MEDICINE AS A CAREER.*

BY

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THERE has been much argument whether Medicine should be regarded as a science or as an art in which science is applied, and it may be questioned if a really comprehensive definition of Medicine has yet been framed. This shows, what no one can seriously doubt, that it is a many-sided profession, presenting a varied choice of possible fields of activity before those who have to decide whether or not it is likely to provide them with a satisfying life career. It offers attractions to men of very different minds—humanitarian, "practical," educational, and scientific. "The proper study of mankind is man," and this includes his psychopathology as well as his physical disorders; medicine touches human life at many points, and exerts its influence on the State, law, industries, education; it appeals to the naturalist and to those who feel impelled, in William Harvey's words, "to search and study out the secrets of nature by way of experiment."

An interest in disease and all that it means draws men, according to their habit of mind, in one of three directions: (1) to practise medicine, curative and preventive; (2) to investigate the problems of disease; or (3) to teach others. The second and third of these occupations are not uncommonly combined, and, though undoubtedly most important, are not adopted by more than a very few of those who take up medicine as a profession. It may perhaps be convenient to speak of research and teaching as careers in medicine before considering the more extensive subject of the various forms of practice.

CAREERS IN MEDICAL RESEARCH AND TEACHING.

Research for the advance of medical knowledge is of two kinds: (1) clinical observation, controlled by post-mortem evidence and aided by the numerical or statistical method, in the past gave most brilliant results in the hands of Hippocrates, Sydenham, Skoda, Bright, Addison, Louis, Stokes, Osler, and others; it is the more difficult of the two, and, though it should most certainly continue, has been helped by, and has often utilized, the methods and apparatus of the laboratory, which are essential parts of (2) the experimental method of physiology and pathology begun by Galen, revived by William Harvey, and which now, widely established and organized, has expanded through experimental medicine into "clinical science." This is the phrase used by Thomas Lewis, who has drawn a sharp distinction between the training, necessary attributes, career, and ideals of (a) those who devote their whole-time energies and life to clinical research, and of (b) clinical workers who in the past were largely responsible for the progress of medicine. The research physicians of the new clinical science should work not in laboratories, but in hospital wards; unlike the ordinary physician, their main objective should be, not the diagnosis of a known disease, but the investigation by experimental means of the unknown processes at work. Their mental attitude, Lewis says, should be one of diffidence and scepticism, in contrast to the necessary self-confidence and optimism of the successful consulting physician. Further, the career of the clinical researcher should be life-long and not an episode to fill in time before he becomes a hospital physician with an eye to consulting practice. In fact, Lewis states that such transient research is seldom of any scientific value, and unfortunately has acquired a recognized commercial value, which indeed may be the chief goal in view. This is a hard saying, and, as regards the value of the work, a generalization not entirely borne out by past experience, while admittedly the consultant's outlook is broadened and his capacity for teaching improved by early apprenticeship in research.

The creation of whole-time professors as directors of clinical units in some of the medical schools in London,

with assistants who may be whole- or part-time, might supply the men and the posts for clinical science; but the heavy duty of teaching general medicine now undertaken by the units has necessarily restricted clinical research of the special character indicated. Whole-time workers with a minimal amount of teaching might be attached to the units and enabled to live and work by grants from the funds of bodies such as the Medical Research Council, the Beit Memorial Fellowships for Medical Research, and the Rockefeller Foundation's Medical Fellowships. So far there are few applicants for this new career in clinical science; this may be partly because established and permanent openings have been very few in the past. How many men are really fitted for this high calling remains to be seen, but that provision will be forthcoming in the not distant future for the right men seems certain from the recent report of the Medical Research Council. In addition to possessing the necessarily high ability and elaborate training, men who decide to devote their lives to clinical science must be prepared for laborious days, have little ambition for a prominent position in the limelight, and none for great financial rewards. They must be inspired with the keen desire of discovering hidden truth, and prefer the prospect of perhaps completely solving a few problems after prolonged labour to that of constantly attempting this daily in many cases and without much probability of any certain success.

Those engaged in clinical science will, it may be hoped, prevent the divorce and bridge the gulf between animal experiments and laboratory work on the one side, and clinical observation on the other. Trotter shows that clinical observation is fruitful in initiating ideas, and the experimental method in putting them to the proof, and that experimental investigation on man, limited as it obviously must be in its extent, is the only wholly unexceptionable method available for the solution of problems of human health and disease.

