BOOK REVIEWS

Refraction and Clinical Optics. Aran Safir, ed. Harper & Row Publishers Inc., Hagerstown, Maryland, 1980 (565 pages, 528 illustrations) (no price stated)

When T.D. Duane's "Clinical Ophthalmology" made its debut in 1976, the publishers announced their intention to reproduce some individual sections from the mammoth five volume series to allow anyone with an extensive library to add only the best and most useful portions of the series. "Refraction and Clinical Optics", which constitutes a separate binding of Chapters 31 to 68 of Volume I, is the first such section to be available separately. The chapter arrangement and contents adhere closely to the course outline for the "Basic and Clinical Science" course of the American Academy of Ophthalmology and Otolaryngology. After a brief introduction to physical optics and intraocular scattering by David Miller there is a lengthy review of geometric optics by Christian L. Kuether. Throughout the text the editor has intentionally avoided a formal mathematical treatment of optics and has attempted to substitute a more graphic and descriptive presentation. This is an onerous task when attempting to describe Gaussian optical systems. The poor apposition between the text and pertinent figures does much to thwart this attempted simplification.

The eye itself is described firstly as a simple optical system and then as a clinical refractive entity. This background provides a basis for successive descriptions of a variety of objective and subjective refracting procedures including retinoscopy, subjective refraction, cycloplegic refraction, cross cylinder testing, keratometry, and automated refraction. The optical principles involved in various clinical examination procedures such as biomicroscopy, ophthalmoscopy, gonioscopy, fundus photography and laser interferometry are also clarified.

An earlier reviewer for the Canadian Journal of Ophthalmology (*Can J Ophthalmol* 16:162, 1981) suggested that Safir's book might be useful as a supplement for Rubin's "Optics for Clinicians" in the teaching of ophthalmology residents. This ophthalmological relevance of the material is perhaps best exemplified by the inclusion of a description of the optics of urine refractometry while at the same time excluding any optical consideration of lens aberrations. From an optometric perspective the text's mundane approach to refraction and optics is unnecessarily awkward and simplistic. In spite of the contribution of an impressive list of authors, many chapters seem outdated and poorly referenced. They have in fact been subsequently revised in Duane's parent publication. The various chapters dealing with contact lenses, automated refraction and intraocular lenses have all undergone major content revisions in the original loose leaf series since Safir's 1980 publication. Bearing this in mind, it would no longer seem reasonable to select "Refraction and Clinical Optics" for your library.

Graham Strong
School of Optometry
University of Waterloo

Ocular Histology — A Text and Atlas (Second Edition) by Ben S. Fine and Myron Yanoff Harper & Row, Publishers, Inc., Hagerstown, 1979, pp 359, illus. U.S. $49.

Some years ago a board member told me that he liked to examine in ocular anatomy "because it never changes"; hopefully, today's graduates are spared this reactionary and uninformed attitude. Thanks to the introduction of transmission electron microscopy (TEM) into eye research coupled with developments in histochemical methods and later followed by scanning electron microscopy (SEM) and sophisticated autoradiographic and other tracing techniques, the body of knowledge of ocular anatomy has expanded dramatically over the past quarter of a century.

Since this book is an outgrowth of a section of a course in ophthalmic pathology presented at the U.S. Armed Forces Institute of Pathology, it is hardly surprising to find clinical observations in the form of external and fundus photographs, fluorescein angiograms and other examples of clinical relevence highlighting the anatomical observations. The bulk of the text leads the reader in a logical, even programmed, way from elementary microscopy to contemporary anatomical research at the time of publication. An introductory chapter describes the theory, techniques and interpretation of TEM and SEM in a manner readily intelligible to the non electron microscopist. Several chapters explain cytologic terminology and the classic concepts of membrane structure. Intracellular organelles and cytoplasmic inclusions are introduced with some indications as to their functions and examples of ocular structures when they are encountered.

Interrelations between cells are covered briefly

and clearly. Consideration of extracellular materials such as collagen, mucinous materials and minerals leads naturally into basement membranes of the various types existing in the eye. Appropriate definitions, conventions and general descriptions are provided prior to the structure by structure description of the eye. Starting with the retina and proceding via the vitreous, lens, cornea and sclera, uveal tract, anterior chamber angle to the optic nerve and adnexa, each ocular tissue is considered from its embryonic origins through gross morphology to light histology and EM cytology. The whole book is liberally illustrated with light and electron (TEM and SEM) micrographs of outstanding quality, mainly from human material. These are enhanced by informative line diagrams and schematics. Standard metric purists will find the retention of the archaic units micron (/) and Angstrom (Å), rather than the recommended micrometre (/ m) and nanometre (nm), irritating. However, as with any five year old text it is possible to question minor points, concepts and terminology and these are far outweighed by the overall quality of the whole.

Eye care clinicians, students and educators will find that this book provides a good foundation for appreciating recent advances in our understanding of the pathological basis of a number of ocular conditions. Those whose anatomy ocular texts were/are limited to Spooner's "Ocular Anatomy", Wolffe's "Anatomy of the Eye and Orbit" or Volume II of Duke-Elder's "System" should be impressed and stimulated by "Ocular Histology". Unfortunately extraorbital structures other than the lids are not included and an up-to-date text including this information is needed and perhaps Gordon Ruskell's anxiously awaited book will fill this gap.

Anthony P. Cullen, M.Sc., O.D., Ph.D., F.B.C.O.
Professor of Optometry
University of Waterloo