

# Res Medica

## A Personal Philosophy

*An Inaugural Lecture*

GIVEN IN THE UNIVERSITY COLLEGE OF  
RHODESIA AND NYASALAND

Professor  
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A PERSONAL PHILOSOPHY

*An Inaugural Lecture  
given in the University College of  
Rhodesia and Nyasaland  
on 3rd July 1964*

*by*

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# RES MEDICA

## *A Personal Philosophy*

THE title of my address this evening is taken from the words which close the meetings of the oldest medical society in the English-speaking world. This is the Royal Medical Society of Edinburgh which is now finishing its 227th consecutive annual session, and which is perhaps the only student society in the world with a Royal Charter.

It was founded in 1737 only ten years after the Medical School in Edinburgh which, to quote Singer, 'was the founder of the best medical teaching in the English-speaking countries of the World',<sup>1</sup> because that school introduced systematic clinical bedside teaching and therefore modern Departments of Medicine. Among the many later prominent members of the society were the effective founders of the Glasgow Medical School, the Medical Society of London, and later the British Medical Association.

At the end of each of its weekly meetings the members of the society affirm their faith in their future and the future of their profession with the words 'Floreat Res Medica', loosely translatable as 'Let Medicine Flourish'.

With this as my text it seemed to me appropriate on this occasion when the task for which I have been chosen as the occupant of the Chair of Medicine in this University College is to establish a new department in a new medical school in a new country, to discuss with you something of the basic personal philosophy which I hold and which enables me to see a vision of the future here in which medicine may indeed flourish, both in the particular in regard to internal

<sup>1</sup> Singer and Underwood, *A Short History of Medicine*, Oxford University Press, 1962.

medicine which is my department, and in the more general and wider sense of medicine in its etymological meaning of 'the science which treats of the prevention and cure of disease'.

Before developing the general theme of this dissertation it is perhaps appropriate to remind you that a faculty of medicine is something of a bastard child within a university. In the first place its students require a relatively superficial and only a superficial knowledge of many disciplines whereas the average academic graduate and undergraduate attempts to delve deeply into a narrower trench in the field of knowledge. Secondly, this superficial survey of these various disciplines, while taking as long as the average degree course, is only the prelude to a second equally long period in which the medical undergraduate must develop entirely new skills and attitudes in the entirely new and strange environment of the hospital, and in this second period he comes to realize that there is art as well as science in the practice of medicine, and that personal relationships and an understanding of people are essential prerequisites for the future. Even at the end of this second phase when he graduates with his medical degree the young doctor is as we shall see little more than a tyro. Thirdly, the division of knowledge among the departments and staff of a faculty of medicine is unlike that in any other branch of knowledge, for the surgeon is only the physician who operates, the physician only the physiologist who practises, the physiologist in medicine only the biologist who has confined himself to one animal, while the biologist himself is ever striving to quantitate the experience of living in terms of chemistry, physics, and mathematics, and all these men are combining their efforts in tutoring the student towards a single degree.

Notwithstanding all this, who among us when confronted with personal illness does not seek above all

a doctor who is kind, gentle, and sincere, one who can take full responsibility for us and our situation, and one whose integrity is such that in his hands our life is sacred?

This then is the paradox of medical education. The prospective doctor must have a working knowledge of many disciplines, so many in fact that it is not easy for him to find time to delve deeply in any, and yet without deep knowledge in some field, and a broad education and experience outside medicine and medically related science, and without the hallmark of a true university education which Alfred North Whitehead has described as 'the acquisition of the art of the utilisation of knowledge', he cannot develop his true worth or fulfil his attainable level of achievement as a humanist and a professional man; this even though he is drawn, as are all his undergraduate colleagues in other faculties, from the topmost of the ten shelves in the world's intellectual storehouse.

A university is properly a company of scholars embarked upon the same basic intellectual adventure and committed to a communal and reciprocal concern for learning, and the medical academic has no place in this community unless he is a willing advocate of this view, but unlike many of his colleagues in other faculties he has in addition a direct social responsibility to the community as represented by his patients and others. Universities have often been accused of being ivory towers from which medieval knights in armour, ill clad for and ill informed about the battles of the modern world, sally forth to tilt at windmills like Don Quixote, and it was one of the basic tenets of the members of the Nuffield-sponsored Medical School planning committee that such an attitude must studiously be avoided. Each member of the young faculty here has, I believe, accepted his responsibility in this regard and therefore it behoves each of us in the planning of the facilities, course, and teaching in his department to have this awareness of

the world outside constantly before him. It follows that it would be profitable to reverse the order of my statement about a new department in a new school in a new country and consider first the environment in which the school exists.