Lines of research in connexion with medicine are well established in pathology, bacteriology, pharmacology, and biochemistry; the workers in these sciences have, from the nature of the available posts, usually been professors, lecturers, or demonstrators, and so primarily teachers. But such teachers should have time for investigation, as thereby they become more inspiring to their pupils. To be good, teaching should be a labour of love and the gratification of the desire to do so, not a means of livelihood only. A teacher's first aim should be to understand his pupils rather than to keep them in order. Successful teachers are of two kinds: those with the talent of presenting the subject systematically to average students so as to secure examination successes—good conductors if not the live wires of the second and higher category, who are of an imaginative, often artistic, nature, stimulators of thought, compellers of enthusiasm, and founders rather than the necessary props of schools.

THE PRACTICE OF MEDICINE.

Medicine, in the ordinary sense—namely, the supervision and cure of the sick—is not, and probably never will be, an exact science; it is an art aided by the application of several sciences, in which philosophy, religion, and sometimes commercialism also play some part. The degree in which science is applied varies, not only in the hands of different individuals, but in the various branches or departments of medicine; the special branches in which science can be most extensively applied, as in ophthalmology, are for this reason the most satisfactory to those with a scientific turn of mind.

As already mentioned, the essential attributes of a research physician differ in some respects from those necessary in the practice of medicine. Success in the healing art, unlike success in pure science, does not depend solely on mental ability; it demands the properties of the heart as well as those of the brain, and perhaps this cannot be better expressed than in the words of the familiar text: "Though I have the gift of prophecy [prognosis], and understand all mysteries [diagnosis], and all knowledge; and though I have all faith, so that I could remove mountains [confidence and operative skill], and have not charity, I am nothing" (1 Corinthians, xiii, 2). To the

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abilities of an engineer and chemical expert of the human body a doctor should add love of his fellow men and some other qualities of a broad-minded churchman. Sympathy requires imagination to see into the minds and understand the anxieties and needs of those who come to be helped and cured; sympathy should not be blunted into callousness by contact with the naked and often repulsive features of poor human nature. Unselfishness, common sense, cheerfulness, reasonable optimism, kindly tact, a good memory, punctuality, and methodical habits, are among the traits and manners that make the real doctor. To be prepared for whatever emergencies may occur in practice demands imagination and foresight; and, though the whims of chance influence the future in ways that to some onlookers may seem very unfair, probably many of those regarded as lucky are so because they are able to turn opportunities as they arise into solid advantages. Good health is obviously important to withstand the strain of continuous hard work, and in their own interest doctors should set an example of personal hygiene, temperance, proper recreation, exercise, and holidays, in spite of the manifold difficulties of their circumstances.

Although it is less than sixty years since the London School of Medicine for Women was opened in 1874, the existence, need for, and spheres of usefulness of women doctors are firmly established. In this relatively short time women doctors have every reason to be proud of the progress they have made in spite of some conservative prejudice.

CHOICE OF ONE OF THE BRANCHES OF MEDICINE.

Heredity in the form of a paternal general practice may from an early date decide the future medical man's life's work, just as happens in business; and general practice is then the obvious course in the absence of any strong inclination in other directions, such as research for its own sake, ambition, a love of travel, or desire to enter the fighting services. But otherwise the choice is far from easy, and indeed it is inadvisable for the student to feel that he should at once and finally settle what particular line of medical work will eventually prove most satisfactory and suitable. For not only do the individual's tastes and capabilities change as his development becomes more mature, but the branches and opportunities of medical practice tend to become more numerous, to alter and expand, with the passage of years. The necessary data for a wise decision may not be available until some time after qualification, when circumstances, or what seems to be almost an accident, may show what is a man's real bent. There is much wisdom in the advice, "Do not specialize too early," for the essential basis of real success is a good general knowledge of medicine as a whole.

