CORRESPONDENCE

Measurement of optic disc size

EDITOR,—Garway-Heath *et al* described a "keratometry and ametropia" method to correct measurements of optic disc size for ocular magnification.[1] The new method implies that the refraction, the power of the lens, and the power of the cornea are all independent (uncorrelated) variables. Table 2 on page 644 (Summary of ocular biometry) clearly demonstrates that this is not always the case; in fact, the variance of the lens power was almost the same as the variance of the total power of the eye. The explanation has to be that the power of the lens and cornea were negatively correlated. Measurements of the corneal curvature were therefore of little use for their purpose. Garway-Heath *et al* noted that the improvement over the use of uncorrected measurements was moderate, but they failed to draw the obvious conclusion: if correction is necessary, and correction based on spectacle refraction is considered unsatisfactory, correction based on measurements of the axial length of the eye is the only alternative—and quite feasible in these days when ultrasound biometry is used to predict intraocular lens power for cataract surgery.

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1 Garway-Heath DF, Rudnicka AR, Lowe T, *et al.* Measurement of optic disc size: equivalence of methods to correct for ocular magnification. *Br J Ophthalmol* 1998;**82**:643–9.

Reply

EDITOR,—Bengtsson raises an interesting question about the nature of the complex interaction between the ocular refractive components. He is correct in stating that the new "keratometry and ametropia" method to correct for ocular magnification[1] assumes that the power of the lens and the power of the cornea are independent (uncorrelated). Linear regression analysis of data pooled from our three patient groups (209 eyes) confirms this (Fig 1, significance of regression p = 0.21) and the finding is consistent with previous reports.[2] The power of the lens and the power of the cornea are also unrelated to refractive error.

The refractive power of the eye depends on the refractive power of the cornea, the equivalent power of the crystalline lens, and the distance between the two ($F_e = F_1 + F_L - [(w/n).F_1.F_L]$, where F_e = refractive power of the eye, F_1 = refractive power of the cornea, F_L = equivalent power of the crystalline lens, and w/n is a function of the distance of the crystalline lens from the cornea).[3] If two random variables are added to produce an outcome, then the variance of the outcome is the sum of the variance of those variables if they are independent (if there is a degree of positive correlation the variance is higher than the sum, and if there is a degree of negative correlation the variance is lower than the sum).[4] Bengtsson points out that the variance of the lens power is almost the same as the variance of the total power of the eye, and concludes that the power of the lens and cornea must be negatively correlated. There are, however, three variables that contribute to the equivalent power of the eye, the third variable being the term $[(w/n).F_1.F_L]$. Table 1 summarises the means and standard deviations for each variable in the pooled data.

The term $[(w/n).F_1.F_L]$ is highly positively correlated with the power of the lens (r^2 = 0.73, p <0.000) and less so with the power of the cornea (r^2 = 0.32, p <0.000). Since this term is subtracted from the other two, it will tend to decrease the overall variance. This partly explains why the variance of the refractive power of the eye is lower than the sum of the variance of lens and corneal powers.

In order to maintain emmetropia in an eye, variables such as corneal power, lens power, and axial length have to be balanced. The relation between corneal power and lens power is modified by axial length.

Both corneal power and lens power are negatively correlated with axial length (r^2 = 0.17, p <0.000 and r^2 = 0.36, p <0.000 respectively), so that both corneal power and lens power decrease with increasing axial length. One might therefore expect corneal power and lens power to be positively correlated. However, if axial length is constant, corneal power and lens power have to be negatively correlated to maintain emmetropia. Figure 2 plots lens power against corneal power for the 48 eyes from our combined data set that have an axial length between 23.0 and 23.5 mm.

There is a significant negative correlation (r^2 = 0.26, p <0.000) between lens and corneal power in this group with relatively constant axial length.

This modifying effect of axial length accounts for the lack of correlation between corneal power and lens power.

Finally, Bengtsson states that we failed to draw the obvious conclusion that ocular magnification correction based on axial length measurement is the only alternative to less satisfactory methods. In our recommendations at the end of the paper, we state that the axial length method should be used in preference to methods that rely on only keratometry and ametropia. We agree with Bengtsson that this is quite feasible these days, with ultrasound biometers readily available in most ophthalmology units. We would urge manufacturers of optic nerve head imaging instruments to include the facility to make corrections on the basis of axial length. The advantage of the new keratometry and ametropia method reported in our paper is that it has little systematic bias with respect to other methods, and is therefore preferable to the other methods when axial length is not known.