This institution is still the University College of Rhodesia and Nyasaland, and even though the two erstwhile federal partners are not, I regret, sending their students here, I have no doubt they will be in competition for our medical graduates, and since their medical situation is comparable to that here, all of what I say about the medical needs of Southern Rhodesia has direct relevance also for those new emergent nations to the north.

This small corner of Africa called Southern Rhodesia has approximately 400 practising doctors and 80 dentists subserving a population of nearly 4,000,000 people. The overall doctor/patient ratio is of the order of one doctor to 10,000 population, which compares with one doctor for less than 1,000 people in Britain and one doctor to 100,000 people in Abyssinia. This overall doctor/patient ratio of one to 10,000 is, however, fallacious, because almost exactly half the doctors here are in private practice among that small minority of all colours which can afford their services—one doctor to 1,100–1,200 people and the other half in government and mission service are trying to care for the needs of the other 3·6 millions of the population—one doctor to 18,000 people. The World Health Organization has set a minimum target to be aimed at of one doctor to 5,000 people. Moreover, the population of this country is growing at a net rate of increase of 3·5 per cent. per annum compound,<sup>1</sup> which is equivalent to doubling in almost exactly twenty years, and this means that by 1984, with our medical faculty producing its planned capacity of 50 doctors per annum, we will have been performing that

<sup>1</sup> S. Rhodesian Census 1962. Central Statistical Office, Salisbury.

exercise so familiar to Alice in Wonderland of running as fast as we can to stay in the same place, for the doctor/patient ratio in this country will be unchanged.

There is a further consideration to be borne in mind here, for while most medical schools are ostensibly training doctors for general practice we have here, in this country, in equal strength two widely divergent types of general practice which are almost irreconcilable. This problem can, however, be legitimately side-stepped for the moment because knowledgeable opinion in Africa and elsewhere is strongly in favour of the view that general medical practise of either type is as much a specialty as say general surgery, and that its practitioners require specific periods and courses of post-graduate training and experience if they are to be maximally effective.

Of deeper philosophical significance in relation to the medical needs of this country are two other questions. The first is whether in time of shortage it is better to train a few highly educated and highly skilled men—that is true university graduates—or to temporarily lower standards of entry and training to produce larger numbers of less well-educated practical doctors along the lines of the Fijian local medical practitioner or the Russian *fel'dscher*—men who are basically technologists.

I believe the answer to this question in relation to medical services is that the universities in Africa *should* continue to train highly skilled and educated men as doctors, men of the types described by Robert Louis Stevenson as the 'flowers of our civilisation', but that at the same time governments must sponsor a vast programme of training for all types of medical auxiliaries. This, of course, predicates responsible co-operation between the university and the community and its government, because this whole community of ours is not only sufficiently sophisticated to expect to be kept in good health, but more important for the majority of the



population in this country health is a primary condition for the survival of the individual as a worth-while economic unit.

The second question is, whether it would be right to follow here the classical pattern of medical education which undoubtedly produces doctors trained in such a way that they feel happiest when confronted by a sick person with whom they can develop an individual doctor/individual patient personal relationship, when the main diseases which affect our population are preventable such as bilharziasis, tuberculosis, leprosy, typhoid, dysentery, smallpox, and all those other communicable ailments which account for so much of our infant mortality and adult disability, especially when, as so often they do, they occur in patients with a background of defective nutrition. The average age at death of the African population of Southern Rhodesia is less than fifty years, twenty years less than that of the average European, and the nation-wide infant mortality rate (the deaths of children under one year old) is over five times that in the white population.<sup>1</sup>

Surely the answer to the second question must be a greater concentration of training and resources directed towards preventive measures and services, and here again close co-operation with the community is essential. It is no good training our students to preach the virtues of pure water supplies to a population whose only water source is some bilharzial-infested river from which they must drink or perish.

