the others. The quest of health is timeless, but with ever-changing frontiers. The outcome of the search depends upon the imagination, energy, skills, and courage of individuals, and especially of university and medical school men, men of "hope and forward-looking mind."

Relation of Medicine to Education

Now may I say a word about the relation of medicine to the university as a whole and to education in general. All of us have seen patients who are sick yet have no evidence of organic disease. We have seen sickness of the spirit of man, sickness of the soul. We have seen patients who are sick because they have given up the battle, because they were incapable of dealing with the problems confronting them. But it is rare indeed that we have seen a sickness of spirit in a man who has prepared himself well for the kind of world in which he is living. The tragic pity is that many people never have the opportunity to prepare themselves to cope with the problems of the kind of a world which is now emerging—a world of science, technology, and industry; and so we see many neuroses, many psychosomatic disorders for which the cure is difficult because re-education is difficult, especially when there has been little education to begin with.

An important element in the revolution of rising expectations is the expectation of every parent that his children will have the advantages of an education. It is clear enough to even the lowliest of men that if his children are to progress and have a better life in an age of science and technology, they must have all the education and training possible. The curiosity, imagination, and great energies of the young need only to be provided with a healthy outlet—serious study, work, and activity, mental and physical and spiritual, which lead them on to better appreciation of themselves, hopefully to full self-realization. Thus the young learn that disciplined well-schooled intelligence is the way to

excellence and that through excellence comes self-realization and understanding of themselves and their fellow men. In this manner they grow to maturity and to leadership in a world which will belong to those who are prepared to manage it.

Education and health are inseparably bound together, for unless the mind is trained to think, to create, to work, to try and fail, and try again and again to achieve, nothing results but a boring routine and no self-realization and no real happiness. Happiness is found only in self-realization, and it is through the mind, nourished by the healthy food of great ideas and great works and great achievements of mind and hand and spirit, that the individual comes to understand and realize himself—who he is and what he can do. This, I suggest, is the binding relation of medicine and education, not merely education of the doctor, but education of men.

The physician humanizes science. He brings to science human understanding and warmth, drawing from the rich traditions of his noble art, from all the ages and races of men. Selfless, dedicated, wise, and strong, his is a profession which seeks to embrace the wisdom of the race, the wisdom of the sciences, and the arts in the service of human kind. The physician of the future is our sacred trust. He will cushion the hammer blows of cold science and technology and of powerful government, and will help bring to this age peace and good will among men everywhere.

In this Conference, ladies and gentlemen, we rededicate ourselves to this great mission of education, joining hands with men of good will in every profession and in government to make a great crusade for the health and welfare of every living soul on this planet. In spite of the many divergent forms of government in this world and of tensions and differences among governments, this bond among men and peoples, though sometimes strained and bent, is never broken.

THE PROCEEDINGS OF THE FIRST WORLD CONFERENCE ON MEDICAL EDUCATION*

BY

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"Medicine to-day demands much from character, intellect, and practical ability, and medicine also provides a wide variety of opportunity for all kinds of talent. But talents will be wasted or misused if the structure and content of medical education are faulty, and if medical educationists remain complacently satisfied with themselves and their methods." With these apt words Sir Lionel Whitby concluded his presidential address to the First World Conference in London in 1953. It is with a deep sense of humility and sorrow that I stand before you, because I know that but for his untimely death Sir Lionel would be in my place and I would not have lost a kind friend and we an inspiring leader.

By a happy inspiration Sir Richard Livingstone, a former President of Corpus Christi College, Oxford, in an address to the Opening Plenary Session struck the

keynote of the whole conference when he expounded the philosophy of the first-rate in the sense that the hall-mark of the educated man is that he knows what is first-rate and "that the best-educated man is he who knows the first-rate in the most important human activities." If the development of such critical appreciation of the first-rate in medicine is the objective of undergraduate education surely the theme of this Second World Conference devoted to graduate education must be the maintenance and sharpening of the same faculty throughout professional life.

The First Conference was attended by over 600 men and women representing 127 faculties and 62 countries. Apart from the Plenary Sessions 87 papers were delivered, and the published proceedings amount to 800 pages containing just short of half a million words.

The work of the Conference was divided into four sections: Section A, Requirements for Entry into Medical Schools (chairman, Dr. Victor Johnson;

*An address given to the Second World Conference on Medical Education, Chicago, 1959.

rapporteur, Dr. Raymond Whitehead); Section B, Aims and Content of the Medical Curriculum (chairman, Sir Arcot Mudaliar; rapporteur, Dr. Morgan Jones); Section C, Techniques and Methods of Medical Education (chairman, Professor Alberto Hurtado; rapporteur, Professor Ian Aird); and Section D, Preventive and Social Medicine (chairman, Professor A. Stampar; rapporteur, Dr. Charles Fletcher).

