BOOK REVIEWS


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 ascription 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 refractioning 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 In spite of the contribution of an impressive list of authors, many chapters seem outdated and poorly referenced.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.

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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 relevance 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 proceeding 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 (µ) and Angstrom (Å), rather than the recommended micrometre (µm) 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/or 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 Ruscell's anxiously awaited book will fill this gap.

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The Canadian Optometric Education Trust Fund
Invites
Applications for Funding
under the awards schedule for the
1985 Grant Program

Purpose of the COETF

Recognizing the need to support the continuing growth and development of the profession of Optometry, the COETF is prepared to financially assist the educational, research and manpower programs deemed by the Trustees to be more important to achieving these goals.

Suitably trained optometric manpower, and the profession's continued access to that manpower is vital to our academic evolution. The COETF supports faculty development in our schools of optometry, graduate students in specialized educational programs and investigative research by undergraduate students.

Ongoing research undertaken by the optometrist in private practice is just one type of professional development program which optometry must continue to initiate. The COETF supports projects established in a clinical environment to assist the visually handicapped and to assist other optometrists through preparation and publication of the details of these clinical research studies.

A third Canadian school of optometry is of vital concern to the profession. The ongoing activities of our two existing schools are just as important. The COETF supports needed alterations and renovations at both schools presently operating and stands ready to substantially assist in the operating cost support of a new school of optometry in Canada.

Continuing education in the 80's must be regular and structured as technology sweeps the profession forward into new methods and discoveries in the delivery of complete vision care. The COETF supports the development of an academic Chair of Physiological Optics and Continuing Education to meet these ongoing needs.

The Canadian Optometric Education Trust Fund invites your support in this "Vision of the Future". If you are (or know of) an optometric practitioner, student, educational institution, service organization or member of the general public who is presently involved in, or planning a program that meets any of the goals outlined above, then assistance might be available to achieve the project's objectives.

Write to us, using the application in this issue of the COJ, by February 15, 1985. The Trustees assure that all projects meeting the purposes of the Fund will be given serious consideration.

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