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1 Garway-Heath DF, Rudnicka AR, Lowe T, *et al.* Measurement of optic disc size: equivalence of methods to correct for ocular magnification. *Br J Ophthalmol* 1998;**82**:643–9.
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Table 1 Variables

	Mean	*SD*
Refractive power of cornea (D)	43.00	1.41
Equivalent power of lens (D)	23.33	2.94
[(w/n).F1.FL]	4.49	0.58
Refractive power of the eye (D)	61.84	2.87

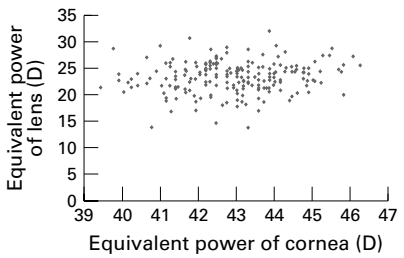

Figure 1

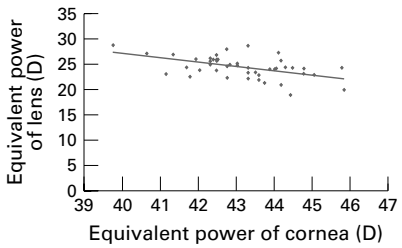

Figure 2

Elevated serum levels of soluble ICAM-1 in uveitis patients predict underlying systemic disease

EDITOR,—Recent research has shown that cell adhesion molecules are integral to the homing and migration of leucocytes into areas of inflammation. Soluble forms of cell adhesion molecules can be detected in the sera after shedding from activated vascular endothelium.[1 2] Increased levels of soluble ICAM-1 have been found in the serum of patients with a number of autoimmune and inflammatory disorders including uveitis.[3 4] We hypothesised that circulating levels of cell adhesion molecules should be higher in patients with uveitis associated with an underlying systemic disease, where there are greater amounts of activated vascular endothelium. We therefore compared the sICAM-1 levels in the sera of patients with uveitis associated with underlying systemic disease with uveitis patients with disease limited to the eye and to normal controls.

Sera were collected from 19 patients with active uveitis and from 15 age and sex matched controls and stored at −70°C. Recorded information included medical history, physical and ophthalmological examination, and diagnostic tests. Soluble ICAM-1 levels in the serum were measured at the same time using ELISA (Bender MedSystems, Vienna, Austria).

Patient characteristics including age, sex, and diagnosis are listed in Table 1. There was no statistically significant difference between patients with uveitis and controls. Ten of the 19 patients had uveitis without associated underlying systemic disease. Six of these patients had idiopathic retinal vasculitis and four had birdshot retinochoroidopathy. Nine of the 19 patients with uveitis had an underlying systemic disease. Six patients had Behçet's disease and three patients had biopsy proved sarcoidosis. At the time that the sera were drawn, all uveitis patients had active ocular

Table 1 Patient characteristics

	Uveitis	*Controls*
N	19	15
Age (years)		
Mean (SE)	35.3 (2.5)	39.2 (2.5)
Range	20–56	20–60
Sex		
Male	9	7
Female	10	8
	Uveitis with systemic disease	*Uveitis alone*
N	9	10
Age (years)		
Mean (SE)	30.3 (3.2)	39.7 (3.4)
Range	20–47	21–56
Sex		
Male	5	4
Female	4	6
Diagnosis	Behçet's disease (n=6) Sarcoidosis (n=3)	Idiopathic retinal vasculitis (n=6) Birdshot retinochoroidopathy (n=4)

disease based on the presence of an increased vitritis, retinal vasculitis, or retinal infiltrates. The underlying systemic disease was not active in any of the patients with uveitis. Of the 19 patients with uveitis, six were treated with prednisone, one with cyclosporine, and three with prednisone and cyclosporine; nine patients were on no systemic anti-inflammatory medications.

