in lipid values.⁴ The reliance on a single test value¹ may have affected the results.

The authors¹ use the serum triglycerides concentration to establish adequate study power to detect a clinically significant change in serum lipoproteins due to topical timolol. It would be more helpful if they were to mention if their study had an adequate power to detect a clinically significant change in the HDL concentration, since it bears a well established inverse relation to coronary heart disease, unlike serum triglycerides, the role of which is unclear.

We suggest that it is premature to rule out clinically important adverse effects on serum lipoprotein levels by topical beta blockers on the basis of the study by West and Longstaff.¹ This is particularly so because the majority of patients with open angle glaucoma throughout the world are commenced on topical β -adrenergic antagonists. A significant number of them will have coexistent risk factors for coronary heart disease. In these patients even a small reduction in serum HDL concentration and/or increase in serum cholesterol may have a significant effect on the incidence of coronary heart disease. Hence a more comprehensive study of a larger number of glaucoma patients involving different ophthalmic centres, if necessary, would be useful to establish the effects of various topical beta blockers on serum lipoprotein levels.

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- 1 West J, Longstaff S. Topical timolol and serum lipoproteins. *Br J Ophthalmol* 1990; 74: 663-4.
- 2 Coleman AL, Diehl LC, Jampel HD, Bachorik PS, Quigley HA. Topical timolol reduces high density lipoprotein cholesterol levels. *Arch Ophthalmol* 1990; 108: 1260-3.
- 3 MacKean JM, Elkington AR. Compliance with treatment of patients with chronic open angle glaucoma. *Br J Ophthalmol* 1983; 67: 46-9.
- 4 Jacobs DR, Barrett-Connor E. Retest reliability of plasma cholesterol and triglycerides. The lipid research clinics prevalence study. *Am J Epidemiol* 1982; 116: 878-88.

Reply

SIR,—We appreciate the interest shown by Raj and Joyce in our paper.¹ We agree that the effects of topical timolol on serum lipoproteins in elderly patients may differ from that in young healthy subjects. However, as those people in the general population taking timolol therapy are glaucoma patients and not young healthy subjects, we felt it more relevant to study the effect in the former group.

Assessment of compliance with eyedrop therapy is always difficult. The method used by Coleman *et al*² does provide a means of quantitating the number of drops expressed from each bottle, but does not take account of such factors as drops missing the eye and inadvertent or deliberate expression of drops from the bottle. Because our study was carried out over a short time period of 15 weeks on patients newly started on timolol, who had the importance of their therapy carefully explained, we would hope to have had good compliance.

Intraindividual serum lipoprotein levels are known to suffer from a large coefficient of variation which can be reduced by increasing the number of samples from an individual. However, when comparing the mean of a group of individuals at one time with that at a later time intraindividual variation is accounted for in the statistical analysis. Our 95% confidence

intervals for triglyceride levels at five weeks of -0.22 to $+0.14$ mmol/l allows us to say with 95% confidence that triglyceride levels do not rise by more than 9% at five weeks. From systemic studies one would expect the reduction in HDL levels to be half this (ie, 4.5%), a relatively small reduction. However, as Raj and Joyce point out, even a small reduction in serum HDL levels may have a significant effect on the incidence of coronary heart disease.

A larger study demonstrating narrower confidence intervals would, we agree, be useful.

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- 1 West J, Longstaff S. Topical timolol and serum lipoproteins. *Br J Ophthalmol* 1990; 74: 663-4.
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Seeing stars

SIR,—My first few months as a first-year ophthalmology resident literally had me seeing stars. While attempting slit-lamp transillumination on a patient with pseudoefferent glaucoma I suddenly focused in on a perfectly symmetrical six-pointed star with a circular centre. Its location seemed to be somewhere between the corneal endothelium and the lens but was difficult to localise precisely. After showing my finding to all the other residents in the clinic (who had never seen or heard of this star before) and extremely excited about the possibility of having this ophthalmological phenomenon named after myself, I spent the next two evenings searching through my newly purchased Duane's textbook to make sure this star had not previously been described.

Finally, a not-so-convinced attending sat down at the slit-lamp and manipulated the settings until he was able to project the tiny image of the above described six-pointed star on to a piece of paper placed in front of the slit-lamp. Since then I have called the Haag-Streit Bern slit-lamp service centre in New Jersey which solved the mystery. Indeed, all of the newer models of Haag-Streit Bern slit-lamps incorporate a filter in the 's' or small aperture setting which is described as a 'target with fixation star particularly suitable for examining fixation in amblyopia.' I suppose I will have to keep searching for an ophthalmological phenomenon to name after myself.

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Paget's disease and angioid streaks: one complication less?

SIR,—I read with interest your editorial¹ on the association of Paget's disease in angioid streaks, and most particularly your comments regarding the article which appeared in the *American Journal of Ophthalmology*.² Not only were the angioid streaks confirmed by colour fundus photographs, but by fluorescein angiography, and then by careful histological serial sections which correlated the clinical appear-

ance of the angioid streaks with linear breaks in Bruch's membrane.

