abortion, it is very doubtful if they ever do more than effect a "trigger" action in a woman who will abort in any event, or more often give rise to a brisk attack of diarrhoea.

Conclusion

The lessons which may be learnt from a study of this wide problem are probably simple. The patient's life and health come first, and this should not be interfered with on the one hand by unnecessary questioning or, on the other, by delay in justifiable therapeutic abortion. The presence of a dangerous abortionist in a neighbourhood should be revealed to authority whenever possible without transgressing professional secrecy, and an open mind, free from bigotry, should be kept on the subject of therapeutic abortion, remembering that the law as well as medicine is progressive.

Next Refresher Course Article.—"Heart Block," by Dr. Geoffrey Bourne.

CLINICAL RESEARCH IN THE NATIONAL HEALTH SERVICE*

BY

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There is a great tendency for the medical profession and the laity to think that clinical research can be carried out only in hospital, where modern equipment is at hand and every aid to diagnosis is provided. But this is very far from the truth. Let us consider for a moment what is meant by clinical research. It is the painstaking investigation of individuals in the course of treating and caring for patients; it leads to an accumulation of knowledge which may be invaluable in the prevention and treatment of disease and in the maintenance of health. This knowledge may aid the advance of the practice of medicine in any of its many branches. It may confirm or refute established practice. It may point the way to new discovery or treatment.

The essence of clinical research is that it is carried out by a clinician—be he general practitioner or specialist—and it is research on the "human animal" during the course of his normal health or during illness.

The Past

In the past, practitioners of the various branches of medicine could be divided into three groups: (a) The humble and honest man who learnt his trade and then proceeded to apply what he had learnt. But he just applied it conscientiously and without thought; he never improved either himself or medicine as a whole. (b) The "quack" who plied his trade always with a view to his own advancement and with little care for the patient. (c) The true clinician, the man who studied his patients, their reactions to disease and treatment, who thought about his work, and who daily became a wiser and better doctor. If this last man kept records of his observations and as a result altered his treatments, improved his results, made original observations, etc., he was in fact a clinician carrying out clinical research on "human animals." We all know of such men in practice, and it is a great pity that their important observations are not handed down to future generations. It is only

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the general practitioner who has continuous access to his patients over many years and sees them in sickness and in health. He is their guide, philosopher, and friend who knows all their peculiar backgrounds and their habits. Such a doctor has far better opportunities for studying and recording the natural history of disease than any other medical man.

Great Names of the Past.—If we think back there are many names that come to our mind, all of whom have made many discoveries in the clinical field. To mention only a few: Hippocrates, Withering, Raynaud, Bright, Jenner, Addison, Hunter, Lister, and Mackenzie. What did they have, these "great names"? They had no x-ray films, no pathological laboratories, and not much in the way of diagnostic laparotomies. But they all had a natural and incurable curiosity, a capacity for hard work, a determination to keep detailed notes of their patients, the ability to observe big and little things which gave them clinical acumen, a healthy scepticism, and culture, and they lived in a more leisured and more slowly moving age.

The Present

What are the conditions prevailing with regard to the teaching of medical students who will become the practitioners of the future? It is good to be critical in these matters, as good may come out of them. Let us consider the present position of:

(a) **Professorial Units.**—Is everything being done to stimulate the student in clinical acumen? Is there not a tendency to promote abstruse research with a bias towards experimental detail? Teaching should be their forte, and they should teach the student to do his own clinical research on the patients. How many professors are true clinicians? Let us have research professors by all means, but in addition teaching professors who are clinicians engaged in the study of patients and their disease. How much are we missing to-day with the present over-specialization of professorial units or even of the average firm in a teaching hospital where the chief has a bias?

(b) **Hospitals.**—Not enough advantage is taken of the clinical material in hospitals, both teaching and non-teaching, and this is a great pity. In looking for the reason for this one is bound to admit that the records are so often poor because note-taking is so skimpy. Also, frequently there are too many patients for the staff to deal with adequately.

(c) **General Practitioners.**—There are many reasons why general practitioners do practically no clinical research. First, they have to deal with too many patients, many of whom are not ill at all; and those that are really ill are taken away to the specialist. This means that the practitioner loses interest in his work and patients; it sometimes means that there is a gulf which may increase between the practitioner and the specialist. The practitioner is too often divorced from his local hospital. Again, the average practitioner has little or no time for leisure or facilities for study, and if he is on his own and takes a holiday it is not a "holiday with pay." He has to pay for his holiday, and he has also to pay the locum. This seems an anomaly.

