practitioners, or enter some clinical specialty. Their main function in the past has been the diagnosis and treatment of disease, and for many years to come this situation is bound to hold. No matter how successfully Departments of Preventive Medicine or Schools of Public Health may implant the prophylactic outlook upon the medical curriculum, nor how enthusiastically Departments of Psychiatry may underline the psychosomatic aspects of disease, the sick patient in a hospital bed will long continue to confront the doctor with his biggest problems. The practitioner of the future must certainly be more familiar with, and a more ardent supporter of, the principles and methods of community sanitation, and of periodic health examinations, than is his contemporary, and he must understand far better than is customary today the proper applications of such diverse procedures as immunization and psycho-analysis; but this knowledge must not displace his traditional concern with the prompt relief of suffering. In other words, Medicine is traditionally the term for a vast body of knowledge, growing increasingly elaborate in scope and complexity, and bearing mainly upon problems of human morbidity; and the fact that disease prevention and health promotion have recently emerged as additional and indeed highly desirable objectives for the doctor to pursue, does not warrant eliminating from the medical student's training a thorough initiation into the techniques of differential diagnosis, of palliative and specific treatment, and of general bedside care.

This means that the medical school must have hospital beds at its command, which can be filled with persons having the various types of maladies most suitable for instructional purposes. These beds must be sufficient in number to ensure that during his period on the wards, every student can secure a thorough background in the fundamentals of management of the sick patient. In a tax-supported General Hospital, no matter whether administered by employees of a City, County, Provincial, State or Federal Government, the *service* function inevitably takes precedence over *teaching*. The immediate demands of the community, in the shape of persons needing hospital care, are given priority over the more remote benefits to be gained through the training of better doctors. Hence, in an epidemic, a large number of the beds in such hospitals may be filled with one particular type of condition. Or if the community exhibits a disproportionately high incidence of chronic degenerative conditions, and has too few convalescent hospitals or private homes to board them in, as is the case in Vancouver,

then an unduly large proportion of General Hospital beds may be occupied by aged persons, presenting real enough problems in geriatrics, but not supplying a sufficient range of disease pictures for undergraduate teaching purposes. When a General Hospital of this type is under consideration as a medical school's main centre for clinical teaching, the assurance of a proper *variety* of disease conditions for student training can only be met by assignment of a sufficient total *number* of beds to University control. *The proper ratio under such circumstances is generally held to be 12-15 beds per student clerkship; or, for a class of 50, a minimum of 600 beds.* These beds would of course have to be properly distributed among the various specialties, e.g. Medicine, Surgery, Obstetrics and Gynæcology, Pædiatrics, and Psychiatry.

Another fundamental feature of any hospital affiliated with a medical school is that the *wards containing teaching beds be placed entirely under university control, and closed to all doctors not on the university staff.* The reasons for this rule need not be detailed here, but are perhaps best indicated by the fact that whenever a university has exercised this rigid control over some portion of such a hospital, the Board of Directors or Trustees have sooner or later been driven by public opinion, as well as by their own observations, to transfer additional portions, and if possible all of the hospital beds, to the professional supervision of the university staff. Moreover, it is characteristic that other hospitals in such communities have soon been impelled to seek similar affiliations.

The Outpatient Department of a hospital offers in many ways a teaching asset just as valuable as the ward beds. If properly run, this department provides an excellent mechanism for selection of patients for the teaching beds; introduces the student in his final year to the responsibilities of the practitioner-patient relationship; and helps to impress upon him the greater amenability to treatment of disease in the earlier stages. The Outpatient Department, for full utilization and close integration as a teaching resource, must also be controlled by university appointees.

The Chiefs of Staff of the various services in a large non-teaching hospital may or may not be the best persons locally available for these positions. But such appointments are highly prized, and the jealousies and acrimony often incidental to filling them when vacancies are anticipated is more than proportionate to the enhanced prestige and privileges accruing to their incumbents. The Heads of the Clinical Departments of a university medical school, on the other hand, should be selected as the best persons nationally, or even internationally available; and it is unthinkable that the Professor of Medicine, Surgery or Obstetrics, for instance, should find his teaching activities hampered—in any of the numerous possible ways—by an obstructionist Chief of Staff. The only adequate insurance against such an eventuality is that the *Head of the University Department should also be Chief of the corresponding Hospital Service.* Indeed, no well-qualified, self-respecting candidate would consider a clinical appointment in a medical school on any other terms.

The following quotations from the Professors of Medicine at two of the best-known Canadian schools seem especially relevant:—"There isn't any possibility of running a medical school on any other basis than that your Professors of Medicine and Surgery should be Chiefs of Staff of your teaching hospital, and the proposition isn't worth five minutes argument . . . There is no Class A medical school where these arrangements do not obtain." And, "The university must control hospital appointments and beds, or there'll be constant headaches. You should not begin until you have a guarantee from the administrators of the hospital for at least 500 assorted beds for a 25-year period, and these should be a completely closed Division. There must be absolutely no breach of the principle that the senior university appointee should be in charge of everything in his service in all parts of the hospital. In many ways, the . . . (hospital in question) is the antithesis of what a teaching hospital should be."

A few additional quotations may be selected, among very many along similar lines, from authorities in the United States. The Professor of Medicine and Dean, at Harvard:—"If you don't have satisfactory arrangements at the start, you'll have a lot of grief with your hospital problem . . . There are three points that *must* be observed in relations with affiliated teaching hospitals: The university should nominate the Chiefs of Staff; these Chiefs should in turn nominate their own staffs, through the university; and the administrators and appointees to non-teaching portions of these hospitals should have no power over the teaching portions." The Director, University of Pennsylvania Hospital:—"I know all the medical schools in the country, and I tell you there is constant trouble unless there is the closest possible affiliation between the teaching hospital and the school of medicine, with the university in control." The Professor of Surgery, University of Pennsylvania:—"Men in city or other non-university hospitals will not take the necessary time to teach students as they ought to be taught . . . You might get your city hospital to offer so many hundred beds, to be staffed by the university without interference . . . But no compromise on this issue of appointments is possible." The Dean, Johns Hopkins Medical School:—"Unquestionably there should be no compromise on the issue of university control of the teaching hospital."

#### *g. Necessity for a University Hospital*

The foregoing section clearly conveys many arguments, (formidable enough though of a somewhat negative nature) in favour of a hospital entirely under university control. Complete dependence upon any of the three large down-town hospitals for clinical teaching would make the future success of the medical school conditional upon maintenance of the closest cooperation between the University on the one hand, and on the other hand, either the City Council of Vancouver, the Veterans Affairs Department of the Federal Government, or a Roman Catholic Order. As noted by the Board of Curators of the University of Missouri in their report on a survey of medical education undertaken recently in rather similar circumstances to those prevailing here:—"No contract and no degree of good faith at the outset could give complete assurance as to the future of such relations."

To anyone familiar with the local scene it should be apparent that prolonged and difficult negotiations would be necessary before any contract could be entered into with these local hospitals which would satisfy, even at the outset, the basic essentials to proper affiliation, as outlined above. The nature and origin of these obstacles, and the fact that they are not peculiar to Vancouver, is evident from the following statement by Dr. Alan Gregg of the Rockefeller Foundation, quoted in the University of Missouri report:—"I know of no university medical school in a large city which within my memory has not had at least one serious quarrel between the university and the powerful and privileged professional leaders in the city. Unless your university medical leaders are resigned to offering teaching positions in return for support and collaboration of clinicians with few other claims to attention, they may well prepare themselves for a decade of pressures and political manoeuvres. Usually if appointments are made *quid pro quo* and at a distance from the university, the character of the school depends on forces only slightly under the university control."

The Vancouver General Hospital has been mooted as the most logical institution for affiliation with the medical school for clinical teaching. This hospital has for many years performed a remarkable service to the community under increasingly difficult conditions, and its staff deserves, and has doubtless received, unsolicited testimonials from innumerable grateful patients. But nothing would be gained by concealing the prevalent opinion elsewhere in Canada, that this hospital is "already too big", that many of its beds are "packed by practitioners with their own chronic patients", that its rever-

sion many years ago to open hospital status was "unfortunate"; that it "lacks residency appointments"; and that the quality and quantity of ward and out-patient teaching offered is such that the Deans of certain medical schools "do not advise their students to apply there for internships". These criticisms would be endorsed by many Vancouver doctors, especially by representatives of the younger generations. For various reasons which need not be developed here, neither St. Paul's nor Shaughnessy Hospital would prove suitable as the sole clinical teaching institution, although their staffs could and almost certainly would dispute any claims of superiority for this purpose made by the General Hospital. The University is left then with two alternatives. Either to seek some sort of emergency affiliation with all three of these hospitals, on the best available terms; or to defer considering any hospital affiliations until a University Hospital has been approved, and is clearly in sight. There is no emergency, local or national, serious enough to warrant the unwise, improvident and unworkable choice of the first alternative. Such a choice would entail a heavy construction programme for each of the three hospitals concerned, in the shape of lecture theatres, staff offices, demonstration and reading rooms, extra laboratory space, and so on; and would expose students and staff to the very features which it is now generally recognized should be avoided, viz., loss of time and integration through separation of the different curricular activities.

There are admittedly many advantages for a medical school in having access, *on its own terms*, to the various hospitals of a large city. The available teaching resources are thus multiplied, giving the student more clinical experience, and a better-balanced picture of the types of morbidity prevailing. Indeed, such affiliations provide one of the most obvious means whereby the development of a medical school can raise, and invariably does raise, the standards of practice and of hospital care throughout the community. Certainly it would be desirable that the University, once its school was securely established, should view sympathetically any request for teaching affiliations from the controlling bodies of local hospitals. As will be pointed out later, hospitals *throughout the Province* should be encouraged to feel that they may be able to contribute, directly or indirectly, to the training of medical students. But in all such cases, if the University's requirements for affiliation be not fully met, it will be saddled with a liability.

The arguments against the feasibility of satisfactorily using down-town hospitals as the University's sole resources for clinical teaching, can be supplemented by additional arguments, of a more positive nature, favouring a University Hospital. Only a university hospital can properly select its patients for admission on the basis of suitability for teaching or research purposes. Only a university hospital is exempt from being looked upon mainly as "the doctor's workshop", and can look upon itself instead as a clinical laboratory. *A Faculty of Medicine which does not have its own hospital is as deficient as a Faculty of Agriculture without an experimental farm.* This last statement of course does not mean that in a university hospital experimentation proceeds for its own sake, and at the patient's expense. The best rebuttal of such an interpretation lies in the marked and immediate popularity of every university hospital erected —no matter how far away from the centre of a city, nor how small the city itself may be. The analogy with the Faculty of Agriculture is particularly apt in refuting the contention that it is not a university function to undertake care of the sick. The University needs fields, barns and an assortment of relevant livestock for the proper training of students in Agronomy and Animal Husbandry; and also for the trial of promising procedures, and the discovery of novel information, which can be disseminated to farmers and interested groups throughout the Province. Likewise the University needs not only public health, pathological and research laboratories, and a student health service, but also ambulatory and bed-ridden patients, for the proper training of future practitioners, health officers and research workers; and in order that it may be recognized throughout the Province as the centre of enlightenment and progress in the whole field of Medicine.

