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THE CHALLENGE TO THE MEDICAL PROFESSION*

BY

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To be invited to deliver the Harveian Oration is one of the highest honours which you can bestow on a colleague, and I am conscious of the importance of the occasion and of my inadequacy to do it justice. To commemorate all the Benefactors of our College who have added to its material and intellectual wealth over a period of three centuries is an impossible task. To exhort the Fellows and Members to search out the secrets of Nature and to continue in mutual love and affection is also the duty of the Orator, and it is to this more general instruction that I propose to devote the time at my disposal.

Each Orator must to a large extent reflect his own experiences and interests during his professional career, and the 50 years since I graduated in medicine have seen changes in the ability of each medical practitioner to relieve the sufferings of his fellow men, and changes also in the community which it is his privilege to serve—changes that are indeed remarkable and perhaps unprecedented in any previous half-century. These changes are still proceeding actively, and no one can foresee what lies before us and our successors; but it has been a privilege to observe the trend of events during such an exciting period. The study of man is but a part of biological science, but, while the behaviour of other animals seems to be governed by the urge for survival of the species, man has shown a capacity to create conditions which direct his behaviour in unforeseeable ways. From this, new situations arise to which the individual is able to adapt with varying degrees of success, and with ever-changing effects upon his health and happiness.

Harvey's Influence on Biology

Since I accepted the invitation to deliver this Oration, I have been spurred to reread and, in some instances, to read for the first time, the published works of William Harvey and also many of the volumes, chapters, and articles that have discussed the importance of his work, the ideas existing at the time that may have influenced him, the type of man he was, and the results of his great discovery of the circulation of the blood. I have read also a considerable number of the Orations of my predecessors and numerous publications of recent years that might have a bearing on the relations of our profession to the community which we serve. None of these studies has affected me as did the film produced in 1928 for our College by Sir Henry Dale and Sir Thomas Lewis. That seemed to me to demonstrate,

as no translation of *De Motu Cordis* before or since has done, the essence of the scientific method and also the perseverance and patience required to establish a truth—"To search and study out the secrets of Nature by way of experiment."

William Harvey was a physician and an ornament of our College, and it is natural that most of the literature dealing with his discovery of the circulation stresses the influence of his work on the practice of medicine; but when first I read *De Motu Cordis*, when I saw the film here in 1928, and in my reading during the past year, it has been the much wider influence that has impressed me—that on the science of biology. In this larger field of knowledge, which includes, of course, the lesser field of medicine, it has been well said by Charles Singer (1950) that "Harvey was the first to give a really adequate explanation, in physical terms, of any bodily process. From Harvey's time to our own the interpretation of bodily activities in terms of physics and chemistry has been one of the main tasks to which biologists have set themselves. Harvey's work is thus not only the starting-point of the modern science of physiology but it is also the first milestone on the road to the modern rationalization of biological thought." And again the same author has written: "The blood, it was seen, is a carrier going round and round on the same beat. What it carries, and why, how and where it takes up its loads, and how, where, and why it parts with them, these are questions the answering of which has been the main task of Physiology in the centuries that have followed."

The tercentenary in 1957 of Harvey's death produced many articles of interest and importance. One that impressed me particularly as stressing the general biological range of Harvey's genius is that by Professor F. J. Cole (1957), who states that in Harvey's published works he cites observations on 128 types of animal life, and in *De Motu Cordis* alone there are observations on 49. His work is regarded by many authors as marking the ending of the myths and conjectures that governed man's thoughts on the relation of life to the world around him. It was a particular instance of the scientific advances then taking place in the sciences, in astronomy, physics, chemistry, and anatomy, but it was many years before it was to exert any influence on the practice of medicine.

