a conference on mineralised tissues without having to discuss the role of alkaline phosphatase in calcification. I have long subscribed to the view that this enzyme is not required to provide phosphate ions for the bone salt . . ."

The author of this review attempts to redress the balance by restating the arguments for Robison's original theory. He has been led to do so by histochemical investigations on the association of alkaline phosphatase with sites of calcification. Although this association is invariable, the author distinguishes between the liberation of phosphatase as an incidental consequence of cell degeneration which results in pathological calcification and its specific elaboration by osteoblasts in pre-osseous tissue. It is still uncertain whether the phosphatase-containing hypertrophic cells in calcifying cartilage should be regarded as degenerative or as specifically differentiated.

The monograph is clearly written and well produced, but it is a great pity that no illustrations are provided of the material on which the argument is based and that no critical discussion of the histochemical methods employed is included. There can be few fields in biological science so full of pitfalls as is histochemistry.—P. G. WALKER.

REFERENCES

- MCLEAN, F. C. (1955): *In* Discussion on Recent Advances in the Study of the Structure, Composition, and Growth of Mineralized Tissues. *Annals of the New York Academy of Sciences*, **60**, 801.
 ROBISON, R. (1923): The Possible Significance of Hexosephosphoric Esters in Ossification. *Biochemical Journal*, **17**, 286.

ON QUANTITATIVE MUSCLE PROTEIN DETERMINATION. Sarcoplasm and Myofibril Protein Content of Normal and Atrophic Skeletal Muscles. By Einar HELANDER. 9 × 6 in. Pp. 99, with 19 figures and 16 tables. 1957. Gothenburg: Acta Physiologica Scandinavica, Volume 41, Supplement 141. Price Sw. kr. 18.

This short monograph provides an excellent example of the enormous increase in the significance of the results of chemical analyses of tissues which is achieved when the figures can be related to tissue morphology on the one hand and to physiological function on the other hand. A technique based on differential extraction by salt solutions, has been devised for separating muscle proteins into three fractions. Histological control showed that these fractions were derived from sarcoplasm, myofibrils and stroma respectively and that the yields were quantitative. The metabolic activities of muscle take place in the sarcoplasm, the myofibrils are the contractile units and the stroma acts as a matrix for these elements.

The results are given of analyses obtained from different types of muscle and from the same muscle at different ages or after denervation or immobilisation. The figures are correlated with the histological picture and interpreted in terms of variations in function. The author is commendably critical of his experimental methods and has tested carefully the effect of many variables in the techniques employed. Confidence in the results given by the methods finally adopted is correspondingly increased. A study such as this in which morphology, biochemistry and physiology meet is a model for a new and enlightened approach to the chemical analysis of tissues.—P. G. WALKER.

ON RHEUMATOID ARTHRITIS IN CHILDREN. A Clinico-Roentgenological Study. By Eero SAIRANEN. 9 × 6½ in. Pp. 79, with 9 figures and 34 tables. 1958. Stockholm: Acta Rheumatologica Scandinavica, Supplement 2. Price Sw. kr. 30. (Edition sold out.)

This study (in English) from the Rheumatism Foundation at Heinola and the University of Turku, Finland, records 100 children with rheumatoid arthritis starting before the age of fifteen. It is written mainly from a radiological viewpoint, the space devoted to this aspect being more than twice that spent on the clinical survey. There is a polyglot bibliography of about 180 references.

The author shows convincingly that radiological change, except periostitis, occurs much later than in adults: other characteristic features of juvenile rheumatoid arthritis included fusion of the cervical spine, subluxation of the hip, brachygnathia and other growth disturbances. Periostitis was the earliest change, occurring at the earliest four months from onset; erosion was not seen in less than two years. Thus the radiological manifestations seem to be much the same in Finland as in England.—E. G. L. BYWATERS.