The question of *expense* need not concern us unduly here. Vancouver is particularly short of hospital beds—a fact denied by none—and the taxpayers must very soon begin to supply the deficiency. Admittedly, a 250-350 bed University Hospital\* would by no means completely alleviate the current and threatened shortages; but it would certainly provide that number of beds better than none. It is also conceded that the per-bed cost of constructing a university hospital is higher than the cost of a non-teaching hospital of similar size; but this is an inevitable concomitant of the teaching facilities and apparatus required, and would be more than repaid promptly in terms of higher standards of hospitalization and medical care. The construction cost of such a hospital should not exceed \$3½ million. The operating deficits would depend upon the extent to which private and semi-private patients were admitted, and could be reduced to an insignificant figure if, as is from many standpoints most desirable, a high ratio of such beds were available. The only safeguard necessary in this event would be a rule that *all patients, irrespective of social and financial status, be available for teaching*. Most up-to-date, full-time clinical professors in university hospitals accept and practice this principle. It may be emphasized here that as prerequisites to a good medical school, full-time clinical professors and a university hospital are very closely linked; for when there are no full-time men, the value to the student of a university hospital may be reduced to temporary insignificance through the hospital being largely filled with private patients unavailable or unsuitable for teaching—a situation which has occurred in at least one Canadian school. This report shall not be complicated by a discussion of hospital financing and management, which are intricate subjects requiring special study. But the comment may fittingly be inserted here that the budgetary and administrative problems of the hospital should not be superimposed upon those already being met by the University. The enterprise would have to be either financially self-sustaining, or the recipient of ear-marked grants. Further, although members of the Board of Governors, the University President, and the Dean of Medicine should be on the Hospital Board, administrative details would need to be handled by a Superintendent and staff. For the present, the crucial points are that the Province will shortly have to build new hospitals, that the first of these might be a University Hospital, and that the construction and operating costs would be readily authorized by public opinion.

These proposals should not be dismissed as idealistic, novel or revolutionary. To be content with less is to be unrealistic and out-of-date. A few examples may help to drive my points home. The brilliant neuro-surgeon, Dr. Harvey Cushing, (part of whose biography I was most kindly permitted to read in MS. by the author, Dr. J. F. Fulton, Professor of Physiology at Yale University) wrote forty years ago in a letter to the President of Yale, who had invited him to accept the Chair of Surgery:—"It is not an abundance of patients that makes for the most successful clinical teaching, but the way in which the small number is utilized as a means of instruction . . . No hospital can attain anything other than merely a local celebrity which is not both a teaching hospital and one from which definite advancement in our knowledge of diseases and their treatment can come . . . A ward for so-called pay-patients should in the first place be remunerative from the standpoint of hospital administration; it keeps the attendants at work in the one institution instead of scattering their energies and thus making poor institutional servants of them; it brings a wide reputation to the hospital and makes the indigent sick not only much more appreciative of the charity but the charity much more effective in curing them of their maladies . . ." And in a letter sent the following year, in which he finally refused the Chair, because the

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\*Footnote:—The choice of cases exercised by a university hospital reduces the necessary ratio of beds per student clerkship to 5-7, in contrast to the 12-15 beds per student required in a non-university general hospital. See page 18.

New Haven Hospital was not yet sufficiently under the control of the University, (although Yale Medical College was founded in 1813), Cushing wrote: "I can see that, for some years at least, the incumbent of the Chair at Yale, if he does his duty as a University servant, will needs give up his entire time to the reorganization of clinical teaching under circumstances which are as yet unfavorable to the task; in an institution not under the control of the school, with far too few public patients at his disposal, and with students as yet not recognized as a necessary part of a hospital organization."

Again, one might instance the century-old, close cooperation between the 3300-bed Bellevue Hospital (operated by the City of New York) and the New York University College of Medicine. Here, the University has control of about three-quarters of the beds, with Cornell and Columbia Universities staffing the remaining one-quarter of the total. Yet the New York College of Medicine has recently launched a campaign for \$15 million for reorganization, of which \$6 million is assigned to construction of a university hospital.

Finally, coming nearer to Vancouver, the University of Oregon Medical School, established in Portland in 1887, and for more than 20 years in close affiliation with the Multnomah County Hospital, is about to campaign for funds for its own university hospital . . . Further arguments pointing to the necessity of a university hospital, if a good school is desired, will be found in subsequent sections.

#### ***h. Location of School, as it affects intra- and inter-Faculty relationships***

*No issue is more important to the future of the school than its location. I am convinced that the University campus is the proper location for the whole medical school.* Although recent experiences have changed my own views on two important questions, namely the size of the necessary budget, and the feasibility of temporary dependence upon the down-town hospitals for clinical teaching, on this problem of location my original opinion is not only unaltered, but has been immensely strengthened by all that I have seen and heard.

At Edmonton, my first stop, I found the university hospital on the University of Alberta campus, adjacent to the medical sciences building, both well-organized and well-constructed units, but struggling manfully against a combination of crowded quarters, no full-time clinical appointments, and inadequate departmental research programmes. One reflected then upon what might have been done at the University of British Columbia with the \$5 million offered it by the Rockefeller Foundation a quarter-century ago, for the commencement of a medical school—an offer eventually transferred to Edmonton . . . Later, at Madison, Wisconsin, I learned that Dr. J. S. Evans, Emeritus Professor of Medicine at the University of Wisconsin, had visited the proposed University of British Columbia site at Point Grey (then virgin land) as long ago as 1914, in company with President Westbrook, and had recommended that the university hospital and medical school should be located there, alongside the University . . . At Chapel Hill, North Carolina, I was permitted to be present when a team of visiting experts on medical education were interviewing the President, Chancellor, Dean of Medicine, and various officials of the University of North Carolina in order to determine, among other matters, where the proposed 4-year medical school should be. The university representatives were unanimously in favour of building a university hospital on the campus, although Chapel Hill is really no more than a village of 1700 permanent residents, and eight adjacent towns and cities were vying for the school; and it can be safely predicted that if the experts decide to advocate early expansion of the existing 2-year course to 4 years, they will recommend its full establishment upon the campus . . . Then, nearer home, I learned that the University of California at Los Angeles had been voted \$7 million by the State Legislature for a new medical school, and had decided to construct the school and university hospital on the campus at Westwood, 20 miles from the centre of Los Angeles . . . Finally



at Seattle, the last stop, the recently appointed Dean of Medicine was planning for a 300-bed hospital to be built in contiguity with the medical science departments, right on the campus . . .

At other places visited, one found widespread agreement among representatives of all departments that a school, starting afresh, should be unified on the university campus. There were of course a few exceptions, notably at universities where the medical school, beginning in the proprietary school era, became of necessity affiliated with a down-town hospital, and later with the university for degree-conferring purposes only. Such schools may operate quite independently of campus life, to their own loss and that of the other Faculties, and as a recurring source of irritation to the university administration. Representatives of such schools sometimes appear so convinced of their good fortune at having the medical science departments and hospital together—which everyone concedes is a most desirable conjunction—and of the physical and fiscal impossibility of having their whole organization transported to the campus, that they seem unable to discuss alternatives objectively with others who still have freedom of choice.

In San Francisco, one found interesting examples of divided schools. University of California and Stanford University medical students take their earlier courses in the medical sciences at Berkeley and at Palo Alto, and then make their headquarters at the respective university hospitals in San Francisco—both schools supplementing the clinical resources of these hospitals by sharing professional control of the San Francisco Hospital. The curricular handicaps, research hiatuses, and physical inconveniences resulting from this geographic separation have culminated in decisions at both universities to fuse the divided course. Stanford University is launching a \$10 million fund-raising campaign, and the University of California has received a vote of \$11 million from the State Legislature, for the necessary construction and reorganization. The centres of gravity of these schools, in terms of money invested, and of professional influence, lie in San Francisco, and it now seems that both schools will eventually be consolidated there. But decisions to this end have not been reached without grave heart-searchings by the Deans and Faculty Councils, nor indeed without a bitter outcry from representatives of the medical sciences, particularly at Berkeley, whose echoes still reverberate. The chief point about this situation for us to note is perhaps this: all were agreed that if they could start afresh, they would plan to develop complete medical schools on their main university campuses.

This somewhat lengthy preliminary discussion seems desirable in view of the extreme importance of the question of location, and of the vehemence with which one or two prominent members of the British Columbia Medical Association Committee have campaigned for a scheme contrary to that originally envisaged, and unanimously endorsed by the Committee. If this changed viewpoint is due to previous failure to appreciate the growing importance of close integration between the so-called "pre-clinical" and "clinical" components of the curriculum, and to realize the numerous difficulties interposed by a 6-mile separation between the campus and any down-town hospital, then I heartily concur that staff and students would find such separation a serious obstacle. But if the issue of *location* has really been linked with the question of *control*, then this is a tiger of another stripe, and must be faced. *Either the University controls its Faculty of Medicine from the beginning, or the school will become a perquisite and a battle-ground for professional cliques.*

Certain additional factors bearing on the location of the school remain to be considered, and are discussed below:

1. *Administration.* A Faculty of Medicine presents serious enough problems to any university administrators, without the aggravating feature of remote control. These difficulties are of course far more serious when the university campus and the medical schools are in different cities; but even a 6-mile separation in the same city is a formidable barrier.

2. *Economy.* The total cost of setting up the whole Faculty of Medicine at or near e.g. the Vancouver General Hospital could ultimately greatly exceed the cost of setting up the school, including a university hospital, on the campus. If the former site were chosen, land would have to be purchased, to the extent of at least 25, and preferably 50 or more acres. A decision to start with a "divided" school (medical sciences on the campus, and clinical experience down-town) would still involve considerable structural alterations to the Vancouver General Hospital, and the construction of an adjacent building to house the students and clinical staff, the headquarters of the Department of Pathology, and a library. Certain administrative offices, as well as parts of the Pathology Department and library, would represent extravagant duplications.

3. *Prestige and prosperity of University.* A good school of medicine is a university's most expensive, but most glamorous asset. It should be on the campus for all the world to see\*—a concrete testimony to the service rendered *by the University* to the whole Province, and an inspiration to the wealthy and public-minded to endow it with further opportunities for service. Moreover, a flow of endowments to one Faculty usually sets the fashion and starts a tradition from which other Faculties soon benefit.

The possibilities of substantial endowments are of immense importance to the future of the medical school. The very large sums nowadays required to yield significant revenues can be illustrated by the fact that \$100,000, for instance, soundly invested today, will not furnish the salary of one Assistant Professor; while the interest upon an endowment of one million dollars would be required to operate a good Department of Anatomy. In seeking endowments of real significance two main sources must be considered—the great health and educational philanthropies, such as the Rockefeller and Kellogg Foundations; and the citizens of the Province. There is little doubt that the response from citizens to an appeal for funds would be far more generous if the Faculty of Medicine were located on the campus. Further, the views of the Foundations on the question of location are so well-known that I do not hesitate to say we could expect no financial help whatever from them if what they would regard as the calamitous choice of a down-town site were made.