These and many other such considerations must affect the thinking of each head of a clinical department, but they must be considered in perspective as they can only predicate a slanting of approach in the clinical experience offered to the student, for willy-nilly a core of 70-80 per cent. of any clinical departments teaching must remain standard, no

<sup>1</sup> S.R. Census 1962.

matter what superficial permutations and combinations are made in the order of courses or in teaching methods employed.

We have touched a little on how the soil in which our school is planted must affect the thinking of the clinical department head, we must now consider the seed, the implements, the fertilizers, methods of culture, and the hoped-for yield.

On an international basis medical students are not different from other students in intellectual ability, although those of us who select them here and elsewhere usually subscribe to the dubious assumption that they are likely more often to possess more rounded, more developed, and better personalities, and to show more of the character traits that form in our own personal viewpoint the image of the ideal medical man.

Recent work from Cambridge, where the medical and non-medical candidates for the first part of the natural sciences tripos take the same examinations, suggests that over nearly a decade there is virtually no statistical difference between the two groups intellectually and that if anything the standard of both groups is rising,<sup>1</sup> and a very careful survey from Glasgow shows that the examination performance of medical students there in both the pre-clinical and clinical years correlates well with the academic performance in school, and even better with performance in the fiercely competitive open university bursary competition.<sup>2</sup>

Although this work is open to the accusation that it deals only with examination results, I am happy from my own experience that intellectual ability is the main factor in successful progress up to at least the obligatory year of

<sup>1</sup> G. Horn, 'Examination Performance of Medical and Non Medical Students at Cambridge'. *Brit. Med. J.* 1963, ii. 592.

<sup>2</sup> J. R. Anderson, B. Lennox, and A. Low, 'Medical Students Performance', *Lancet*, 1964, i. 96.

hospital work after graduation when the bright student makes the bright house physician. Whether it applies beyond this I have grave doubts, because it is during this first postgraduate year that the young doctor assumes the individual responsibility for other human beings which is part of his life's burden, and it is during this year of developing human relationships that those destined to be happier with patients and those happier without patient responsibility begin to separate. The second group may have intellectual brilliance as medical scientists, but they will never be really good doctors in the eyes of the public.

What I have said about medical students in general applies, I believe, to the young men and women who comprise our first two student intakes here in Rhodesia. They are no different from medical students elsewhere, and I therefore look forward with keen anticipation to the time when their tutelage will be in greater part the responsibility of my department.

The seed has been planted, what then of the conditions of growth?

The surroundings will be admirable. The plans for the medical school buildings and for the associated teaching hospital which have been prepared by Lord Llewellyn Davies and his associates in conjunction with the University of Birmingham, the College, and the Faculty, and which have so recently been shown to be acceptable to our own and the British Government, represent all that is superb in medical school and hospital design and have secured general acclaim (both as to functional efficiency and economy of cost) from those best qualified to judge such matters. We may be confident that in this single complex of buildings adjacent to, and in close contact with, the rest of the college there are represented almost ideal conditions for the growth and development of the seed, if it is fertilized, and also room for the development of the

further responsibilities of the Faculty beyond undergraduate education which are of equal importance for the future of the nation's health.

The ideal educational fertilizer for the young mind is probably as elusive as the philosopher's stone, but there are a number of ingredients which must perforce be present for any growth to take place at all.

Given adequate students a university is only as good as the calibre of its academic staff, and this naturally applies to medicine also, likewise a teaching hospital is only as good as its medical, medical ancillary, and administrative staff. From the strictly university viewpoint the hospital can be looked upon as the practical laboratory of the medical school, but if the hospital and its governing body take any point of view other than the hospital's primary duty is patient care then both hospital and university suffer.

Given good students and a good academic staff, the most strange and unbalanced medical educational systems have shown themselves capable of producing *some* good doctors, but not unnaturally if there has been thoughtful planning in the type of course offered, in its content, and in its objectives, the chances of producing more good doctors are enhanced.

The second report of the Medical School Planning Committee set up in 1956 to advise the College on the desirability and practicability of establishing a Medical School has been hailed as a major contribution to medical education.<sup>1</sup> In this report, which laid down a suggested blueprint for the medical course here, the very distinguished committee members were careful to reserve the right of those staff actually appointed to disagree with or ignore their suggestions, but not unnaturally those of us who have accepted appointments here have done so because we subscribe in large measure to the committee's views.

