

In the objective electrophysiology – the electroretinogram, slow potentials, and spike activity, lateral geniculate and cortical response, receptive fields, etc. – which occupies the first three of the eleven chapters of the book, the author's researches dovetail with much current work, and he gives an interesting and detailed review of the present situation as he sees it.

In all, this is a book that every library concerned with the visual sciences will need to have.

Postoperative Disturbances of Wound Healing. (Postoperative Wundheilungsstörungen.) Edited by F. W. GIERHAKE. 1970. Pp. 74, 15 figs. Springer, Berlin. (DM 19.80.)

In this stimulating work, the authors deal with disturbances of primary wound healing from both bacterial and other more mysterious causes. When accurate records of careful observations are analysed they find an overall figure of 10 to 15 per cent. abnormality in healing. It is most important to rely on careful statistics and not estimates and subjective impressions, and the examination of records of over 30,000 general operations cover series both before and after the second world war. The incidence of complications shows no change despite the introduction of antibiotics which may indeed have led to less strict asepsis in surgery. The role of bacteria and antibiotics is detailed and other factors are considered. The age of the patient and acuteness of the condition concerned are important; time of year is not. Figures vary with the nature of the operation but the statistics for different series of the same operation are consistent. Although the patient's age and the duration of the operation are two factors which have worsened recently, improved anaesthesia and earlier mobility have countered them. The references and index are good and the editor's observations on the principles of sound wound healing, and especially his insistence on the need for continued asepsis, will apply to ophthalmic surgery as much as to the general surgery he considers.

Physiological Bases of Light and Colour Sensations. (Physiologische Grundlagen der Helligkeits- und Farbempfindungen.) By W. STARKIEWICZ. 1970. Pp. 128, 41 figs, 81 refs. Ophthalmological Monographs No. 39. Thieme, Leipzig. (D.M. 37.)

The author surveys the physiology of vision and the relation of the physiological data to the perception of light and colour. He believes that only under unusual conditions are the perceptions strictly related to the stimulus and the physiological processes in the retina and the optic pathways. Under normal familiar circumstances, the impressions are modified by psychical adaptation, especially by verbal associations mediated from Broca's centre. The author calls this auditory cooperation a "verbal reflex". It appears difficult to distinguish between normal and unusual circumstances. Further, the reviewer calls as witness Duke-Elder who stated that "the vision of colour in normal illumination is no less problematic than vision in abnormal illumination". The combination with tactile impression, which the author recommends for the re-education of a faulty localization after squint operations, has been practised for a long time. The statements that psychological adaptation can succeed in perceiving as upright an image which has been inverted by a "prism" and that a nervous impulse is travelling up to a "meningeal" centre are obvious mistakes. The author believes in the generally accepted three-cone colour theory of Young-Helmholtz. The explanation offered by this theory for the phenomenon of simultaneous and successive contrast, and that of complementary-coloured after-images is not very convincing, though it has to be admitted that Hering's teaching of dissimilation and assimilation is also open to criticism. The old conception that different sense perceptions have to make use of different nerve fibres is controversial, since it has been demonstrated that elements in the optic nerve and in the lateral geniculate body react differently to an "on" stimulus of light waves than to an "off" stimulus. It is conceivable that the same cone reacts in eliciting a different colour sensation by different wavelengths of light. Hitherto even the electron microscope has shown no anatomical difference between the cones which are supposed to react independently on red, green, or blue light waves. The author describes with remarkable certainty,

the electrical processes in the bipolars and higher up to the red, green, and blue cortical centres. This is illustrated by schematical pictures.

An appendix describes an electric "eye", consisting of photo-electric cells, which transmit optic stimuli to levers acting on the skin. These tactile impressions should enable a blind man to avoid obstacles when walking.

Physiology of the Retina and Visual Pathway. By G. S. BRINDLEY. 2nd ed., 1970. Pp. 315, illus., bibl. Arnold, London (Monographs of the Physiological Society, No. 6). (£4.50)

The second edition of Professor Brindley's book is an important event. There have been enormous advances in visual research in the last 10 years, many of which are incorporated in this monograph. Half of the book is devoted to physiology and half to visual psychophysics.

The new material deals mainly with photochemistry, the early receptor potential, and intracellular records from retinal cells. The central pathways of vision are treated somewhat sketchily. The most important work on the visual cortex (by Hubel and Weisel) is given three pages; the same allocation as is made elsewhere to interesting but inconclusive work on electrical phosphenes. There is little treatment of recent developments in experimental neuroanatomy, and no mention of the psychophysics of binocular vision. Thus, as is admitted in the introduction, the coverage is idiosyncratic, but what is dealt with has authority and distinction.

Stereoscopic Atlas of Slit-lamp Biomicroscopy. Vols I and II. By A. E. BRALEY, R. C. WATZKE, L. ALLEN, and O. FRAZIER. 1970. Pp. 225, 213 figs, 210 stereoscopic views in colour on 30 reels. Mosby, St. Louis; Kimpton, London. (£35.75)

This atlas comprises 210 stereoscopic pairs of slides with accompanying text and pictures. There is also a brief introduction describing the techniques used to prepare the slides. The authors claim that, as most features of the eye are viewed stereoscopically, they are best recorded stereoscopically. Several hundred cases seen in the Department of Ophthalmology at the University of Iowa have been recorded in this way, and the atlas contains a selection of this material to demonstrate either good teaching cases or rare clinical conditions.

The photographs are grouped according to the structure involved; conjunctiva, cornea, iris, anterior chamber, lens, vitreous, and retina and choroid. Within these groups the order of presentation is completely haphazard but this is a minor irritation. Unlike most atlases this volume does not cover the subject comprehensively and certain conditions receive a disproportionately large representation; there are, for example, five views of a pigmented angle. Other common conditions might have been given more space and the treatment of diabetic changes is disappointing. It is always interesting to view a rare condition, but the authors seem to have chosen a poor case of the rapidly disappearing condition of mustard gas keratopathy as they show a non-specific corneal ulcer and do not demonstrate the classical vessel aneurysms on an otherwise avascular sclera.

As far as technical merit is concerned the series is excellent. Either a broad-beam or a slit-beam is used for illumination, and the former gives the more impressive sensation of depth. The slit-beam views of the angle are excellent but those of the fundus are far less informative. Indeed, without the descriptive text, it would be difficult to know what some pictures represent. Certain subjects lend themselves to beautiful portrayal, particularly the various lens opacities. Two pictures leave a particular impression, one a diabetic cataract and the other of a posterior vitreous detachment.

It is difficult to determine who will be best helped by this book. The experienced ophthalmologist will be interested to see a case of angle recession but will not be edified by an illustration of a dendritic ulcer or of an aqueous flare, whereas the undergraduate would be better served by the latter. There is no doubt that the book should be available to every junior ophthalmologist, but whether it should be placed in the library or the museum is up to the purchaser. The production of this text



Physiological Bases of Light and Colour Sensations

Br J Ophthalmol 1971 55: 501-502

doi: 10.1136/bjo.55.7.501-a

Updated information and services can be found at:
<http://bjo.bmj.com/content/55/7/501.2.citation>

Email alerting service

These include:

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:
<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:
<http://group.bmj.com/subscribe/>