Book reviews

developments in terms of rhodopsin transport and the role of the interphotoreceptor matrix. This section finishes in the field of molecular biology with an extremely useful description of the role of genes in retinoblastoma.

The final section on functional organisation of the retina gives the reader an insight into the advances facilitated by the use of modern biochemical techniques and intracellular recording systems. Particular emphasis is given to the role of monoclonal antibodies in eliciting further information on transmitter systems in the neural retina.

This is a delightful book, beautifully written and well illustrated, and one that I would recommend to all my colleagues who have an interest in understanding the ways in which the retina works. I particularly recommend it to clinical ophthalmologists, for from one all too short volume they will be able to assimilate a quarter of a century of research. I congratulate the authors and now look forward to future volumes in this series.

JOHN MARSHALL

Spatial Vision. By RUSSELL L DE VALOIS AND KAREN K DE VALOIS. Pp. 381. £65.00. Oxford University Press: Oxford. 1988.

This monograph represents a summation of the experimental results and the views of this extremely distinguished team, and as such is welcome: it is a view of the visual world from Berkeley, and an interesting one at that. It will be used by those active in the field as a valuable source. The authors' presentation is heavily influenced by their belief that a form of piecewise harmonic analysis is carried out in the visual system. They adduce much evidence for this idea. For example, under certain circumstances cortical cells respond to the higher harmonics contained in a square wave grating as though they were carrying out a frequency analysis; the actual harmonic content is of course not perceived at all by the observer. For this reason Chapter 1 consists of a very clear and well illustrated introduction to linear systems analysis, pitched initially at so low a level that this reviewer anticipated that the book would consist of expanded lecture notes for students. However, parts of the book are extremely detailed, and there is no attempt to survey the field. Thus, although the first chapter ends with a warning, 'Quite different from applying Fourier analysis . . . is the construction of a machine to *carry out* Fourier analysis,' non-linearities are discussed only in the last chapter, no school of work which presents contrary views is mentioned, and the problem of how the brain defines both amplitude and phase is treated in a sanguine manner.

It is thus not clear for whom the monograph is designed. Its main concern is neurophysiology, and the applications to sensory psychology are very much secondary. It covers the entire visual system, dealing with optics, the anatomy of the visual pathway, retinal histology, photochemistry and visual transduction en passant. While each section would be required in a general textbook the emphases here are quite different. Thus the cortical magnification factor receives five pages (the authors have contributed to this problem by 2-deoxyglucose studies, and reproduce a handsome illustration), while the anatomy and histology of the primary, secondary, and tertiary cortical areas merit one page and no figure. Again, clinical measurement of low-frequency

contrast sensitivity is discussed, and in view of the authors' bias one might expect them to be enthusiastic. But: 'Many causes of high spatial frequency sensitivity loss are optical, and if so can often be alleviated by . . . spectacle lenses. Low spatial frequency losses in sensitivity cannot be corrected by such simple measures. Purely on practical grounds . . . it makes sense for clinicians to expend their limited time and resources on those problems which can be alleviated rather than others . . . which cannot be treated.'

Arguments such as that and omissions such as those noted above must detract from the book; moreover there are other problems. The section on transduction is out of date: there is no mention of the response shaping in peripheral retina, or the colour organisation of the primate visual system described last year by Hubel and Livingstone. Maybe the authors are not convinced by this work, but they should not dismiss it with a reference to 'Tootell *et al.* in preparation.' This is particularly unfortunate because their plate showing false colours is poor. It shows a red-yellow and a red-blue chequerboard, in which reds are meant to differ because of Bezold's effect. Although, as the caption states, the two sets of red squares *do* look different, this is due at least in part to very bad colour printing and not to any psychological or neurophysiological property of the viewer's visual system. Also, in general, the text refers to, but does not describe, the experiments and the results shown in the figures, and the captions are not in themselves long enough to provide instant understanding. This, combined with pages in which detailed arguments are highly compressed does not make for enjoyable reading.

G B ARDEN

The Vitreous and Vitreoretinal Interface. Eds CHARLES L SCHEPENS AND ADOLPHE NEETENS. Pp. 315. DM 128.00. Springer-Verlag: Berlin. 1987.

This book has been compiled by two of the more senior members on the international ophthalmic stage. There are 18 chapters, all dealing with different aspects of the vitreous. The book has been very well produced, and the overall effect is extremely pleasing. The chapter layout is clear, and the illustrations mainly of a very high standard, although it might have been nice to see more colour. (The legend for Fig. 2 on page 238 is inaccurate.)

As one would expect in a book devoted to a subject about a structure that is difficult to see and about which we are still extremely ignorant, the link between what is actually known and the clinical situations to which this knowledge is applied is rather tenuous. It is not therefore surprising that vitreoretinal surgeons would not agree with many of the clinical interpretations contained in this book. For example, it is surprising to see the use of intraocular gases under the title of 'vitreous substitution'. Again, the explanation of macular oedema in diabetes is contentious, as are the views expressed about open sky vitrectomy. One of the main clinical tools we have for studying the vitreous, particularly when there are opacities of the media, is ultrasonography. Many readers might have preferred a more thorough account of the diagnostic and prognostic value of this technique. Each chapter has been carefully referenced, with an extensive literature to allow further reading.