A brief allusion may be made here to the fact that the general University morale would undoubtedly suffer seriously if the Faculty of Medicine were divorced from the campus. After so many lean years, the recent generous grant for new buildings from the Provincial Government has naturally been viewed with appetite by long-starved, existing Faculties. To reconcile the University at large to creation of this new and expensive Faculty, of relatively small student enrollment, will not prove easy under any circumstances; but if one-third of the new grant were spent upon construction of buildings remote from the campus, the effect upon inter-Faculty relations might well be shattering.

4. *Trends in the Medical Curriculum.* Several trends are currently apparent in the medical curriculum, which stress the necessity of securing the closest possible proximities and sympathies between the various departments of the Faculty of Medicine. One of the most firmly established of these trends, and the simplest to arrange, is the earlier introduction of the student to clinical methods and objectives. The best example of this is the training in physical and laboratory diagnostic techniques nowadays customary in the second year of the course, and which some schools plan to bring about at an even earlier stage. This training gives added point and purpose

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\*Footnote:—In my wanderings, I was frequently struck by the fact that even where the parent university and the medical school were both world-renowned, if the two were at all separated, (as e.g. by only ½ mile at the University of Rochester) it proved much easier to find one's way by asking for the hospital than by mentioning either the university or the medical school.

to the student's instruction in Anatomy, Biochemistry, and Physiology; and also helps to lower the artificial barrier which has too often separated the "preclinical" and "clinical" portions of the curriculum.

Another trend is seen in the system of "joint conferences". The holding of frequent clinical-pathological conferences has become traditional in medical schools, and also at some non-teaching hospitals; and although such conferences focus attention overmuch upon the end-results of disease, they represent a valuable and scientific means, for both students and staff, of integrating knowledge of advanced morbidity. At the more forward-looking schools, clinical-physiological conferences, and similar open discussions in which the anatomist, bacteriologist, biochemist and pharmacologist take equal part with the clinician, are increasingly favoured. Joint meetings of this type are breaking down a pedagogical and attitudinal barrier (between the early study of the normal, and subsequent concern with the abnormal) which has long been confusing and discouraging to the student. They also serve to illuminate the various phenomena of disease in the earliest and most amenable phases.

In one school\* at least, the slow permeation of the medical curriculum with the preventive outlook, which is another obvious and widespread trend, is accelerated by the holding of joint conferences under the auspices of the departments of clinical and preventive medicine. Students are thus constructively and authoritatively made equally aware, not merely of the differential diagnosis and treatment of e.g. acute rheumatic fever, but also of the various factors contributing to its onset, with the appropriate prophylactic measures. They are thereby vividly reminded of the importance of such different concepts as immunity, nutrition and social environment, whose bearing upon questions of health and disease were usually first brought to their attention in the earlier years through courses sponsored by the Preventive Medicine and other departments.

One more trend in the medical curriculum to which reference may be made in this section, is toward early orientation of the student to the significance of psychological factors in disease—a field of study to which the term "psychosomatic medicine" is now popularly applied. In some of the best schools, Departments of Psychiatry make contact with the student through required lectures and demonstrations, and elective seminars, in the first or second years, or even both. These courses are designed to familiarize him with the range of the normal personality, with the physiological bases for abnormal behaviour, and with methods of conducting psychological examinations.

All the trends exemplified above represent and entail a linking together of the various components of the 4-year undergraduate course, to the end that students may suffer less from a surfeit of discontinuous and frustrating mental disciplines, and may enjoy persisting stimuli from constructive influences and attitudes implanted early. *The other feature common to these trends is that for effective promotion, they require all departments of the Faculty of Medicine to be closely interrelated in every respect.* A gap of 6 miles between Departments of Anatomy and Surgery, between Physiology or Pharmacology and Medicine, and between Bacteriology and Paediatrics, does not necessarily debar cooperation between the enthusiastic, while the closest proximity does not guarantee cooperation between the unwilling. But immense advantages will

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\*Footnote:—Vanderbilt University. Of special historical interest here is the fact that when a new Dean (Dr. Canby Robinson) was called to Nashville in 1925 to reorganize the School of Medicine, he found a down-town hospital already under construction, which was planned as the future teaching centre. The authorities were persuaded to abandon this structure, and to build instead a university hospital on the campus. The present high calibre of the school there is the best testimony to the rightness of that decision made 20 years ago.

accrue to those who should and would cooperate, if the policy of an undivided school be accepted from the beginning.

##### 5. *Premedical Education*

Curriculum committees of medical schools everywhere are striving to arrange logical sequences and helpful conjunctions of courses, and to eliminate as far as possible the disjointedness—the abrupt transitions—for so long characteristic of the medical student's training. These committees are equally concerned with the question of *pre-medical education*. Among the entrance requirements to most medical schools now are a minimum of 3 years (after Junior Matriculation) of college courses in arts and science subjects; while in some schools, the number and quality of applicants are such that almost all of those accepted have their B.A. degree. Certain arts courses are stipulated because a doctor should at least be able to express himself clearly, recognize how broad are the fields of knowledge, and sense the graces of literature, the purpose of philosophy, and the amenities of life. Certain science courses are required because the prevailing conceptions of a well-trained physician involve his having at least encountered a great amount of miscellaneous factual information in the various medical sciences, and he cannot hope to approach and absorb this material without preliminary initiation. The net result is a compromise course, from which few applicants indeed graduate as the élite which medical students ought to be. Admittedly no set of prescribed academic courses alone will produce an élite; nor will the prevailing dissatisfaction with premedical education be greatly reduced by insisting that it should occupy three years instead of two, or four years instead of three. Nevertheless, many changes are imminent in premedical education. In purport these changes will resemble those described in the preceding section, viz., the prescribed courses will be better integrated, and of more obvious reference to Medicine. Anthropology, genetics, government, and sociology, for example, are valuable fields of study not only for the cultured citizen, but also and especially for the future doctor. Such courses might well displace several of the more time-honoured ones which, though now often taken in a spirit of desperation, might conceivably be keenly sought by the more mature medical student. Indeed, throughout the actual course in Medicine, coming generations of students will doubtless be offered, and encouraged to take, elective courses in a wide range of arts and science subjects. Persons sceptical of the senior medical student's desire for "culture" should ponder the fact that at one famous school, courses entitled Greek Philosophy and The Historical Foundations of the Present World Conflict were recently given to overflowing classes.

Time could be furnished for medical students wishing to take electives of this type by advancing such courses as Bacteriology and Biochemistry to the "premedical" years, by reducing the total hours now spent upon Anatomy, and later upon Surgery, and by various other reforms. The total effect of such changes would be a far less rigid, a better correlated, and a more informative and interesting curriculum. To achieve these reforms, it will be necessary to convert the last strongholds of the viewpoint that at a certain stage in his career the medical student—having tasted his modicum of culture—should settle down to serious business, and face (undisturbed by irrelevancies) the ordeal of being stuffed with facts of possible professional import. *Moreover, to be feasible, such reforms depend upon inter-Faculty relations being cordial, and upon the Faculty of Medicine being wholly on the campus; and nothing could be more calculated to defer them than to set up the school as a sort of annex to a downtown hospital.*

##### 6. *Co-operative Research.*

The necessity to make due provision for *research* in all departments of the medical school has repeatedly been emphasized in this report. Much of this research may be entirely intra-departmental, while the more elaborate investigations will involve close cooperation between the clinician on the one hand, and, on the other hand, the anatomist, bacteriologist, biochemist, pathologist, pharmacologist, and physiologist. But

it is inescapable that the future of medical research is intimately linked with, and dependent upon, advances made in the basic physical and biological sciences. Innumerable examples of this growing interdependence could be given, but a few must suffice. One of the most obvious and dramatic is, of course, the story of penicillin, which began as a happy fortuity followed up by a bacteriologist; which 12 years later, under pressure of a world crisis, required the solution of many chemical-engineering problems for its large-scale production; and which must culminate in its synthesis by a group of biochemists . . . Investigation of the specific activities of e.g. a new sulphur drug requires not merely cooperation between the bacteriologist, biochemist and pharmacologist, who test the drug in their laboratories, but also between them and the clinician who is responsible for its trial upon his patients, and the chemist who manufactures it . . . The demonstrated possibility of administering radioactive isotopes as tracer substances to laboratory animals and human beings, reveals wide horizons for cooperative research, in which the physicist must be an essential partner. And in the field of bacteriology and of virus research, one has only to mention the electron microscope to be forcibly reminded that it is an apparatus too formidable to own and handle unless there is a physicist around the corner . . . Again, statistics play an extremely important role in many fields of medicine, and their compilation and elucidation frequently require the helping hand of the mathematician . . . This increasing dependence of Medicine upon the basic sciences may be finally illustrated by mentioning such terms as Biometrics, Biophysics, Chemotherapy, Hospital Administration, Medical Economics and Microbiology, which have become accepted already as representing essential departments of medical knowledge. *Consideration of these developments alone should serve to invalidate proposals to place the Faculty of Medicine anywhere but on the campus.*

#### 7. Contributions to other University departments

The Faculty of Medicine has an extremely valuable contribution to make to general University welfare through supervision of the Student Health Service, which should definitely come under its jurisdiction. Likewise, it can profitably act in an advisory capacity to the Department of Physical Education. Certain departments of the Faculty are also indispensable to the training of personnel in many fields related to Medicine, as will be developed in a later section of this report. Further, arts students of adequate standing should be permitted to major in some fields of knowledge bearing on the body and mind of man; and the most authoritative repositories of such information are Faculties of Medicine. As a well-known anatomist wrote recently, in urging consolidation of a medical school upon its university campus ". . . it is high time that the University cry out with alarm that so-called professional education should wrest from it the greatest group of competent scholars dealing with the structure and function of the higher organisms, for the pre-clinical half of the medical curriculum constitutes the best-rounded education in biology to be found in the world." Perhaps it is permissible to interpose at this point that already, at our own University, over 300 students in the Faculties of Arts and Science, Applied Science, and Agriculture, are taking courses in the Department of Bacteriology and Preventive Medicine; and over 500 are expected to enroll next year. Do the proponents of establishment of the medical school at the Vancouver General Hospital seriously advocate uprooting this department, and depriving so large a number of non-medical students of the right to take these courses on the campus, in order to meet the convenience of one-tenth the number of medical students? Or do they envisage the prodigal expense of a duplicate and rival department?

This section on the question of location as it affects the University at large may now be closed by a few brief and representative quotations: The Professor of Anatomy, University of California, has written:—"It would be difficult to pick a single matter of deeper import for the whole future . . . of any school of medicine. The choice between a 'down-town' location . . . and a location on or contiguous to the university

campus is in effect—make no mistake of it—the choice between a trade school, however excellent in its class, and a university school in the best sense of the term . . .” The Director of the Medical School, Johns Hopkins University stated:—“It isn’t debatable that the essence of success for a medical school is complete university control of the hospital, and the closest possible proximity of the medical science and other university science departments . . .” And the Director of Medical Sciences, Rockefeller Foundation:—“Of course there is no question that you should plan to have your school on the campus, with its hospitals alongside . . . If you start out downtown, the graduates grow up to believe that is the right kind of school, and their sons and grandsons inherit the same view. This perpetuates the tradition for 75-100 years, and only dynamite can change the situation then.”