The sICAM-1 levels (mean (SE)) were significantly higher in the sera from patients with uveitis (270.3 (23.2) ng/ml) than in normal controls (167.9 (18.9) ng/ml; p=0.002; Student's *t* test). sICAM-1 levels were also higher in uveitis patients with an associated systemic disease (315.2 (41.9) ng/ml) than in uveitis patients with no systemic disease (229.9 (16.0) ng/ml; p=0.04; Student's *t* test) (Fig 1). sICAM-1 levels were higher in patients with sarcoidosis than in patients with idiopathic retinal vasculitis (p=0.0007), Behçet's disease (p=0.005), birdshot retinochoroiditis (p=0.06), or normal controls (Fisher's test). Serum levels of sICAM-1were slightly higher in uveitis patients receiving systemic anti-inflammatory medications (290.7 (39.0) ng/ml) than in uveitis patients without systemic treatment (247.6 (22.8) ng/ml); however, the difference was not statistically significant (p=0.3; Student's *t* test).

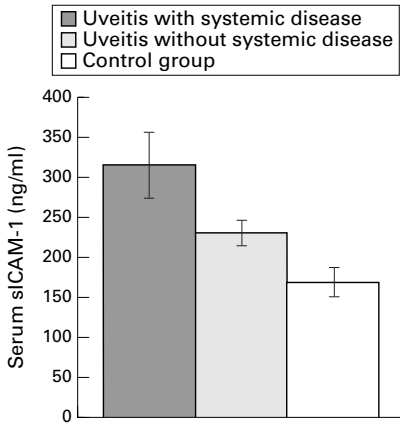

Figure 1 Mean serum levels of sICAM-1 in patients with uveitis associated with an underlying systemic disease, in patients with uveitis without an associated systemic disease, and in age and sex matched normal controls. The sICAM-1 levels were significantly higher in uveitis patients with an underlying systemic disease than uveitis patients without an underlying systemic disease (p=0.04; Student's t test). Bars indicate the standard error of the mean.

Our data show that levels of sICAM-1 were higher in the sera of patients with uveitis than in normal controls. Importantly, sICAM-1 levels were significantly higher in sera of patients with uveitis associated with an underlying systemic disease. In contrast, Zaman *et al* reported that patients with accompanying systemic disease had similar sICAM-1 levels to these with isolated ocular disease.[3] Our study showed no significant difference in sICAM-1 levels in patients receiving or not receiving systemic anti-inflammatory medications. Droogan *et al* similarly reported that methylprednisolone did not affect sICAM-1 levels in patients with multiple sclerosis.[5] Therefore, it is unclear whether sICAM-1 levels could be used to assess or predict therapeutic effect. In summary, our data suggest that elevated sICAM-1 levels in the sera of patients with uveitis may predict the presence of an underlying systemic disease and warrant a diagnostic evaluation in these patients.

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1 Pigott R, Dillon L, Hemmingway I, *et al*. Soluble forms of E-selectin, ICAM-1, and VCAM-1 are present in the supernatants of cytokine activated cultured endothelial cells. *Biochem Biophys Res Commun* 1992;**187**:584–9.
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Do patients with age related maculopathy and cataract benefit from cataract surgery?

EDITOR,—We were interested to read Shuttleworth and colleagues' recent paper on the benefit of cataract surgery on patients with age related macular degeneration (ARMD).[1] The article suggested that the prognosis of patients with ARMD after cataract extraction was not as poor as had been previously thought and that more than two thirds of patients benefit from surgery and consider the procedure worthwhile.

Previous research has suggested that cataract surgery may increase the progression of ARMD. Van de Schaft *et al*[2] reported an increased prevalence of disciform macular degeneration in postmortem pseudophakic eyes with IOL implants. The Beaver Dam Eye Study[3] indicated a statistically significant relation between cataract surgery at baseline and the incidence and progression of disciform ARMD. Pollack *et al*[4] reported a 19% increase in progression following surgery on the first eye of patients with moderate, bilateral ARMD. In a further study[5] they reported an even higher incidence of progression (24%) when the second eyes of patients with previous uneventful postoperative maculopathic course were operated on.

In 1997, we performed a pilot study to assess the feasibility of a major prospective study comparing the progression of ARMD on patients undergoing cataract surgery, with age matched controls. A quality of life questionnaire was administered before and after surgery to a group of patients (n=23) diagnosed with ARMD, and their case notes reviewed retrospectively for visual acuity, simple grading of ARMD, and status of fellow eye. Thirteen patients had mild dry ARMD, seven had moderate dry ARMD, two had severe dry, and one had severe wet ARMD at the time of surgery. Visual acuity (classified into four categories—less than 6/60; 6/60–6/36; 6/24 to 6/18; and 6/12 to 6/6) improved in 18 patients, remained the same in three, and deteriorated in two patients. The poor visual outcome of the five patients whose eyesight did not improve was directly attributable to their ARMD and not to other ocular conditions. Both patients whose visual acuity declined had moderate, dry ARMD.

