vitreous surgery and current controversies, was rather more readable though the questions asked were somewhat naive and the answers proffered generally unimaginative. All in all this book is disappointing. DAVID MCLEOD

Eye Movements and the Higher Psychological Functions. Ed. JOHN W. SENDERS, DENNIS F. FISHER, and RICHARD A. MONTY. Pp. 394. £21·00. John Wiley: London. 1978.

This volume reports the proceedings of a conference held in February 1977 in Monterey, California. The conference was the second on this subject, the proceedings of the first having been published in 1976.

It is in some ways refreshing to relate the cerebral control of ocular movements to the higher visual functions for which they have been developed. This also introduces a practical element which some of the recent volumes on eye movements have omitted in their concentration on the neurophysiological, neuroanatomical, or biomedical aspects of the control of eye movements. Thus the reader who does not possess an up-to-date account of eye movement control is gently introduced by Robinson and Goldberg to the visual substrate of eye movements. This platform enables him to delve deeper into saccadic suppression, the role of eye position in space perception, and the co-ordination of eye movements in perception.

A whole section is devoted to eye movements in the process of reading, and this is followed by a section on eye movements in looking at static and dynamic displays. Searching for NINA (after Hirshfeld) emphasises the pattern of eye movement search when the subject is asked to find the word NINA camouflaged in a picture. The final section discusses recordings of eye movements to assess patterns of search used in driving a car and analysing a chest *x*-ray.

This volume provides ophthalmologists with further information on the complex motor and sensory integration occurring in the brain and subserving the visual organ, whose function he strives to maintain. It is worthy of perusal by those interested in broadening their knowledge, and the extensive bibliography provides an opportunity to delve more deeply. M. D. SANDERS

Goniodysgenesis: A New Perspective on Glaucoma. By TORD JERNDAL, HANS ARNE HANSSON, and ANDERS BILL. Pp. 212. DK300. Scriptor, Copenhagen: 1978.

It is the authors' hypothesis that the fenestration of the primitive endothelium lining the anterior chamber and the subsequent development of the angle recess may be arrested or disturbed by either genetic or environmental agents, thus producing a condition of goniodysgenesis and creating the mechanical prerequisites for a block at the pretrabecular level. They are led to this conclusion from a study of the embryology of the normal angle, on which there is a chapter, and by consideration of the physiology of the healthy iridocorneal outflow. Their method of investigating eyes with glaucoma is by correlating gonioscopic findings with those from the scanning electron microscope, examining tissues removed at trabeculectomy and sometimes post-mortem specimens of whole eyes. They recommend gonioscopy with the Haag-Streit 900 slit lamp, using a distinctly narrow slit with extra eye pieces ($\times 16$).

Congenital glaucoma is regarded as a rare and maximal expression of goniodysgenesis with the presence of a Barkan membrane. They believe that the true genetic trait in congenital glaucoma is goniodysgenesis, resulting in a dominant (sometimes markedly irregular) hereditary pattern. The close association of infantile congenital glaucoma and juvenile and adult open-angle glaucoma in the same family is to them a clear indication that a similar aetiology is probably at work in all three, and their aim is to convince the reader that this is proved.

Since dysgenesis of the iridocorneal angle is the primary cause of congenital glaucoma, it is only natural to find other signs of maldevelopment in many of these glaucomatous eyes, particularly in the anterior segment. All these anterior malformations have an autosomal dominant inheritance. In this light the authors discuss various keratodysgeneses such as opacification of the cornea and sclerocornea, ruptures of Descemet's membrane, anomalies of the corneal diameter, and embryotoxon; iridodysgeneses such as aniridia, colobomas, persistent pupillary membrane, and hypoplasia of the iris stroma; phacodysgeneses such as cataract and congenital dislocation of the lens; and complex dysgeneses of the anterior ocular segment, including Reiger's and Peters' anomalies.

In their study of exfoliative glaucoma they point out that its hereditary pattern cannot be assessed in a simple manner. The 2 factors goniodysgenesis and exfoliation are genetically separate. Goniodysgenesis is thought to be dominant, whereas the hereditary pattern of exfoliation is still unknown. In patients with exfoliative glaucoma the authors describe a membrane blanketing the angles stretching from the iris root and passing up to the line of Schwalbe. In many cases there is a pronounced dehiscence at the 6 o'clock position, where there is an accumulation of pigment. Within the coloboma the true recess of the angle with the scleral spur is visible and at times the anterior rim of the ciliary band. It seems likely that the main stream of aqueous is trained through this port, so that the filtering pores of the outflow channels become increasingly clogged to produce at first a slow elevation of intraocular pressure. Sooner or later this moderate rise is abruptly changed into severe hypertension. Inevitably exfoliative glaucoma becomes a surgical problem.

In their study of pigmentary glaucoma they point out that pigmentary blocking of the pores cannot be the only factor, since the full pigmentary dispersion syndrome is encountered in many eyes without glaucoma. The authors introduce the dysgenetic sign into the picture of pigmentary glaucoma and agree with Malbran, who found in nearly all cases of pigmentary glaucoma gonioscopic evidence of a maldeveloped angle with anterior insertion of the iris. He concluded that pigmentary glaucoma may be classified as a true congenital glaucoma with a blanketing of the uveal meshwork corresponding to the membrane of Barkan. The hereditary pattern of pigmentary glaucoma is bifactorial and similar to that of exfoliation glaucoma.

In the chapter on simple chronic open-angle glaucoma