and of creep encountered in TKR designs are the direct result of failing to allow adequately in the design for the properties of the materials. Thus, no modification of material or new composition will necessarily improve the performance of the total joint replacement. The acquisition of improved materials with well-characterised mechanical and biological performance will lead to improved total joint replacements only if sound new designs evolve.

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THE TRAINING OF ORTHOTISTISTS

Many, and often bitter, complaints are made by patients and doctors about orthoses and no one disputes the need for a very considerable improvement in quality, delivery and research. It is the means that are debated. As a step in this direction formal training has been instituted for Orthotists in England and Wales by the Orthotic Training Council set up by the Department of Health and Social Security in 1972 for this purpose, and in Scotland for combined Orthotists and Prosthetists by the National Centre at Strathclyde. As always, the problem of transforming an empirical craft into a scientific discipline presents many problems and options and the Orthotic Training Council has instituted an inherently flexible system, capable of evolution both in regard to future organisation and to the maintenance of adequate education and technical standards in the light of advancing knowledge. A four-year course has been adopted with three academic periods, each of ten weeks, within a technical college, interspersed with three in-service years with the firm sponsoring the student. Both are monitored by appropriate examinations and the in-service training by the appointment of a training officer in each firm. The student is required to work through a task book of some fifty-two tasks at approximately fortnightly intervals covering the whole spectrum of orthotic fitting. In addition the firms are visited at regular intervals by orthotic and engineering assessors to discuss problems and standards of education. In the final year a research project has to be undertaken. In addition to this course, postgraduate refresher courses are held at regular intervals and it is hoped to institute a formal course for the advanced training of orthotists wishing to teach and to engage in research.

In June 1977 the first two students qualified for the Diploma of the Orthotic Training Council, four are due to sit the examination this year and ten the next. After June 1982 no orthotist will be able to work for the National Health Service unless he possesses an acceptable qualification.

All such schemes contain many imperfections. At present the entrance level is wide and variable. In the very near future it will be possible and desirable to raise this level quite considerably. Similarly the question of joining the Council for Professions Supplementary to Medicine is under urgent consideration.
A beginning has been made but a vital factor both in the success of training and the ultimate function of orthotists is the interest, knowledge and involvement of the consultant who is "responsible for ensuring that each complete appliance conforms to the prescription and is satisfactory in manufacture, fit and function when fitted to the patient" (Department of Health and Social Security 1978), an obligation often "more honour'd in the breach than the observance". One can understand that the orthosis is now somewhat overshadowed by the more glamorous internal prosthesis, but a recent paper (Jacobson and Mason 1977) suggests that there is an important place for both in a correctly balanced scheme of treatment. In scoliosis and in spina bifida orthoses make unique contributions, as they can do in many other fields if the necessary research is undertaken in close cooperation with, if not initiated by, the medical prescriber. Such research will depend on the survival and enlargement of hospital workshops, which are at present tending to decay rather than to expand, although there are signs that this danger is now being recognised and, one hopes, countered in time. G. K. ROSE

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