What Harvey did was to show that biological problems could be solved by the methods of observation, experiment, and measurement; but more than two centuries were to pass before these methods were to be applied extensively to the solution of the many

*The Harveian Oration, delivered at the Royal College of Physicians of London on October 18, 1960.

problems facing the clinician in the understanding of disease and in the treatment of patients. In the intervening years many important advances were made in anatomy, physiology, pharmacology, morbid anatomy, bacteriology, and hygiene, but the methods that were devised for the advance of these subjects were not applied to the problems of clinical medicine. There were not the opportunities to do so. The clinician did not have the laboratory facilities nor the skills required, even if he appreciated how these methods might assist him. By the end of last century the teaching hospitals of this country were mostly provided with pathological laboratories, and the physicians and surgeons could get reports on the histology and bacteriology of specimens obtained from their patients, and on the results of the simpler chemical tests; but clinical science and research as we now know it did not exist.

Development of Clinical Science

In an address at Oxford on the evolution and organization of the university clinic, Dr. Simon Flexner (1939) stated that the first clinic of this kind was that at Munich under Von Ziemssen, where in 1878 laboratories were provided in close relation to the clinic "in which advanced students and assistants study primarily problems of disease derived from the patients, but it does not exclude the study of more fundamental scientific subjects." There were considerable objections to the plan, such as that students would be made too scientific, an idea that is still familiar. This was followed in 1892 by a clinic at Leipzig under Curschmann, and later at other centres in Germany. In 1895 the first centre of this kind in the United States of America was established at the University of Pennsylvania when the William Pepper Laboratory of Clinical Medicine was attached to the wards of the hospital, to be followed 10 years later by the Hunterian Laboratory for research in surgery under Halsted at Johns Hopkins Hospital in Baltimore and in 1906 similar laboratories for the Department of Medicine there under Barker.

We owe the provision of comparable opportunities in this country for seeking out the truth in the clinical subjects to the Royal Commission on University Education in London (the Haldane Commission) which was appointed in 1911 and issued its final report in 1914, just before the outbreak of the first world war. The Commission heard evidence from representatives of all the medical schools in London, but what was of more importance in leading the Commission to its conclusions was the evidence given by Professor Von Müller, of Munich, Mr. Abraham Flexner, Sir William Osler, and Professor Starling. Before giving evidence the representatives of the schools had received a memorandum contributed by Abraham Flexner which included the following:

"Clinical teaching in London remains an incident in the life of a busy consultant who comes to his post through promotion on the basis of seniority, and visits his too miscellaneous wards twice weekly in the afternoons between, perhaps, two and four, in company with his house-physician and clinical clerks. There is no certain or direct interaction between the fundamental scientists and the clinicians; except in the region of morbid anatomy, some elementary bacteriology and physiological chemistry, they barely touch. The clinician lacks the time even if he has had the training, which will enable him to bring to bear upon clinical problems the artillery which chemist and pharmacologist are forging. Nor are the teaching hospitals equipped and organized with a view to teaching of University quality.

They are admirably designed and conducted for the care of the sick on a routine basis. But their laboratories need to be greatly extended and their staffs completely reorganized before they can serve as University Hospitals."

And it continued:

"In order to reconstruct a London Medical School on modern lines, it would be necessary completely to reconstitute the staff, to break up the present method of appointments by seniority, to salary teachers of medicine in order that they may devote their main time and thought to teaching and investigation, to introduce increased differentiation of material and to add to the existing hospital wards laboratory equipment along the lines in which the clinician is interested in working. It must be made possible to import into London the scientific producing clinician—devoted to teaching and research—from any place in which he may be found; and younger men must be taught that their chances of higher appointments depend, not on using themselves up in tutorial coaching, not on faithfully stepping into the breach when the superior is absent nor following in his footsteps when he is present, but on the development of their own powers along genuinely productive lines."

The reactions of the representatives of the medical schools to these criticisms and suggestions make interesting reading. Some of them, notably Henry Head, Archibald Garrod, and Sir Bertrand Dawson, as they then were, accepted the criticisms and also, with modifications in detail, the suggested reforms. But many of the others maintained that the existing methods of staffing the hospitals and of teaching produced such good results in the advancement of knowledge of practical clinical medicine and in the training of students to become good doctors that there was no need for change. Now, 50 years later, these views are still held, but by a dwindling number of physicians and surgeons.