While one, and certainly the commonest, reason for entering a profession is to obtain a livelihood in a reputable manner, this objective can be reached more easily, rapidly, and in greater measure in some form of trade than in medicine. On the other hand, medicine meets a universal demand, and with the expansion and development of medicine and of appointments under the State at home and abroad there are more opportunities and various openings now than ever before. Secondly, apart from illness, accident, or misconduct, every competent qualified man or woman can be fairly certain of gaining a living wage, thus contrasting favourably with other professions, though the great prizes are few as compared with those in Law and the Church. To enter on the "physic line" may be justified as a means of keeping the wolf from the door, but it cannot be recommended as a way to get rich quick, or indeed to get rich at all. It has been estimated that before the war the average income of the medical profession was about £500 a year, and now is about £750, both gross, so that with the present high cost of living and taxes the position is about the same. This, of course, leaves little margin to save and provide for the time when illness or old age arrests activities. An advantage of public practice—namely, practice for the State, as in the fighting services—is the assured pay and a pension.

The life of a medical man, especially in general practice, though full of human interest, is hard; qualification is only a milestone, though an impressive one, in what should be

a lifelong studentship. Much exposed to infection, hard worked and usually poorly paid, subject to numerous anxieties and the occasional danger of vexatious legal actions for malpraxis, the average span of life among medical men does not equal that of the Church and the legal profession. The statistics got out in three London schools at various times by Sir James Paget (1869), Sir Squire Sprigge (1906), and Mr. F. M. Corner (1920) show that the outlook for medical students is encouraging, for about 75 per cent. become qualified, and, according to the first two authorities, 66 per cent. of those qualified should be satisfied with their professional success. Although it has been said, and, of course, with truth, that "it is not the degree that makes the man," there can be little doubt that, other things being equal, a university degree (particularly the letters M.D.), quite apart from the training, are a very considerable asset from the popular and material point of view. The schoolboy looking forward to medicine should realize this at a stage when he can make arrangements to matriculate at a university, and so avoid regret later that he had not taken the opportunity at the proper time; for it is difficult and time-consuming to remedy this at a later stage in the medical course.

GENERAL PRACTICE.

In spite of various developments, especially the establishment of State medical services, of the clinics for tuberculosis, venereal disease, dental care, school children, child and ante-natal welfare, of the large amount of midwifery done by trained nurses, and of the competition of the increasing number of specialists, general practice still claims the vast majority of the medical profession. The increasing activity of the State and municipal bodies in the care of the common health has created some anxiety about the future of general practice, and raised the question of the introduction of a universal State medical service, comparable, for example, to the organization of the postal service. Indeed, from what has already taken place further advance in this direction is extremely probable, if not inevitable; it would appear that this impression is now becoming more general; thus the Council of the British Medical Association has proposed a scheme of general medical service for the nation which will provide every kind of treatment, and be based on a contributory insurance system, and on the fundamental principle that every individual is under the care of a general practitioner. There is not any reason to fear that the medical profession would suffer financially under some scheme framed on these, or indeed other, lines; the work must be done by them, and they would have, as now in the case of panel practice, an assured income. From uncertainty about the future young medical men are said to be reluctant to purchase practices, especially in the country. There is, however, little justification for pessimistic views about the future of general practitioners. Under any anticipated change in their present independent position they would still be in the best possible position to detect and correct the earliest stages of ill-health, when prevention—the ideal of modern medicine—is most easily effected. They are thus the first line of defence against disease. Their disappearance, if indeed it were possible, would be a calamity.

The conditions of general practice have greatly altered, in many ways for the better; improved medical education and equipment have brought about a corresponding change in medical practitioners, who can therefore take their share in an organized national scheme for the prevention of disease and an improved national health. The scheme of medical benefit under the National Health Insurance Act, 1911, has improved the financial position of panel practitioners as compared with the conditions under the old "club system," and the forebodings and opposition which the panel system evoked from the profession at the time of its introduction are now happily forgotten.

The number of registered medical men resident in England at the end of 1929 is estimated at 33,443, and the number of panel practitioners 14,726, or 44 per cent.; for women the corresponding figures are 2,320 and 776, or 33 per cent. In 1925 the estimated number of registered medical men in England was 27,600, and of these 12,696, or 46 per cent., were on the panel, showing that there has now been a considerable increase in the total number and a slight fall in the percentage of those on the panel; the

change in the position of *women* is almost in the opposite direction, for in 1925 there were 2,209 registered medical women, of whom 434, or 19 per cent., were on the panel. The number of medical women on the panel has thus markedly increased, though the total number on the *Register* has risen very slightly. These figures, kindly supplied by Dr. J. Smith Whitaker of the Ministry of Health, are chiefly noticeable for the increasing degree that women, by taking more part in the rough-and-tumble of panel practice, are establishing closer touch with the lives of the poor.

