

# Reviews of Recent Books



**The Arterial Wall**, edited by Albert I. Lansing, Williams & Wilkins Co., Baltimore, 1959, pp. 259, \$7.50.

The arterial wall is currently in both public and scientific lime-lights; a book about it deserves and will receive attention. Dr. Lansing has edited a compendium of ten chapters contributed by thirteen distinguished American scientists. Anatomy, biochemistry, physiology, enzymology and metabolism of arterial tissue of the normal vessel are considered, although references are made to changes with age and arteriosclerosis. Even when not stated, it is apparent that the arterial wall in atherosclerosis is not far from the minds of all.

Any book to which a number of investigators contribute inevitably suffers unevenness, overlaps and omissions. But here all appear *in extremis* nearly to the point of caricature. The opening chapter on *vasa vasorum* by Charles Woerner is in essence a report of his studies of some forty human arteries and thirty-five others from dogs or rabbits using clearing and injection methods; he gives brief citations from pertinent literature. But Dr. Wilfried F. H. M. Mommaerts' chapter on arterial muscle is a masterly lucid summary-in-depth of muscle physiology, structure and biochemistry, including contemporary knowledge of proteins of muscular tissue and dynamic aspects of contractile activity of both striated and smooth varieties. This chapter presents not only the fundamentals but also the recent advances in this complex area in a thorough and succinct manner that will certainly command readers' admiring respect. The section dealing with the structural aspects would have been enhanced by light and electron micrographs, but this minor omission cannot obscure the excellence of his presentation, which is one of the best that this reviewer has ever encountered. It is divided into several sections, each with its own separate and extensive bibliography providing many useful references.

On the same high plane is Dr. Zweifach's contribution on vascular endothelium which emphasizes nicely the many areas in which knowledge is lacking, particularly histochemistry and histoenzymology of endothelium in relation to age and species. These deficiencies constitute a handicap in any attempts to assess changes in endothelium with aging or in atherosclerosis. Dr. Zweifach's chapter is highlighted by many excellent key references of the older literature (of fifty years ago and more) as well as recent.

Although the contributions by Woerner, Zweifach, and Mommaerts can be followed by the student who

does not work in these specialized areas, that of Batchelor and Levene on collagen and ground substance cannot be grasped by those unfamiliar with the background material (although they do cite key reviews of it). These contributors have addressed themselves to the problem of fiber growth with emphasis on the perifibril zone. It is regretted that these authors were not allowed space to go into background as did some of the others.

The problem of elastic tissue and the enigma of elastase is ably reviewed by the editor, Dr. Lansing, who has made many major contributions to this field. The origin of the enzyme, elastase, is reviewed and efforts to localize it in some specific portion of the pancreas described. Unfortunately, in some of the experiments it has not been appreciated that although cobaltous chloride (at least in guinea pigs) produces damage to alpha cells, it is even more toxic to acinar tissue and conclusions suffer accordingly. In his review of mucopolysaccharides of arteries, Dr. John E. Kirk ably presents the chemistry and histochemistry of the subject. His own work on chromatography of polysaccharides of arteries from man is illustrated with color plates. He points out discrepancies between histochemical and biochemical studies, for example, the increase in mucopolysaccharides in arteriosclerosis indicated by histochemistry has apparently not been confirmed by biochemical estimations. A possible explanation may be that some histochemists have confused mucopolysaccharides with the pigment, ceroid, which has similar staining characteristics and does increase in arteriosclerosis. Barrows and Chow review the rather scanty knowledge concerning enzymes in arterial tissue. They present a limited "birds-eye view" of the available literature, suggesting approaches for further study. Reading their chapter, one is forced to conclude that enzymatic studies of arterial tissues have not yet been particularly rewarding.

Lipid metabolism of connective tissue as related to vessels in aging is reviewed by Drs. Boucek and Noble who apparently believe that initial changes in atherosclerosis consist of deposition of connective tissue and alteration of ground substance before any abnormal lipids appear. This view is not the consensus of all students of the subject, but based on this premise Boucek and Noble have directed their attention to the accumulation of sterols and lipids in fibroblasts growing in implanted sponges in animals and various races of man (White, Negro, Indian and Eskimo). With this

artificial model they have made interesting and stimulating observations which are not, however, easy to interpret in relation to either normal or pathologic arteries. Dr. Lehninger's final chapter on metabolism of the arterial wall to a certain extent reviews aspects of the previous contributions. Dr. Abraham Dury has provided a summary of some five pages neatly pointing out the highlights of the various chapters.

The index provides frequent cross references, the format is pleasing and the print exceptionally easy to read and free of more than but a few typographical errors.

This book provides rather specialized views on certain aspects of normal arteries. Some chapters are suitable only for the advanced student while others are capable of assimilation by any intelligent reader. Documentation is good and the bibliographies will serve well for references to further reading. In the introduction, the editor formulates a number of questions that he believes are suggested by the contents that follow. Should this book stimulate intensified search for answers its purpose will have been served in an exceptionally worthwhile way. This monograph is recommended reading for all investigators in the field.

W. STANLEY HARTROFT

#### BOOKS RECEIVED FOR REVIEW

Books received for review by *The American Journal of Clinical Nutrition* are acknowledged in this column. As far as practicable, those of special interest are selected, as space permits, for extensive review.

*The Premature Baby*, 5th Ed., by V. Mary Crosse. Little, Brown & Co., Boston, 1961, pp. 266, \$7.00.

*Selected Films and Filmstrips on Food and Nutrition*, Food & Nutrition Council of Greater New York, 1961, pp. 72, \$1.25.

*1960-1961 Year Book of Endocrinology*, edited by Gilbert S. Gordan, Year Book Medical Publishers, Chicago, 1961, pp. 408, \$8.00.

*Progress in Medical Genetics*, Vol. 1, by Arthur G. Steinberg. Grune & Stratton, Inc., New York, 1961, pp. 341, \$9.75.

*Ciba Foundation Study Group No. 7, Virus Meningo-Encephalitis*, edited by G. E. W. Wolstenholme and Margaret P. Cameron. Little, Brown & Co., Boston, 1961, pp. 120.

*Ciba Foundation Symposium. Quinones in Electron Transport*, edited by G. E. W. Wolstenholme and Cecelia M. O'Connor. Little Brown & Co., Boston, 1961, pp. 453, \$11.00.