Having considered the conditions which prevail at the present time, let us look at the future.

The Future

The Ingredients of Clinical Research

The Doctor.—(a) **Right Type.**—This is being forgotten to-day in the selection of medical students. It must be remembered that it is not usually the bookworm who makes the good doctor. It is often the footballer or cricketer, the good organizer, the man who lives and is human who will in the end be the better "type"—he who loves his fellow men. (b) **Right Training.**—It is essential that the training of medical students should develop their curiosity and their power of observation. Medical students who have not read *The Adventures of Sherlock Holmes* should be advised to

do so. The art of patience should be inculcated into every medical student, and it is important that the student should have a good basic knowledge and clinical acumen. Book knowledge is not enough; the practical side is important, and the teacher, whoever he be, must himself be a good clinician and teach by example rather than precept.

The Material.—There is no lack of clinical material in this country, although good use is not always made of it. The patients, young, middle-aged, and the aged, form the material. They may be seen at their homes, in institutions, in hospitals, in factories, or in the Services. This vast material will be of little avail unless adequate records of all details are made at the time of examination: these details may be of great value at a later date; these notes must be properly indexed and filed.

Facilities.—In a modern world where everything is being speeded up it is important that the practitioner should have time just to stop and think. He must not become an automaton or a slot-machine. In my opinion consultants should give better reports to general practitioners not only from the out-patient department but also after in-patient treatment, for by so doing the practitioner is kept abreast of modern therapy. Copies of pathological and x-ray reports should always be sent to practitioners, also necropsy reports so that interested doctors may be able to check their clinical findings. There must be the closest co-operation between the practitioner and the consultant. All facets of the patient's life are then brought into line—his job, home life, his diseases, his injuries, his "follow-up." It is essential that the practitioner can get an opinion without losing his patient. The practitioner should be able and have time to do the simple clinical tests. He should be able to get adequate x-ray films and pathological reports, to treat and study the patients whom he is capable of treating. He must, however, appreciate his own personal limitations. He must have adequate clerical staff and records, and these will probably be forthcoming when the health centres come into being. In some districts with very few hospital facilities health centres are an urgent necessity. A general practitioner working alone tends to become stale; discussions regarding patients with colleagues, general practitioners or specialists, are of great value. Group practice is the ideal form of practice in my opinion under this Health Service, for it allows discussions on patients, and there is a give and take and an added interest in the whole of medicine.

In hospitals the practitioner should have facilities for seeing his patients and for obtaining records of their progress and treatment. Practitioners should be encouraged to visit the operating theatres and see operations in progress, to see necropsies on their patients, and to attend clinical meetings. In my opinion the practitioners should play a more active, as opposed to passive, part than they do.

There is a very real place for the cottage hospital run by practitioners with consultant cover. These hospitals are doing excellent work and are filling a gap which would be difficult to supply from other sources. This is especially so in country districts where the population want to be treated in their local hospital and not be taken 20 miles away where their friends and relations do not have the time, money, or facilities to visit them.

Defects at Present

(a) Lack of time.—This is related to the financial stress of the individual. The practitioner is forced to "count heads" so that he can keep and educate his family as his predecessors have done for centuries. The State also comes into this picture, for it demands more work for fewer people, and the doctors with very large lists cannot possibly do justice to their individual patients.

(b) There is far too much time-devouring paper work, signing forms in triplicate, etc.—time better occupied in writing clinical notes or thinking, or in reading notes.

(c) Another great defect which must be remedied is the divorce of the general practitioner from hospitals and the

loss of the doctor-patient relationship which results in the loss of the family doctor. It must be acknowledged that the old type of family doctor is becoming rare in towns with fluctuating populations, where families live only for a brief period and then move on.