A. Requirements for Entry into Medical Schools

The first group of papers were concerned with the general educational background of the prospective medical student. While everybody was agreed that this background should be broad, there soon emerged the usual controversy on the part which should be played by the classical tradition based on Greco-Roman studies, philosophy, and history on the one hand, and on the other by a scientific foundation with emphasis on mathematics, physics, chemistry, and biology. The one fact that soon emerged was that an educational programme which would reconcile all these varied views would occupy the average student far into adult life and would leave him, at best, fit only to compete on a TV general knowledge quiz and at worst would make him completely refractory to all further educational stimulus. Although perhaps not expressed in so many words there was a general realization that the business of doctoring had in it such a large content of chemistry, physics, and biology, much of it quantitative, that for most students a substantial foundation of these subjects had to be laid at the high school or gymnasium stage. At the same time, while such might be the path of the majority, provision should be made for the acceptance for medicine of a minority who had shown brilliance in purely classical studies. The innate ability of these would enable them to acquire quickly the necessary grounding in science subjects and to overtake the generality. It was pointed out that the inculcation of a cultural background was not the exclusive perquisite of classical studies, but that, properly taught, science could be an intensely humanizing experience as well as a basis for sound doctoring.

A great deal of time was devoted to considering the criteria for selection of medical students. It emerged that in some countries devotion to the principle of "the equality of man" excluded any discrimination whatever. All who bore the prescribed educational hall-mark were admitted. This practice results in enormous classes in the early years with a very high failure rate. All this leads inevitably to serious impairment of teaching efficiency during the early years, with loss of time and frustration of those who are rejected. Although meant to be kind, this indiscriminate egalitarianism can be cruel.

At the same time, while the majority were clearly against mass acceptance there was considerable divergence of opinion as to how best to effect a satisfactory selection. It did seem clear, however, that, while a high standard of performance in the subjects of general education was a useful guide, a careful and skilfully conducted interview was a great help in assessing the important qualities of bearing and character. Contrasting opinions were expressed on the value of psychological tests, although it was, I think, widely agreed that these procedures would become valuable with constant use and systematic correlation of performance with prediction.

It was obviously an advantage to be able to select on the basis of individual worth alone without consideration of the extent to which the applicant's family was able to contribute financial support.

In summing up, Dr. Whitehead made a very eloquent plea that we all remember that students were merely ourselves when young and not to expect too much of them. Professor Samson Wright was quoted as having whimsically described the ideal medical student as "tall, handsome, of great personal integrity, beautifully mannered, cultured, highly intelligent, a tireless worker, original, good with his hands, skilful in exposition, a good mixer, athletic, devoting his spare time to extramural activities, with a good family background, and so on and so forth"—a dazzling Olympian but certainly not to be found amongst men.

B. Aims and Content of the Medical Curriculum

In this section many speakers emphasized the importance of the university ideal in which emphasis is not on training and instruction in the sense of didactic teaching, but to help the student to acquire outlooks and habits of scholarship, to develop his critical faculties to the utmost, and, above all, to be fired with curiosity to know, to find out, and to add to the total of human knowledge.

There was widespread acceptance of the concept that the duty of the medical school was not to produce a general practitioner any more than a surgeon or a hygienist, etc., but the much simpler and more attainable one of advancing the education of the doctor to the point from which he can, within a reasonable period, be turned into a useful general practitioner or, if he be possessed of the required industry, enthusiasm, or ability, can aspire to one or other of the more exacting specialties for which a period of approximately 10 years' postgraduate training is required. Thus formal qualification is merely the end of the beginning, not an end in itself.

There was frequent use of the blessed word "integration," by which was clearly meant the presentation of a single corpus of knowledge concerned with the health of man. The conventional divisions of medical science into anatomy, physiology, pathology, etc., are to some extent accidents of evolution rather than fundamental in nature, while the subdivisions of clinical practice depend more on historical trends, technical skills, and circumstances of the market place rather than on basic belief.

The importance of introducing an appreciation of statistical mathematics at an early stage was emphasized. Not that it is necessary for the student to become proficient in the arithmetic callisthenics of statistics, but rather to develop a sound philosophy of numerical data. All medical men should have some idea of when data can be usefully compared, the magnitude of error in observation, of the significance of differences, and, above all, that significant numerical correlation does not necessarily imply causal relationship. A doctor must also be familiar with the conventional methods of expressing vital statistics. Much of the opposition to statistics in medicine springs from its power to unmask the falsehood which underlies the careless observation, muddled thinking, and pompous assertion which still bulks so largely in current belief.