<sup>1</sup> Second Report of the Medical School Planning Committee, *Cent. Afr. J. Med.* 1959, 5. 145.

In the time of Francis Bacon it was possible for one man to encompass all knowledge. In the time of Newton it was possible for one man to encompass all scientific knowledge, but in this modern age it is not even possible for one man to be in possession of all knowledge in, say, cardiology, one of the six or seven subdivisions of general medicine, itself one of the baker's dozen of examinable subjects in a medical curriculum. What implications has this for the medical student and his mentors?

He must accept, and we must accept, that he cannot know everything. It is therefore important to keep the load of isolated facts which he is forced to learn down to a minimum and attempt to distil for him the principles of knowledge. But principles only follow understanding, and so much in the practice of medicine is even yet hidden and ill understood. This makes it more than ever important that the student be early encouraged to acquire what John Locke described as a 'relish of knowledge'.<sup>1</sup> Unless he does acquire this before he arrives at his major period of clinical training, and unless he has also acquired the methods by which he may satisfy this spirit of inquiry, he is likely to become bemused and aimless on his arrival in the hospital and in the words of the Nuffield Planning Committee 'reject clinical medicine as crass empiricism'. In medicine problems are many and answers are painfully few, and time must somehow be provided in the medical course for the student to seek new knowledge for himself in depth, like his other university colleagues, and advance somewhere under his own flag to the very frontiers of discovery. In parenthesis it may be noted that the same approach to the discovery of what is already known is also of great value, for learning is personal discovery, learning is doing and learning does not always require a teacher.

<sup>1</sup> John Locke in a letter to the Earl of Peterborough advising the latter on education for his son.

Unless our students are true disciples of learning there is a great tendency for them to become technical officers and for them to be turned into machines for information storage and retrieval, adept at objective type examinations but basically uneducated.

It is one of the sad facts of life that the fund of acquired knowledge that the young graduate has when he leaves medical school tends to atrophy from that moment without continued reinforcement. As George Miller has put it, 'one shot instruction has a very limited pay off'.<sup>1</sup> It is no good learning the practice of today for practice tomorrow in medicine, because medical knowledge after lying dormant for nigh on 2,000 years has been in the last century, and is now, advancing at an unprecedented rate, so that in these days the application of medical knowledge can be a powerful force for good or for evil. Nothing is so pathetic as the middle-aged doctor who has not kept up with the times, and nowadays he is not only pathetic but also dangerous, for his lack of knowledge of the possibilities of modern therapeutics may compromise his patients' welfare.

Learning in medicine is a lifetime occupation and facilities for such learning must be provided, and although I am considering mainly undergraduate education in this lecture I am equally convinced that postgraduate education is not a luxury but a necessity of life for any country whose population demands health. It is pertinent to remind you here of the quip of the London physician who told his students that half of what he taught them today would be nonsense in ten years time, only he was sorry to have to tell them he did not know which half.<sup>2</sup>

The medical student's goal must ever be held in his sight. How frustrating it was for most of us of the present-day

<sup>1</sup> G. E. Miller, *Pride and Prejudice in Professional Education*. Lewis A. Connor Memorial Lecture 1962, *Circulation* 1963, 27. 951.

<sup>2</sup> Attributed to the British Broadcasting Corporation Radio Doctor, *circa* 1944.

profession to be made to spend two to three years in the schoolroom without ever catching sight of a patient. How difficult this made the study of all our necessary pre-clinical subjects and how apparently aimless, and yet as long ago as 1885 Ebbinghaus showed a progressive increase in the efficiency of learning a constant set of syllables as they were transposed from random order, to presentation as words and finally stanzas.<sup>1</sup> It has been said 'Ex Africa semper aliquid novi', I hope this will also be true of this school, but let us first make use of what is already known. I remember learning and relearning and relearning and still forgetting the relationships of the arm nerves at the root of the neck until I saw the patient with the clinical injury and its results.

And it is so easy to apply these principles. I believe this is what we are already trying to do here in Salisbury, and at this point we must remember that the ideal medical course would teach everything in one instant of time, because there is so much interaction and overlap between all the subjects that each individual subject suffers if it is not taught after something and before something else, from chemistry in the first term to the practice of medicine and surgery in the last. This has, of course, the implication for the far from ideal actuality that the later clinical subjects must also appear early in the course to sustain the goal, and the early subjects must also appear late to round out knowledge.

