

**Manual of Tonography.** By R. C. DREWS. 1971. Pp. 128, 89 figs, refs. Mosby, St. Louis; Kimpton, London. (£6.20)

The writer of this review holds some beliefs which are opposed to those of the author of this book, who states in his preface "To deny patients tonography is to set glaucoma care back 20 years". It has to be admitted, therefore, that the reviewer could not read the book without challenging the author to convert him from his disbelief, and it is to be hoped that the reviewer has not been unreasonably resistant to conversion.

The book starts off with a brief but interesting history of tonography, and this is followed by a short adequate account of the theory of tonography, including such matters as ocular rigidity. The basic errors of tonography are mentioned, mathematics being kept to a minimum—which is a good idea in a book concerned largely with clinical applications. It is pleasing to find that the routine correction of tonographical results for abnormal ocular rigidity is not recommended, because there is evidence that such corrections are not always valid.

There is a very useful section dealing with the equipment needed for tonography. This includes not only such obvious things as the various electronic tonometers and recorders, which are dealt with in some detail, but also other necessary items, such as something for the patient to lie on and something for the technician to sit on. These less obvious items are worth mentioning, because anyone who wants to do tonography properly will have to acquire everything that is needed, and the initial cost needs to be worked out carefully. Not only the money required has to be considered but also the space, and this point is also made. In fact, the author draws up a table of costs (unfortunately in dollars only) and makes no secret of the fact that a tonography unit is not cheap either to set up or to maintain and operate. His comments regarding the technician who is to use the equipment and do the tests are excellent; you must have somebody who is kind, intelligent and reliable. The section on the practice of tonography is clearly written and full of sound advice and is very useful not only to clinicians but also to the technicians who will do the tests.

In all the above respects this book is to be recommended, but, in the reviewer's opinion, it is disappointing when it comes to the problem of the clinical value of tonography as distinct from its undoubted value in research. As already mentioned, tonography is time-consuming expensive (even this book of 128 pages costs £6.20 in Britain). This would not matter if the procedure gave information of vital importance in the management of glaucoma patients and did not use up money and time which, with a limited budget, could perhaps be used on equipment and personnel for testing the visual fields. The author makes repeated statements about the clinical importance of tonography, but his assertions are not equalled in number by the items of factual evidence that tonography really does improve one's ability to diagnose glaucoma and really does prevent sight being lost in the long-term treatment of this condition. The author says that much evidence exists proving the value of tonography but he gives this evidence in general terms only.

The reviewer considers that the author should have devoted a section of this book to a critical and convincing review of this evidence because this would seem to be the best way of achieving the intention stated in the preface that "The purpose of this book is to help patients get better care".

**Biochemistry of the Eye.** Edited by C. N. GRAYMORE. 1970. Pp. 783, figs, tables refs. Academic Press, London. (£12)

This large volume consists of eight review articles written by ten authors, all authorities on their subject.

The cornea (D. M. Maurice and M. W. Riley), retina (C. N. Graymore), and lens (J. F. R. Kuck Jr.) are dealt with in a similar manner. The metabolism of the tissue is fully described together with the nature of the component proteins and enzymes, and any other substances which have attracted the attention of biochemists. The articles on the lens and retina also describe in detail the biochemical aspects of functional failure, cataracts, and retinal degeneration (hereditary and chemically-induced) respectively.

The cornea and sclera were the subject of a chapter by Maurice in "The Eye", volume 1, "Vegetative Physiology and Biochemistry", 2nd edition, published in 1969, also by the Academic Press. In this publication, Maurice fully reviewed the structure and function of the cornea, and Maurice and Riley have therefore concentrated chiefly on the biochemistry of the tissue.

Metabolism of the retina was also the subject of an article, also by Graymore, in "The Eye", vol. 1, there is considerable overlap between the two chapters, although the "Biochemistry of the Eye" contains a longer and more detailed account.

The lens was dealt with by two different authors in "The Eye", vol. 1. Kuck, whose contribution is divided into three chapters "Chemical constituents of the lens", "Metabolism of the lens", and "Cataract formation", is less informative about recent work on lens proteins, and gives more space to other chemical constituents, such as nucleotides and lipids.

The ciliary body and aqueous humour (D. F. Cole) and the vitreous body (E. R. Berman and M. Voaden) both have their counterparts by different authors in "The Eye", vol. 1. Dr. Coles' contribution is an interesting review of the composition of the aqueous humour and the processes by which it is formed and leaves the eye. Surprisingly little research has been done on the ciliary body itself, probably because it is difficult to isolate and to dissect with pigmented and non-pigmented layers. This important tissue deserves more attention from the biochemist. The chapter in the vitreous body is a full account of the structural aspects of and the movement of fluids and solutes through the structure.

Biochemistry of vision (C. D. B. Bridges) is a detailed review of present knowledge of all aspects of the visual pigments, in solution and in the eye, their nature, distribution, photo products, and changes associated with bleaching.

Unlike the others, the last two chapters are not concerned with one part of the eye, but with the effect upon the whole organ of inborn errors of metabolism in man (C. N. Graymore and D. Y. Y. Hsia) and of malnutrition, chiefly vitamin deficiency, in man and animals (D. S. McClaren). Neither chapter has much to say about the biochemistry of the eye, but this is not a criticism; very little is known about this aspect of the subject. Inborn errors are a fashionable topic and research on the subject is abundant. Nutritional research is not so fashionable, being frequently tedious and difficult. It may be in this field that the most important advances, in terms of benefit to mankind, are to be made; this chapter serves to emphasize how sketchy is our knowledge of the subject at the present time.

This book, which reaches a consistently high standard, will be valuable to research workers with an interest in any part of the eye, and essential for newcomers to the field. Apart from the important matter of expense to libraries or individuals, such comprehensive articles are time-consuming to write, and Academic Press are to be criticized for commissioning two similar volumes at almost the same time.

As the Editor points out, this is the third book to be entitled "Biochemistry of the Eye". The first (264 pages) was written by one author in the thirties, the second (323 pages) by two authors in the fifties, and this one (783 pages in 1970 is by ten authors. It will surely be the last attempt to cover the whole subject in one volume.

**Strabismus, Heterophoria, Ocular Motor Paralysis (Clinical Ocular Muscle Imbalance)** (Strabismes, hétérophories, paralysies oculo-motrices (Les déséquilibres oculo-moteurs en clinique)). By R. HUGONNIER and S. HUGONNIER. 3rd ed., 1970. Pp. 866, 270 figs. Masson, Paris. (Frs 130)

France has a reputation for producing men who have made valuable contributions to our knowledge of strabismus and its treatment, among whom in the past have been Javal Remy, Onfray, and Cantonnet and Filoziat. It is therefore most appropriate that another Frenchman has continued this tradition by writing a good textbook on the subject of strabismus. He is assisted in this work by his wife, who is a distinguished ophthalmologist.