When quality of life measures were considered two areas showed significant change. Before surgery only 16% of patients reported that they were satisfied with their vision and 84% were dissatisfied. Following surgery 71% of patients were satisfied with their vision and only 29% were dissatisfied. Visual disability was assessed using the VF-14,[6] a widely used questionnaire of patient functional impairment designed for use in cataract studies, and the mean score increased from 54% to 73%.

The rate of ARMD reported in these studies, although widely different, is still higher than would be expected by the natural course of the disease over the same period.[7] Some of the variation in reported incidence and progression may be attributed to study design. Shuttleworth *et al*'s study was retrospective, with information gathered from case notes and a questionnaire, and included patients with all forms of ARMD. Pollack *et al*'s study was prospective and had strict inclusion criteria—only patients with moderate ARMD were selected. It is possible that the patients included in Pollack *et al*'s study were at a greater risk of progression, as all the patients had an intermediate form of the disease, which may still have been active. Surgery may provoke an inflammatory reaction or mechanical trauma that speeds up the degenerative process or triggers a more severe response.

These studies suggest that there is a specific group of patients who are at greatest risk of ARMD progression following cataract extraction, and it is this group of patients that we

must try to identify for better assessment, follow up, and documentation of the disease.

At present, we are conducting a prospective case control study, funded by the Gift of Thomas Pocklington, that aims to determine the effects of cataract surgery on ARMD progression. We hope that it will yield valuable information enabling clinicians to assess the quality of life improvement and risk progression of ARMD in our increasing elderly population.

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1 Shuttleworth GN, Luhishi EA, Harrad RA. Do patients with age related maculopathy and cataract benefits from cataract surgery? *Br J Ophthalmol* 1998;**82**:611–16.
2 Van der Schaft TL, Mooy CM, de Bruijn WC, *et al*. Increased prevalence of disciform macular degeneration after cataract extraction with implantation of an intraocular lens. *Br J Ophthalmol* 1994;**78**:441–5.
3 Klein R, Klein BEK, Jensen SC, *et al*. Relationship of ocular factors to the incidence and progression of age-related maculopathy. *Arch Ophthalmol* 1998;**116**:501–13.
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Reply

EDITOR,—We thank Ambrecht *et al* for their interest in our paper. They raise a number of interesting points.

We are aware of the evidence within the ophthalmic literature regarding the effect of cataract surgery upon the progression of ARMD. Although epidemiological evidence is suggestive of an association between cataract surgery and the development of exudative disease or geographic atrophy,[1] this does not imply causation. We note that the Rotterdam study did not find such an association.[2]

Postmortem studies have also provided some supportive data, however, van der Schaft *et al* make the point that the best assessment of the changes that occur after cataract extraction is to compare the operated eye with the fellow non-operated eye. In this study only 16 cases were suitable for such a comparison and no histological difference could be found between these eyes.[3]

Although the two studies from Pollack *et al* find an increased incidence of progression of ARMD in eyes that have undergone cataract surgery, both draw data from small groups of patients and neither are RCTs.[4 5] In addition, in their first paper assessments of fundus fluorescein angiograms by a blinded observer, necessary to confirm symmetrical disease, do not appear to have been performed and no statistically significant difference between operated and non-operated eyes was found. Pollack *et al* do not recommend withholding surgery in this group of patients although postoperative monitoring is advised.

We are encouraged that Ambrecht *et al* have found cataract surgery to be of benefit in patients with ARMD using quality of life measures and the VF-14. However, large scale randomised control trials, with ARMD of all grades of severity, are required in order to identify those patients most likely to benefit from cataract surgery and also to identify those patients most at risk of disease progression.

