

Book reviews

Photoprocesses, Photoreceptors, and Evolution. By J. J. WOLKEN. 1975. Pp. 317, 152 figs, tables, bibliog. Academic Press: New York (£11.90)

'And God said, let there be light: and there was light. And God saw the light, that it was good'. Then He brought forth living creatures—first plants, then fishes and birds, then land animals, and finally man.

Light has been associated with life since its origin and all forms of life are dependent for their living on the absorption of solar energy. To utilise this energy effectively photoreceptor systems developed so that a process of photosynthesis could convert light energy into chemical energy for cellular metabolism. The vast scale of the process is seen in the surmise that 100 billion tons of organic compounds are thus synthesised each year. The response of living creatures from phototropism in plants to phototaxis in motile organisms to vision in the higher types is discussed. As these phenomena evolved from bacteria and fungi to plants and animals a vast variety of structures is utilised, from dermal sensitivity to specific eye-spots and finally the retina, as well as several specific molecules constituting pigments or pigment-systems to absorb the light energy. The author has described the structures of these—porphyrins, chlorophylls, carotenoids, flavins, and other types—integrating the researches of a number of authorities with his own. Although morphological distinctions in the organs thus developed among plants and animals are marked, the interesting conclusion is reached that a common molecular basis for all photoreceptor systems exists despite the multitude of these structural variations. The phenomena of photoperiodism and the nature of photochemical memory as well as of bioluminescence are also discussed.

The book is ambitious and its territory wide, but the author has undoubtedly succeeded in his task. The reader will require to overcome any antipathy he has to chemical formulae, but the book contains a vast store of information skilfully presented and has a plentiful supply of beautiful illustrations, including some fascinating photomicrographs and a useful and up-to-date bibliography for further reading. STEWART DUKE-ELDER

Advances in Vitreous Surgery. Edited by A. R. IRVINE and C. O'MALLEY. 1976. Pp. 720, figs, tables, refs. Charles C Thomas: Springfield, Illinois (\$51)

This book has been compiled from the contributions to a conference on recent advances in vitreous surgery held at the University of California Medical Center in 1974. Unlike so many publications which arise from symposia, the editors here have contrived to produce a volume which can be fairly described as excellent. Despite there being 50 contributors the work is comprehensive and well balanced.

The 63 chapters are divided into 12 parts. The first two parts deal with vitreous structure and examination of the vitreous body and the patient. Parts three and four deal with the surgical techniques of both the anterior and pars plana approaches. The next three parts deal almost entirely with different aspects of modern instrumentation. Parts 8–11 deal with different aspects of vitreous surgery which are related to specific diseases, apart from vitrectomy. In part 12 there are conjectures about future developments, with special emphasis on ultrasonic instruments.

It was provoking though stimulating to find that so many of one's ideas for the advancement of instrumentation, like cryofixation of the globe, have passed beyond the stage of debate to be put into practice, though it was pretty obvious from the proliferation of different instruments, both for vitrectomy and for the management of intraocular haemorrhage, that scope for improvement remains wide open.

Of particular interest also were the excellent papers on massive vitreous retraction (OKUN, Scott) or massive preretinal proliferation (Machemer) and the six chapters on the various aspects of diabetic retinopathy, which continues to be the main source of vitreous problems and the greatest stimulus to further work.

A. D. MCG. STEELE

Management Complications in Ophthalmic Plastic Surgery. Edited by D. B. SOLL. 1976. Pp. 379, figs, refs. Aesculapius Publishing Co: Birmingham, Alabama, USA (\$55)

This elegantly bound, printed, and illustrated volume from the USA, written by some 20 ophthalmologists and plastic surgeons, attempts, once again, to chart the no-man's land between ophthalmology and reconstructive surgery. Unhappily, it is only a partial success, and rather an expensive one at that. This must be largely due to the ponderous and unmanageable title under which the many distinguished contributors have been obliged to write. 'Complications' in this field of orbital, lachrymal, and palpebral reconstruction are almost always the result of the wrong operation or of the right operation done badly, and one has great sympathy with the authors whose only real message (which does emerge through the repetitive and contrived passages on complications) must be 'do it properly'.

Of the 17 chapters, all of which provide useful information for the newcomer to this field, two may be singled out for comment. That on orbital fractures is excellent, in that it is succinct, well written, and practical in its approach. By contrast the chapter on eyelid reconstruction is sadly inadequate. Operations of this sort account for much of the surgery in this field, and the real problems (and the complications) arise only when large defects, exceeding 50% of the full thickness of an eyelid, must be made good. The reader will search this chapter in vain