With regard to the association of angioid streaks with Paget's disease, we performed a complete ophthalmological evaluation on 50 patients with clinically active Paget's disease of the bone, and found angioid streaks in five of these patients. Interestingly, there was a higher incidence of angioid streaks in those patients with clinically active skull involvement.

The patients in our survey all had increased 24-hour production of urinary hydroxyproline and an alkaline phosphatase of at least twice normal. Therefore it is not surprising that a group of unselected and probably asymptomatic patients with Paget's disease should demonstrate a lower incidence of angioid streaks. In addition, Dabbs and Skjodt only performed fluorescein angiography on selected patients. Angioid streaks may be difficult to detect on routine ophthalmoscopic examination.

We agree that the coexistence of pseudoxanthoma elasticum may be difficult to rule out. However, the presence of even one patient in this unselected group of 70 patients chosen only because of their past exposure to canine distemper could be significant, particularly in the light of our findings that the patients with active Paget's disease of the bone were more likely to show evidence of angioid streaks. It seems Terry's original observation probably is correct.³ Our findings support Terry's original observation. We assume that in 1934 those patients known to have Paget's disease had obvious clinical manifestations of the disease, as opposed to the patients reviewed by Dabbs and Skjodt, in whom the diagnosis of Paget's disease may have been less obvious.

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- 1 Smith R. Paget's disease and angioid streaks: one complication less? *Br J Ophthalmol* 1990; 74: 577-8.
- 2 Gass JDM, Clarkson JD. Angioid streaks and disciform macular detachment in Paget's disease (osteitis deformans). *Am J Ophthalmol* 1973; 75: 576-86.
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BOOK REVIEWS

Year Book of Ophthalmology 1988. Eds J Terry Ernest, Thomas A Deutsch. Pp 268. £43.50. Wolfe Medical: London, 1988.

The 1988 *Year Book* follows the traditional format of this popular series. Fifty three ophthalmic and specialty-related journals were reviewed, and the editors selected articles which reported the most interesting and innovative material published in 1988. The book is divided into 11 chapters dealing with all the ophthalmic clinical subspecialties as well as basic sciences. The chapters are introduced by short review articles by well known authorities in their fields. The reviews are followed by abstracts of 20 to 30 original papers. After each abstract there is a short (and often amusing) comment by Dr Deutsch.

As all *Year Books*, the 1988 edition makes

very interesting reading. It is the last in the series under the present editors, and hopefully their successors will continue to distil the ever increasing volume of ophthalmic literature in this efficient yet enjoyable format.

Z GREGOR

Surgery of the Eyelids and Orbit: An Anatomical Approach. By Bradley N Lemke, Robert C Della Rocca. (Pp 322; £92.) Prentice-Hall: Hemel Hempstead, Herts. 1990.

This new book is a textbook of surgical anatomy rather than a comprehensive textbook of surgery, and in this respect the title is misleading. The anatomy of the midfacial tissues is described in detail and clinical surgery is discussed within this framework. The authors are well known for their publications in ophthalmic plastic surgery and anatomy in particular.

The book is divided into five sections: osteology, nose and paranasal sinuses, lacrimal excretory system, the eyelids, orbital anatomy, and surgery. Each section begins with a general subsection on clinical considerations. Specific clinical points are made in the anatomy subsections and selected operations are described. Each section has an extensive bibliography.

It is the anatomy which is of greatest value in this book. The text is readable and well researched. The illustrations are good black-and-white photographs of osteology and cadaver dissections backed by clear line drawings. The clinical and surgical parts of each section are less consistent and do not always fit comfortably within the anatomical framework of the book. This leads to a discursive style which lacks a systematic arrangement of clinical information. Acute dacryocystitis and lacrimal system tumours, for example, appear in the subsection on the lacrimal pump; the assessment of ectropion is found with lateral canthal repair. This scattering of clinical information means frequent reference to the index to gather a topic together.

The authors have been very selective in their choice of recommended operations, especially in the section on the eyelids. Only transposition of orbicularis and (in a different subsection) repair of the lower eyelid retractors by a skin approach are offered for the correction of entropion. The whole of ptosis surgery is covered by anterior approach levator repair or resection. Müller's muscle surgery is limited to its excision in thyroid ophthalmopathy. Eyelid reconstruction is hardly mentioned. Operations which are included are, however, well described and illustrated.

This is an attractively produced book in hardback which will appeal mainly as a text on surgical anatomy. Those looking for a systematic, comprehensive coverage of practical ophthalmic plastic surgery will be disappointed.

A G TYERS

The Eye in Infancy. By Sherwin J Isenberg. Pp 522. £45.00. Year Book Medical: London, 1989.

This is a multiauthor textbook dealing entirely with the eye in the first year of life. It succeeds well in its aim to concentrate on the eye in infancy. The first section, on general considerations in the newborn eye, considers anatomy and physiology of the eye at birth and problems of assessing visual acuity. There is an excellent second section on congenital malformations

which are evident at birth or soon after and a third section on acquired ocular disorders of the newborn. The book concludes with a discussion of the newborn eye in systemic disease.