A man in general practice must possess some knowledge of every branch of medicine, in fact, be an all-round specialist in miniature, with the important proviso that he realizes his own limitations—what he can do himself and what, in the patient's and, indeed, his own interests, he should leave to consultants and specialists. With the great and progressive complexity of medicine anything approaching a real all-round specialist is, of course, impossible, but to some extent the difficulty of covering the ground in general practice is met by firms of general practitioners so constituted that each of the partners is more skilled in medicine, surgery, or midwifery, and in one or more of the specialties. This team work is on the lines of the divisions of a hospital staff.

There are other lines of work compatible with, and closely allied to, general practice. Examination of people for life assurance is part, but not a considerable item, of a general practitioner's routine. Some men, however, act for several companies, or as the chief medical officers of these companies occupy a considerable part of their time in this way; but the chief advisory appointments are usually held by consultants and hospital physicians. Periodic health examinations of the supposedly fit, analogous to periodic visits to the dentist, are an obvious measure of preventive medicine; American life assurance companies have made 100 per cent. upon the money spent in providing their policy holders and employees with these medical inspections, for thus incipient disease is detected and unfavourable influences in the individual's habits or environment can be corrected. If periodic overhauls of children every six months and of adults annually became general in this country, a line of medical work, allied to that of life assurance, would be opened up; this would most suitably be entrusted to the family doctor, because he is acquainted with the environment, traits, and conditions of the individuals concerned. Medical appointments to look after the staff of big business firms, and police surgeoncies, are nearly always part-time occupations, and best held by general practitioners. Industrial medicine should become more widely organized and provide more posts for medical men, some of which will probably be whole-time.

CONSULTING PRACTICE.

For future consulting physicians the highest university degrees and for consulting surgeons the Fellowship of the Royal College of Surgeons are practically essential, for without them it is difficult or impossible to become physicians or surgeons to most large hospitals—a position necessary not only to maintain efficiency, but to inspire the confidence of practitioners. After qualification the embryo consultant should hold a resident appointment as house-physician or house-surgeon at a hospital with a teaching school; here he is in a position of responsibility, is the miniature of the visiting physician or surgeon, and, like him, teaches the clinical clerks and dressers, and while gaining this experience thereby extends his own knowledge. At this time he should begin to collect material for a thesis or other papers. After holding this most important office he should proceed, if he has not already done so, to a higher degree or diploma, and then seize the opportunity, which will never again be so easy, of enlarging his horizon of medical science, thought, and men by spending some months in clinics on the Continent or in America, learning (or perfecting his knowledge of) French, German, and Italian, and watching the various methods of research, teaching, and practice. This, of course, is made more easy by the fortunate possession of a travelling fellowship, or monetary grant, which enables him to make a longer visit than might otherwise be possible, and to undertake a piece of research work—for example, the solution of a problem which came before him during residence as a house-physician or house-surgeon.

After this he should return to obtain a hospital post, such as registrar or member of a professorial unit, which, while supporting him financially, is a rung on the ladder towards the permanent staff of the hospital, and provides clinical work, further experience in teaching, and opportunities for independent research and reading. This is the seed time when he can consolidate "the student-habit," store his mind with ideas, and lay the foundations of a reputation as an authority. The future consultant has not only to labour, but to wait, and this time of probation tests and often sorely tries his grit; but on its proper utilization the future depends, for the weeding out of the competitors now becomes more acute and critical, and laziness, born of satisfaction at getting so far in the point-to-point race, may easily lead to a fall. With the experience thus accumulating he should, after a time, be in a position to publish papers, not because "he has to say something" but because "he has something to say"; the main advantage of this is not advertisement, which indeed is usually disappointing and may even be harmful, but because, like teaching, only more so, it is a valuable discipline on account of the work, thought, and reading necessary to deal thoroughly with the subject.

