catalogue of uveitic syndromes; it includes, for example, diseases such as polychondritis and Sjögren's syndrome. Its approach is disease orientated, so that scleritis is, for example, discussed mainly under rheumatoid arthritis and alluded to elsewhere rather than discussed in its own right as an ophthalmic entity.

The chapters are headed sarcoidosis, systemic vasculitis syndromes, systemic lupus erythematosus, eye and joint disease, psoriasis polychondritis and bowel disease (a slightly odd grouping), and finally infectious disease and the eye. There is a rather uneven emphasis on some conditions. There are, for instance, 16 pages on sarcoidosis, 10 on SLE, and only half a page on AIDS. The general arrangement is to describe the systemic features and the type of ocular involvement with notes on the aetiology, diagnosis and, briefly, treatment, with short descriptions on immunopathology and aetiology—which I found the most interesting. Each chapter is very well referenced and illustrated with black-and-white photographs, many of which are unfortunately rather poorly reproduced.

Books such as this have a difficult role, for they often fail to satisfy either ophthalmologists or general physicians because the volume of material to be covered is so large. For instance, most ophthalmologists will want to dispense with the first chapter on ocular signs, though it may be of interest to physicians, and vice versa the same may apply to some of the medicine. The ratio of general medicine to ophthalmology on each topic varies considerably but is probably in the ratio of two-thirds medicine to one-third ophthalmology. I found, not surprisingly, that the ophthalmology was better done.

Ophthalmologists may use the book as a short handbook but will want to turn to the larger textbooks for more complete descriptions of systemic diseases or the conventional ophthalmic specialist texts for a fuller discussion of complications and treatment. It does, however, contain much easily readable information and will certainly find a role for quick and easy reference. It is a pity that the publishers did not do a better job on the presentation of the material for their author.

D J SPALTON

Ophthalmic Echography. Proceedings of the 10th SIDUO Congress. Edited by K C OSSOINIG. Pp. 625. £95.50. Kluwer: Dordrecht, Netherlands. 1987.

This book presents the proceedings of a congress held in 1984, but the contributions have been adapted for publication in 1987. It contains 103 papers drawn from 16 countries and is divided into three parts. The first part is dedicated to biometric ultrasound; the second and third parts deal with diagnostic ultrasound in intraocular and orbital and peri-orbital disease, respectively.

Some worthwhile papers dealing with axial length measurement and intraocular lens implant power calculation, corneal thickness measurement, and retinal/choroidal/scleral thickness measurement are presented in part 1. Fortunately there appears to be a heightened awareness by some authors that the major source of error in axial length measurement is misalignment of the probe. Fourier analysis techniques are used by several authors in the measurement of retinal/choroidal/scleral thickness, and there is a

refreshing recognition that echoes detected on A or B mode do not necessarily correspond to the boundaries of these interfaces.

Part 2, dealing with intraocular diagnosis, contains a mixture of the well known and the controversial peppered with some interesting and worthwhile observations despite many very poor greyscale/bistable displays. One paper claims A mode is useful in the differentiation of spindle cell and epithelioid malignant melanoma, an observation which is contradicted by the following paper. Other papers look at the response of malignant melanoma to radiotherapy. Some describe doppler techniques, but surprisingly duplex imaging (combined simultaneous doppler and real-time B mode) in ophthalmology is mentioned but not used or referenced in this context. Colour doppler imaging is not mentioned.

A series of papers on orbital disease are to be found in the final part of the book. Some interesting observations and useful measurements are presented in some papers. In the concluding appendix, dealing with the therapeutic use of ultrasound in choroidal detachment, which is recommended to us by the authors, there is some confusion whether three patients or 42 patients received this ultrasonic treatment.

This book will be of interest to those actively engaged in the field of ophthalmic ultrasound but at £95.50 is unlikely to appeal to those on NHS salaries.

MARIE RESTORI

Proceedings of the Retina Research Foundation Symposium. Vol 1. Edited by DOMINIC MAN-KIT LAM. Pp. 220. US\$ 24.95. Portfolio Publishing Company: The Woodlands, Texas. 1988.

Normally the published proceedings of symposia are among the most frustrating volumes presented to the scientific community. For those who attended the symposium they are sometimes helpful as aide mémoires, but to those who did not they often appear as a series of disparate papers with little co-ordination of subject matter and great variation in scientific content and literary style. This volume is unique in that it will delight its readers from cover to cover.

It is divided into three sections—physiology of photoreceptors, molecular biology and biochemistry of photoreceptors, and functional organisation of the retina. In each section significant advances have been made over the last few years, and these advances are related to a great extent by their discoverers. Few books of this type have contributions by such eminent authorities as Sir Alan Hodgkin, Professor H Gobind Khorana, and Professor John Dowling. Each of these are at the forefront of their field but still retain the capacity to relate the complexities of their work to the interested reader.

The section on physiology of photoreceptor cells is a model of clarity and with three contributions is a must for all students in the field of phototransduction. After reading these three papers it would be very difficult for any student to fail an examination on this subject.

The clarity of the text and the comprehensive nature of the contents are maintained in the section on molecular biology and biochemistry of the photoreceptors. Here the latest developments in the structure and function of rhodopsin are described together with the important recent

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.