

Reviews

PHYSIOLOGY OF THE EYE

The Eye. Volume Two. The Visual Process. Edited by Hugh Davson. (Pp. 796+xviii; illustrated. £7 17s. 6d.) New York and London: Academic Press. 1962.

The Eye. Volume Three. Muscular Mechanisms. Edited by Hugh Davson. (Pp. 323+xvi; illustrated. 86s.) New York and London: Academic Press. 1962.

The Eye. Volume Four. Visual Optics and the Optical Space Sense. Edited by Hugh Davson. (Pp. 432+xvii; illustrated. £5.) New York and London: Academic Press. 1962.

Quite soon after the appearance of the first volume the remaining three books of this comprehensive treatise on the physiology of the eye have appeared.

The second volume, the largest of the series, is concerned with the visual processes. The first part, written by M. H. Pirenne, of Oxford, deals with the visual functions of the eye in general terms. It comprises a concise account of the nature and biological properties of light, the retinal receptors and their directional sensitivity, spectral luminous efficiency, the characteristics of dark adaptation and light adaptation, retinal thresholds, quantal fluctuations and lineal increments of brightness, visual acuity, flicker, and after-images. Thereafter F. H. C. Marriott, also of Oxford, has contributed an excellent résumé of the theoretical and practical aspects of colour vision. This is followed by a full and up-to-date section contributed by H. J. A. Dartnall, of London, on the photobiology of the visual processes which forms a readable and integrated assessment of our knowledge of the visual pigments. This volume is completed by an equally full discussion on the neurophysiology of the retina, the lateral geniculate nucleus, and the visual cortex by Ragnar Granit, of Stockholm.

The third volume of the series is American in origin. M. Alpern, of Michigan, has written of the extra-ocular muscles, their anatomical and physiological characteristics, the ocular motility and its anomalies in strabismus, as well as the function of accommodation. Otto Lowenstein and I. E. Loewenfeld, of New York, have discussed the pupils and their reactions; while the volume ends with a section on the secretion of tears and the physiology of blinking by W. K. McEwen, of San Francisco.

The fourth and final volume is on visual optics and the optical space sense. The first part, written by A. G. Bennett and J. L. Francis, of the London Refraction Hospital, is a straightforward and readable exposition of the (usually unreadable) subject of visual optics; and the last section by Kenneth Ogle, of the Mayo Foundation, gives an excellent account of the complicated principles underlying the optical space sense which must be read slowly if its value is to be appreciated.

This project is an ambitious one, but it has succeeded. It presents a consecutive and readable account of a vast subject which, apart from one or two sections, has constantly been changing, particularly over the last two decades. It is too elaborate for the non-specialist, but to the general physiologist and to those especially interested in the physiology of the special senses it provides the most authoritative and comprehensive exposition of the subject available to-day.

STEWART DUKE-ELDER.

BIOLOGICAL STAINING METHODS

Staining Animal Tissues: Practical and Theoretical. By Edward Gurr. Foreword by Sir Howard W. Florey. (Pp. 631+xii. 84s.) London: Leonard Hill Ltd. 1962.

The preparation of a stained section, a stained film of blood or of tissue fluid, is frequently the first step taken by the pathologist in formulating an opinion on the nature of a disease process and thereby accepting a measure of clinical responsibility. Badly stained material can, and often does, seriously reduce the clinical value of his observations.

The author of this book is "an organic chemist with a specialized knowledge of biological stains" and "an awareness of some of the problems and requirements of the biologist and medical laboratory worker."

It is impossible to deny that up to comparatively recent times "staining methods have been based more on myth and lore than on established scientific facts," and for this very sound reason the first part of Mr. Gurr's book is concerned with the mechanism and theory of staining reactions. This section is clearly written, does not demand a profound knowledge of organic chemistry, and will certainly help the histologist to cultivate the commendable habit of selecting a stain on the basis of its structural and chemical affinities rather than on its popular, and possibly uncontrolled, local reputation.

The second part of the book and its appendix bring together a large number of staining methods previously scattered throughout many books and journals. It forms a valuable bench book for everyday use and we predict that it will become well and polychromatically stained.

GEOFFREY HADFIELD.

RUSSIAN MEDICAL AND CIVIL DEFENCE

Medical and Civil Defence in Total War. By L. F. Supron and F. P. Zverev. Edited by A. P. Mukhin. (Pp. 406; illustrated. 78s.) Jerusalem: Israel Program for Scientific Translations. 1961.

The original from which this book was translated was published in Minsk in 1959 for the Ministry of Health of the Byelorussian Soviet Republic. It consists of eight chapters, of which four (one-half of the book) are concerned with the organization of civil defence. The remainder deals with the principles of atomic weapons, radiation sickness, war gases, and protection from radiological damage. Bacteriological warfare is mentioned in a few paragraphs only.

So long as weapons of man's destruction are held in readiness by all "Great Powers" one may feel that the medical profession has a duty to learn about their effects and be ready to assist stricken populations. This book in the original must be of real value to our Russian colleagues who are trying to equip themselves with the necessary knowledge as are numbers of ourselves. For example, the description of instruments for detecting and measuring residual radioactive contamination is detailed and clear; it is also almost entirely free from formulae, presumably because Russian doctors, like ours, usually study biology rather than mathematics in the upper grades of school.

Indeed, the striking feature of this long book is its general similarity to what we also have the opportunity to learn. For instance, the eight tasks of the M.P.V.O. (Russian Civil Defence organization) are given as:

"1. Administer expedient first-aid and medical aid to casualties."