In the past the lean years of the waiting period were so difficult financially that it was often said that only men with private means could hang on, especially as physicians, with a view to consulting practice. There were, however, many exceptions then; and now, when the posts, such as registrarships at teaching hospitals, open to men at this stage, are much better paid, and there are far more scholarships and grants for original investigation, this difficulty is not so serious. But on the other hand, the possession of a comfortable income is far from an unmixed advantage, for it removes the poor man's obligation to scorn delights and live laborious days; no doubt the possessor of independent means can wait, but there is the danger that he may do little or nothing meanwhile. It has been said, with some degree of truth, that a consultant is made, not born, and there is no doubt that he has a hard task in making himself efficient and successful.

The highest positions in the medical world, and the largest incomes in the profession, are gained by a few of the general consultants, who, however, as a whole, have had their wings somewhat clipped by the legitimate growth of specialism, and, as mentioned elsewhere, many physicians and surgeons tend to concentrate more or less, though not entirely, on some division of their extensive subject. General physicians have suffered more than their surgical brethren, partly from the increased number of special hospitals, and partly from the much better equipment of general practitioners; without an independent income the long wait may be tragic, and many deserving men never get their reward.

Consulting surgeons "arrive" earlier, so that their waiting period is less trying than that of their medical colleagues. Their operative skill has enlarged their regional activity at the expense of the physician's territory, and their financial rewards are much greater. The cures wrought by operation are much more obvious and spectacular than those obtained by the physician, who must often admit time as his partner in procuring a successful issue. It is not surprising that surgery has lately been more attractive than internal medicine. On the other hand, an operating surgeon's tide of activity ebbs earlier, and the physical strain of his exacting life is greater than in the case of the physician. It is difficult to foretell the future accurately, but the pendulum may swing back and the surgeon's province and harvest shrink. The surgical specialties—orthopaedics, genito-urinary and venereal disease, laryngology and otology, and proctology—have already encroached considerably on his domain, and there is accumulating evidence that radium may diminish the need for surgical treatment of malignant disease in some of its most frequent sites. If immunology should succeed in banishing infective disease—especially in the abdomen, so that inflammation of the appendix and gall-bladder and peptic ulcer become rare—and if the cause and means of preventing malignant disease were discovered, the conditions demanding the use of the knife would become comparatively infrequent.

CAREERS AS SPECIALISTS.

The term "specialist," though often applied by the public to consulting physicians and surgeons in order to distinguish them from general practitioners, properly belongs to those who confine their practice to special departments, such as ophthalmology, gynaecology, laryngology, otology, psychiatry, orthopaedics, and radiology. The enormous advances in all branches of medicine, and the skilled technique required, have made specialization most necessary and beneficial, and the conservative disapproval of specialism by the leaders of the profession in the last century is now of interest only as a phase in the history of the healing art. Most of the specialties mentioned above demand skilled technique, but in addition the ever-increasing detail of medicine is splitting practice into a mosaic, so that there is an inevitable tendency for individual consultants to pay particular attention to some one part of the body or group of diseases, such as the heart, nervous system, lungs, the skin, the genito-urinary tract, the rectum, tropical diseases, or even rheumatism and gout. Intensive study, of course, leads to the advance of knowledge, the perfection of technique obtained from constant practice, and the benefit of patients.

Specialism should be superimposed on a wide acquaintance with medicine as a whole, so that in order to avoid a narrow outlook a specialist should know something about every division of the healing art as well as everything about his own subject. It is therefore a mistake to specialize too early; it cannot be begun until after qualification, and should not be attempted until after a resident appointment—house-physician, house-surgeon, or preferably both—at a general hospital; a resident appointment at a hospital for the special diseases in which he is interested should then follow. In many instances there are special diplomas to be obtained, and preparation for these examinations should now engage the future specialist's attention. In addition, the possession of university degrees or the Fellowship of the Royal College of Surgeons is most desirable.

From the material point of view specialists have the advantage, as compared with general consultants, and especially physicians, that the waiting period is shorter, that financial success comes sooner, and may be considerable, though seldom so phenomenal as that occasionally secured by a few outstanding general surgeons and physicians. In America specialization is advancing with somewhat excessive rapidity; in his recent attractive *Doctors and Specialists*, Dr. Morris Fishbein mentions that, whereas in 1905 about 10 per cent. of those whose names appeared in the *American Medical Directory* were specialists, now 25 per cent. of the 150,000 medical practitioners limit their work in this way, and that a questionnaire addressed to the graduates of Class A medical colleges showed that more than 50 per cent. had already chosen their specialty before obtaining resident appointments.

