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.
- 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 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.

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 pseudoexfoliative 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 pseudo-xanthoma 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.
- 3 Terry TL. Angioid streaks and osteitis deformans. *Trans Am Ophthalmol Soc* 1934; 32: 555-73.

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