We suggest that for the present time cataract surgery should not be denied to any patient on the grounds that their ARMD may progress. Indeed, on the basis of our study we conclude that the benefits considerably outweigh the risks.[6]

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1 Klein R, Klein BEK, Jensen SC, *et al*. The relationship of ocular factors to the incidence and progression of age-related maculopathy. *Arch Ophthalmol* 1998;**116**:506–13.
2 Vingerling JR, Klaver CCW, Hofman A, *et al*. Cataract extraction and age related macular degeneration: the Rotterdam Study [abstract]. *Invest Ophthalmol Vis Sci* 1997;**38**:S472.
3 Van der Schaft TL, Mooy CM, de Bruijn WC, *et al*. Increased prevalence of disciform macular degeneration after cataract extraction with implantation of an intraocular lens. *Br J Ophthalmol* 1994;**78**:441–5.
4 Pollack A, Marcovich A, Bukelman A, *et al*. Age-related macular degeneration after extracapsular cataract extraction with intraocular lens implantation. *Ophthalmology* 1996;**103**:1546–54.
5 Pollack A, Bukelman A, Zalish M, *et al*. The course of age-related macular degeneration following bilateral cataract surgery. *Ophthalmic Surg Lasers* 1998;**29**:286–94.
6 Shuttleworth GN, Luhishi EA. Harrad RA. Do patients with age-related maculopathy and cataract benefit from cataract surgery? *Br J Ophthalmol* 1998;**82**:611–16.

BOOK REVIEWS

If you wish to order, or require further information regarding the titles reviewed here, please write or telephone the BMJ Bookshop, PO Box 295, London WX1H 9TE. Tel: 0171 383 6244. Fax: 0171 383 6662. Books are supplied post free in the UK and for British Forces Posted Overseas addresses. Overseas customers should add 15% 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 data, and your full name. (The price and availability are occasionally subject to revision by the Publishers.

Pocket Book of Ophthalmology. By Philip I Murray, Alastair Fielder. Pp 112. £9.99. Oxford: Butterworth-Heinemann, 1997. ISBN 0-7506-2371-3.

The *Pocket Book of Ophthalmology* is a textbook primarily aimed at undergraduates and general practitioners. It has been devised to fit easily into a pocket and to provide a brief overview of ophthalmology that might be encountered in an outpatient or primary care setting. Although there are many small books aimed at such an audience, few are so easily portable and none include that elusive pinhole occluder that is freely provided. Also, although not explicitly stated, the costs of this book appear to have been subsidised by the pharmaceutical industry who are perhaps trying to indoctrinate future members of the medical profession at an earlier stage than might be thought decent. Morals aside, does this book meet its objectives?

The core of the book is divided into three sections of brief notes—applied "anatomy and physiology", "conditions", and "topics". The section on applied anatomy and physiology is clear and to the point providing adequate explanation for the novice. In the section on conditions diseases are arranged alphabetically and succinctly which is good for easy reference but might encourage didactic learning without thought to disease processes or systemic involvement. The section on topics gives a brief overview of ophthalmic assessment, optics, and therapy. This section is varied and interesting, including topics on such wide ranging subjects as aging, the problems of visual acuity testing in children, and the use of lasers in ophthalmic practice. Finally there is a short appendix of well chosen diagrams.

This book does not aim to be a comprehensive textbook but sees itself as a guide to ophthalmology and as a stimulus to wider reading. Its physical size is one of its main attributes but its contents are perhaps not sufficient for the entire needs of most medical students or general practitioners. Its role is therefore as an adjunct for the interested student or practitioner and in that setting it more than adequately meets its objectives.

J A OLSON

Cisternal Anatomy of the Vitreous. By JGF Worst, LI Los. Pp 148; $156, Dutch guilder 250. Amsterdam/New York: Kugler Publications, 1995. ISBN 90 6299 110 6.

The first author of this interesting volume is renowned within the ophthalmological community for his unique approach to ophthalmology. He was a pioneer in the early days of intraocular lens implantation with the development of the first lens, but more importantly he is widely known for his studies of the anatomy of the vitreous gel, particularly what he terms the "cisternal anatomy". Most vitreoretinal surgeons will appreciate that the elusive gel does indeed have particular anatomical structure and indeed older anatomists describe a variety of spaces such as Berger's space, the canal of Pettit, and other features of the vitreous gel. Jan Worst has added further to this knowledge. His work has been founded on the use of coloured dyes injected into the various compartments of the vitreous to identify their features. Some of the spaces have been named after him, such as the Worst premacular bursa.