CAREERS IN THE SERVICES.

The call of adventure and the desire to see the world attract men to the medical services of the Royal Navy, Army, Air Force, or of the Colonial Office, and provide a life with varied interests including sport, an assured rate of pay, a pension on retirement, and so freedom from the weary waiting and the carking cares that may attend private practice. The commencing rate of pay in the Royal Navy is about £413, in the Royal Army Medical Corps £511, in the Indian Medical Service £586, the Royal Air Force £556, and the Colonial Medical Service £600 per annum, and, of course, the pay rises with the rank and length of service.

The opportunities for original work have increased in the fighting services, and that devotion to scientific research is compatible with gaining the highest posts was shown by the late Sir William Leishman's appointment as Director-General of the Army Medical Services. Tropical medicine, with its wide potentialities, is specially open to those in the Colonial Service. Since the war, however, there has been a shortage of medical officers in the fighting services, and accordingly short commissions of four years or so have been offered; they carry with them a gratuity on retiring, which helps considerably in starting practice. The ex-

gencies of the fighting services may station men where there is little medical work to occupy their time, and where they are isolated from medical colleagues and facilities; there is then a danger that unless they are really keen and resourceful they will get rusty and out of touch with their profession; much obviously depends on individuality and independence of mind.

The progressive activity of the State medical services provides many official positions, not only part-time, which are chiefly occupied by general practitioners, but whole-time appointments. Medical officers of health are similarly either part-time and then general practitioners, or whole-time officials in the larger towns and districts. The resident posts in fever and mental hospitals are also whole-time, and are graded with progressively increasing salaries and pensions. From a material point of view it is thus obvious that these appointments in the various services have the advantage over private practice that a pension is assured on retirement. It must, however, be admitted that retirement, especially in the fighting services, sometimes comes early, before capability of good work is exhausted, but rather late to strike out in a new line, such as a consultant in tropical diseases, or in general practice.

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SUPPURATIVE DISEASES OF THE LUNGS.

LECTURE BY DR. CHEVALIER JACKSON.

At a special meeting of Fellows of the Royal Society of Medicine on October 14th, Dr. CHEVALIER JACKSON of Philadelphia delivered a lecture on suppurative diseases of the lungs. Dr. T. WATTS EDEN, president of the Society, was in the chair, and the attendance was very large, many standing all round the Barnes Hall for the two hours which the lecture and the subsequent proceedings occupied. Dr. Chevalier Jackson showed himself to be a lecturer of consummate skill. His lecture was illustrated throughout by lantern slides (chiefly radiographs of chest conditions), except for drawings on the blackboard, which he executed with coloured chalks and with an artistic genius which evoked much admiration from the audience. At the close of the lecture a cinematograph film, which had been prepared by Dr. Jackson's son, was projected, illustrating schematically the different kinds of check valve action of the respiratory tract, and also the method employed in Dr. Jackson's clinic for the treatment of pulmonary suppurative conditions by bronchoscopic aspiration.

Dr. Chevalier Jackson began by pointing out that suppurative diseases of the lung formed so vast a subject that any presentation of it must necessarily be limited. He could only show and describe a few of his clinical cases, with his own interpretations thereon, which might be wrong. In discussing first of all the etiology of the condition, he said that inefficiency of the cough reflex was one of the most important etiological factors. He doubted whether this was appreciated clinically as fully as it should be. Sometimes the cough reflex was totally absent, at others present but inefficient. He feared that at times the cough reflex was destroyed by the giving of opium derivatives and atropine, which so thickened the secretion as to render expulsion more difficult. The primary factor from the bronchoscopist's point of view in all suppurative diseases of the lung was bronchial obstruction. So long as there was free ventilation and drainage, the defensive powers of the lung could cope with almost any infection which found its way in by the air route; he was not at the moment talking of infections which came through the lymph or blood channels.

TYPES OF BRONCHIAL OBSTRUCTION.

There were many kinds of bronchial obstruction, but those which were mostly seen by the bronchoscopist could be divided into three. One of these was the complete