What then should we be trying to achieve with our undergraduate course here in Rhodesia?

I think I cannot do better than quote Sir Charles Illingworth, Emeritus Professor of Surgery in the University of Glasgow writing in the recent *Scottish Medical Journal* series on medical education.<sup>2</sup>

<sup>1</sup> Quoted by Miller.

<sup>2</sup> 'The Future of Medical Education in Scotland', pamphlet published by *Scottish Medical Journal*, 1963. (Collected reprints from *Scot. Med. J.*, June 1962–Jan. 1963.)

The young graduate is now only at the mid point of his training which will certainly include the preregistration internship and at least one further year of supervised postgraduate training, so as regards practical experience he requires only sufficient knowledge, technical experience, and craftsmanship, to cope with the duties of a house officer, and it should be possible to devote most of his precious years at University to a real education designed to provide him with the scientific basis for his future postgraduate studies, and also give him the poise and experience necessary for good personal relationships, and the scholarly attainments appropriate to a professional man.

These may seem limited objectives for a six-year university course of study, but I would repeat that being a student of medicine is a lifetime occupation and to be a good doctor is always to be a man who is truly educated and, as Trilling of Harvard has said, 'at home in and in control of the modern world which is the true purpose of all study'.<sup>1</sup>

The curriculum for the medical course in this medical school is in the process of evolution, and no doubt unless we are careful will attain before long to that position of interlocked courses, allotted hours, and timetables, which has led to the saying that it is easier to move a graveyard than alter a medical syllabus.

I do not wish to dwell on how this medical course will or will not differ from others elsewhere. It will undoubtedly be based upon the suggestions in the Planning Committee's report and upon the kind of principles I have earlier enumerated, and we are singularly fortunate in having as our sponsor the University of Birmingham which is ready to accept change where change seems justified. The fact that change is possible is due to the new era in British medical education which began in 1957, just before our planning committee reported, when the General Medical Council, the controlling body, revised its recommendations and

<sup>1</sup> L. Trilling, 'Commitment to Modern', *Harvard Alumn. Bull.* 1962, 64, 739.



requirements for the medical course to enable the implementation of changes and experiment which were clearly desirable. This they achieved by changing the detailed regulations of 1947 to a few generalizations.<sup>1</sup>

This act by the way was not a new and imaginative move forward on the part of the Council, but merely a return to their position of 1885. The wheel had turned full circle, but nevertheless the 1957 decision opened the gates to progress or perhaps more cynically to changes in the face of medical education in Britain and its associated spheres of influence.

The catchword in medical education today is integration. The interpretation of the word in the various medical schools of the world is an interesting study in semantics, but the classical example of the integrated medical course is to be found in Western Reserve University in Cleveland, Ohio, U.S.A., where no subject is taught as a subject, but human biology and biopathology are taught as a continuum. For example, the student studies the anatomy of the cardiovascular system, then its physiology, biochemistry, pathology, the clinical manifestations of its diseases, and considers therapeutic measures designed to influence those diseases in a single continuous course and then moves on to another body system. Medicine is taught by systems not by disciplines. An enormous amount of careful planning has gone into the course at that medical school, and it was only after five years hard work by the various co-ordinating committees that the staff members were able to come to reasonable agreement about what should be included, and what left out, of the cyclostyled instruction manuals which really form a new series of textbooks following the teaching method.

The introduction of this programme had two major effects, it increased to a very high level the enthusiasm of

<sup>1</sup> Recommendations as to the Medical Curriculum, General Medical Council, 1957.

the staff and forced them to think about what they were teaching, what they should teach, and how it should be done, and it attracted a particular kind of student, a student with a greater than usual amount of what one can only call character. Whether it has done more than this is doubtful, and whether it has resulted in the production of larger numbers of better doctors is entirely unmeasurable, but this experiment has certainly induced a chain reaction in many medical schools outside Cleveland and has made many more people in them begin to think about modern teaching methods and their application to medicine; but as one of the original fathers of the scheme has commented, 'most medical schools teach medicine in an unintegrated fashion in different departments and the student goes home and integrates his knowledge, here we teach integrated medicine so the student has to go home and disintegrate it'.<sup>1</sup>

All such programmes call for greater than usual co-operation between members of the academic staff and can break down upon the rock of the rugged individualist. They also appear to demand a high staff/student ratio very often greater than unity.

