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## BOOK REVIEWS

### ***Choroidal Circulation***

Gisbert Richard

Georg Thieme, Stuttgart, 1991.

This extensively illustrated and referenced book attempts to review the literature on the anatomy and physiology of the choroid, followed by interpretation of video angiograms of patients supposedly suffering from choroidal ischaemia.

With regard to the anatomy and physiology of the choroid, the author gives the results of many publications leaving the reader confused as to what the facts actually are:

The high oxygen content of the venous blood is regarded as a peculiarity of choroidal circulation. The venous oxygen content is only 2–4% lower than that of the arterial blood (Bill *et al*, 1983). The arteriovenous oxygen difference in the retinal vessels is reported as 35% (Tornqvist and Alm, 1979) or as 38% (Hickam *et al*, 1963). Alm and Bill (1970) measure an arteriovenous oxygen difference of 1.02 Vol.% in the uvea in cats, Elgin (1964) 0.4–0.9 Vol.%/uvea in dogs, while Bill *et al* (1983) arrive at a value of 2–4 Vol.%/choroid; Neisel (1980) reports 4%. The oxygen saturation in the venous blood of the uvea amounts to more than 90% and is therefore higher than in each other organ. He states that the 'mechanism' which causes the lower arteriovenous oxygen difference through the uvea is unknown. The O<sub>2</sub> consumption in the uvea and the outer retinal layer is reported as 2.5 mL/min/100 g (Alm and Bill, 1970). The high oxygen content of the venous blood is of great significance for a possible retrograde filling of the choriocapillaris units with disturbances of the choroidal circulation.

and

Thus the main ciliary artery, whose branches perforate the sclera at a point medial to the optic nerve, is described as the medial posterior ciliary artery. It can exist singly (in about 70% of examined eyes) or doubly (in about 30%; Hayreh, 1962, 1983a). The lateral posterior ciliary artery runs lateral to the optic nerve and can exist singly (in about 75%) or doubly (in about 20%), or it can be missing altogether (in about 3%; Hayreh, 1962, 1983a). A superior posterior ciliary artery is only found in about 9% (Hayreh, 1962, 1983a) or in one-third of examined eyes (Weiter and Ernest, 1974) and can have 1 branch (in about 7%) or as 2 small branches (in about 2%; Hayreh, 1962).

Ducournau *et al* (1981) found 3 main ciliary arteries in 50% of the examined (human) eyes and more than 3 main ciliary arteries in 25%. Commonly, 2 lateral posterior ciliary arteries (in 50% of the examined eyes) or 2 medial posterior ciliary arteries are found on the corresponding side of the optic nerve. Of these 2 vessels, one always proceeds at a distance of 1–2 mm from the optic nerve while the second nestles directly against the optic nerve. If, on the other hand, only one main ciliary artery is present on one side of the optic nerve, then this one divides early into

2 branches, of which one, again, runs in contact with the optic nerve, the other at a distance from it.

The section on video-angiography is beautifully illustrated. However, the value of angiography over careful ophthalmoscopy is not convincingly discussed.

This book is perhaps of some value as a reference book for consultant ophthalmologists with a special interest in medical retinal diseases. However, it is of limited value for ophthalmologists in training.

Gawn G. McIlwaine

### ***Manual of Systematic Corneal Surgery***

Arthur D. McG. Steele and Colin M. Kirkness

Churchill Livingstone, Edinburgh, 1992.

Once upon a time, corneal surgeons would have regarded their craft as being the epitome of microsurgical elegance, taking equal pride in the pleasing symmetry of their sutures and the spherical refraction of their results. Their textbooks of surgical technique needed to be large in order to accommodate the lengthy descriptions and numerous illustrations of their art. Fortunately this is no longer the case and the authors of this compact volume have proved that it is possible to create a clear and concise exposition of the basics of corneal surgery. The work is well illustrated (over 40 colour pictures and more than double that of line drawings), the text is detailed and yet the result is a highly readable and practical volume which is less than 100 pages in length.

The book cannot be described as pocket sized (although it would fit comfortably into a handbag) but for all that it manages to cover a wide range of subjects in a way which is both comprehensive and economical. As might be expected, nearly a third of the book is taken up with the topic of penetrating keratoplasty but many other subjects are dealt with in detail. Starting with basic corneal surgical and anaesthetic techniques, the authors also describe lamellar grafts, conjunctival flaps and the latest refractive and laser surgical techniques.

In their preface, the authors suggest that the work is intended for the occasional corneal surgeon, but many others would find it useful. The experienced corneal surgeon will value the thoughtful approach as a yardstick by which to measure his or her own techniques. Likewise, the Resident or Fellowship student will benefit as should any ophthalmic operating theatre staff. It deserves the widest

readership of anyone with more than a passing interest in corneal surgery.

P. A. Hunter

***Optics and Refraction: A User Friendly Guide***

S. M. Podos and M. Yanoff

Gower Medical Publishing, New York, 1991.

This book is entitled 'a user friendly guide'. It is certainly the most readable book on optics that I have ever come across as it is unusually presented with many diagrams and interesting illustrations and the reader is continually tempted to turn the page to see what comes next.

The subject matter is covered in some depth and there are interesting paragraphs on current issues such as the problems experienced by VDU users and whether it is harmful to wear dark glasses. Also there is a whole chapter on corneal refractive surgery. This book is going to be enjoyed particularly by readers who are already familiar with the basics of optics and refraction and who wish to enhance their knowledge of details such as lens tints, contact lens optics and contrast sensitivity which tend not to be well covered in more basic texts. It is a little too deep for use as a starter text-book for the trainee with no knowledge of optics, as the basic physical optics of reflection and refraction by mirrors, lenses and prisms is assumed and not covered.

This is definitely a book for the library and one which is almost bed-time reading because of the 'user friendly' presentation.

H. Frank

***Manual of Ocular Diagnosis and Therapy, 3rd edn***

D. Pavan-Langston

Churchill Livingstone, Edinburgh, 1991.

The third edition of this manual has been extensively revised to accommodate new developments in diagnosis and drug therapy. Its stated aim is to provide a practical book on ocular diagnosis and therapy for both junior and senior ophthalmologists.

The book has the advantage that its chapters are written by different authors with expertise in that particular field. They are generally up to date, concise and accurate and contain a commendable level of detail for such a small volume. The chapters on cornea and external disease and paediatric ophthalmology are particularly good and cover a number of areas which are often omitted in much larger texts.

This manual will have wide appeal to all ophthalmologists. For those who are just embarking upon the specialty it contains a large amount of useful information on examination techniques and differential diagnosis of both common and rare ocular disorders. For the more experienced ophthalmologist it constitutes an extremely up to date and comprehensive reference source for all ocular medications. It is particularly strong on dosages of topical systemic and intraocular antibiotics which are often difficult to locate, particularly when they are needed most!

A. K. Bates