to review the cases of uveitis occurring with Glauine distributed in ethylene oxide sterilised bottles, as mentioned by Mr Akingbehin. If the same peculiar pattern of uveitis were to be observed, one might look for similar mechanisms. Minims, a unit dose product that is still approved for sale in the United Kingdom as 0.3% and 0.1% solutions of metipranolol, is distributed in plastic containers that are not sterilised by γ irradiation. These formulations, as well as the multidose metipranolol formulations available in the United States made using aseptically produced sterile bottles, show no free oxygen reactions in assays of their eyedrop solutions in contrast to the Glauine data.

Until the mechanisms responsible for the adverse reactions of Glauine eyedrops are more clearly defined, caution should, of course, be exercised. Experimental studies in tissue culture using corneal endothelial cells and other cell types may help to sort out the independent effects of γ irradiation from other sterilisation procedures. These and additional investigations may reveal whether or not the metipranolol molecule could participate under certain conditions in an immunological reaction capable of evoking a granulomatous process. Such studies could help to clear up a mystery that has not yet been solved regarding the unusual, reversible uveitis syndrome that has been reported primarily with high dose metipranolol distributed under the Glauine trademark in the United Kingdom.

G RICHARD O'CONNOR

Deep lamellar keratoplasty in the treatment of bullous keratopathy

EDITOR,—We read with interest the article by Chau *et al.*¹ We agree with the authors that even though, nowadays, penetrating keratoplasty has a high success rate and a better visual outcome, deep lamellar keratoplasty might still be indicated in certain conditions. They mention, that the procedure is indicated only in eyes with a normal, functioning endothelium. We feel that the indication can be extended even to corneas in which the disease is caused by a decompensated endothelium such as bullous keratopathy after cataract surgery. In these cases, however, a full thickness graft must be used as donor material. In our experience, if a supernumerary anterior chamber is formed between the retained host's Descemet's membrane and the graft, the transplanted endothelium may function properly, assuring graft clarity.^{2,3} McCulloch *et al* have reported that if the endothelium is left on the donor tissue in lamellar keratoplasty it does not survive.⁴ This is probably true only when the anterior face of the retained Descemet's membrane and the graft's endothelium are in close contact. However, when a double anterior chamber exists, the aqueous that separates these two layers prevents the damage to the endothelium. Concerning the surgical technique, in oedematous corneas of bullous keratopathy, dissection of the stroma from the underlying Descemet's membrane is not difficult since a cleavage plane exists owing to the marked oedema. We feel that air injection is not necessary in these cases.

Deep lamellar keratoplasty is a safe procedure, with an acceptable visual outcome. It might be indicated in severely damaged and high risk eyes with bullous keratopathy, in which opening the anterior chamber might necessitate difficult and major reconstruction of the anterior ocular segment, intraocular lens

exchange, and vitrectomy. Performing an 'extraocular' procedure might avoid severe complications in these selected cases and achieve acceptable results.

ANAT LOEWENSTEIN
MOSHE LAZAR
Department of Ophthalmology,
Ichilov Hospital,
6 Weizman Street,
Tel Aviv 64239, Israel

- 1 Chau GK, Dilly SA, Sheard CE, Roston CK. Deep lamellar keratoplasty on air with lyophilised tissue. *Br J Ophthalmol* 1992; 76: 646–50.
- 2 Loewenstein A, Geyer O, Lazar M. Intentional retention of Descemet's membrane in keratoplasty for the surgical treatment of bullous keratopathy. *Acta Ophthalmol* 1993; 71: 280–2.
- 3 Lazar M, Loewenstein A, Geyer O. Intentional retention of Descemet's membrane during keratoplasty. *Acta Ophthalmol* 1991; 69: 111–2.
- 4 McCulloch C, Thompson GA, Basu PK. Lamellar keratoplasty using full thickness donor material. *Trans Am Ophthalmol Soc* 1963; 61: 154–80.

Reply

EDITOR,—Loewenstein *et al* are to be congratulated on their innovative variation of deep lamellar keratoplasty in which fresh tissue with intact endothelium is used in the treatment of corneal endothelial failure. In their series,¹ five of six grafts remained clear with functioning endothelium, and there was only one graft failure where the supernumerary anterior chamber was lost and the host Descemet's membrane came into apposition with the donor endothelium.

The risk of rejection with Loewenstein's technique is probably no different from that in conventional full thickness penetrating keratoplasty, and the advantages of an 'extraocular' technique are balanced against the risk of endothelial failure owing to contact between the donor endothelium and the host Descemet's membrane.

In the technique of Chau *et al.*,² deep lamellar keratoplasty with lyophilised tissue has the advantage of lack of graft rejection and lack of sensitisation of the host to donor antigens, and this is balanced against potential problems with re-epithelialisation of the graft and of interface opacification.

No doubt both of these techniques are valuable new options for treatment of selected cases of corneal disease.

CHAD ROSTON
St George's Healthcare,
Blackshaw Road,
London SW17 0QT

- 1 Loewenstein A, Geyer O, Lazar M. Intentional retention of Descemet's membrane in keratoplasty for the surgical treatment of bullous keratopathy. *Acta Ophthalmol* 1993; 71: 280–2.
- 2 Chau GK, Dilly SA, Sheard CE, Roston CK. Deep lamellar keratoplasty on air with lyophilised tissue. *Br J Ophthalmol* 1992; 76: 646–50.

BOOK REVIEWS

Colour Guide Ophthalmology. By J J Kanski. Pp 92. £7.95. Edinburgh: Churchill Livingstone, 1992.