What I believe the Nuffield Committee had in mind and what I hope can be implemented here, is what can be called interdigitation and co-operation rather than integration. I believe my department will be able to develop this type of teaching in association with other departments here. By this I mean that where appropriate consecutive inter-departmental teaching should take place, with each teacher having a knowledge of what has gone before and what is coming after, but not necessarily with teachers from all departments present at once. A striking illustration of the importance of lack of this kind of co-operation was the teaching of lung physiology in Columbia University where the physiologist, the biochemist, and the clinical teacher

<sup>1</sup> Professor Hale Hamm, personal communication 1962.

each pursued his own line of thinking and teaching, and all complained that the students had not been taught what was necessary, until each was sent to hear the other lecture and adjusted his own lectures accordingly. No one was more pleased with the result than the students who were now able to follow a consecutive story which was understandable.<sup>1</sup>

This brings me to the question of teaching methods, and to the true but perhaps surprising statement that neither at present nor in the past has much importance been attached to teaching ability in the selection of the medical academic. All doctors are apparently considered to be excellent teachers! It is true of course that all doctors do teach, whether it be their patients, their assistants, or their fellows. The whole of medical practice, including clinical teaching, has in the past been based on the twin pillars of apprenticeship and experience and in large measures rightly so, but the medical academic has tended to be self-selected and this self-selection has not been based on his, or anyone else's, assessment of his teaching ability but rather upon research potential and performance. He has rarely been given any training in teaching technique, but has picked up what he can by these same methods of apprenticeship and experience.

If this is not a satisfactory method as far as school teachers are concerned, how can it be satisfactory as regards the university teacher? Bradley of Columbia has recently discussed some of the difficulties extant in assessing the teaching ability of the clinical teacher, and he points out that often the only available guide to that ability is student enthusiasm which is well known as notoriously poor index of effective instruction.<sup>2</sup> I feel that nearly all of us would benefit from instruction in the methodology of presenta-

<sup>1</sup> Professor John Taggart, personal communication 1962.

<sup>2</sup> S. E. Bradley, *Medical Care: Its social and organisational aspects: Medical Education and Medical Research—an interaction*, *New Eng. J. Med.* 1963, 269, 1292.

tion of our material, even though I sometimes wonder if it is possible to teach a university student anything at all. He seems either to learn for himself or to languish.

Early in this talk I indicated how interwoven and interdependent are the activities of the various departments in a medical school, perhaps because of the single degree, and with the background of my previous discourse I would like now to turn to the question of the place of the Department of Medicine in this synctium.

The function of any clinical department is essentially tripartite, research, service, and teaching, and these are also the basic functions not only of each member of such a department, but also the functions of the greater whole, the teaching hospital in which the members of a clinical department spend a large proportion of their working time, for only their research function is legitimately to be found outside its walls.

What then is a teaching hospital? First and foremost it is a hospital. It is a place for the care of sick people, and the individual patient and his care has been and remains the elemental reason for its existence. Any hospital provides a service to the community at large, and the community looks to it for a high standard of patient care, and when it is a teaching hospital a very high standard of patient care. In the hospital the individual doctor enjoys that degree of authority and autonomy which serves the best interest of his patients, and these two individuals, doctor and patient, form the basic human equation around which the whole complex superstructure is erected. A modern teaching hospital remains highly individualistic in its function as an organization because of the highly personal and critical nature of its work, but nevertheless looked at from the administrative side it is one of the most complex organizations that exist in modern society, far and away more complicated than either of the two bodies—university and

ordinary hospital—from which it is spawned. Our own, of 350 beds initially, is likely to have a permanent staff of at least 700 people, an annual budget of £650,000, and every day between 3,000 and 4,000 people will pass through its doors. Built into this microcosm in close relationship to the areas designed for patient care will be areas designed for use by the academic staff in their teaching and research functions, and other areas which will help to ensure the expected high standard of patient care, for it is in the provision of ancillary patient care services to the standard required for modern scientific medical investigation that the teaching hospital and the non-teaching hospital differ most. The teaching hospital has to provide for the fact that its academic staff are pushing forward the boundaries of knowledge, and that advances in these areas of research with a clinical bias are likely to require more and more sophisticated and more and more complicated apparatus, more and more services, and more and more space. For example, the number of radiological investigations performed in any teaching hospital with a fixed number of beds has been doubling every decade, and the graph of this function seems mathematically to be proceeding exponentially to infinity,<sup>1</sup> similar considerations apply to investigations carried out in departments of clinical chemistry<sup>2</sup> and to a lesser but still formidable extent to operating-theatre hours and out-patient attendances.