(d) Inadequacy in the number of teaching beds in hospitals, mainly due to the growth of specialization; this stops the student from having adequate clinical experience while training. These teaching beds should be greatly increased so that the student may see the common and everyday type of case which will form the bulk of his cases in practice, and not the rare or special cases; these latter should be segregated to the postgraduate hospitals and not the undergraduate hospitals. The medical student is all too ready to learn about rare diseases and rare clinical cases, while he neglects the common diseases and conditions. Students should have more facilities for seeing emergency cases and emergency operations, as these are likely to occur in general practice. In every teaching hospital there should be at least five beds per student in general medicine and general surgery, and yet the figure is greatly below this in most hospitals that I have visited, and I have visited quite a number. In this mechanical age with fast-moving transport of every kind it is essential that the student should have a good grounding in the surgery of trauma, and this is best seen in the casualty departments of hospitals. It is here that he learns the treatment and management of the minor and major injuries. It might be a good thing for the future if every candidate for the Fellowship had to produce evidence of having done six months in casualty work. Senior registrars might also have to show that they had been in charge of the casualty-room at a recognized hospital for six months before qualifying for consultant status.

(e) Deficient and inadequate note-taking, especially case histories. This is all too prevalent except perhaps in the psychiatric departments of our hospitals. Adequate note-taking is the background of clinical knowledge, and once it is mastered clinical acumen comes to the fore.

Remedies

The Health Service has been in being for long enough for us to see its teething troubles and its defects. The remedies are:

(a) Less work for the doctor. This can be brought about by smaller "panel" lists. Institute payments for medicine so that unnecessary work may be cut out. Payment for apparatus will also act as a deterrent. There are far too many spectacles, artificial hearing-aids, and spare dentures which are not made use of at all by curious patients.

(b) Restore the status of the doctor so that he may take a pride in his work and not just be and feel a drudge, at the beck and call of everybody on his list.

(c) Provide adequate facilities for study without financial loss. Medicine is a progressive science; it does not stand still. New drugs and new forms of treatment are constantly appearing, and it is vitally necessary that the practitioner should be kept up to date. It is not sufficiently known that general practitioners can attend twenty-two sessions of approved postgraduate study each year. Expenses for the doctor and his locum (if necessary) are paid by the authorities.

(d) Increase teaching beds by using peripheral hospitals and by reducing specialist beds in teaching hospitals. Co-opt as teachers suitable people at the periphery; this will give them added incentive, and they will have an enormous volume of clinical material. Have constant interchange of registrars between the teaching hospitals and the non-teaching hospitals. Nothing but good can come of this interchange.

(e) Put the soul back into medicine. Change the name from the Health Service to something else. The name "service" is deadening, and it should be much more than a service.

(f) Decentralize so that local pride, so important for good work, may come back into medicine, so that the doctors once again become individuals and not units, and can think of their patients as human beings and not just as another number.

(g) Carry out a thorough and continuous "follow-up," for it is only by doing so that progress and knowledge may result.

Looking Forward

It is important to remember that ultimately all depends on the doctor. He must always remember that the patient is human. The doctor must be curious, keep up to date, be acutely observant, and at the same time be a healthy sceptic. He must think straight and keep his sense of proportion. He must behave as though medicine is a calling and not a "job." He must keep adequate and accurate records, and must have time to sit back and think at times.

The field is wide-flung—in fact, limitless. To mention only a few aspects in which all in the service can play a valuable part: (a) the study of the effects of drugs in the home, in the factory, and in the hospital; (b) the effects of operations—the immediate and the remote; (c) relation of treatment to rehabilitation in its widest sense; (d) the problem of geriatrics—this is likely to become more pronounced in the future, as the population as a whole will probably live longer; (e) the early diagnosis of cancer—this is a field of research which should appeal to most medical men, and the general practitioner has an important part to play in this ever-present problem; (f) domiciliary medicine, which must increase tremendously—this will prove of real value to the patient, practitioner, and specialist alike.

Conclusion

Clinical research is just as important as any other kind of research, and it does not always mean multiple laboratory investigations; but of course it can be and sometimes must be coupled with laboratory research.

Remember that observations must be accurate and they must be controlled; notes must be kept.

Much experience has been lost to medicine because doctors in the past have neglected to record their observations and pass them on.

Reports of Societies

PREFRONTAL LEUCOTOMY

VIEWS OF THE SCOTTISH ANALYTIC GROUP

At a recent meeting of the Scottish Analytic Group at which a number of neurosurgeons, neurologists, and psychiatrists were also present, Mr. J. SCHORSTEIN (neurosurgeon) opened a discussion on the ethics of prefrontal leucotomy.