This volume is a culmination of many years of work and contains a remarkable set of data which will not be repeated elsewhere. Vitreoretinal surgeons, and indeed all of those interested in the ocular physiology and anatomy and, in particular, vitreous pathology should read this book. It is organised in a series of chapters detailing the cisternal anatomy, functional anatomy, and the traditional view of anatomy of the vitreous. This is followed by an interesting chapter on the decompartmentalisation concept in relation to cataract surgery which is written in the context of intracapsular and extracapsular cataract extraction. This particular chapter would have benefited from an evaluation of the compartments of the vitreous in relation to phacoemulsification techniques for cataract extraction since the special forces induced on the vitreous structure during

phacoemulsification within a closed compartment are likely to have major significance.

The last three chapters deal with aspects of vitreous pathology in relation to cystoid macular oedema, rhegmatogenous retinal detachment, and the vitreous in diabetic retinopathy; these are interesting review chapters but are somewhat out of date.

The most interesting feature of the book is a false compartment at the end which contains a stereo viewing set and series of superb slides which are taken from Jan Worst's personal collection. These slides beautifully illustrate all the aspects of the anatomy and pathology of the vitreous which Dr Worst and his co-author Dr Los wish to draw to our attention. In this respect they have been outstandingly successful and more often than not they have been quite convincing.

JOHN V FORRESTER

NOTICES

Primary Eye Care
The latest issue of the *Community Eye Health* (no 26) discusses the importance of primary eye care, particularly in the developing world. For further information please contact *Community Eye Health*, International Centre for Eye Health, Institute of Ophthalmology, 11–43 Bath Street, London EC1V 9EL. (Tel: (+44) 171 608 6910; fax: (+44) 171 250 3207; email: eyeresource@ucl.ac.uk) Annual subscription £25. Free to workers in developing countries.

Residents' Foreign Exchange Programme
Any resident interested in spending a period of up to one month in departments of ophthalmology in the Netherlands, Finland, Ireland, Germany, Denmark, France, Austria, or Portugal should apply to: Mr Robert Acheson, Secretary of the Foreign Exchange Committee, European Board of Ophthalmology, Institute of Ophthalmology, University College Dublin, 60 Eccles Street, Dublin 7, Ireland.

Office of Continuing Medical Education
The 21st Annual Wilmer Institute's Current Concepts in Ophthalmology will be held on 4–9 February 1999 at the Hyatt Regency Cerromar Beach Hotel, Dorado, Puerto Rico. Further details: Program Coordinator, Johns Hopkins Medical Institutions, Office of Continuing Medical Education, Turner 20/720 Rutland Avenue, Baltimore, MD 21205, USA. (Tel: (410) 955-2959; fax: (410) 614-8613; email: cmenet@som.adm.jhu.edu)

XVII Asia-Pacific Academy of Ophthalmology Congress
The XVII Asia-Pacific Academy of Ophthalmology Congress will be held in Manila, Philippines on 7–12 March 1999. Its theme is "Ophthalmology in the Asia Pacific Region for the 21st century", the main topics being Cataract, Infection and Inflammation, Glaucoma, and Vitreoretinal disease. Further details: Secretariat, Philippine College of Surgeons' Building, 3/F, 992 North EDSA, 1105 Quezon City, Metro Manila, Philippines. (Tel: (632) 927-2317 or (632) 925-3789; fax: (632) 924-6550; email: pao@pao.org.ph)

Ophthalmic diagnostic ultrasound
A 1 day intensive course in ophthalmic diagnostic ultrasound will be held on 12 March 1999 at Royal Victoria Hospital, Newcastle upon Tyne. Topics to be covered include A and B-scan examination techniques of the eye and orbit; principle of standardised echography; screening of opaque media; differentiation of ocular tumours; assessment of vitreoretinal conditions; trauma; diagnosis of common orbital lesions; and introduction to high frequency ultrasound. Further details: Mr R C Bosanquet, Eye Department, Royal Victoria Infirmary, Newcastle upon Tyne NE1 4LP. (Tel: 0191 282 5449.)

