Opening address

The university in medicine and cardiology

Sir John McMichael¹

The organization of medicine as an applied science based on the disciplines of natural philosophy and biology was brought into acceptance by Boerhaave in Leiden two and a half centuries ago. From this enlightened centre a pattern of medical education was evolved which slowly spread through the English-speaking world in the next century. Slow scientific progress began with vaccination against smallpox just before 1800, and this was followed by the reduction of water-borne diseases as a result of better standards of cleanliness and improved sanitation. Over the past 80 years we have seen in rapid succession the control or elimination of many organismal disorders, diphtheria, pneumonia, tuberculosis, malaria, poliomyelitis. We have recognized many deficiency diseases, such as scurvy and rickets, and introduced replacement therapy for deficiencies of endocrine or alimentary origin, thereby reducing the ravages of pernicious anaemia, diabetes, and many other disorders. The consolidation of all these advances has resulted from laboratory science and experimental endeavour. Each new advance is not only a gain against disease but a starting point for new and deeper understanding.

Because medicine is an applied science, it must draw on the knowledge and techniques of sister sciences, physics, chemistry, general biology. Thus it can only flourish in a community of scientists and scholars: that is, in a university atmosphere. Research must be continuous and the production of therapeutic

miracles, such as those I have listed, can only emerge occasionally from long and arduous intensive and systematic research.

Continuing critical questioning of our beliefs motivates increasing precision of observation, leading to increased depth of understanding of the modes of working of the human body and its reactions with its environment. This in turn gives an increasing rationalization of knowledge and greater wisdom in the management of the afflicted individual. Centres of excellence from which new knowledge emerges and in which the highest standards are achieved are not geographically fixed places but they develop round men of leadership and genius, wherever they happen to emerge. We have many such leaders assembled in this company today.

We are, however, facing certain dilemmas. The science of today becomes tomorrow's routine. Standards of study and investigative techniques in cardiology increase in complexity and cost. The days of the amateur scientist are over, and as clinicians we must enter more and more into partnership with highly trained basic scientists using modern and costly equipment, who must be our allies in laboratory studies of the problems emerging from bedside investigation of the sick. Newer laboratory techniques in cardiology have contributed enormously to refinement of bedside observation and interpretation, giving an ever increasing precision to clinical bedside judgement.

The justification for concentration of expertise in university centres lies in the maintenance of the highest possible standards in teaching and training of our future doctors.

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The young medical student of today, however, sometimes gets the feeling that medical science and the understanding that goes with scientific knowledge are less important than doing good in the community. He is sometimes impatient with detail and may try to argue that much basic science, such as biochemistry and physiology, is unnecessary. He must learn, however, that he cannot help the afflicted without the deepest possible understanding of the science of medicine applicable to that situation. Diagnosis becomes more exacting and for this reason and because the drugs we use are immensely powerful, we can even do more harm than good if we work without proper scientific appraisal. Knowledge alone can guide us: kindness is not enough. What is needed by the patient is the greatest degree of wisdom based on knowledge and experience which can be brought to bear on his particular disorder applied with a warmth of sympathetic feeling for the variety of complex circumstances in which he lives.

We cannot relax our efforts. The problems facing us are enormous and we cannot rest. Thrombosis, hypertension, and arterial disease need much more hard investigative effort. Sudden death requires medical rather than legal study. The best medical care is based on a profound knowledge of the organic dis-

orders to which men are prone. Without this knowledge medicine becomes incompetent and thereby more costly, not only in inadequate or ineffective measures of treatment, but costly also in the life, health, and happiness of the individual.

There is no easy road to medicine. We cannot revert to an apprenticeship method of training. The empirical methods of the past are now being replaced by deeper understanding, both of the disorders we are treating and of the drugs we are using. We cannot reverse the process and return to the simpler rules of a past that is gone. Our responsibilities lie mainly to the individual who needs our help, but we also serve the state which seeks our advice on the wider application of medical progress. These responsibilities are enormous and touch on the welfare of the whole population. Each of you from the 78 countries meeting here today must rise to the demand according to your own local circumstances, and I can safely say that the backgrounds against which you do your work are of 78 different varieties. Nevertheless in this Congress we are pooling our knowledge and hope thereby that each of you will be enabled to achieve the best possible in the circumstances in which you pursue your beneficent efforts on behalf of sick humanity.