Anybody reading the book will come away with increased knowledge of this complex and challenging topic. I thoroughly enjoyed it and would recommend others involved in this work to read it.

A H CHIGNELL

Advances in Ophthalmic Plastic and Reconstructive Surgery. Vol. 6. **Orbital Trauma**, Part 1. Edited by STEPHEN L BOSNIAK. Pp. 419. No price given. Pergamon Press: New York. 1987

Advances in Ophthalmic Plastic and Reconstructive Surgery. Vol. 7. **Orbital Trauma**, Part 2. Edited by Stephen L Bosniak. Pp. 351. No price given. Pergamon Press: New York. 1987.

These two volumes are the latest additions to the series 'Advances in Ophthalmic Plastic and Reconstructive Surgery'. 'Advances' is a misnomer, as the volumes contain reprints of classic historical monographs and dissertations on long-accepted techniques. However, the two volumes provide an extensive review of the topic with much of interest to the general ophthalmologist.

Both are multiauthor texts, and the reader is exposed to differing approaches to common problems such as blow-out fracture and the anophthalmic socket. The absence of unanimity highlights the fact that more advances are needed before ideal solutions are found.

The scope of the books is broad, with separate and often several chapters on traumatic optic neuropathy, fractures, traumatic ptosis, burns, and penetrating and gunshot wounds. Much of both volumes is devoted to fractures in the orbital region, with contributions from neurosurgeons, otolaryngologists, and plastic surgeons. These additions serve to inform the reader of techniques available to their patients and as such are valuable to the ophthalmologist. Each chapter has an extensive bibliography and each volume has a key word and author index.

A MCNAB

Atlas of Ophthalmic Surgery. Vol 2. **Cornea, Glaucoma, Lens.** Eds KLAUS HEILMANN AND DAVID PATON. Pp. 268. DM 270.00. Georg Thieme Verlag: Stuttgart. 1987.

The second volume of this atlas continues the same excellent pattern of combining superbly clear illustrations with a concise text; it has 18 internationally respected authors.

The first four sections cover anterior segment micro-surgery of the cornea, chamber angle, ciliary body, lens, and trauma, with descriptions of 29 different procedures ranging from eight techniques in the management of cataract to more esoteric operations, including three types of block excision of the ciliary body. The final section describes the management of corneoscleral lacerations and anterior segment reconstruction.

The editors point out that it is not possible to include every surgical procedure. There is certainly a comprehen-

sive coverage of anterior segment procedures, but I think the account of keratorefractive surgical techniques should have been expanded beyond radial keratotomy, particularly to include the management of astigmatism. Modification of the techniques described would cover most other eventualities.

The particular value of this book is in allowing the reader to study in detail the techniques developed by surgeons highly skilled in these anterior segment procedures. The 561 step-by-step illustrations are accompanied by a short didactic text. The artwork is remarkable in its clarity, and there is never any confusion about the manoeuvres being demonstrated.

I would recommend this book to ophthalmic surgeons at all levels. The initiate would appreciate the clear step-by-step approach to the individual surgical procedures both to complement the early teaching and to clarify those operations not yet experienced. Many experienced surgeons studying this atlas may choose to modify their established technique in routine surgery and would like to refer to the book before performing the less common procedures.

R WILSON

Contemporary Issues in Ophthalmology: Refractive Keratoplasty. By IVAN R SCHWAB. Pp. 316. £45.00. Churchill Livingstone: Edinburgh. 1987.

While certain areas of refractive surgery have deservedly attracted a bad reputation, this burgeoning subspecialty has much to offer selected patients. This multiauthor volume is an excellent, up to date guide to the main techniques. Lamellar procedures such as epikeratophakia, keratomileusis, and plastic corneal inlays are covered as well as the incisional procedures such as radial keratotomy and relaxing incisions. Every chapter is easy to read, authoritative, and includes a comprehensive reference list. Inevitably some authors are rather too keen on their own techniques, but the average critical British ophthalmologist should have no problem in sorting the wheat from the chaff.

B L HALLIDAY

Immunopathologie de l'Oeil. By J P FAURE, E BLOCH-MICHEL, P LE HOANG, E VADOT. Pp. 430. 600F. Masson: Paris. 1988.

The authors of this book, which is in French, aim to cover all disorders affecting the eye which have an input from the immune system. In the introductory chapters they attempt to summarise current concepts in general immunology and specific knowledge of immune mechanisms in the eye. They describe in detail the immunopathology of a wide variety of ocular diseases, including infections, chronic inflammatory processes of all types, ocular tumours, and also corneal grafting.

In general, they achieve their aim, and the book will be useful for reference. An English edition would be necessary for readers whose French has not advanced beyond, at best, O-level standard.

SUSAN LIGHTMAN