Office of Continuing Medical Education
The 16th Annual Wilmer Institute's Current Concepts in Ophthalmology will be held on 14–19 March 1999 at the Manor Vail Lodge, Vail, Colorado, USA. Further details: Program Coordinator, Johns Hopkins Medical Institutions, Office of Continuing Medical Education, Turner 20/720 Rutland Avenue, Baltimore, MD 21205, USA. (Tel: (410) 955-2959; fax: (410) 614-8613; email: cmenet@som.adm.jhu.edu)

Ophthalmological Clinic, University of Creteil
An international symposium on the macula will be held on 26–27 March 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophtalmologique Universitaire de Creteil, Centre Hospitalier Intercommunal, 40 Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Leonhard Klein Award 1999
The Leonhard Klein Award 1999, valued at DM30 000, will be given for innovative, scientific works in the field of development and application of microsurgical instruments and microsurgical operating techniques. It can be conferred on an individual as well as a group of researchers. The work must be submitted in either English or German by 31 March 1999. Further details: Stifterverband fur die Deutsche Wissenschaft eV, Herrn Peter Beck, Postfach 16 44 60, D-45224 Essen, Germany.

XVIII Tuebingen Detachment course: Retinal and Vitreous Surgery
The XVIII Tuebingen Detachment course: Retinal and Vitreous Surgery will be held 8–9 April 1999 at thev lecture hall "Kupferbau" of the University, Gmelinstrasse 8, 72076 Tuebingen, Germany. Further details: Congress-Secretariat (T), Professor I Kreissig, Augenheilkunde III, Schleichstrasse 12, D-72076 Tuebingen, Germany. (Fax: +49-7071-293746; email: ingrid.kreissig@uni-tuebingen.de)

ARVO 1999 annual meeting
The 1999 annual meeting of the Association for Research in Vision and Ophthalmology will take place on 9–14 May 1999 in Fort Lauderdale Convention Center, Fort Lauderdale, Florida. Further details: ARVO, 9650 Rockville Pike, Bethesda, MD 20814-3998, USA. (Tel: (301) 571-1844; fax: (301) 571-8311.)

12th Annual Meeting of German Ophthalmic Surgeons
The 12th annual meeting of German Ophthalmic Surgeons will be held on 10–13 June 1999 at the Meistersingerhalle, Nürnberg, Germany. Further details: MCN Medizinische Congress-Organisation Nürnberg GmbH, Weilandstrasse 6, D-90419 Nürnberg, Germany. (Tel: ++49-911-3931621; fax: ++49-911-3931620; email: doerflinger@mcn-nuernberg.de)

XII Congress European Society of Ophthalmology
The XII Congress European Society of Ophthalmology will be held in Stockholm, Sweden on 27 June–1 July 1999. Further details: Congress (Sweden) AB, PO Box 5819, S-114 86 Stockholm, Sweden. (Tel: +46 8 459 66 00; fax: +46 8 661 91 25; email: soe@congrex.se; http://www.congrex.com/soe/)

4th Meeting of the European Neuro-Ophthalmology Society
The 4th meeting of the European Neuro-Ophthalmology Society will be held on 29 August–2 September 1999 in Jerusalem, Israel. Further details: Secretariat, 4th Meeting of the European Neuro-Ophthalmology Society, PO Box 50006, Tel Aviv, 61500, Israel. (Tel: 972-3-514000; fax: 972-3-5175674/972-3-5140077; email: Eunos99 @kenes.com)

Ophthalmological Clinic, University of Creteil
An international symposium on the macula will be held on 1–2 October 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophtalmologique Universitaire de Creteil, Centre Hospitalier Intercommunal, 40 Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Jules François Prize
The 2000 Jules François Prize of $100 000 for scientific research in ophthalmology will be awarded to a young scientist who has made an important contribution to ophthalmology. All topics in the field of fundamental and/or clinical research in ophthalmology will be considered. The application should be sent jointly with a curriculum vitae, the list of all publications, and three copies of the candidate's 10 most relevant publications to Jules François Foundation Secretary, Professor Dr M Hanssens, Dienst Oogheelkunde, de Pintelaan 185, B-9000 Gent, Belgium. Deadline for applications 31 December 1999.

Correction
An error occurred in the article by Levy *et al* that appeared in the October issue of the *BJO* (1998;**82**:1154–8).

The sentence comprising the conclusion in the abstract was wrong. It should read:

Conclusion—Integration of neoadjuvant chemotherapy and combined treatment with carboplatin and diode laser into the therapeutic armamentarium for retinoblastoma has enabled us to limit the indications for more aggressive treatments such as enucleation and external beam radiation.

We apologise for this error.