forecast that over the next five years, as a result of retirements, deaths, and expansion, there would be an average of 125 consultant vacancies a year in medicine, surgery, and obstetrics, taken together, and about the same number of fully trained candidates competing for them.

If events confirm these predictions, the career outlook for the senior registrar at least would seem reasonably reassuring. What cannot have reassured the Minister's hearers, however, were his strictures on those among them who emigrate—"escape" was his word—to countries "where the doctor/population ratio is even higher than our own, and where the financial pickings sound more attractive and can be gathered in for less work." The Minister completely misjudges the temper of these well-trained men and women if he believes that their emigration is something planned almost from the start of their medical education and executed later selfishly and cynically. They go because they feel, rightly or wrongly, driven to it, because they see their contribution to the community undervalued, and because, it seems, they have come to dislike medical practice as they have experienced it here and prefer what they believe to be better outlets for their skills elsewhere. The emigration figures are a truer guide than any other to the health of the N.H.S., and the Minister would be wiser to examine dispassionately the reasons why doctors emigrate rather than to assume that their motives are unworthy. At this juncture to hint, even only by implication, that some discriminatory powers might be taken against them will further antagonize those whose confidence in their terms of employment is already at a low ebb. What will keep young doctors in Britain is some visible improvement in their lot, not smooth—or rough—words from Ministers or anyone else.

Measuring Joint Movement

There has long been need for a single, standard, and agreed method of measuring and recording the range of movements at joints. Prompted by increasing demands from their members, the American Academy of Orthopaedic Surgeons appointed a committee in 1959 to study joint movement. Under the chairmanship of Carter R. Rowe, of Boston, a trial pamphlet was produced in which methods of assessing the ranges of movement at joints were outlined. The pamphlet was sent for comment to the Academy and Association of American Orthopaedic Surgeons and to similar associations in Australia, New Zealand, Canada, South Africa, and Great Britain. The American Society for Surgery of the Hand also cooperated.

The result was a joint meeting in 1964 of representatives of interested associations and the unanimous acceptance of the method now described in an 87-page booklet.[1] It sets out in the clearest terms and with simple sketches just how the ranges of movement at individual joints should be measured. The instructions are precise and unambiguous. So clear are the diagrams it is perfectly possible for anyone, even without much anatomical knowledge, to measure the range of movement at any joint in the prescribed planes. The principles of the neutral zero method as described by E. F. Cave and S. M. Roberts[2] are used. All movements at any joint are measured from defined zero starting positions. This means that the extended anatomical position in an extremity is accepted as zero, rather than 180°. Confusion has arisen in the past over doubt about what exactly is the starting-point of a particular movement. Not unnaturally the present method occasionally uses starting-points that are functionally rather than anatomically defined. This is perfectly acceptable, but sometimes the compilers look over their shoulders at pedantic anatomists, as, for example, when they write on p. 58, "There is an anatomical question whether extension is present in the hip at all." Perhaps they ought to have consulted an earlier paper by Thomas Walmsley[3] about the screwing home of the head of the femur after 15° extension.

The movement at any joint is to be compared with that at the joint of the opposite side or with the average movement at the joint of a person of similar age and physical build. The difference is expressed in degrees of movement. There are instructions in the use of a goniometer for measuring joint movement. Types of movement are also described, and the difference between extension and hyperextension is carefully explained. As the movement opposite to flexion at the zero starting position is an "unnatural" one, it is referred to as hyperextension in the elbow and knee-joint. Movement at the shoulder-joint is analysed geometrically in "envelopes of compound motion." Confusion has existed in the past because there have been no accepted terms to describe horizontal movements of the arm at the shoulder, and flexion in the anatomical sense carries the arm forwards and medially across the front of the chest and not straight ahead as in marching. Movement at the shoulder-joint is therefore considered as taking place within a globe and matters are probably made much simpler—if everyone would agree.

Several diagrams indicate how limitation in the passive and active range of movement is assessed, and it is emphasized that a more accurate estimate of the range of movement will be obtained if the extremity is examined in a position of greatest comfort to the patient.

The pamphlet ends with commendable encouragement for the keeping of proper records. There is also a list of the average ranges of joint movement compiled from four sources. As the sources are themselves mean results there is little real indication of the true range of movement at any joint or of the influence, if any, of age, build, or sex. Experts will find the references of help here, though the compilers of the method of measurement hope that the averages will be of use when both extremities are injured in the patient under examination. In general the method has much to be said for it and support will be found for many of its recommendations.

[1] *Joint Motion.* Published by the American Academy of Orthopaedic Surgeons, 1965, and reprinted by the British Orthopaedic Association, 1966. E. & S. Livingstone, London and Edinburgh.
[2] Cave, E. F., and Roberts, S. M., *J. Bone Jt Surg.*, 1936, **18**, 455.
[3] Walmsley, T., ibid., 1928, **10**, 40.