THE NUFFIELD ORTHOPAEDIC CENTRE, OXFORD

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In order to further the progress of orthopaedic surgery and traumatology Lord Nuffield, in December, 1949, made a donation of £50,000. This donation is being used to organize a centre for the study, research, and treatment of orthopaedic and traumatic conditions, which in his honour has been named the Nuffield Orthopaedic Centre.

It is probable that the increasing collaboration between clinicians and research workers is one of the factors responsible for modern medical progress. It may be easy to find convincing examples of the benefits that this association brings to both types of workers and ultimately to medical progress in general, and, as the author has had the opportunity of stressing this point before,¹ it will not be elaborated further here. This assertion appears to be true for every branch of medicine, and it seems certain that the study of the pathology of the locomotor system will also benefit from this double-sided method of approach—that is, accurate clinical observation and scientific recording of experimental data obtained from research on laboratory animals.

It is common knowledge how orthopaedic surgery became detached from the main body of surgery by the outstanding contributions of a handful of men such as Hugh Owen Thomas, Louis Ollier, Robert Jones, and Vittorio Putti—to mention only a few of the past generations, who in not much more than fifty years created this specialty and brought the study of the diseases of the locomotor system from the elementary state in which they found it to the satisfactory conditions of the present day. H. O. Thomas in particular was responsible for spreading the conviction that crippling disabilities could be both cured and prevented in the great majority of cases. His work and that of his immediate follower, Sir Robert Jones, proved so successful that in the hands of people such as G. R. Girdlestone, so recently and sadly removed from us, the prevention and treatment of a great number of crippling diseases have reached a high pitch of perfection. It seems doubtful now whether much progress

can still be achieved by the method of observation alone, as was practised by all these great orthopaedic surgeons.

Combined Clinical and Experimental Approach

I have had the privilege, on more than one occasion, of collaborating with research workers in the investigation of problems which had been detected in the clinical wards.^{2 3 4} Having thus been engaged for a good number of years both in clinical work as an orthopaedic surgeon and also in experimental research on animals, I may be allowed to venture an opinion on the possibilities of a co-ordinated centre where the investigation of clinical problems can be approached from both the clinical and the experimental aspects. As an orthopaedic surgeon several examples spring to one's mind of subjects which are awaiting such a combined approach; osteomyelitis might be given as an example. Haematogenous osteomyelitis is due initially to a vascular thrombosis in the bone, but we know next to nothing about the rearrangement of the blood supply once the condition has become established. This gap in our knowledge should not surprise us, since as yet we know nothing of the blood supply of normal bone—an incredible situation when one recalls that bone is one of the most important sources of blood. Thus a well-planned and meticulous investigation of the blood supply of the bone in normal and pathological conditions is essential if we are to understand the intimate problems of bone pathology. But without correlating the results thus obtained with the findings in human pathology—in this case haematogenous osteomyelitis—the information gained may be incomplete or even erroneous. For this reason the clinical study and histories of cases in the wards of the centre must be accurate and as complete as possible.

Poliomyelitis is another condition in which such integration of clinical observations and experimental work is urgently needed. At present orthopaedists and neurologists collect data from clinical material somewhat independently, and virus experts investigate the characteristics of virus diseases in animals. But the role that muscle plays in the disease is still undetermined, notwithstanding that orthopaedic surgeons and physiotherapists have centred their interest on muscular recovery for many years. The wealth of experimental data now available on the damage to the central nervous system contrasts sharply with the scarcity of information on the phases through which the muscle passes in this

The proposed Nuffield Orthopaedic Centre.

paralysing disease; this knowledge might explain the very late, and not infrequently unexpected, recoveries in poliomyelitis. It is clear that without careful experimental research the study of both the changes in the blood supply of bone and of muscle recovery in poliomyelitis is unlikely to be fruitful, if not totally impossible.

Facilities Required for Orthopaedic Research

An organization dedicated as much to the study of the physio-pathology of the tissues of the extremities as to the surgical correction of deformities should have a department with sections for clinical investigations of vascular, lymphatic, nervous, muscular, and bone disorders of the extremities with all the necessary clinical armamentarium; a section for experimental surgery with the appropriate animal house; sections for histopathology, micro-radiography, radiography, and photography, both clinical and experimental. This department should function in close liaison with the hospital which handles the clinical problems and houses the orthopaedic patients, and should be complemented by a library, lecture hall, museum, record offices, etc. Such a centre should be located in a university area in close connexion with other university departments such as those of inorganic and organic chemistry, pharmacology, physiology, etc., where any highly expert advice and help can readily be obtained when required.