A very interesting communication dealt with the teaching of medicine and surgery as a single discipline. This has obviously much to commend it, and a useful preliminary to this which works well in my own hospital is the retention in medical wards of patients in whom surgical treatment becomes necessary. This brings together easily and naturally surgeons and physicians, to their great mutual advantage, and the student does not fall into the error of thinking that there is surgical dyspepsia as distinct from medical dyspepsia, or that the physician and surgeon are rivals for, not partners in, the care of such disorders as thyrotoxicosis.

Many speakers expressed the view that topographical anatomy was overemphasized and that undue devotion to dissecting the whole body was undesirable. Anatomists and physiologists presented stimulating accounts of how they had attempted with considerable success to combine the presentation of their subjects and to link them closely with clinical practice.

Expressed broadly and yet succinctly, it seemed to me that Section B considered that the aim of the curriculum was to lay a secure foundation of critical knowledge of human biology and on this to build a concept of clinical practice as an applied science. Parallel with this must go the development of the no less essential qualities of compassion and selfless devotion to the sick—ethics which cannot be taught by precept but only by the example of those devoted to these ideals.

C. Techniques and Methods of Medical Education

Much of the work of this section was inevitably and quite properly a more detailed consideration of the broad aims outlined in Section B. The great value of this became apparent at the final plenary session and is fully realized when one studies the *Proceedings*. There was a highly diverting and somewhat controversial discussion on the place of the strictly whole-time clinical teacher. It was clear that in this problem much depended on the national background. In Britain, where a very high proportion of patients are treated in State hospitals and in which whole-time as well as part-time teachers enjoy similar facilities, deal with the same social range of patients, and, to some extent, see patients in their homes (without of course receiving a fee personally), the distinction between the two categories has become virtually insignificant. It was, however, widely agreed that the student should be taught by both varieties of teacher—indeed, that each was complementary to the other. Personally, I am in the strongest possible agreement with this viewpoint.

The systematic lecture came in for some heavy criticism. Didactic rather than Socratic teaching, large classes, crowded ward rounds, overemphasis on theoretical lectures, lack of contact between staff and students, excessive reliance on textbooks, and examinations which test memory more than reasoning are all to be avoided in education for medicine. There seemed little doubt that most people appreciated the importance of clinical education by practice and example. The incorporation of the student into the team concerned with patient-care and his presence throughout the vicissitudes of a wide variety of incidents of illness is of prime importance.

Claims were made for teaching in the policlinic, in the home, in the laboratory, etc., but I gathered the impression that any place was suitable provided the teachers were keen and capable and that they were

dealing with real live problems of health and disease. The opinion was expressed that the extent to which the various specialties of clinical practice and types of disease were emphasized in the curriculum should bear a quantitative relation to the frequency with which they were encountered in daily life. This was countered, and I think rightly so, by the opinion that subjects should have a degree of importance attached to them dependent on their scientific sophistication. Thus emphasis on cardiovascular disease and neurology would rightly be educationally advantageous.

D. Preventive and Social Medicine

In many ways this was the liveliest and most productive section of the Conference. A perusal of the record leaves no doubt that good doctoring entails a proper appreciation of the environment in relation to health and disease. The many excellent papers effectively dispelled any lingering doubts as to any undesirable political implication of the term "social medicine" while at the same time making it abundantly clear that the effective promotion of health and the adequate provision of medical and material aid for the sick and their families is an essential feature of any well-ordered community. Whether this be provided by the State or by efficient private enterprise seems largely irrelevant and a matter that can be left to the inclinations of each nation. The essential thing is that it shall be provided. It was emphasized that while the principles of preventive and social medicine should imbue all clinical teaching, these subjects constituted academic disciplines in their own right and that a medical school needs specialists in the various aspects of the subject.

Conclusion

You will realize that because of my own inadequacy and the strict limitation of time necessarily imposed on me this is a ludicrously inadequate survey of the First Conference. I have been viewing it at a reduction factor of approximately 1 in 250 with an optical system which visualized only what I want to see but which I hope is free from chromatic aberration.

In conclusion I wish to emphasize one consideration which seems to me of paramount importance in the lifelong study of medicine and which was implicit in much of the work of the First Conference. The lifelong maintenance of a high standard of informed, critical, and conscientious practice depends more than anything else on the avoidance of professional isolation. Where doctors are continuously subject to the kindly mutual criticism and approbation of their peers it becomes difficult for them to allow their standards to slip and their minds to crystallize. The circumstance that teaching hospitals are, in general, the best hospitals, that medical teachers constitute in the main the leaders of our profession, is not only due to careful initial selection but to the fact that the teachers work constantly in the fierce light of the critical appraisal of their colleagues and even more so of their students. Whether they like it or not, they are set on a pedestal which can so easily become a pillory. I hope, therefore, that full attention will be paid to the promotion of professional association, which is much more important than formal refresher courses. This is particularly important for family doctors. I hope also that we will face squarely the fact that it can easily happen that a system of remuneration can minimize such association

by tending to make practitioners commercial rivals rather than professional brethren. Where such occurs everything possible must be done to overcome such influence.