#### i. *Long-term Planning*

In planning to develop a university Faculty of Medicine, one should bear constantly in mind the immense power and enduring nature of any university worthy the name. As a wise Professor Emeritus of Pharmacology said to me during my travels: “A university is the nearest thing we have to physical immortality on earth.” This dictum bids us look ahead not merely a year, a decade, or a generation, but a century at least; and furnishes a useful reminder of the stability and spaciousness of a campus in contrast to city streets.

In the original plans for the permanent buildings of the University of British Columbia, a field of 22 acres was assigned for the future medical school. This area is adequate for a good start, but provides nowhere near enough reserve for eventual developments. Shaughnessy Hospital alone, for example, when its current expansion programme is completed, will occupy 40 acres. Fortunately, at the University a much larger tract of woodland lies adjacent to the allotted field, and should be held as the site for various hospitals which will be needed as Vancouver grows. For if the University Hospital were built on the campus, as part of, or adjacent to, the medical school buildings, nothing could be more certain than the future hospitals would desire to be close at hand; and one of the world’s great medical centres might then develop here, to the greater fame and prosperity of the University, the City, and the whole Province. What chances of similar unfettered development would be available to a medical school attached to the Vancouver General Hospital? How much would 22 acres, or say 40 acres, of adjacent land cost there? And even 40 acres should not be deemed enough in planning for the probable needs of our Faculty of Medicine 100 years from now . . . *Free land in an academic environment and an unsurpassed setting* should alone offer an enticing enough prospect for a future medical school and hospital centre, apart from all the many other reasons advanced in favour of the University site.

There are three plausible objections to this long-term plan, which are all easily refuted, but deserve consideration at this juncture. First, there is the contention that sick persons would not readily make the long journey out to Point Grey, and that more especially the Out-patient Department of a University Hospital would not be well attended. This objection has been advanced so often elsewhere against proposals to establish university hospitals on the outskirts of big cities that to hear it raised in our midst may be deemed a natural phenomenon. In this age of multiple and rapid means of transportation, and particularly in this climate which gives year-round open city streets, 6 miles or so from downtown Vancouver would be no more deterrent to persons needing medical care than it has been for years to thousands of students seeking education. Besides, the city is already built up right to the University gates, and is rapidly spreading out in all other directions. Before long it may be a quicker and easier journey to the campus than to traverse the city to reach existing hospitals. *The notion that hospitals belong near the heart of a traffic-congested, noisy and ill-ventilated city is as old-fashioned as a horse-and-buggy.*

*Sick people will nowadays travel almost any distance for better hospital and medical care.* When, for example, the Presbyterian Hospital was moved out from a downtown area to 168th Street, New York; when Johns Hopkins Hospital was built on the fringe of Baltimore, and the Strong Memorial Hospital 5 miles from the centre of Rochester, many were the prophecies that patients would not travel so far. Yet undergraduate and graduate students attending Columbia University College of Physicians and Surgeons, the Johns Hopkins University Medical School, and the University of Rochester Medical School, now find patients aplenty for their needs, both on the wards and in the out-patient clinics. Again, one may instance Duke University Hospital, situated on the campus, about 4 miles outside Durham, a city of roughly 60,000 population. To this hospital 80,000 out-patient visits were made last year by persons from all parts of North Carolina, and even from neighboring States, who journeyed an average of 80 miles to get there. Likewise, the University of Iowa Hospital,  $\frac{1}{2}$  mile across the river from Iowa City (with only 17,000 inhabitants) is eagerly patronized by patients brought in by automobile from as far away as 200-300 miles. In fact, it has been repeatedly demonstrated that in the public's estimation, the superior quality of service available at a university hospital greatly overrides the question of accessibility. Hence the erection of a university hospital, no matter how small the city, nor how far from the centre of a metropolis, almost invariably leads to a nearby aggregation of other hospitals.

The second objection to a long-term plan envisaging a University of British Columbia medical centre may now be considered. Various claims will doubtless be put forward that such a centre should be developed elsewhere, e.g. near the Vancouver General Hospital, on the grounds that a large nucleus of buildings, representing a considerable investment of public funds and sentiment, is already established there. The argument may then proceed in either of two directions. One alternative is to allege that if to this nucleus were added a medical school and certain other facilities, the resulting entity would be superior to anything that could be developed *de novo* at the University. To this, the only just retort is that the devotion to teaching and research so characteristic of a first-class medical school, cannot be engrafted upon a public service institution inevitably trammelled by civic, medical, commercial and other forms of politics. Such grafting operations are rarely successful, even under circumstances more propitious than those locally prevailing. The best that can be hoped for (to pursue a somewhat parallel analogy) is a relationship akin to that of the mistletoe—a pretty parasite symbolizing casual gallantry in season—sprouting from a stolid oak . . . The other alternative is to complain that if, despite all gloomy prognostications, the University medical centre proved a success, then financial losses would be incurred by other hospitals and their professional visiting staffs. Against this fear may be quoted the experiences of e.g. the University of Wisconsin at Madison, and of Duke University at Durham, where opposition to establishment of a medical school was expressed by hospital boards and local practitioners, lest losses of revenue should follow. Actually, within a few years after these schools and their associated hospitals began operations, they had so raised the level of medical practice and hospital care in their communities, that people gained, rather than lost confidence in the local men and institutions, and sought their services as never before.

The third objection to a University site is voiced in terms something like this:—“We do not need an elaborate medical school in British Columbia, with too much fancy research and too many radical ideas. After all, what the public wants is *safe* doctors. The young doctor anyway only learns how to practice after he leaves school.” These more or less literal quotations from pronouncements on medical education by some well-known practitioners are apparently believed by them to indicate that a down-town hospital, run by men “familiar with the every-day problems of practice”, is the obvious place for the medical school. But even superficial analysis of these statements, if they be fair samples of the beliefs and outlooks behind them, yields only further evidence of the urgent need for the medical school to be *completely under University*

*control.* As the Professor of Medicine at the University of California commented to me: "When people talk about only wanting a school to turn out safe practitioners, I tell them what they are planning then is a second-rate school." Again, it is hard to understand how a young doctor can be *safe*, if he is to know very little on leaving school. Granting there is no true substitute for experience—in Medicine as in so much else—if the average student does not graduate with a firm grounding in scientific principles and investigational attitudes, he will not gain them during 50 years of practice; and his healing efforts will mostly be compounded of placebos and empiricism. Moreover, in Medicine, experience that is not built upon a sure foundation, laid down and made strong under the influence and example of research-minded men, is liable to result in a style of practice that is—to hold the metaphor—baroque or even rococo, cluttered up with glittering irrelevancies and fetishism. To quote in this connection the new Dean of Medicine at our neighboring University of Washington:—"You can't train thoroughly good physicians unless the men responsible for training them are *hunting* for things. The job of a school is two-fold: to train good physicians, and to acquire new knowledge. You can't separate the two functions, and you must therefore have men who can build up a research programme and atmosphere . . ." Finally, the bogey of radicalism is only too often dragged out by the unprogressive, and must be laid low right from the start. To the extent that this bogey derives from unfamiliarity with the extraordinary changes which have already taken place in the medical curriculum in recent years, it must be emphasized that medical education is a job for specialists, and practitioners have no more right to impose their wishes upon a curriculum committee than has e.g. a bacteriologist to try his hand at taking out a human spleen. To the extent that the bogey represents fear that a medical school on the campus would become a hot-bed of propaganda for some form of "socialized medicine", then it should be made clear that while a Faculty of Medicine should hold aloof from politics, it must of course have full licence for free discussion of all matters pertaining to the public health and welfare.

Assuming now that the conception of a medical centre on the campus be approved, and that all question of temporizing with a down-town hospital affiliation be abandoned, then how soon ought a start to be made in the long-term plan? The answer is *at once* . . . The trends towards a longer life-span and a lower birth-rate, seem established; and despite recent slaughterings of unparalleled scope and ferocity, the value of human life to the average decent person stands higher than ever before. Moreover, the public is becoming increasingly aware of the fruits of research in the field of Medicine, and is learning to expect not merely to be made well when sick, but to be *kept* well. Yet the doctor finds this task more difficult as his patient grows older, and hospitals today are overcrowded with the degenerative conditions of an aging population. Thus we find the public both enthused with the feasibility of more *health* being somehow made available to them, and alarmed at the necessity for more hospitals of practically all types. In British Columbia especially, this conjunction of enthusiasm and alarm is very conspicuous. The enthusiasm is seldom well-informed, and the alarm is often quite unjustified. But there is no doubt that our climate and other amenities attract an unduly high proportion of the aged and ailing, and that our present total hospital accommodation is very inadequate. While Essondale Mental Hospital and the Vancouver General Hospital are packed, there is no real Psychiatric or Pædiatric Hospital in the Province. A public fund-raising campaign for a Children's Hospital is imminent, and the Provincial Government will soon have to make provision for construction of other types of hospitals in Vancouver.

The public purse is not only ready to be opened for hospitals, but also for medical research. A \$500,000 cancer control campaign is now in progress. At least two service clubs have assigned funds aiming at the control of particular diseases. Large sums of money could no doubt readily be raised, either from wealthy individuals, or from the general public, for other projects. But where will these hospitals be located? Who will apportion the funds raised for control of cancer, poliomyelitis, and other



diseases? Who will direct the resulting enterprises? These are far more important questions than "What well-known figures are on the Board?" or "Will the campaign go over the top? . . ." In affairs so important as the location of a hospital, or the disposition of research funds for health projects, the University should have a strong voice. If this voice be exercised *without delay*, and a firm declaration made that its policy and intention is to establish a medical centre on the campus, the University will find itself called upon, as it should be, to give leadership in the formulation of long-term and comprehensive plans for the betterment of the people's health—*plans in which the medical school would feature as fulcrum.*

It should be added that legislation, current or impending, will inevitably enlarge the demand for medical and hospital care of a high quality. Existing medical schools cannot efficiently train more graduates. Mere erection of additional medical schools will admittedly not alleviate the maldistribution of physicians, which is at present a more serious feature than on overall shortage. But the community can always benefit from and absorb good doctors, while a soundly-planned university medical centre of the type to be outlined would contribute greatly to the assurance of a more uniform distribution of medical and hospital care throughout the Province.