It is not surprising, therefore, that when an opportunity arose for establishing such a centre, where the requirements of clinical medicine could be correlated with the strict discipline of laboratory research, this was seized. It was due mainly to the foresight of G. R. Girdlestone that such a centre was planned. Apart from the research potentialities inherent in a university centre so compact as Oxford, there are specially favourable opportunities for the investigation of orthopaedic problems in that city because, thanks to G. R. Girdlestone, clinical orthopaedics have been efficiently organized there for more than thirty years. The Wingfield-Morris Orthopaedic Hospital is thus a long-established centre drawing orthopaedic patients from a population of nearly 2,000,000. The first requirements for any investigation based on clinical material are an efficient method for recording and keeping the clinical data and that the analysis of these should be performed by workers of experience and objectivity. From such material the statistician, so recently praised by Sir Henry Dale,⁵ must extract those factors which have real significance in the pathological process under study, without underestimating the importance of the individual case, which may sometimes throw as much light on a problem as the best and most copious statistics. It is from this sort of analysis that problems are isolated from the main body of observation and can then be individually studied and, when necessary, brought to the laboratory for experimental analysis.

The New Centre

Provisionally, with the help of the Nuffield Institute for Medical Research, Oxford, a beginning has been made in the working of such an organization, and some modest, if very urgently needed, building facilities are being provided to intensify the work at present undertaken. The Nuffield Orthopaedic Centre integrates into a working body both the Wingfield and its associated clinics, the Accident Service of the Radcliffe Infirmary, and the Nuffield Department of

Orthopaedic Surgery. The first contact has been established between colleagues interested in poliomyelitis working in the Oxford Region, including doctors from the isolation hospitals, orthopaedists, neurologists, and research workers. As facilities increase it is hoped that they will combine to form a research group. A residence for postgraduate students has already been acquired, and the first foreign students are already working in the Centre.

To attract postgraduate visitors and junior members of the Centre a course of lectures is being given on Thursdays during term by experts on subjects which sometimes may seem to be outside the immediate interest of the orthopaedic surgeon. Discussions of current medical literature, also covering a wider field than that of pure orthopaedics, take place every month.

Plans have been drawn up for a suitable building (see illustration), and the money is already available; soon the facilities for trying this double-sided approach to orthopaedic problems will be increased once the erection of the first and smaller building is completed.

In recognition of the great life-work of Girdlestone, Lord Nuffield has given £10,000 to the Nuffield Orthopaedic Centre for the creation of a scholarship to be known as the Girdlestone Scholarship. This will be for the purpose of enabling doctors from overseas to spend a period of time at the Wingfield working within, and learning from, the organization Girdlestone created and which so clearly bears the imprint of his personality.

I have felt compelled to give this short account of the working and projects of the Nuffield Orthopaedic Centre as a last tribute to G. R. Girdlestone, the man to whom orthopaedics in general, and Oxford medicine in particular, owe so much.

REFERENCES

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The Expert Committee on School Health Services met in Geneva from August 7 to 12, 1950 (*World Hlth Org. techn. Rep. Ser.*, 1951, 30), and prepared an outline of basic policies and approaches to the problems of establishing school-health services. To learn effectively it is essential that children should be really healthy, and health teaching is an all-important factor in their school life. The need for co-operation in planning between parents, community, professional groups, and so on was emphasized, and the committee approved the initiative taken by the W.H.O. Expert Committee on Professional and Technical Education in recommending the inclusion of mental health instruction in public health training. The importance of the teacher's role was stressed; the fundamental method required is continuous observation and interest in the child. The teacher alone can provide the physician and nurse with information vital to the understanding of the child's problem. Provision must be made for treatment of both physical and emotional health problems. In order to meet the needs of the schoolchild the health staff must be adequately trained: for instance, the physician must possess insight into the emotional needs of the child in addition to being a good clinician. The committee stressed the importance of continuation in child-health work; prenatal attention, infant-welfare centres, school-health services, and so on, should all be organized by the same authority or co-ordinated to ensure uninterrupted supervision.