This then is the locus in which the department of medicine functions, but looking from the university side the teaching and research functions take precedence over service. The goals of the university and hospital are the same but the time-scale is different.

<sup>1</sup> Dr. E. R. Millar, Professor of Radiology, University of California, Medical Center, San Francisco, personal communication 1962.

<sup>2</sup> 'Clinical Chemistry Time for Investment', Prof. L. G. Whitby's Inaugural Lecture from the Chair of Clinical Chemistry at the University of Edinburgh, *Lancet*, 1963, ii. 1239.

The hospital is and must be dedicated to the care of today's patient and to the health needs of contemporary society; the university must provide for the patient of the future by training future doctors and by research. The two must remain in reasonable equilibrium, for if the pendulum swings heavily either way both the university and the community in which it exists will suffer.

It is therefore obligatory if this balance is to be maintained that every member of the department who has contact with patients be primarily a competent clinical doctor. This does not mean that other people with non-clinical interests must be excluded from the department, but rather that no one should have clinical responsibilities which he is not capable of handling easily at his present stage of development or training.

Such competence is a prerequisite for the teaching of students. The other prerequisite for the clinical teacher is a research interest. Scientific research is essentially a critical quest for truth and understanding, and this is surely also an exact definition of clinical diagnosis, and therefore, *ipso facto*, medical scientific research demands the same qualities of character, personality, and intellect which assure satisfactory clinical competence. The student must be exposed to instructors who are, as I earlier quoted, 'at home in and in control of the modern world', instructors who can show him the boundaries of knowledge, help him to know what he must seek out for himself from the body of existing knowledge, and tell him what although not understood must be committed to memory. Unless these men are themselves engaged in the process of expanding their own and the world's knowledge, then the student apprentice will reach the point when Jack may be as good as his master but cannot be better.

Having said this I would like to add the rider that by demanding a research interest I do not mean that I

subscribe to what has been described as the 'publish or perish philosophy', for one really good contribution to knowledge per decade is worth more than ten pieces of rubbish per annum.

Sir Austen Bradford Hill has pointed out that the practice of medicine largely resolves itself into seeking the answers to three questions:

What is wrong?	.	.	.	Diagnosis
What is going to happen?	.	.	.	Prognosis
What can be done?	.	.	.	Treatment

and to these Dr. George Thorn of Harvard<sup>1</sup> would add two more questions which are relevant for the scientific and socially responsible medical man:

Why did it happen?  
 What can be done to prevent it?

The instruction of the student in how to seek the answers to these questions is the function of the department of medicine.

When the student leaves that part of the course which is conducted mainly in the basic science and medical science departments of the faculty, he will I hope and trust be a true disciple of learning, and it is a matter of some moment that his first encounter with the clinical side of medicine is, and I regret must be, intellectually depressing, for the first thing he must learn on his first real contact with clinical practice is how to examine a patient and how to take a history. Supreme competence amounting almost to automatism in these exercises is absolutely fundamental to his future development, and they constitute as new and as basic an experience as learning to read or write. This is one of the few things the student has to be taught not as a university graduate but as a schoolboy, for it is initially

<sup>1</sup> G. W. Thorn, 'A Department of Medicine 1963-1973', *New Eng. J. Med.*

learning by rote, albeit understanding will and must follow.

It is a sad reflection on the performance of our medical schools today that the commonest reason for failure in higher examinations and diplomas in medicine in both Britain and America and elsewhere is inability to conduct the basic physical examination.<sup>1</sup> The reason for this is not hard to seek, for it is much easier for a company of scholars to find something interesting to discuss than for the instructor to bludgeon—for that is what it means—to bludgeon the student into the repetitive examination of his patient until his responses are automatic and sins of omission absent. I have thought deeply around this particular problem in relation to the new methods of teaching reading current in our schools, but have been forced to accept that it is one of the vocational skills which form such a curious admixture with education in a medical course and which cannot be learned except by the methods of the old-time village dominie.