#### **j. Functions and powers of Dean**

*The form and fame of a medical school is very largely determined by the character and ability of its first Dean.* There are few tasks more difficult, more responsible, or more taxing of time and talent, than that of organizing and launching a first-class medical school. For this is a graduate school, concerned with fields of knowledge so vital as to make their conveyance to the proper persons a solemn duty, yet so esoteric that the uninitiated should not be made too welcome. The Faculty is made up of men who have spent more time and money than most on their education, and their emoluments are therefore generally higher than in other Faculties—a fact which is not always accepted by the latter without bitterness, especially when considered in the light of such points for statistical comparison as time available for research, number of students per instructor, and size of budget in terms of enrollment. Then too there is the problem of securing the goodwill of the local profession without conceding control of any part of the school; and the making of equitable arrangements with clinicians who may have valuable teaching contributions to make to the school on a part-time basis. All these problems, and many others of which examples might be multiplied, would be more bearable if the Faculty of Medicine were not so apt to be comprised of persons whose fields of interest are among the most highly specialized to be found at universities, but whose personalities are perfectly normal in their propensity for envy, intrigue and even animosity. And it is the constant showering of difficulties upon the Dean by all and sundry among his colleagues which no doubt accounts for the reflection rather mournfully confided in me by the Dean of a well-known medical school: "A Dean of Medicine is to his Faculty as a lamp post to a dog! . . ." Certainly under the most auspicious circumstances, the Dean's lot is not a happy one; and when his powers and his budget are not specific and adequate, there can be few worse jobs in Christendom.

The Dean of Medicine is a buffer between powerful forces, and can only be effective in this capacity if he himself has the respect and confidence of all who matter. On the one hand, there is the University Administration, liable to find itself torn between pride in the accomplishments and lustre of its Faculty of Medicine, and exasperation at its insatiable appetite for funds and its general inscrutability. On the other hand, there is the Faculty, made up of specialists who are members of the world's most individualistic profession. Further, he will have to contend with the loud-voiced and the whisperers, who resort to strenuous lobbying with administrative and even governmental circles in order to seek control of vital aspects of the school. There will be pressures to resist from Health Departments, convinced of their rights

to exact from the school certain forms of assistance as specified by themselves. He will also have to cope with clamorous minorities and the cultists. In fact, there can be no hope of a good school unless its first Dean be the type of man who can be looked upon by both the Administration and Faculty as sensible enough to concede points in minor issues, but of sufficient rectitude and courage never to give way on questions of principle, no matter how great the pressures, or from what quarters they come.

The Dean's functions are obviously not merely negative. He must also be a man of action, and of vision. In a very real sense, the first Dean is the creator of the school. Before any start can be made, the Dean must prepare outline plans—organizational, financial, pedagogical and even architectural—for approval by the University authorities and the Provincial Government. Then, before detailed planning is embarked upon, a nucleus of future departmental Heads should be appointed; and *the Dean's recommendations should be paramount in their selection*. For only he can give sound advice on such matters as whether a "microscopic" anatomist should be viewed as handicapped by comparison with a "gross" anatomist, in selecting the departmental Head; whether or not an M.D. degree should be possessed by the Head of a Department of Biochemistry; or whether the over-riding consideration in each of these instances is the character and attainments of the men involved. Only he can so select the Heads of Departments of Physiology, Pharmacology and Biochemistry as to ensure a maximum coverage, and a minimum of duplication, in their fields of interest. Only he can determine, by perusal of their publications, whether the *quality* rather than the quantity of these reveals men of true research ability. And he can more clearly visualize than others whether they are men likely to struggle successfully against their common difficulties, rather than to seek independent empires. The degree of the Dean's success in obtaining the first-class staff which is so essential—for the quality of the school can be no better than the calibre of the men who join it—will largely depend upon three factors: his personality, which must be firm and yet conciliatory, strong and yet resilient; the extent and security of his budget (which has already been rather fully discussed, pp. 10-13); and his professional attainments and interests, to which a brief allusion may here be made.

A good Dean of Medicine is almost inevitably the busiest person in his Faculty. Whether his activities always represent the best use to which his talents might be put is another question, which most Deans I have met would answer in the negative. The innumerable committee meetings, the mass of correspondence, student and staff problems, and budgetary matters, take up many hours a week, and often leave far too little time for long-term planning, let alone for attention to his own academic and research interests. If the Dean has not in him a touch of the missionary, he is bound for misery. But he should not be expected to give over all his day to this form of indulgence. One of the happiest Deans I encountered had so organized his Faculty affairs, with the help of Associate and Assistant Deans, and a highly competent Secretary, that he managed to run a first-class school despite spending only an hour a day in the Dean's office. At other times he pursued his duties as Professor of Pathology, winning a Nobel prize on the side.\* Even at the fine University of Minnesota, where the Dean of Medical Sciences has executive control of the whole University Hospital staff, of the School of Nursing, of the School of Public Health, and of the School of Medical Technology, he is pleased to retain also his title as Professor of Preventive Medicine and Public Health, and to fulfil teaching obligations in that capacity. The important matter is not the formula applied to the duties, but the quality of the man

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\*Footnote:—Dr. George Whipple, Dean of the School of Medicine and Dentistry, University of Rochester. The reference would not be complete, however, without mentioning that 20 years ago, when this school and its conjoined hospitals were built, the Dean and one or two associates lived by the site (in the laboratory animal house!) planning and supervising the building almost brick by brick.

chosen. It is certain that the Deanship should not be taken on as a side-show. But a sound man would devise his own time-table to best advantage, and should be encouraged to retain whatever research or teaching obligations he finds it possible to perform effectively.

Almost without exception, the two-score Deans and Assistant Deans I met held some senior departmental position, and were glad to do so. For many of them, student contacts in classroom proved a valuable means of interpreting the difficulties of the same or similar students seen later in the Dean's office. Some retained a personal interest in research problems as an important stimulus to keeping abreast of advances in their own specialties. One of them found occasional refreshment for his onerous executive duties in the performance of a major surgical operation. These Deans and Assistant Deans were affiliated with almost any department, from Anatomy and Bacteriology to Pædiatrics and Psychiatry. (See Table II.) The Department of Medicine had the highest representation, not because it is generally thought desirable to give preference to men in this department, but because it usually has the largest staff of any department in the Faculty, and hence offers a wider choice of candidates. There are in fact good arguments for giving preference nowadays to men in the medical science departments; for they are bound to have closer relations with the rest of the university, and to come naturally into contact with the more junior students. Such men are also likely to be sensitive to curricular trends and revision needs; and are perhaps on the whole more often of high scientific repute and accomplishment—qualities which are of course no handicap to a Dean, but on the contrary guarantee him the academic respect of his own and other Faculty members, and of prospective candidates for important positions on the staff. To summarize the situation, in the selection of its Dean the university's main obligation is to select the very best man available from all standpoints; and then to protect him from a morass of administrative detail by permitting him to pick assistants. Thus he can hope to keep up-to-date in his own major field of interest, while the administrative aspects of the school do not become either the encumbrance or the monopoly of any one man.

## 2. ADDITIONAL REQUIREMENTS FOR A GOOD SCHOOL AT A STATE UNIVERSITY

A richly-endowed private university is a glorious inheritance: an extremely valuable device for protecting freedom of thought and speech, for ensuring propagation of knowledge at the highest levels. Faculties of Medicine at such institutions have the special advantages of a wider choice of students from which to pick; of being less preoccupied with problems of circumventing or combatting the foibles and pressures of ill-advised local groups; and of more readily moulding the medical school to their own predilections. However, the shrinkage of investment yields, and the steadily increasing costs of medical education, are handicapping even the wealthiest of private universities; and many of the less well-endowed are urgently campaigning for additional endowment and building funds.

By contrast, state universities are inevitably more sensitive to community opinion. But although any claims they may make for increased appropriations are often viewed as unwarranted, these can never be dismissed as illegitimate. And when such claims are approved, the advantages to a medical school of access to the public exchequer outweigh any distracting commitments to broader forms of service which may be thereby entailed.

### a. *Sympathetic community attitudes to the medical school*

No private university could really flourish in a hostile community. For institutions financially dependent upon State or Provincial Legislatures, good public relations are vital. A first-class medical school is an asset of such obvious utility that there need be little fear of its withering from lack of adequate nourishment, *if properly started, vigorously operated, and clearly designed to provide better medical care and*

*health standards.* But an insufficiently financed school, administered by people liable to listen overmuch to the uninformed and bigoted, or to make concessions to self-seekers, may totter on the verge of dissolution for years; and more than one school in Canada today qualifies for this category. The desiderated medical school at the University of British Columbia must not be jeopardized from the beginning through having no clear mandate from the people. To ensure this widespread support, not merely lukewarm sympathy is required, but active, even aggressive campaigning by the most intelligent groups in the Province.

Any man who seeks one day to covenant for peace and contentment would be seriously hazarding his hopes by stating that his neighbours were unintelligent or unprogressive. I certainly shall not commit this folly, or this error. But as a community we have made some extraordinarily stupid decisions, and even more often have wallowed pathetically in a slough of indecision. Policies relating to our medical school must not be similarly characterized. To say that we still breathe a frontier atmosphere is no derogation to ourselves, still less to the pioneers whose enterprise made possible our settling here; but to fail to profit from this very fact, which grants us opportunities to plan developments denied to older places, would mean that posterity might deplore our lack of wisdom, energy and courage.

Brief reference should be made here to a few particular features of the local scene which intimately affect the prospects of a medical school.

One of these is the astonishing popularity, extending into politically quite important circles, of certain healing cults and of various forms of "drugless therapy"; and the potential difficulties from such sources are not lessened by the fact that approaches of various kinds have been made to the University in recent years by some of these groups.

Another is the prevalence of high-minded individuals of a type rather apt to declare themselves anti-vivisectionists when medical research involving use of laboratory animals is in question. In case this should seem an alarmist and trivial point to raise, one may adduce the marked concern manifest at medical schools in various States over the resurgence of anti-vivisectionist propaganda. This was especially true of the State of New York, which contains several schools whose continuing fame largely derives from the notable advances made there, through animal experimentation, in our knowledge of the causation, cure and prevention of human disease.

Again, many schools complained of increasing difficulties in obtaining human cadavers for anatomical dissection. This is for the most part a consequence of higher prosperity levels and of social security legislation, which have reduced the supply of unclaimed bodies; but is sometimes due to the bodies of indigents not being released to medical schools, despite the provisions of existing Anatomy Acts. We have yet to pass an Anatomy Act in British Columbia.

These points illustrate a few of the ways in which unenlightened or prejudiced public opinion can threaten to shackle the development of a medical school, particularly at a state university. The observation is pertinent that to clarify the thinking, and fortify the policies of a community in matters pertaining to health, is another function of a medical school. However, this must also be recognized: that as yet the Province has had little demonstration of the effectiveness of its more intelligent but unorganized citizenry when faced by determined and mistaken zealots. The Faculty of Medicine should of course be expected to give leadership in these affairs; but if it be not sufficiently acknowledged and proclaimed as the rightful authority, and lacks the wherewithal for due dignity and prestige, its efforts will be stultified.

