steroids on any other patients than rheumatoids using this technique?

DR. VERNON-ROBERTS We intended to carry out a further investigation on patients before and during therapy to evaluate them clinically by one of the recognized indices. We did not carry this out in the investigation presented, but Dr. Jessop made a clinical assessment of disease activity and we found a significant correlation between this and the phagocytic scores of macrophages in the untreated patients with rheumatoid arthritis, which gives us encouragement to continue this investigation. Regarding your second point, we had a few patients not included in this series who had polymyalgia rheumatica and were on steroids. They exhibited marked depression compared to our control group.

DR. A. G. MOWAT (*Oxford*) These are two very nice papers, but I wonder if you have not confused yourselves by this simple 'skin window' technique? There are four or five stages to this inflammatory process: these include changes in the vessel wall, migration of cells through the vessel wall, chemotaxis of the cells, and finally phagocytosis. Your method measures only phagocytosis. In rheumatoid arthritis there are important vascular changes and a serious defect in chemotaxis of the cells has been demonstrated (Mowat and Baum, 1971).

DR. VERNON-ROBERTS We have qualified our statements and have made it clear that all these factors operate in inflammation. In using these techniques we cannot distinguish which aspects of the inflammatory response these compounds were inhibiting. We know, for example, that prednisolone inhibits every stage from the release of monocytes from the bone marrow pool to the phagocytic activity of the migrant cells. One does not know much about the mechanism of action of gold, but we are going to carry out further experiments on animals to study the production of monocytes, their emigration, chemotaxis, and so on. We think that the very significant difference between the rheumatoid and control groups and the results in our patients on gold and steroid therapy suggest that this relatively crude test may provide useful information on response to treatment.

Reference

- Mowat, A. G., and Baum, J. (1971) *J. clin. Invest.*, 50, 2541 (Chemotaxis of polymorphonuclear leukocytes from patients with rheumatoid arthritis)
 Nicol, T., Quantock, D. C., and Vernon-Roberts, B. (1967) in 'Reticulo-endothelial System and Atherosclerosis', pp. 221. Plenum Press, New York

Joint Hypermobility—Asset or Liability? A Study of Joint Mobility in Ballet Dancers. By R. GRAHAME and the late Miss J. M. JENKINS* (*Guy's Hospital*) This paper was published in the *Annals* (1972), 31, 109.

Discussion

DR. J. A. D. ANDERSON (*London*) Have you considered using applicants rejected by the Royal School of Ballet as alternative controls for your study?

* We regret to announce that Miss J. M. Jenkins died on March 15, 1972.

DR. GRAHAME It was difficult enough to examine the ballet students, let alone the rejects!

PROF. E. G. L. BYWATERS (*Taplow*) Did any of your ballet students in training show, or give a history of, joint effusions, and do you think that these could be avoided by adequate muscular control?

DR. GRAHAME Surprisingly few of these girls—they were only 17 years old—had had trouble of this nature, but a lot of older patients whom I have seen with generalized hypermobility do have this problem and in these cases I do believe that attention to the musculature, and particularly quadriceps drill, in relation to the knee joint, is of great value in preventing this complication.

DR. J. H. GLYN (*London*) Dr. Grahame has persuaded us that hypermobility is indeed an asset to a 17-year-old ballet student. Does he know what happens to these hypermobile joints eventually? Presumably there must have been long-term studies on the incidence of degenerative and other arthritic diseases as such girls mature. The first metatarsophalangeal joint would seem to be an obvious joint worthy of such a simple prospective study.

DR. GRAHAME I don't think there are much data on this subject, but perhaps this would be the appropriate time to mention that we have now set up at Guy's a clinic that will study the consequences of joint hypermobility as seen in ballet dancers. Perhaps in 20 years time we may be able to look into this.

DR. J. B. MILLARD (*Clacton*) May I ask Dr. Grahame to carry on with this type of research, because osteoarthritis of the hips is a great problem, and my impression is that people with hypermobile hips, like the Chinese and the people from the far East, do not get osteoarthritic hips. It is important to find out why.

Total Hip Replacement using the Charnley Prosthesis in Inflammatory Joint Disease. By J. HARRIS, C. D. R. LIGHTOWLER, and R. C. TODD (*The London Hospital*)

Between August, 1966, and December, 1970, 73 Charnley low-friction arthroplasties were performed in 55 patients with inflammatory joint disease. The main indication for surgery was severe pain in a hip which was the site of extensive destructive change. There were 54 operations performed for rheumatoid arthritis, twelve for ankylosing spondylitis, psoriatic arthropathy (3), Still's disease (3), and Behçet's syndrome (1).

44 patients were reviewed in a clinic and five replied to a questionnaire. Three are dead and three are lost to follow-up. 65 operations were therefore reviewed (59 in the clinic and six by questionnaire).

Before total hip replacement, 95 per cent. of the hips were severely painful, and postoperatively 88 per cent. were virtually pain-free. In those patients who attended for follow-up (excluding four in whom the prosthesis had been removed) movement had increased by at least one grade (d'Aubigné and Postel, 1954) in 89 per cent. There was at least 60° of flexion in 89 per cent. of hips.