Frequency of Leucotomy Rapidly Increasing

Originally the operation had been intended as a final attempt to alleviate the suffering of mental patients in asylums whose illness had affected them so badly that their life could scarcely be regarded as human any longer, who had proved unresponsive to other treatments, and whose prognosis was otherwise hopeless. However, since the operation had been accepted as a normal form of treatment a tendency to apply it much more widely had become evident. For example, in the United States the number of leucotomies performed had risen from approximately 275 between 1936 and 1941 to 1,725 in the next five years, 3,000 in the following 15 months, and 5,000 between June, 1948, and October, 1949. Freeman had reported that only 50% of the cases he operated on were hospitalized. In this country leucotomy had become a standard treatment for schizophrenia irrespective of whether the personality of the patient was completely distorted or not. Even in Scotland, where the treatment was generally applied only very conservatively, instances of leucotomy for homosexuality were known, and the operation was recommended for phobias or for preoccupation with discomforts and pains. That was alarming, because leucotomy caused in each patient a change

in the personality and blunting of the moral qualities. It reduced the capacity for the abstract attitude in Goldstein's sense. The best result it could have was to restore the capacity for social and economic adjustment in a personality whose finer qualities had already been destroyed. This result was achieved in only 7.8% to 25% of the schizophrenic cases, whilst the rest were maimed even if some were more easily nursed after the operation.

Arguments Against Leucotomy

Much human suffering could be removed by blunting the human personality, but that ought not to be regarded as ethical medical treatment. It rested on a wrong attitude to suffering and the idea that we had to remove suffering whatever the cost. It viewed man as a machine and not as a moral individual. Many people felt an instinctive aversion to such treatment. Not only doctors but also many of the relatives of leucotomized patients had a bad conscience about it. Mr. Schorstein felt strongly that leucotomy ought to be rejected as a permissible treatment just as the medical profession had actually rejected it in 1890 when Burckhardt, in Switzerland, performed cortical extirpation for the first time.

Mr. J. E. PATERSON (neurosurgeon) also expressed his concern about leucotomy. When doing a leucotomy he was asked to damage healthy brain tissue, while in his other work he had to take the greatest pains to preserve as much brain tissue as possible. Secondly, no neurosurgeon could predict with any accuracy the mental effects which this operation would have. That was true not only of the usual operation, where parts of the brain were destroyed without visual control, but also of topectomy, where the parts were seen. Lastly, he was uneasy about the division of responsibility in those cases where the treatment was recommended by a psychiatrist and executed by the neurosurgeon. In all other cases the neurosurgeon made his own diagnosis and took full responsibility for his treatment. The division of responsibility opened the road for abuse.

Dr. J. B. GAYLOR (neurologist) shared the concern which was felt by the other speakers, but described a patient who after leucotomy had successfully completed a professional training demanding high sensitivity and artistic differentiation. This patient was now a much healthier and happier person than ever before, and no personality defects resulting from the operation had been detected in spite of great attention being given to this question. The Discussion Group felt, however, that this case could not fairly be used in argument, because in all probability the operation had produced too little destruction of brain tissue for the usual defects to become evident. Dr. I. CAMERON (psychiatrist) said that leucotomy appeared to him as spiritual euthanasia: it preserved the form and sacrificed the content of the personality.

Leucotomy Justified in Hopeless Cases

The other psychiatrists, psycho-analysts and psychotherapists present did not agree with Mr. Schorstein's total rejection of the operation. Objection could not be taken to the operation on the ground that it destroyed the moral personality in cases where illness had done this more radically already. However, all agreed that the operation should be regarded as a last resort in desperate and otherwise hopeless cases. Concern about any wider application of leucotomy was general, and it was felt that this question should be much more carefully considered.

Reply of an Advocate for Total Rejection

In reply Mr. SCHORSTEIN said that leucotomy had not arisen out of a new knowledge of man and of mental illness but out of a new attitude to and a new valuation of man. Out of that came the Nazi attitude towards the chronically ill and the lunatic and the modern practice of leucotomy. He did not believe that individual suffering, be it mental or physical, or a saving in expenditure on mental hospitals could justify a procedure which did away with the highest