

## BOOK REVIEWS

**Retinal Circulation in Man and Animals.** By I. C. MICHAELSON. 1954. Pp. 146, 95 figs. Thomas, Springfield, Ill. (50s.).

Michaelson's work on the retinal circulation both comparative and pathological is well known, and it is with pleasure that we have received this short monograph on the development and anatomy of this important part of the circulation in vertebrates. The study is essentially based on the appearances delineated by injections of Indian ink into the heart, the carotid, or the ophthalmic artery (depending on the size of the animal) soon after death, and is supplemented in many cases by ophthalmoscopic examination during life. Each class of vertebrate is studied in this way, particular attention being paid to such representative species as the eel, roach, frog, pigeon, horse, cat, rat, and man. The pattern of vascularization varies considerably among different vertebrates: in some (guinea-pig), the retina is almost avascular and its tissues are nourished almost entirely by diffusion from the choroid; in others (eel), there is no vascular choroid and the retinal vessels are maximally developed; in others (birds), a specially vascular structure, the pecten, contributes largely to the nutritional supply; and in all, many points of interest arise. Not the least important part of the work is the author's observations on the growth of new vessels and the comparison which may be drawn between the normal picture in various animals and some of the pathological changes which may occur in man. The book is original and in every sense interesting; incidentally, it is beautifully produced.

**Abstracts on Military and Aviation Ophthalmology and Visual Sciences, Volumes I and II.** By CONRAD BERENS and L. BENJAMIN SHEPPARD. 1953. Pp. 539 and 245. Biological Sciences Foundation, Washington, D.C.

These two volumes form a very useful summary of the literature on military and avian ophthalmology, the first abstracting relevant papers and books from the sixteenth century until 1940 and the second summarizing the enormous amount of work published in the years 1941 to the end of 1945. The immense impetus given to the study of visual capacity owing to the increase in the speed and performance of aircraft, the growing complexity of the machines of war, and the increased strains put on the sensory apparatus, now stretched to the limits of its capacity and beyond in the attainment of supersonic speeds, account for the fact that the two volumes are about equal in size, though one covers four centuries and the other only five years.

Each volume is divided into 93 sections comprising every aspect of ophthalmology which can be even remotely associated with military and avian activities. The subjects include such diverse topics as physiological studies of the light sense and the colour sense, methods of testing vision and the various standards which have been proposed, and the influence of such factors as glare, fatigue, drugs, refractive errors, and muscular imbalance upon visual performance. Much space is given to the literature concerned with visual environmental stresses such as high altitude, decompression, acceleration, and deceleration. Much of the available information on such topics is scattered and difficult of access, though much of it is of unusual importance and interest. The authors have done a great service in gathering it all together in a readily accessible form.



## Abstracts on Military and Aviation Ophthalmology and Visual Sciences

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