The section in the final report of the Commission that deals with medical education in London is a long one and I must be content to quote a few paragraphs only from it, those that seem to be relevant to William Harvey's instruction to us to seek the truth and those that encourage us to follow his example of accurate observation and experiment. Before the conclusions are reached the following paragraphs occur:

"Under the existing system, the students are taught the practice of the applied science of medicine, or as it may be called, the art of medicine, better than under any other—the art of examining a patient and gathering from his symptoms and physical and mental conditions, with all the aids which scientific procedures can give, an accurate diagnosis of the case. Under this kind of clinical teaching the student serves an apprenticeship, and actually acquires, in the course of his instruction at the hands of experienced physicians and surgeons, the training and experience which fit him for the practice of his profession. No one suggests that this method of teaching should be abandoned or superseded."

And:

"But what is suggested and insisted on is that if, as is admitted, co-operation is necessary for the practice of medicine at the level of medical science to-day, it is also necessary, even in a higher degree, for the advancement of medical science beyond its present stage; further, that this co-operation does not exist in the Hospital Medical School, and cannot do so as long as the physicians and surgeons make use of science only to aid them in recognizing and curing disease, and in teaching the students to do so on the basis of existing knowledge. It is maintained that they must give their time to attacking the problems of disease, and that they do not do so alone, but must become members, and controlling and directing members, of a group

of men working together for a common end—a group in which the subordinate members are selected with a view to the special knowledge required to aid and supplement that of the leading and directing mind. They must devote themselves to original research under the conditions which make it productive in the case of the exceedingly complex problems which medical science has to solve. Finally, it is said that the 'hospital unit' is the kind of organization which experience has already shown provides the conditions required; and that it is only when the conditions have been found and established which make research in medical science possible and actual that the true University spirit will inform the teaching, and that the teachers will be the kind of men we have spoken of as University Professors—men who will do for medicine what other men do for physiology and chemistry, and, indeed, for every subject which is capable of being scientifically treated."

Finally, the Commission came to the following general conclusions:

"1. The standard of the teachers in these [the clinical] subjects ought not to be different from that of University Professors in other subjects, and it is therefore necessary to appoint and pay professors of the various branches of clinical medicine and surgery who will devote the greater part of their time to teaching and research.

"2. The complex nature of the science of medicine and its dependence for assistance on other branches of science necessitate co-operation, and the special organization of a professorial department, in order to enable the professor to carry on research successfully, and also to give scientific instruction in the subject.

"3. The kind of organization known as 'The hospital unit' appears to be well fitted for attaining this end. It consists of: a professor with the control of wards; an outpatient department; assistants nominated by the professor with a view to complementing his own knowledge and affording him the special assistance he requires to carry on research in the direction in which he is interested; and finally, laboratory accommodation in close proximity to the wards, not only for the service of the wards and the examinations and procedures connected with the diagnosis and treatment of the cases, but also for the purpose of research."

Establishment of Clinical Units

With the outbreak of the first world war in 1914 no immediate action was taken as a result of this report. In 1919, however, the Board of Education offered grants to the medical schools in London to enable them to establish clinical units, each to be "under the control of a whole-time director, to have adequate beds, assistants and laboratory facilities." Near the end of 1919 the responsibility for giving grants to universities was transferred to the newly formed University Grants Committee, which required that the directors of the units should, if possible, be appointed professors by the University. There were difficulties in providing the necessary laboratory facilities adjacent to wards, but with the help of grants from outside sources these were overcome and professorial units were established. By the end of 1921 there were in London five units in medicine and four in surgery under the direction of either full-time university professors or part-time directors, and one unit in obstetrics and gynaecology had been approved by the University but no chair was instituted until some years later. The Haldane Commission was appointed to advise on the University of London, and its recommendations on medical education applied to the medical schools of London only, so that it is not surprising that the schools of universities outside London did not adopt the suggestion of "clinical units" at that time; but there was one exception, for the

Medical School in Cardiff established units in medicine and in surgery in 1921 with full-time professors in charge of them.