#### ***b. Province-wide cooperation with practitioners and Health Departments***

The ramifications of the future medical school will be more far-reaching than those of its present-day prototype. For in the world of tomorrow, medical schools, from which spring most of the newer knowledge of health and disease, must make

broader contributions to the propagation of that knowledge. Throughout this Report emphasis has been laid upon the need for a full research programme to be instituted from the beginning, in every department of the school; and under no circumstances should this necessity be compromised. But most Faculties of Medicine are themselves only too well aware that a seemingly endless multiplication of research sub-specialties is occurring, without any mechanisms of comparable efficiency being devised for ensuring prompt and widespread application of the resulting discoveries. True enough, a university hospital provides an excellent locale for trial, under the most scrupulous auspices, of new diagnostic and therapeutic methods. But arrangements are needed for conveying the information thus gained to the practitioners living in remote districts, so that the standards of practice and of hospital care can everywhere be raised. Although a few of the privately-endowed medical schools have already recognized this need and responded to it, the demand and the obligation will in future settle more irresistibly upon the shoulders of state-supported institutions.

There are various ways of meeting this demand and of fulfilling this obligation, which can only be briefly alluded to here. One way is to provide post-graduate "refresher" courses, of varying duration, and at convenient seasons of the year. These would be held at the medical school, probably using affiliated down-town hospitals as supplementary teaching resources. An alternative is to send the mountain to Mahomet, arranging a regular tour of the smaller towns in different parts of the Province by teams of Faculty members, who would make their headquarters in the local hospitals. Formal lectures would not be given on these occasions, but there would be friendly discussions around a table or a hospital bed, with the latest information imparted in practical-minded fashion. The travelling "detail" salesman might thus at last meet his match! . . . The best of these physicians in outlying towns, who were keen, intelligent and of high integrity, might be considered as possible "preceptors", to whom the student would be attached for one quarter of his final year (as is done profitably at the University of Wisconsin), in order to gain insight into the problems of practice, and the interests of life, away from a big city. Yet another valuable connection might be arranged between the school and certain hospitals in the medium-sized cities in the Province, by sending students there for a portion of their internship. Naturally, the University would require the maintenance of stringent standards at those hospitals, and also the right of regular inspection to ensure their observance. The inevitable effect of such arrangements as these in gradually elevating the general level of medical practice, and in helping to rectify the maldistribution of physicians, should be apparent. The reciprocal benefits to the school are by no means all intangible. For instance, there are obvious advantages in establishing cordial relations with practitioners throughout the Province from the standpoint of referral of suitable patients to the University Hospital.

Here it should be added that while every link possible should be forged between the medical school and the general practitioner, this should not be done at the expense of complete and thorough training of the undergraduate student; nor should the other important function of building up strong facilities for graduate teaching be jeopardized.

Important advantages also accrue from close cooperation between medical schools and municipal or state Health Departments. The ultimate objectives of the latter should be to secure for the community as many of the benefits of modern Medicine as may be contrived by law or disseminated through education. To achieve these ends requires the constant utilization of all trained persons in the community; and the training of personnel for this work can be one of the most constructive activities of a medical school.

Although Health Departments commonly employ various categories of specialists, their greatest potential helper is the general practitioner. At times the practitioner is not sufficiently encouraged to be helpful, and at other times he may not know or care enough to make his contribution effectively. But in so far as this deficiency is due

to preoccupation with *morbidity*, and to a limited concern for *health*, the older curricula are largely to blame. Most medical schools are now making efforts to permeate the undergraduate course with the spirit of prophylaxis. In this they can be greatly helped by the field work experience, the statistical data of various kinds, and the special lectures on certain aspects of public health, which can be supplied by Health Departments. The foregoing comments, in very general terms, give reason enough for good relationships to prevail between School and Health Departments. Medical schools at private universities have sometimes enjoyed such relations; while state institutions, which theoretically should have a greater desire to observe them, and a better chance to create them, do not always succeed in so doing. This is often due to medical schools finding themselves too short of space and staff to carry out extraneous duties conveniently. Not uncommonly, it derives from the petty-mindedness of health officials jealous of their prerogatives.

A concrete example of Health Department and Medical School co-operation may fittingly be considered here. Public health laboratories exemplify the most technical aspects of a Health Department's activities. The successful operation of such laboratories is fundamental to the diagnosis and control of communicable diseases, from ringworm and trench mouth, to diphtheria, typhoid fever, smallpox, tuberculosis, and syphilis. Yet the great majority of specimens reaching the laboratory are sent in by general practitioners, many of whom have rather vague ideas about its procedures; while many others come from public health officials who frequently do not follow up to the best advantage the findings of the laboratory. The practitioner of the future must not graduate with similar deficiencies. Nor should the laboratory itself lack the necessary educational and epidemiological staff to ensure a fuller application of its work.

Now the outlook, atmosphere and general effectiveness of public health laboratories are markedly enhanced (as has been already shown true of medical schools) by a university campus location. Moreover, they can be more economically operated in conjunction with university departments, for they require the same kinds of expensive equipment, and staffs of similar qualifications. Further, such laboratories provide invaluable additions to the teaching and research resources of a medical school; and a campus location, in close proximity to the school, is essential to the proper training of medical students—quite apart from the many other types of students to be mentioned later. For all these good reasons, our neighbouring University of Alberta has the Provincial Laboratories on the campus, in the medical school, and under professional direction, while at the Universities of e.g. Minnesota, Wisconsin, and Iowa, the State Laboratories are similarly located and operated.

As many will recall, plans were approved in 1937 by the Provincial Government for erection of an Institute of Preventive Medicine on the campus of the University of British Columbia. This Institute was to have housed the University Departments of Bacteriology and Preventive Medicine, and of Nursing and Health; the University Health Service; the Western Division of the Connaught Medical Research Laboratories, University of Toronto, and sundry other research projects for which grants were obtainable. The Division of Laboratories of the Provincial Board of Health was also to have been quartered there. Except for the University Health Service, all of these departments and activities were at that time, as now, under unified direction. The project had the enthusiastic endorsement of all leading public health and educational authorities who heard of it, as well as of the then Minister of Education and Provincial Secretary, who sponsored it. The sum of \$350,000 was assigned by the Provincial Government for the building's construction, the plans were drawn in full detail, the site selected, and—owing to unfortunate delays following authorization of the project by the Government—the World War began just a week or two before a start was to have been made upon the building. Its construction was postponed (instead of accelerated, as it should have been) at the behest of the Dominion Government. Many more and greater wartime contributions could have been made in that building than

proved possible in the wretchedly inadequate available accommodation. The Provincial Laboratories could have readily coped with the successive emergencies which have since overburdened its capacity and tended to undermine its morale. The University could have had more room in the Science Building for the past six crowded years; a fine new building on its campus, at one-half its probable cost today; and also *the nucleus for its medical school*. Even since the War began, numerous recommendations have been forwarded to the Provincial Government urging construction of this building, by the University Senate, the British Columbia and Vancouver Medical Associations, the Greater Vancouver Health League, the Local Council of Women, and other organizations. Nevertheless, a contrary plan is now said to be favored by the Department concerned, involving disposition of the Laboratories in a down-town building, at some location still to be decided. No sound reasons for the change have ever been offered to the Director of the Laboratories—in fact the new policy was apparently adopted long before he had even heard of it. This summary of a sequence of misfortunes and mistakes is set down in no bitterness at failure to have a vision consummated, but solely in the belief that a reversion to the former policy is most desirable for the future welfare of the University, and more especially of its medical school; and in the hope that publication of an objective outline of the facts may lead to a thorough investigation of the sources and motivations of the new scheme before it is irrevocably adopted.

Only the briefest allusions to the later proposals appear to have been made, either publicly or otherwise, but these have suggested that a down-town site for the Laboratories was essential for the convenience of doctors; and was moreover the only proper centre for a Vancouver branch of the Provincial Board of Health. The first argument is refuted by the fact that members of the Medical Associations concerned have unanimously and vigorously recommended the University location. The second point finds its best rebuttal in the mind of any informed person who compares the prospects of Laboratories situated in a down-town government building with the unlimited possibilities for usefulness afforded by conjunction with a Faculty of Medicine of the type envisaged. Over the years, numerous memoranda have been submitted to the authorities, setting forth the advantages of the campus location for the Provincial Laboratories, and also the importance to the University and the Province of the proposed Institute of Preventive Medicine. There seems no need to cover the ground again in this Report. But it cannot be too strongly emphasized that *if the original arguments were sufficiently convincing to persuade the Government 7 years ago to approve the project's implementation, then they should carry even greater validity and strength today, when a medical school is being planned*. A few illustrations of this point must serve here.

Reference has been made above to the fact that the Provincial Board of Health and the University could both profit from this association of the Provincial Laboratories with the medical school, in terms of improved undergraduate teaching facilities. Further, the graduate training resources of the school for health officers, epidemiologists, laboratory directors, and other medically-qualified persons would be especially increased; while students in fields closely related to medicine would also benefit. For instance, for some years now, under increasing difficulties, graduate nurses taking the Public Health Nursing Course at the University have received a brief initiation into public health laboratory problems. Again, in the not-distant future, students in Dentistry, Veterinary Medicine, and Sanitary Engineering will require courses in Bacteriology, including some experience in public health laboratory work; while Pharmacy students will be seeking such opportunities very shortly. All of these classes of students would profit greatly if their required training in public health laboratory work, whether long or short, could be pursued on the campus, along with their other courses. Finally, many of the young women graduating with a Major or Honours degree in Bacteriology and Preventive Medicine, look for positions as laboratory technicians in hospital or public health laboratories. Academic courses alone cannot possibly equip them adequately for such work, and a period of 6-12 months probationary or apprenticeship experience is required.

There is at present, and in prospect, so marked a shortage of well-trained laboratory technicians, that medical schools should make every effort to supply the requisite experience to recent graduates who favour this vocation. If not only the University Hospital, but also the Provincial Laboratories, were on the campus, this experience in the two fields of laboratory work could easily be furnished in co-ordinated fashion; and besides these institutions themselves, the smaller hospitals and laboratories throughout the Province would thus be assured of a satisfactory choice of personnel.

Certain points also deserve mention which relate to the many research opportunities afforded other departments of the Faculty of Medicine by the large numbers and variety of specimens reaching the Provincial Laboratories. These represent excellent material for bacteriological, epidemiological, clinical and statistical investigation. Reciprocity operates here through those improved methods which, after being evolved by research workers, are then adopted by the Provincial Laboratories, to their own and the public's advantage. Several notable instances of this type of reciprocity have indeed occurred locally over the past ten years—the Department of Bacteriology and Preventive Medicine at the University, and the Western Division of the Connaught Medical Research Laboratories being the other partners in the joint investigations. It would indeed be unfortunate if this fruitful partnership should not be consolidated, but instead have to dissolve, through denial of the opportunity to pursue such closely-correlated activities under one roof.\*

British Columbia needs a tumour biopsy service, as an aid to cancer control; and this should be developed under the auspices of the Provincial Laboratories. Such a service could most economically and profitably function in association with the Department of Pathology of the Faculty of Medicine. Again, the Canadian Red Cross Society has adopted the policy of establishing a laboratory in each Province, for the preparation of blood derivatives and their distribution to hospitals throughout the Province. Many routine tests on blood donations can best be performed in the Provincial Laboratories, but problems are occasionally uncovered which require for their solution the facilities of certain departments of a Faculty of Medicine. This Red Cross "blood bank" laboratory, which would be an invaluable research asset to the medical school, is much more likely to be established on the campus if the Provincial Laboratories were also there.

