Book Review

Ultrastructure of Synovial Joints in Health and Disease Edited by F. N. GHADIALLY and S. ROY Pp. v + 186, 80 pl., bibl. Butterworths, London (£5)

For some years, Ghadially and his colleagues have been publishing the results of their electron microscopic investigations begun, in Sheffield, under the inspiring guidance of the late Professor D. H. Collins to whom many of us owe so much. This volume summarizes and amplifies their papers and, with the aid of Dr G. Meachim, gives their views both on normal synovial tissue and on articular cartilage and on these tissues in selected diseases (osteoarthrosis, traumatic arthritis, haemarthrosis and lipohaemarthrosis, and rheumatoid arthritis). The results of their enquiries are contained in a slim volume of 186 pages, which includes 80 plates (some composite, and all electron micrographs) and which concludes with a selected bibliography of 244 references and an adequate Index of four pages.

Two principal criticisms emerge. First, Ghadially and Roy have missed an opportunity, which must now surely be grasped by others, of making a definitive and comprehensive statement on the applied biology of synovial joints. Instead, they have deliberately restricted themselves to the electron microscope, with only the briefest references to the light microscopy of 'fixed tissues', the chemical and histochemical analysis of homogenates, cold microtome and freeze-dried material, and the behaviour *in vivo* of living synovia and cartilage. They have produced, in effect, an Atlas of Synovial Joint Structure. Secondly, it is strange that, in so doing, they have devoted so little space to the technical criticism of the methods on which they rely heavily. An electron micrograph of a fixed, sectioned synovial cell does not reveal all that is known of the natural history of this unit and without parallel *in vivo* and biochemical data the two-dimensional records of the electron microscopist can be misleading.

By their tactics, therefore, Ghadially and Roy expose the weakness of their strategic philosophy. No matter how many electron photomicrographs are replicated at no matter how great expense, the responses of synovial, cartilaginous, fibrocartilaginous, or any other kind of joint in health and in 'disease' will only be understood fully when at least three-dimensional and preferably four-dimensional investigations are analysed by the accepted techniques of chemistry, physics and mathematics.

In detail, synoptic lists of references (*e.g.* p. 1) tend to create the impression of superficiality. Excessively condensed summaries (p. 2, para. 2) may appear naive. Biochemical statements (p. 20, para. 3) should follow recommended contemporary terminology (mucupolysaccharide = glycosaminoglycan) and theory (synovial fluid 'hyaluronic acid' is surely, a protein-hyaluronate macromolecule). The mechanisms of lubrication of articular cartilage (p. 48) are not so simple as Ghadially and Roy would have us believe and the concept of the 'remarkably smooth surface' they describe is debatable. Electron microscopic claims regarding 'disintegration' of cells (Fig. 1, plate 36) should exclude problems of fixation artefact convincingly and I prefer the Japanese terminology for synovial cells—M(acrophage-like) and F(ibroblast-like)—rather than the American (A and B). Boyd's views (p. 151) on the course of rheumatoid arthritis are not authoritative. The presence of germinal centres in synovial lymphoid follicles (p. 152) does not prove that a local immunological response is directed against autologous antigen and the older views of Collins on the significance of the presence of lymphoid foci in synovia in rheumatoid arthritis should be modified by the addition of some phrase such as 'provided that immunocytes and rheumatoid factor can be shown to be present'.

Ultrastructure of Synovial Joints, it will be seen, is a provocative monograph, unlikely to appeal to those who are not directly concerned with the biology of synovial joints, obligatory reading for those who are.

Difficulties inherent in the production of very large-format electron micrographs of human tissues would have been lessened, without loss of information, by the adoption of a smaller photographic print.

Proof-reading is meticulous, printing precise and the price realistic.

D. L. GARDNER

Notes

New Zealand Rheumatism Association

In May, 1969, a combined meeting with the Australian Rheumatism Association was held in Brisbane in association with a meeting of the Royal Australasian College of Physicians.

In October, 1969, the Association conducted a conference on rehabilitation and physical medicine at Rotorua.

Dr G. A. Q. Lennane gave an outline of present rehabilitation services, Mr Brocklehurst, Secretary, Social Security Department, presented a paper on the administrative aspects of rehabilitation, and Mr Duncan, Legal Consultant to Labour Department, spoke on the Woodhouse Commission Report as it affects rehabilitation. Mr. W. P. Maddren, Disabled Persons Placement Officer, outlined the role of the Placement Officer and there was a lively panel discussion on social and medical aspects. Doctors F. H. Swan, R. G. Howes, R. A. Barker,

and W. I. Glass outlined experiences with schemes already operating in New Zealand.