The recent war (1914-8) and the importance of conserving manpower had impressed on physicians and surgeons the need in peacetime also for more accurate methods of diagnosis and controlled methods of treatment. They were eager as never before to make use of any help they could get from physiologists and biochemists and their quantitative methods. Thyroid surgery, for example, was being developed, and the need for measurements of the basic metabolic rate for the assessment of thyroid function was recognized. The occasional occurrence of parathyroid tetany aroused interest in both hypoparathyroidism and hyperparathyroidism and the need for calcium balances to control treatment. Of perhaps even more importance was the discovery by Banting and Best of insulin, and the need this created for quantitative methods of estimating acid-base relationships, for blood-sugar curves, and so on. It was members of the staffs of the professorial units who carried out these procedures in those early days. The units in London were thus established just in time to meet this challenge to clinical medicine of important advances in the basic sciences. I remember well how one of my colleagues suggested that we were in danger of forgetting to look for specific aetiologies in our enthusiasm for elucidating physiological distortions. I would suggest, however, that the establishment of these clinical units was the first concerted action in this country to enable clinical medicine to meet the challenge of William Harvey's great achievement by training young clinicians to be clinical scientists.

In an address delivered just a year ago, Sir Lindor Brown (1960) said: "The physician no longer needs the physiologist to visit his wards and explain to him some of the finer points of recent discoveries in cardiovascular physiology, or gaseous exchange in the lungs, or of renal function. The boot is very much upon the other foot. The cardiologist now makes measurements on man that the conventional physiologist of the past had never dreamed of, progress in the respiratory physiology of man comes from the ward rather than the laboratory, and the activities of diseases effect such spectacular changes in the balance of food and electrolyte that they far outdo anything that the most enterprising experimenter can produce in the laboratory. The effect of all this is to make the physiologist less necessary in the wards and the physician more necessary in the laboratory."

The Goodenough Report

There was little further development between the two world wars except for the appointment of a full-time professor of medicine at Bristol in 1935 and the establishment of the Postgraduate Medical School of London at Hammersmith Hospital. There the professors of medicine, of surgery, and of obstetrics and gynaecology are not the directors of units within the School and Hospital but are responsible for the care of the patients as well as for the teaching and research in the whole of the departments in their subjects. This was the arrangement favoured by the Haldane Commission but not regarded as practicable for the London undergraduate schools and hospitals at the time of the Commission's Report.

In 1942 the Inter-Departmental Committee on Medical Schools—commonly known as the Goodenough

Committee—was appointed, and reported in 1944. At that time the second world war was drawing to a close and medical education and the hospital services had been altered drastically to meet the needs of the war so that there appeared to be peculiar opportunities for adjustment and improvement with the reorganization that would be necessary. The voluntary system of hospital finance had broken down and a National Health Service was being planned. The Committee's reference was "To inquire into the organization of medical schools, particularly in regard to facilities for clinical teaching and research."

The Report is a long one, and in many respects continues and carries on from the recommendations of the Haldane Commission. The General Summary of the Report contains the following:

"In harmony with the general body of evidence it is recommended that at the earliest possible date the staff of every medical school should include a whole-time professor in each of the departments of general medicine, general surgery, and obstetrics and gynaecology. This goal may have to be reached by stages as suitable men and women become available. . . .

"All clinical departments should have a number of whole-time appointments in the intermediate and junior grades, particularly the latter . . .

"Medical schools, teaching hospitals and postgraduate institutes have three important functions in relation to medical research: (i) to discover and train future research workers; (ii) to encourage and facilitate original investigations by members of their teaching staffs; and (iii) to house special research units and workers."

These recommendations have been carried out to an extent that is remarkable in the few years that have elapsed. There are now only a few medical schools without a full-time professor of medicine as director of a unit with full-time assistants, wards, and laboratories. There are more so far without a similar unit in general surgery, and there are as yet only a few such units in obstetrics and gynaecology. It is extremely gratifying to see the large number of young clinicians now in this country, trained to utilize the methods of the basic sciences for the elucidation of the problems met in patients and capable of adapting them and of devising new ones to meet the peculiar conditions of clinical medicine. There can be little doubt, I think, that this is the result of the establishment of the "clinical units" directed by persons appointed by the universities, and with conditions of appointment similar to those of professorships in other university subjects and to the influence of these units on the standard of work of all our hospitals.