All these arguments, reinforcing those which originally won the Government's approval, seem to make an irrefutable case; and no time should be lost in pursuing the project anew in the light of hoped-for developments. The University has the opportunity to offer for the Laboratories, if developed in conjunction with a medical school, a free site, more economical operating costs, and a far broader field of community service. If the Government approved, the sooner this building were erected the better. Some of the benefits would be obvious and immediate, while others would become more apparent as the years passed. The earliest advantages would derive from the release of various University departments and the Provincial Laboratories from the crippling influence of overcrowding upon their activities. From the University standpoint, not only would the Departments of Bacteriology and Preventive Medicine, and of Nursing and Health, be able to cope with impending demands for training of yet more students—demands impossible to satisfy in the present quarters—but they could develop as yet undemonstrated potentialities. Moreover, the space vacated in the Science Building

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\*Footnote:—The comment is perhaps appropriate here that for over a decade the Connaught Medical Research Laboratories of the University of Toronto has made possible, through its Western Division (which is housed in quarters provided by the Department of Bacteriology and Preventive Medicine) many additions to our knowledge of health and disease. This work, which has been quite unsung, has involved annual expenditures equivalent to the interest on a trust fund of over \$250,000—a significant token of faith shown by this unit of a sister university that the University of British Columbia would plan its future expansion soundly.



would be extremely helpful to the Department of Chemistry. The opportunity of completely reorganizing the University Health Service, which would be afforded by its installation in proper quarters, should likewise be eagerly welcomed. From the standpoint of the Government as a whole, removal of the Provincial Laboratories to the campus would permit new services for which there is a popular and soundly-based demand (e.g. tumour biopsies, and premarital blood tests) to be promptly undertaken. Incidentally, it would permit the demolition of the four rickety houses on Hornby Street, and the erection in their place of a fine Government building.

Immense subsequent advantages should result for the University and the Province at large from the fact that such a decision would create an ideal nucleus for a future medical school of the type and quality outlined in these pages. For the building could house a team of men who might begin at once to help plan in detail the remaining features of the school. If there were no building, these men would be scattered, with far less chance to unify their outlook and concentrate their effort; and indeed, with far less good reason for their appointment. At present there are only two medically qualified members of the University teaching staff. This number needs to be increased. At least one additional member could be arranged through the University assuming full direction of the University Health Service. Another appointee could readily be utilized to supplement the teaching resources of the Departments of Bacteriology and Preventive Medicine and of Nursing and Health. Also, if the Provincial Laboratories were on the campus, three other joint appointments might profitably be made. An epidemiologist, a parasitologist, and a pathologist, on perhaps a half-time basis, would all be invaluable to the Laboratories. The remainder of their salaries could be met from outside research grants, or covered by the University for part-time teaching or Health Service duties. Apart from sharing in the training of undergraduates for vocations ancillary to Medicine, these men could build up post-graduate courses in various fields for recent graduates, public health personnel, and practitioners. That such post-graduate courses are feasible in the absence of a complete medical school has been strikingly shown at the University of North Carolina, where Dr. M. J. Rosenau, subsequent to his retirement from the Chair of Public Health at Harvard, built up a highly successful School of Public Health, where valuable training is given to county Health Unit personnel from North Carolina and neighbouring States.

In our own Province, the obvious need for more rural Health Units goes unfulfilled mainly because of lack of trained men to staff them. This training could be furnished as soon as the building and the staff described above became available. *It would indeed be a strange and reprehensible situation if any state Health Department deprived itself of necessary trained personnel and technical assistance, by intransigently adopting a policy which hindered or even prevented its own state University from furnishing such help.*

In the earlier discussion of the obligations resting upon the medical school to extend its influence to all parts of the Province, mechanisms were suggested for achieving this end, which involved chiefly the practitioner. An equivalent interest in health officers and their staffs throughout the Province can also take various forms. Provision of graduate training and refresher courses at the University, and aid in emergencies by loaning specialists from the Faculty of Medicine for consultative and investigational work, are among the ways in which help can best be extended in this direction.

A final observation on this problem of cooperation with Health Departments seems pertinent here. If the recently-evolved "Coordinated Hospital Service Plan", sponsored by Dr. Thomas Parran, Surgeon-General of the United States Public Health Service, proves as prophetic as it is obviously wise, then the rural Health Unit staff of the future will become only one component of a Health Centre, having a hospital and the local practitioners among its other components. In this widely-approved Parran plan, (and likewise in the invaluable "Goodenough Report" on medical education in England and Scotland,) the final base of reference for the problems of these peripheral centres is visualized as the teaching and research institutions normally found only at a university

medical school. In other words, the medical school of the future should be conceived as a combined Medical and Health Centre. All that has been advocated in this Report is believed fully consistent with such a conception; and its fruits should not be denied this Province.

*c. Obligations to other University departments*

There will inevitably be heavy and early calls made upon the Faculty of Medicine for extension of certain departmental facilities to students and staff in other Faculties. As suggested earlier, the most advanced courses in human biology available at a university are those given in the Anatomy and Physiology Departments of the medical school. Requests for these courses are therefore likely to be made by graduate students in the biological science departments. Again, students from a social science department may seek a course in Preventive Medicine, or a graduate of the Chemistry Department, a course in Biochemistry. These requests should be welcomed as a legitimate desire for a type of knowledge often thought the prerogative of the medical student alone; and as a means of promoting inter-Faculty goodwill and understanding. However, none but the best, and these all graduates, should be admitted to courses designed for medical students. Various departments of the medical school will almost certainly be called upon eventually to provide special courses for students hoping to enter not only such long-established and closely-related vocations as Nursing, Dentistry, Pharmacy, Sanitary Engineering, and Veterinary Medicine; but also for potential laboratory technicians, social workers, hospital administrators, occupational and physio-therapists, health teachers, physical educationists, dietitians and home economists.

This proliferation of sub-specialties on the fringe of Medicine is often baffling and even exasperating to many members of the Faculty, who on the whole find complete naivety preferable to sophistries in matters of health and disease; who suspect the liability of some members of these groups to assume and usurp the traditional authority of Medicine; and who feel that to provide courses for them lowers teaching standards throughout the Faculty. But a much more reasonable attitude is to recognize that these professions are flourishing in response to a public need for *trained intermediaries*; that they express the prevailing desire for more health and less disease, and for a better distribution of knowledge concerning these matters; and that the medical profession unaided has failed to satisfy this desire. There is in fact no doubt that these intermediaries are here to stay. If they receive proper training in certain of the medical sciences, they are often valuable and entirely valid affiliates of Medicine; and if this training be not gladly offered them by the Faculty of Medicine, there will be danger of their resorting to cultists to get it. Furthermore, planning the content of these special courses often involves those elements of imagination and adaptation which safeguard a curriculum from rigidity. Nor should it be forgotten that some of these non-medical students may have a broad background of interests, or even special knowledge in a field (e.g. genetics or sociology) where the medical student finds himself on unfamiliar ground. For this reason, certain of the courses given in the Faculty of Medicine may be profitably given to joint classes.

Despite all favourable arguments, it would be wiser *at the start* for the Faculty of Medicine to make as few commitments as possible for these special courses. The main obligation must be to graduate first-rate medical students; and to ensure this, the quality of departmental teaching must never be sacrificed to quantity; nor must a keen research spirit be swamped by inundations of extra-Faculty students. A department too eager to promote good campus relations may soon find itself obligated to cater for many times more non-medical than medical students. Budgetary and staff adjustments to cope with the influx are customarily slow, and the rising teaching load is therefore handled at the expense of research. On the other hand, in research activity the utmost cooperation should be sought and welcomed from any department on the campus, whether in the shape of joint interests and enterprises among members of different Faculties, or of directed researches for non-medical graduates.

Finally, the relationship of the University Health Service to the Faculty of Medicine requires comment. The type and amount of service offered by University or Student Health Services show wide variations, depending especially upon whether the medical school be on the university campus or not. The existence of a first-class medical school on or adjacent to a campus certainly facilitates, and should ensure, a first-class University Health Service. Such a Service provides complete physical examination of all students entering university, and at regular intervals thereafter; susceptibility-testing, with immunizations where indicated; chest X-rays; first aid care; opportunities for consultation with a psychiatrist; free professional treatment in medical and surgical emergencies; and a limited period of hospitalization free, or at reduced rates, in the university hospital, or in the Health Service infirmary. The Service should regularly inspect the sanitation of the campus, and of adjacent places where students feed or board, and should have the right to approve and the power to ban unsatisfactory board-in-houses and eating-places. Very close relations should also be maintained with the Department of Physical Education, so that physical recreational facilities are fully used, and to best advantage, by *all* students. (Medical students especially should be encouraged to take due part in athletics. Only too often, and particularly when the medical school is away from the campus, students become so immured in seeking to learn about disease, as to risk their own health.) Finally, a lecture course in Hygiene for the first year student body can and should be sponsored by the University Health Service.

Very fine Student Health Services, embodying all or most of these features, were observed at e.g. the Universities of Minnesota, Wisconsin and Michigan, where they operate on a self-sustaining budget covered by a special annual levy of from \$10 to \$15 per student. The staffs include one or more full-time physicians, and various part-time specialists (psychiatrist, gynæcologist, ophthalmologist, etc.), in addition to several nurses, a sanitarian, and a large clerical staff. The Service is a department of the Faculty of Medicine, and its physicians are members of that Faculty. This makes for administrative economy, and for a higher level of professional care. It also permits a more intimate integration of the Health Service resources with the teaching requirements of a modern medical school. A Health Service organized in the way indicated can provide the medical student with an early introduction to the techniques of physical examination; can accustom him to recognize that normal health is consistent with a wide range of physical, mental and emotional qualities; and can instil the prophylactic attitude by innumerable demonstrations of its effectiveness. Various types of research problems, and of field work experience, can also be provided for senior students by the Health Service.

At our own University, the Health Service has long been an improvisation, and is now in urgent need of expansion and reorganization. When the Metropolitan Health Area of Greater Vancouver was established, an agreement was entered into whereby the health of the University students became the part-time responsibility of a city Health Unit director. Considering the inadequacies of budget, space and time available, a very creditable contribution has been made by the Health Service director, nursing supervisor and remaining staff. But a student enrollment unlikely to fall much below 5000 represents a community which requires more than the part-time services of one physician; while reforms in campus sanitation should not be liable to shelving through the curious inhibitions so apt to result when city and provincial departments divide responsibility for certain aspects of the health of the University area.

For some time to come, the services of certain officers of the Greater Vancouver Health Department might well be retained on a part-time basis, both for the Health Service, and for the occasional lectures they can helpfully give. But the present situation, and the future probabilities, point to the necessity of making plans for placing the University Health Service under the direction of the Faculty of Medicine.