A further series of papers dealt with the place of physical medicine in the treatment of locomotor problems. Dr D. Gordon outlined the extent of the problem, Dr J. W. Gibb gave an account of a series of cases of painful necks classifying them from the clinical, prognostic, and therapeutic aspects, Dr M. J. Bishop pointed out the common ground in various theories of the aetiology of cervical headache, and Dr K. R. Orr talked on low back pain, emphasizing the frequency of various sacroiliac syndromes. Dr M. I. Hepburn discussed the importance of short leg in the production of back symptoms. Dr I. S. Broadfoot reviewed the cult of chiropractic with a plea that the medical profession should take positive action to counter the effects of expert sales talk. Dr R. G. Howes spoke on ice therapy in the treatment of various joint disorders. Dr D. Gash pointed out the economies which follow the establishment of industrial health clinics, particularly as applied to work accidents.

In February, 1970, the Association met in Dunedin with other specialist societies and the combined New Zealand and Australian sections of the College of Physicians. Dr John Webb, President of the Australian Rheumatism Association, spoke provocatively and very much to the point on politics and policies relating both individually and collectively to those interested in rheumatology—a theme also followed by Prof. T. C. Highton in his Presidential Address.

The following papers were presented.

D. B. Myers and D. G. Palmer (*Dunedin*) Joint compliance

T. C. Highton (*Dunedin*) and L. Donaldson and W. Bertaud (*Lower Hutt*) Scanning electron microscopy of synovial membrane

J. K. Laing (*Christchurch*) Septic arthritis in rheumatoid disease

B. Tait (*Hamilton*) Sensory trigeminal neuropathy in connective tissue diseases

B. L. J. Treadwell and E. W. Pomare (*Wellington*) Sustained release aspirin—A preliminary report

W. J. Weston (*Lower Hutt*) Radiographic anatomy of the digital flexor tendon sheaths

R. D. Wigley, A. Craig, K. Williamson, K. G. Couchman, and R. Maule (*Palmerston North*) Electronmicroscopy of PN mice showing virus-like particles

D. E. Caughey (*Auckland*) Hypothyroidism and joint disease

J. K. Laing (*Christchurch*) Still's disease in an adult

D. G. Palmer and T. C. Highton (*Dunedin*) Preliminary observations on measuring gold levels in patients with rheumatoid arthritis

J. M. Tweed (*Wellington*) Double-blind trial of Ibuprofen in rheumatoid disease

D. G. Palmer (*Dunedin*) Syncytial masses in cultures of synovial tissues involved by rheumatoid disease

A. G. Wasmuth (*Dunedin*) Biology and genetics of the disease rheumatoid arthritis

Professor Verna Wright

Dr Verna Wright has been appointed to a Personal Chair in Rheumatology, tenable at Leeds University. There are now four Chairs in the specialty in the United Kingdom.

Dr Wright has been Head of the Rheumatism Research Unit at the Leeds University School of Medicine for some years and is a leading authority on the mechanics of joint movement and lubrication.

He is a member of the Editorial Committee of the *Annals of the Rheumatic Diseases* and is Chairman of the Education Sub-Committee of the Arthritis and Rheumatism Council for Research.

Dr.H . L. F. Currey

Dr H. L. F. Currey has been appointed Reader in Rheumatology at the London Hospital Medical College.

Dr Currey's research interests lie in a number of fields, particularly that of experimental arthritis and its modification by various drugs.

He is a member of the Editorial Committee of the *Annals of the Rheumatic Diseases* and serves on the Scientific and Education Sub-Committees of the Arthritis and Rheumatism Council.

South-East Asia and Pacific area league against rheumatism

II Congress, Auckland, New Zealand, February 15 – 18, 1972

The Scientific Programme will include formal lectures by invited experts, symposia, round-table discussion, and free papers.

Further information may be obtained from the SEAPAL Secretary-General, Dr I. C. Isdale, Queen Elizabeth Hospital, P.O. Box 513, Roturoa, New Zealand.

Correction

In the paper by R. Arinoviche and G. Loewi (*Annals*, 1970, **29**, No. 1, January), on p. 32, it should be noted that 'Imuran' is the trade name for Azathioprine, which is owned by The Wellcome Foundation Ltd., and not by British Drug Houses, as indicated.