The widely scattered doctors of the less-well-developed territories are also a problem. It so happens that in the last two years I have travelled nearly 40,000 miles in three long medical tours in British Africa, mostly equatorial Africa, so that I might learn something of the outlook of doctors there and perhaps give them something of my outlook. The circumstances of these lands present formidable difficulties, but I will close by quoting the motto of my University of Birmingham, "Per ardua ad alta."

CONCLUSIONS AND RESULTS OF THE FIRST WORLD CONFERENCE ON MEDICAL EDUCATION*

BY

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I have circularized the 400 medical teachers who attended the First World Conference on Medical Education, and received about 100 answers. About 20 of my correspondents replied that they had learned nothing anew at the Conference, and the Conference had consequently had no effect on their teaching methods or on the medical curriculum in their medical schools.

Appreciation of the Conference

The great majority of the answers, however, expressed very strong appreciation of the Conference itself, and the value of the opportunity of informal conversation with delegates from other medical schools and other countries was frequently stressed. It must be confessed that a majority of the correspondents could not single out any particular alteration in method of teaching or in content of medical course, but a majority believed that the Conference was responsible for a freshening revival of educational ideals. Most delegates do seem to have been stimulated to renew their own positive thinking about educational aims and methods.

On the positive side, it is quite clear that the published *Proceedings* of the First Conference were of very great value to those responsible for new medical schools that have been brought to birth in the last few years. Delegates from six important countries have been able to report that the *Proceedings* have been closely studied by the authorities responsible for drawing up the curricula in new universities. In two other countries, Germany and Chile, the curriculum of medical schools has been recently reviewed, and the delegates from these countries to the Conference have reported that due and detailed consideration was given by the replanning authorities to the *Proceedings* of the First World Conference. In Britain the General Medical Council has recently brought forward recommendations for improvement in the curricula of medical schools, and a

study of these recommendations shows that many ideas expressed in these recommendations are in close parallel with deliberations at the First World Conference. It seems clear that the *Proceedings* of the First World Conference are likely for some considerable time to exercise an important influence on the intellectual architects of new medical schools.

In general the ancient medical schools of wealthier highly industrialized countries have been disinclined to alter their established curricula and teaching methods. Delegates from these medical schools, reporting their conservatism, have reacted to the conservatism in different ways. Some of the delegates have been convinced by the Conference that the methods of their own school cannot be bettered, and in a great many instances one is forced to concur with this view. Some other delegates from such schools, however, have returned home after the Conference with a fervid ambition to make important alterations in teaching programmes and methods, but have failed to enlist the support of those colleagues who had not attended the Conference. It seems probable that the Conference in fact attracted men who already felt that the medical course in their own schools, as in other schools, was still imperfect.

The Conference does seem to have been most appreciated by delegates from less wealthy and less highly industrialized countries, and the effect seems to have been greatest in the medical schools of these countries. Even so, however, delegates from these countries are those who in writing to me have shown the greatest frustration. Returning to their countries imbued with new ideas from the Conference, they have been balked in their ambitions and in their enthusiasm by the poverty of their countries' educational budgets. A very striking antithesis has emerged in this correspondence between the inertia of intellectual self-satisfaction that has assailed delegates returning from the First Conference to old medical schools in highly industrialized countries, and the economic inertia which has balked candidates returning to less highly industrialized countries.

Frequent praise is directed, however, to the success which the Conference had in a restatement of the aims and ideals of medical education, and it is clear that most delegates returned from it spiritually refreshed.

The Curriculum

Some delegates took back to their universities the agreement of the Conference that, in a consideration of requirements for entry, due weight be attached to a broad general education and adequate consideration be given for some knowledge of such liberal subjects as Greek, Latin, history, philosophy, the arts, and music, tempered by the opinion of the Conference that science was not inferior to the humanities as an educational exercise. The Conference can perhaps hardly take credit for the proposal of Oxford and Cambridge to remove Latin from the compulsory entrance subjects, but certainly it is only since the Conference that this measure of educational freedom has been instituted. It appears that as a direct result of the Conference some medical schools have adopted new educational devices for assessing the character and intelligence of entrants to the medical profession.

In respect of the aim and content of the curriculum, Sir Richard Livingstone's advice that our aim be a

*An address given to the Second World Conference on Medical Education, Chicago, 1959.