The taking of the patient's history is another matter, for this is one of the highest arts of medical practice. The knowledge and understanding of which questions to pose and when and how to ask them is only acquired slowly over several years, and here the apprenticeship comes into its own, for it is only at the feet of the master that the student gradually learns the significance of what he is doing until in the end half a dozen well-trained men of widely differing personalities and methods of approach will, given adequate time, obtain much the same story from a given patient.

Obviously factual knowledge is an important concomitant in the process, for if one does not know of the existence of a given disease or of a given symptom

<sup>1</sup> This view is based on discussion with examiners of the British, Australian and Canadian Colleges and Members of the Examining Board in Internal Medicine in the U.S.A.



complex in a given disease, one may miss the vital question which would have elicited the diagnostic answer, and obviously during the course of the learning process the student will develop the ability to choose his questions according to the differential diagnosis he is forming in his mind and so shorten the exercise.

It takes a student in his first clinical year two to three hours to take a history, and a competent practising physician ten to twenty minutes. Unless the student is continually given the opportunity to practise and develop the skill under supervision he never learns the art. Without it he will never be an adequate doctor.

If my colleagues and I in the department of medicine succeed in teaching every student competence in these two fields, history taking and the physical examination of his patients, we will have achieved more than most medical schools and almost more than one dare hope for.

How can it be done? Partly by starting early enough in the basic science years, partly by devoting enough time to it, partly by ensuring only small group teaching in groups of five or less, partly by careful selection of teachers, and partly and most importantly by the co-operation of all the teachers in all the clinical departments, so that no student is ever allowed to develop bad habits, and this in its turn requires constant self criticism on the part of the individual teacher.

So far what we have been discussing is schooling in medicine, vital to be sure but only a part of the whole, for if we confined ourselves to this in the department, we would immediately be guilty of all those faults which I have discussed earlier only to reject.

Side by side with the schooling must go the opportunity for university education in medicine, and such is the diversity of clinical practice that there is little difficulty in making learning exciting in the wards. The main difficulty lies in

providing reinforcement for the single experience presented by the individual patient in terms of the disease processes involved, and here the new techniques of teaching and the new knowledge of the learning process for which we are indebted to the educationalists are proving of inestimable value.

I am glad to say that the teaching ward round where the patient's detailed history is recited aloud in public, and intimate examination carried out in full view of the rest of the ward, has now been banished as the medieval anachronism which it was. It was ethically intolerable and in practice of little value.

It has been replaced by the student conducted seminar, the interdepartmental conference, and the small private group in the private room, and by adaptations of the techniques of modern education from closed-circuit television to programmed learning. In the passing I might just comment that I have yet to meet a patient who was unwilling to have his illness and himself subjected to careful examination by medical students.

Before I close I would like to mention how strongly I support the proposed development by the faculty of the project for the study of the community as it exists in Rhodesia today. On the one hand, the research work carried out in the community by all the departments of the faculty will enable us to develop a feed-back mechanism which will be of inestimable value in enabling the school to adapt itself to change and development in the community which it serves, and perhaps even initiate change in the community; on the other hand, it will enable the students to avoid the ivory-tower outlook so easily engendered inside the gates of the teaching hospital and university, and which is so harmful in every respect.

You will be aware that this talk has mainly considered undergraduate teaching. Postgraduate teaching is in my

view of equal importance but I have talked long enough already.

What I have said represents a purely personal viewpoint which will be subject to change and adaption in discussion with my present and future colleagues, for the more important thing is not the department of medicine but the faculty of medicine, and although doubtless I will seek to have the students in the department of medicine for as much time as I can persuade my colleagues to allot to it, I subscribe to the belief that teaching time is faculty time, and what is taught within that time is the responsibility of the faculty although how it is done must be the responsibility of the department.

I have made you privy to something of the philosophy which has influenced my thinking as one of those appointed to help in the planning for this new school, and in closing I would ask you to see with me my vision of a medical school here in Salisbury pledged to all that is best in medicine, for medicine is international, non-sectarian, non-racial, and devoted to the relief of suffering in and the advancement of knowledge about humanity.

That is why I am here speaking to you this evening, and I hope that you will all join with me when I end as I began with an affirmation of faith 'Floreat Res Medica'.