I would pick out the sections on retinopathy of prematurity as being exceptionally helpful and easy to read, giving an excellent up-to-date review of this subject. The chapters on chromosomal abnormalities and anomalies of the eyelid are also outstanding. This book is well illustrated and practical. There are excellent bibliographies at the end of each chapter.

This is one of the best multiauthor American textbooks that has come my way for some years, and I can fully recommend it to every ophthalmologist in training. I think it will become a standard reference work on the eye in the first year of life.

ALAN MUSHIN

Current Ocular Therapy. Vol 3. Eds Frederick T Fraunfelder, F Hampton Roy. Pp 792. £55.00. Saunders: London, 1990.

This is an unusual book. Since it is the third edition, I should know it already, but hitherto have been unaware of it. At a first glance it would appear to be potentially an extraordinarily useful volume to have available for reference, preferably in the consulting room or not far away, and especially if one were to encounter a condition one did not meet often and for which therefore were uncertain of the best treatment. As a practical test I looked up five conditions at random in the index of the *System of Ophthalmology* (which although unsurpassed for comprehensiveness is not strong on treatment) and then attempted to find them in this book. Hypersensitivity of the conjunctiva, osteitis fibrosa, heterochromic cyclitis, diabetic retinopathy, and craniopharyngioma were the conditions randomly picked out. The book contained informative articles on all five of the sample subjects, though the somewhat obscure 'osteitis fibrosa' of the *System* seemed to have changed its name to Engleman's disease and several closely related syndromes. Extending the scope of the test by referring to the advice given in the conditions chosen, one is not disappointed. In my opinion this is an extremely useful reference book and will prove of value especially in busy ophthalmological hospital departments.

R SMITH

Progress in Sensory Physiology 10. Eds H Autrum, D Ottoson, E R Perl, R F Schmidt, H Shimazu, W D Willis. Pp 124. DM 124.00. Springer-Verlag: Heidelberg, 1990.

This informative book attempts a highly ambitious task. In essence it surveys the morphological, physiological, and pharmacological background to the synaptic circuits in the central visual system and discusses the ways in which the neurones in these circuits are influenced by the neuromodulatory systems arising in the brain stem and basal forebrain. The material is subdivided into four main sections. These cover the basic anatomy and physiology of the visual pathway and neuromodulatory systems of the brain stem and basal forebrain, the neurotransmitters involved, and the way the core systems generate state-dependent changes in the visual cortical and thalamic circuits. This work cannot be regarded as an introduction for workers outside the field: a good background knowledge in all

the main areas is essential for anyone attempting to follow the main arguments. Its particular strengths are that it reviews the background literature in each of the main areas and attempts a synthesis phrasing the action of the brain stem and basal forebrain modulatory systems in the context of neuronal function in the visual system.

One has to say that it is not an easy work to read. Much of the information is presented in a very brief and notelike fashion, and one needs to be very interested in the material to follow through each section with patience. A level of caution is required, because some statements are clearly incorrect and misleading. For example, one learns on p 22 that in the visual cortex: 'At variance with the projections of spiny stellate cells, the axons of pyramidal neurones synapse mainly with aspiny or partially spined neurones.' This is quite incorrect. The reference cited deals with a very specific connection made by layer VI cells in layer IV of the visual cortex, and even here the conclusion is open to some debate. The majority of pyramidal cell connections are with other spiny cells.

The account of the circuitry and function in the lateral geniculate nucleus was, I felt, more balanced than the treatment of the cortex, and the main issues were nicely summarised. The discussion of the intracellular data regarding GABAergic mechanisms is both clear and thoughtful. The main focus of the book, however, is one that leads the reader to consider the state-dependent changes in these processes. The effects mediated by the cholinergic input to the lateral geniculate nucleus from the peribrachial region of the pedunculo-pontine nucleus are particularly intriguing because there are some interesting conflicts in the available data. The main interest for ophthalmologists may well be in this section of the book covering the mechanisms controlling and modifying the retina's access to the brain. Overall I would recommend this short book only to those with a particular interest in the field. It is far too detailed and specialised to help those meeting the topics covered for the first time.

A M SILLITO

*** All titles reviewed here are available from the BMJ Bookshop, PO Box 295, London WC1H 9TE. Prices include postage in the UK and for members of the British Forces Overseas, but overseas customers should add £2 per item for postage and packing. Payment can be made by cheque in sterling drawn on a UK bank, or by credit card (MASTERCARD, VISA or AMERICAN EXPRESS), stating card number, expiry date and your full name.

NOTE

Glaucoma meeting

A glaucoma meeting in honour of Mr Redmond Smith, editor of the *BJO*, will be held on 4 October 1991 at the Institute of Ophthalmology, 17-25 Cayton Street, London EC1V 9AT. The organiser is Mr Roger Hitchings. Registration fee: £95 (to include buffet lunch, refreshments, and evening reception). Details from Mrs Sharon Robinson at the Institute (tel: 071 387 9621 ext 269; fax 071 490 8971).