Changing Conditions of Medical Practice

There is to me one striking difference between the reports of the Haldane Commission and of the Goodenough Committee. The former discusses briefly the need for the instruction of undergraduates in lunacy and mental diseases, and considers that this could be carried out in special institutions; the Goodenough Committee, in contrast, discusses at some length and in considerable detail the teaching of social and preventive medicine and of psychiatry, and advises that there should be special departments in the teaching hospitals in which undergraduates can be taught and experience the importance of these subjects in the practice of medicine. This difference in the space of 30 years reflects a change in the conditions of medical practice that had taken place between the wars and that has

continued at an increasing rate during the years since the end of the second world war.

A graduate of the period before the first world war could not fail to be impressed by the significance of the work of such men as Pasteur, Koch, Lister, and Manson, and of the great benefit to mankind that could result from the discovery of the specific causes of diseases, and which would, it was hoped, be followed by specific treatment by means of antisera, as shown by von Behring for diphtheria, or prevented by vaccines through the work of Almroth Wright, while specific chemotherapy was on the horizon through the work of Ehrlich. It seemed as if all that was necessary was to find the specific cause, be it bacterial or protozoal, and methods of diagnosis, treatment, and prevention of disease would follow. However, the growing appreciation in the following years of the effects of deficiency and of excess of the secretions of the internal secreting glands, and of the essential accessory food factors, for example, emphasized the relative nature of health and ill-health, and the experience of the first world war had not only confirmed this but had also demonstrated the importance of mental and emotional factors, and directed interest to a wider concept of psychiatry than that generally accepted at the beginning of the century. At the same time it was recognized that these minor mental or emotional disturbances were frequently the result of conditions in the home or at work, and often due to the personal relations with other members of the family, with neighbours, or with colleagues at the place of employment. Thus it is often difficult to distinguish between the fields of social and preventive medicine and of psychiatry.

Most medical schools now have departments of psychiatry and a few have departments of social medicine, but there are still not nearly enough men with the appropriate training and experience to be in charge of academic departments in social medicine. The departments that have been established are busily engaged in research. In social medicine this is usually concerned with the correlation of housing, industrial conditions, density of population, etc., with morbidity, and requires statistical treatment. In psychiatry the major mental disorders are being investigated by physiological, biochemical, pathological, and experimental methods, but there is so far little if any basic knowledge of how emotional and mental disturbances affect physiological processes and still less how they are able to contribute to the incidence of structural changes. And there are also the reverse problems of the effects of illness on the social equilibrium of patients and their families, and on their mental and emotional reactions.

Without doubt we will, before long, understand the disturbances to health and happiness due to these factors much better than we do now. As Lord Adrian (1959) said in his address to the meeting in Edinburgh of the British Medical Association: "We must learn more about the effect of social pressures, the particular conditions in our own ways of life and in human society generally which lead to anxiety or psychosis." And he continued: "Social science and its applications to medicine may have been poorly served by the enthusiasts, and some of their conclusions have been criticized as vehemently as we were once accustomed to criticize Freud." He concluded his address by saying: "We need not worry too much at having found no answer to an old philosophical dilemma, but we have patients with troubles to be prevented or put right, and we have

learnt to respect troubles that we used to neglect. . . . We still have a long way to go before we can claim any striking advance. But it is our privilege as well as our responsibility to work for it, and it will be a work in which every one of us can share."

Effect of the National Health Service

Shortly after the publication of the report of the Goodenough Committee the National Health Service was established with its three main divisions of local authority, hospital, and general practitioner services, and the Ministry of Health invited universities with medical schools to accept responsibility for providing postgraduate or continuing education for the general practitioners in the region in which each university is situated. In this way my colleagues and I have become conscious of the large proportion of the work of general practitioners concerned with illnesses in which social and mental conditions appear to be important or even the dominant factors, and in the years since the second world war there have been numerous publications confirming this and maintaining that there has been an actual increase in the number of patients suffering from such conditions. It is difficult to find any satisfactory evidence of such an increase, but there is no doubt of the increase in the number of patients applying for help in whom these factors rather than organic diseases appear to their doctors to be important.