## CONCLUDING COMMENT

Throughout this Report I have tried to depict the main prerequisites for a first-class medical school. I have also endeavoured to paint a fair picture of those features of the local scene which affect our prospects of achieving such a school at this University. In so doing, I have sought to avoid obscuring basic principles by intrusion of excessive facts, and yet to ensure that unfamiliar proposals should not go unsupported by details confirming their authenticity. In what I deem to be the public interest, some current defects and fallacies which could endanger and destroy the quality of a medical school have had to be revealed. The overwhelming weight of evidence indicates that it would be a wrong and foolish decision to launch a Faculty of Medicine at the University of British Columbia until these weaknesses and difficulties have been recognized, and the means of overcoming them approved.

I am equally convinced that a unique opportunity now faces this University of planning and organizing a medical school second to none in quality, and in scope of service to the whole community. If this opportunity be resolutely and promptly seized, widespread support will be forthcoming from enlightened public opinion. Dalliance or diffidence may lose the day. For in the next few months, many decisions are to be made that will inevitably condition the future of our medical school. Meanwhile, the University must develop a strong enough voice to be heard unmistakably throughout the Province.

The recommendations which follow are believed to need no amplification: the text of the Report gives due reason for their inevitability. As for their soundness, this is for others to judge. I am certain the Report will meet strong opposition from some quarters. I am equally convinced it would be generally approved by the true leaders of medical education, so many of whom I have had the recent privilège of meeting. These last authorities should be the adjudicators.

## RECOMMENDATIONS

1. That this Report should be regarded as a public document, and that it should be officially submitted to leading authorities on medical education for comment and criticism.
2. That a group of experts on medical education be invited to survey the local situation, and to make recommendations.
3. That medical students should not be enrolled this year.
4. That plans be commenced at once for establishment of a Faculty of Medicine on the University campus along the lines indicated in this Report.
5. That approval of the Government be sought for a budget increasing to \$350,000 per annum (less student fees), for the operation of the Faculty of Medicine.

6. That the need for a University Hospital be publicized, and that a brief indicating this need be submitted by the University to the authority recently appointed by the Government to survey hospital and institutional requirements in the Province.
7. That the medical school be operated as a component of a Medical and Health Centre to be developed at the University, for enhancement of the health and welfare of the Province at large.
8. That the University make every effort to induce acceptance of a University site for the proposed Children's Hospital, and any similar institutions capable of contributing to the effectiveness of the Medical and Health Centre.
9. That the building known as the Institute of Preventive Medicine, authorized by the Provincial Government 7 years ago, be constructed as soon as possible.
10. That an immediate start be made towards enlarging the existing nucleus of medically qualified University staff by the appointment of additional members to the Departments of Bacteriology and Preventive Medicine, and of Nursing and Health, and to the University Health Service.
11. That as soon as the early development of the medical school along the recommended lines is assured by fulfilment of the main prerequisites, a Dean of the Faculty of Medicine be appointed.
12. That nothing should divert the University from taking full advantage of the opportunity to create a medical school of the highest quality.

## APPENDIX



### CONTENTS

Representative List of Persons Interviewed  
and  
Short Bibliography of Recent Literature Bearing on  
The Establishment of Medical Schools



Altschul, Dr. R.	Associate Professor of Histology and Embryology, University of Saskatchewan, Saskatoon, Sask.
Anderson, Dr. Gaylord	Director, School of Public Health, University of Minnesota, Minneapolis, Minn.
Anderson, Dr. H. H.	Professor of Pharmacology, University of California Medical School, San Francisco, Calif.
Atlee, Dr. H. B.	Professor of Obstetrics and Gynæcology, Dalhousie University, Halifax, N.S.
Baird, Dr. W. W. E.	Dean, University of Oregon Medical School, Portland, Ore.
Baril, Dr. Georges	Director, Institut de Chimie, University of Montreal, Montreal, P. Q.
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Barron, Dr. D. H.	Associate Professor of Physiology, and Assistant Dean of Medicine, Yale University, New Haven, Conn.
Bean, Mr. R. J.	Professor of Histology, and Secretary, Faculty of Medicine, Dalhousie University, Halifax, N.S.
Bell, Dr. E. T.	Professor of Pathology, University of Minnesota, Minneapolis, Minn.
Berger, Dr. A. R.	Director, Student Health Service, and Assistant Professor of Medicine, New York University, New York, N. Y.
Berry, Dr. G. Packer	Professor of Bacteriology, Associate Professor of Medicine, and Assistant Dean of Medicine, University of Rochester, Rochester, N. Y.
Berryhill, Dr. W. R.	Dean of Medical Sciences, University of North Carolina, Chapel Hill, N. C.
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Blake, Dr. Francis G.	Professor of Medicine, and Dean, School of Medicine, Yale University, New Haven, Conn.
Blalock, Dr. Alfred	Professor of Surgery, Johns Hopkins University, Baltimore, Md.
Blanchet, Dr. R.	Professor of Physiology, Laval University, Quebec, P.Q.
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Boyden, Dr. E. A.	Professor of Anatomy, University of Minnesota, Minneapolis, Minn.
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Bowman, Dr. Maxwell	Associate Professor of Preventive and Social Medicine, University of Manitoba, Winnipeg, Man.
Bowman, Dr. K. M.	Professor of Psychiatry, and Director, Langley Porter Clinic, University of California Medical School, San Francisco, Calif.
Brown, Dr. J. H.	Associate Professor of Bacteriology, Johns Hopkins University, Baltimore, Md.
Buerki, Dr. R. C.	Director, University of Pennsylvania Hospital, Philadelphia, Pa.
Burwell, Dr. C. S.	Professor of Medicine, and Dean of Medical School, Harvard University, Boston, Mass.
Cadham, Dr. F. T.	Professor of Bacteriology, University of Manitoba, Winnipeg, Man.
Cameron, Dr. A. T.	Professor of Biochemistry, University of Manitoba, Winnipeg, Man.
Cameron, Dr. D. G. W.	Director of Health Services, Department of National Health and Welfare, Ottawa, Ont.
Cantor, Dr. M. M.	Associate Professor of Biochemistry, University of Alberta, Edmonton, Alta.
Carpenter, Dr. C. M.	Associate Professor of Bacteriology and Public Health, University of Rochester, Rochester, N.Y.
Chandler, Dr. L. R.	Professor of Surgery, and Dean, Stanford University School of Medicine, San Francisco, Calif.
Chesney, Dr. Alan M.	Dean of Medicine, Johns Hopkins University, Baltimore, Md.
Chisholm, Dr. G. B.	Deputy Minister, Department of National Health and Welfare, Ottawa, Ont.
Conant, Dr. N. F.	Associate Professor of Bacteriology and Mycology, Duke University, Durham, N. C.
Coon, Dr. H. M.	Superintendent, University of Wisconsin Hospital, Madison, Wis.
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\*Seen at Vancouver shortly after returning.

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Eastman, Dr. N. J.	Professor of Obstetrics, Johns Hopkins University, Baltimore, Md.
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Ettinger, Dr. G. H.	Professor of Physiology, Queen's University, Kingston, Ont.
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Farquharson, Dr. Ray	Professor of Therapeutics, University of Toronto, Toronto, Ont.
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Fraser, Dr. Donald T.	Professor of Hygiene and Preventive Medicine, and Associate Director, Connaught Medical Research Laboratories, University of Toronto, Toronto, Ont.
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Hiscock, Dr. Ira V.	Professor of Public Health, Yale University, New Haven, Conn.
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Thompson, Dr. Richard	Professor of Bacteriology, University of Colorado School of Medicine, Denver, Colo.
Thompson, Dr. McLaren	Professor of Anatomy, University of Manitoba, Winnipeg, Man.
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Turner, Dr. Thomas	Professor of Bacteriology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md.
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SHORT BIBLIOGRAPHY OF RECENT LITERATURE BEARING ON  
THE ESTABLISHMENT OF MEDICAL SCHOOLS

- Appointment and Tenure of Faculty of Professorial Rank.* Report by Edward R. Mugrage, M.D., University of Colorado School of Medicine, Denver, Colo., 1945.
- Bingham Associates Fund.* Pamphlet compiled by Joseph T. Smith, M.D., Boston, 1945.
- Consideration of Full Time and Part Time Faculty Services in the Medical Schools of North America in Relation to Medical Education and the Care of the Sick.* Presidential Address, by A. C. Furstenberg, M.D. Reprinted from Journal of the Association of American Medical Colleges, 1945.
- Cooperative Agreement Between Salt Lake County and the University of Utah for the Operation of the Salt Lake County General Hospital,* 1943.
- Curriculum Committee Report.*  
University of Michigan Medical School, Ann Arbor, Mich., 1945.
- Developments in the Medical College of Alabama,* by Roy R. Kracke, M.D., and J. W. MacQueen, M.D. Reprinted from the Southern Medical Journal, 1946.

- Final Report of the Committee on the Teaching of Preventive Medicine and Public Health.* Reprinted from Journal of the Association of American Medical Colleges, 1945.
- Graduate Medical Education.* Report of the Commission on Graduate Medical Education, University of Chicago Press, Chicago, Ill., 1940.
- Health Service Areas.* Requirements for General Hospital and Health Centres. Public Health Bulletin No. 292, Superintendent of Documents, Washington, 1945.
- Hospital Survey News Letter.* Commission on Hospital Care, Chicago, Ill. July 1945-March 1946.
- Johns Hopkins University School of Medicine, 1893-1943.* Booklet published to commemorate the fiftieth anniversary of the opening of the School, Baltimore, Md., 1943.
- Medical Care in Puerto Rico, A Survey with Special Reference to the Proposed Establishment of a Medical School,* by Victor Johnson, M.D., Secretary, Council on Medical Education and Hospitals, American Medical Association, Chicago, Ill. 1945.
- Mission of a Medical School.* Prospectus of New York University College of Medicine and University Hospital. Prepared by Faculty of Medicine, New York University, 1945.
- Mississippi Study of Higher Education,* Chapter 6 (d), Medical, Dental and Nursing Education. Report to Board of Trustees, Mississippi Institutions of Higher Learning, Jackson, Miss., by W. T. Sanger, M.D., President, Medical College of Virginia, 1945.
- Report on the Proposed Four-year Medical School and Central Hospital for North Carolina,* 1945.
- Report of the Inter-Departmental Committee on Medical Schools.* Ministry of Health and Department of Health for Scotland, His Majesty's Stationery Office, London, 1944.
- State Programs for Hospital Care of Indigent Sick in Iowa, Michigan and Louisiana.* Report to the North Carolina Commission, 1945.
- The Furtherance of Medical Research,* by Alan Gregg, M.D., Director for the Medical Sciences, Rockefeller Foundation, Yale University Press, New Haven, Conn., 1941.
- The Medical School and the Student Health Service,* by John Sundwall, M.D. Reprinted from Journal of the Association of American Medical Colleges, 1940.
- University of Missouri Medical School and Rural Health Care.* Issued by Board of Curators, University of Missouri, Columbia, Mo., 1945.
- University of Missouri Survey of Medical Education.* Board of Curators Report, 1945.
- Wartime Health and Education.* Hearings before a Subcommittee of the Committee on Education and Labor, United States Senate, S. Res. 74, Part 5, United States Government Printing Office, Washington, 1944.

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Numerous additional articles on medical school curricula and finances may be found in the appropriate medical journals.