

Heberden Society

Clinical Meeting, September, 1970

At a meeting held at the Royal College of Physicians, Edinburgh, on September 25, 1970, the following papers were presented:

Adjuvant-induced Anti-red Blood Cell Activity in Mice: the Role of a Micro-organism isolated from Rheumatoid Joint Material. By ANN MCCRACKEN and D. M. WEIR (*Immunology Unit, Department of Bacteriology, University of Edinburgh Medical School*)

An inbred strain of mice have been shown to exhibit a detectable immunological response to their own red blood cells on injecting either *Corynebacterium parvum* or SF 16—a bacterium isolated from the synovial fluid of a patient with rheumatoid arthritis. These micro-organisms have a marked adjuvant effect on the immunological system. The anti-red cell response has been detected by the immuno-cytoadherence test and the Jerne plaque method and animals injected with either organism show a pronounced increase in anti-red blood cell activity compared with saline-injected controls. This phenomenon has been correlated with haematological findings to determine the extent of any anaemia induced.

Doses of 0.1 to 8 mg. (dry weight) of heat-killed organisms were capable of producing the effect which was maintained for up to 3 weeks. It is proposed that the anti-red cell response may be due to stimulation of pre-existing antibody-forming cells and the antibody may act directly on red cells or facilitate their uptake by macrophages. This phenomenon, if it occurs in patients, may help to explain the anaemia of rheumatoid arthritis.

Discussion

DR. W. W. BUCHANAN (*Glasgow*) White and Gordon, as you pointed out, noted the adjuvant effect of diphtheroids obtained from a rheumatoid joint, and electron microscopy done on these organisms indicated that there were filaments on their surface similar to those they had seen in mycobacteria and in *Nocardia*, which of course have powerful adjuvant effects. I wonder whether you have examined your organism for this particular feature and whether you know of any organism that has an adjuvant effect but which does not have these peculiar filaments?

MRS. MCCRACKEN I hope to carry out electron microscopy studies in the near future.

DR. T. M. CHALMERS (*Manchester*) Have you tried introducing any inhibitors such as corticosteroid preparations into this system?

MRS. MCCRACKEN No.

PROF. E. G. L. BYWATERS (*London*) Is it possible that your bacteria have absorbed on to them something from the culture medium which might react with something coating the red cells?

MRS. MCCRACKEN To the best of my ability I have excluded this. The bacteria were washed ten times after removal from the medium and when I injected some media there was no similar anti-red blood cell response.

Effect of Iron Dextran on Experimental Synovitis in the Guinea-pig. By A. G. MOWAT, T. F. DISNEY, and J. H. VAUGHAN (*University of Rochester School of Medicine and Dentistry, Rochester, N. Y.*)

This paper and the discussion thereon has been published in the *Annals* (see p. 201).

Radiological Assessment of the Cervical Spine in Rheumatoid Arthritis. By J. A. K. MEIKLE and M. WILKINSON (*Bridge of Earn Hospital, Perthshire*)

This paper and the discussion thereon has been published in the *Annals* (see p. 154).

Straingauge Plethysmography in the Assessment of Joint Inflammation. By I. VADASZ (*Guy's Hospital*)

This paper and the discussion thereon has been published in the *Annals* (see p. 211).

Study of Cells from Synovial Fluid in Tissue Culture. By J. M. K. MACKAY, W. R. M. ALEXANDER, and W. A. NEILL (*Rheumatic Diseases Unit, Northern General Hospital, Edinburgh*)

It is widely held that an abnormal immune response, probably of cell-mediated type, is present in rheumatoid arthritis. In view of the increasing evidence that macrophages have an important role in cell-mediated immune reactions a study of synovial fluid macrophages in tissue culture was undertaken.