It is easy to suggest possible reasons for an absolute increase. These vary from lack of the support of religious beliefs to mechanization of industry, from the loosening of family and community loyalties to urbanization and the new towns, and from the boredom of life under the Welfare State to dependence on newspapers, television, wireless, and the cinema for ethical and moral values and codes of behaviour. It is generally agreed that it is the rapidity of change in these social conditions to which many individuals are unable to adjust that is the important factor. On the other hand, with the remarkable strides that have been made in clinical science during the past 50 years, the clinician is now able to obtain quantitative assessments of deviations from the normal in numerous physiological, biochemical, and biophysical functions, and to use these as guides to treatment. As a result there has undoubtedly been a temptation to concentrate attention on these abnormalities that can be measured and to ignore the numerous others that cannot. Be that as it may, few generalizations or principles that can be taught to undergraduates or postgraduates to guide them in their care of individual patients have been established in the fields of social medicine and psychiatry.

The individual is the product of his inheritance and of an ever-changing environment, and in his Gifford Lectures in 1937 Sir Charles Sherrington (1940) said, "but although of their species it is not quite like any other that ever was. It is not only man but it is the man John Brown, or the woman Mary Smith, whose exact like never was yet." In a recent book Dr. René Dubos (1960), of the Rockefeller Institute in New York, has much of interest to say on the subject of health and illness, and I would like to quote one short passage in which he writes: "Whereas the experimenter determines by choice the phenomena that he studies and the epidemiologist formulates statistically those most significant under the conditions he observes, it is the responsibility of the physician to decipher the relative importance of the various factors involved in the

response of each individual patient and to decide which aspects of the internal and external environment can be safely manipulated for the purpose of treatment."

The Ecological Study of the Patient

Dubos is pleading for the biological approach to the problem of the individual and for the ecological study of each patient in order to assess the many factors in his ill-health and to treat him effectively. The family doctor is the person most favourably placed to know the factors that may be significant in each patient, both those genetically determined and those due to environment not only at the time of the illness but also during the earlier years of development. Hargreaves (1958), in his Heath Clark Lectures for 1957, expressed his belief that it is not until a graduate of the present time has had experience of family practice that he is able to appreciate any instruction or education in what to look for in such ecological studies. It would seem improbable that an average undergraduate would obtain the right attitude and appreciate the possible importance of social and minor psychiatric factors by a few attendances at special departments for these subjects, to which the physicians and surgeons of the hospital refer those patients whom they regard as suffering from causes they do not understand, but which they could understand had they the time to look for them with a knowledge of what they were looking for.

The undergraduate and house officer learn more from the example of the general physicians and surgeons whom they serve and respect than from any instruction, and the physician or surgeon in charge of the patient is the person who should be responsible for the social and psychiatric study and for the final assessment. The almoner is there, or should be, to obtain directly or through the local authority much of the evidence required, although special departments of psychiatry and social medicine should certainly be available when the methods and experience of a specialist are really necessary. In the last few years the hospital almoner has been freed to perform these services, for which she is trained, and in many hospitals she is now encouraged to act in co-operation with the physicians and surgeons and to provide the evidence they have rarely the time or opportunity to seek, and also to assist in teaching. There are not nearly enough almoners to serve the hospitals of the country efficiently, and even teaching hospitals have been slow to recognize the essential nature of the information they can supply.

Two recent publications—a book by Lady Wootton (1959) and the report of the Working Party on Social Workers under the chairmanship of Miss Younghusband—discuss in great detail the value and scope of almoners, health visitors, and social workers, and the need for many more; and there have been numerous shorter accounts of how health visitors and social workers can and do assist family doctors with their patients. In much the same way almoners are able to supplement the medical investigation of patients and the training of students and house officers in hospitals. At the World Conference on Postgraduate Medical Education in Chicago in 1959 it was generally agreed that postgraduate education in social medicine and psychiatry would remain ineffective until undergraduates were trained to appreciate the numerous social and community factors of ill-health, and this, I believe, will be accomplished only when the physicians and surgeons themselves set a good example by developing a biological

and ecological approach to every patient under their care. The factors disclosed may be of significance in aetiology; they are always significant for convalescence, rehabilitation, and the prevention of recurrences.

In a number of medical schools steps have been taken to introduce the undergraduate to the conditions met with in family practice, of which perhaps the most highly developed so far in this country is the General Practice Teaching Unit in Edinburgh under Dr. Richard Scott, and there are many experiments for the same purpose in the medical schools of the United States of America. Doubtless all these have value, but none can replace the example which the undergraduate should be given by all his teachers of how to discover and assess the social and emotional problems of each individual patient. Graduating with this tradition firmly established, every qualified medical practitioner, whether his career is in the hospital, general practice, or local authority services, will know how to make use of the wide range of assistance that local authorities now provide, and how they can help him in his patient-care and remove some of the causes, even if these be only contributory, of the ill-health and unhappiness of those who appeal to him for help and advice. Much has been said and written of the lack of co-operation between the three sections of the National Health Service, a lack due, I am convinced, to ignorance of what each has to offer and what each is competent to provide. There is little doubt that there has been a change during the past 50 years in the help that the individual member of the community seeks from the medical profession, a change that continues still and will require the constant adjustment of medical education and medical practice.

Integration of the Health Services

In his address to the British Medical Association in 1959, from which I have already quoted, Lord Adrian says: "It would be a great mistake to think that there can be a general advance without the support of every doctor who has patients to understand. We have ourselves to understand, too; however healthy and well balanced we may be there may be something to learn by observing our own reactions to difficult situations. At all events we have been trained to the clinical observation of human beings exposed to anxiety and discomfort and we must not belittle our training." Both general practitioners and consultants are able to contribute to this advance and to meet this challenge, and are more likely to do so earlier by co-operation not only with each other but also with the medical officers of the local authority and the social workers. Surely the senior physicians and surgeons of our general hospitals are the persons to take the lead in forming such a partnership, each for its own community.

Regular meetings of representatives of the three divisions of the National Health Service, and perhaps of the clergy also, in the area would soon show how each can best help the others and how the hospital and local authority services can utilize the peculiar experiences of family doctors to supplement their own restricted and specialized training. It seems probable that it was the observation of valves in veins that gave Harvey the clue to the circulation of the blood, and it may well be that some unforeseen observation will provide clues to be followed up by clinicians, physiologists, geneticists, psychiatrists, and social scientists that they may "search and study out the secrets of nature."

In the meantime the ecological study of each patient whom we are called upon to understand and to help must surely contribute to the health and happiness of the communities we have the privilege to serve.

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INITIAL EXPERIENCES WITH EXTRACORPOREAL CIRCULATION IN INTRACARDIAC SURGERY

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The technique of heart-lung by-pass for repair of intracardiac defects was placed on a firm foundation by Kirklin *et al.* (1955) and by Lillehei *et al.* (1956), and good results from these and other groups have established the soundness of the method. The following report concerns the first 25 consecutive such operations to be performed with the aid of a Melrose N.E.P. heart-lung machine (Melrose, 1955) at this hospital. Prior to the first human operation in September, 1958, practice by the complete operating team in the experimental laboratory had resulted in the long-term survival of seven successive sheep after 30 minutes' total heart-lung by-pass during which right ventriculotomy was performed.

Material

This initial series consists of 15 patients with ventricular septal defect (on one of whom two operations were performed), three with partial atrio-ventricular canal, one with atrial septal defect, four with congenital aortic or subaortic stenosis, and one with rheumatic tricuspid stenosis. Pre-operative haemodynamic findings are summarized in the Table in which the cases are grouped according to the major defect present and in which those with ventricular septal defect