Mr Kanski has yet again produced a concise pocket sized and beautifully illustrated colour guide of basic ophthalmology. I am sure that most students and trainee doctors will find this

book of great benefit. Within its pages, including an adequate index, the book manages to cover a wide variety of ophthalmic disorders. It is logical and sequential in its description of disease and is easy to read, with well reproduced pictures and succinct text. It manages to cover both common ophthalmic problems which would be of interest to non-ophthalmologists and also the more specific ophthalmic disorders particularly retinal disease; it would act as good aide memoire for the trainee ophthalmologist. Medical students I am sure will find this book of use during their short clinical attachments in ophthalmology.

ANDREW DICK

Ultrasound of the Eye and Orbit. By Sandra Frazier Byrne, Ronald L Green. Pp 506. £81. London: Mosby Year Book Europe, 1992.

Ophthalmic ultrasonography (echography) has experienced great advances and widening application in the past two decades. This technique is now the method of choice in the investigation of many ocular lesions and is an excellent alternative and support to computed tomography and magnetic resonance imaging in the investigation of orbital diseases. The low cost, safety, and ability to perform echography in the office, bedside, or operating theatre will ensure its prominent role for many years to come. Such views are echoed in the Foreword of this book by two eminent ophthalmologists; Edward Norton at the Bascom Palmer Eye Institute and Stephen Ryan at the Doheny Eye Institute, who experienced at first hand the valuable services of the two authors in their respective institutions.

This book is, to date, the most comprehensive work on this subject. Comprising 506 pages, it describes in detailed but easy to read text the technique and application of ultrasonic diagnosis in ophthalmology. A superb set of echograms among the 415 illustrations is clearly labelled and consistently displayed to be read from left to right; a pleasing feature that avoids confusion. Many echograms are also supported by line drawings and, particularly in the orbital section, by computed tomograms and magnetic resonance images.

A relevant and to the point description of ultrasound physics is contained in the first chapter. Thereafter, the chapters are logically arranged into two major sections; the Eye and Orbit. Each section is further divided into indications, methods of examination, followed by a number of specialised sections. In the eye these are vitreoretinal, trauma, intraocular tumours, and axial eye length measurements, and in the orbit they comprise orbital tumours, vascular lesions, extraocular muscles, optic nerve, and trauma and periorbital diseases. A useful feature is a concluding glossary of technical terms. The book is well referenced with each chapter containing its own bibliography.

Throughout the book, the wide experience of the two authors is tangible, especially their description of the method and applications of standardised A-scan. This technique, developed by K Ossoinig and yet to be popularised in the United Kingdom, is a valuable diagnostic tool, particularly in the tissue differentiation of ocular and orbital tumours, and in the detection of extraocular muscles and optic nerve diseases. The chapter on orbital vascular lesions is an excellent example of the merit of combining standardised A-scan, B-scan, and Doppler ultrasound in the investigation of such lesions.

The best chapter overall, however, must be

that on intraocular tumours. The authors describe in meticulous detail and with beautiful illustrations the echographic diagnosis of choroidal and ciliary body melanomas and their differential diagnosis, including choroidal metastasis, haemangioma, naevus, disciform, and other mimicking lesions. A comprehensive description of retinoblastoma and leucocorias is also included. The reader will again appreciate the value of standardised A-scan in the differentiation of ocular tumours; many producing similar appearances on B-scan. Figures 5.44, 5.46, and 5.49 are good examples.

The technical advances in instrument design and application of ultrasound are always expanding, including those of colour Doppler and spectral analysis of blood flow characteristics and high frequency B-scan (50 to 100 MHz) for anterior segment imaging. This may explain the relatively scanty information on these topics in the book. Nevertheless, the authors have succeeded in combining a practical guide for the beginner and a complete reference for the more experienced echographer.

HRATTA

A review of the literature on visual impairment and disability among older people in Britain: a case study in epidemiologically based needs assessment. (This publication is an occasional paper.) By Rachel Leventhall. Pp 80. Public Health Research and Resource Centre, 1992.

There is a continuing need to be updated on the epidemiology of visual impairment and handicap when planning strategies for health care.

Recently there have been a number of important epidemiological studies relating to visual dysfunction in the elderly. This occasional paper draws together the essence of these reports indicating the extent of the problem and providing reasons to explain differences in the data presented by the various studies.

The review begins by defining what is meant by visual impairment, visual disability, and visual handicap. There is then a discussion of the sources of data for analysis and finally a review and (meta) analysis of the published findings. The last section contains a discussion while some essential raw data are presented in the appendix.

This is a useful document which provides much valuable information for health care workers, statisticians, and health economists in assessing the needs of the elderly with regard to visual impairment. It will therefore provide a useful reference source.

JOHN V FORRESTER

Corneal and Ocular Surface Histochemistry (From a series of books entitled 'Progress in Histochemistry and Cytochemistry' Volume 25, No 3). By Linda D Hazlett. Pp 64. DM 76. New York and Stuttgart: Gustav Fischer Verlag, 1993.

This brief review documents recent methodology in studying components of the ocular surface with particular reference to histochemistry and immunohistochemistry of proteins, glycoproteins, cells, and extracellular and matrix components.

The review is timely in that, after a brief introduction on general morphology of the cornea and ocular surface, the reader is rapidly brought up to date with details of ultrastructure and biochemistry.

The illustrations, particularly the electron micrographs, are of high quality and the later sections dealing with the immunohistochemistry beautifully detail, in flat mount preparations, the Langerhans cells within the conjunctiva and cornea.

The monograph itself is a short read which crystallises recent information in this area, and will be of particular value to researchers whose immediate field of interest is not the ocular surface but the recent advances in corneal and conjunctival biology.

JOHN V FORRESTER

If you wish to order or require further information regarding the titles reviewed here, please write to or telephone the BMJ Bookshop, PO Box 295, London WC1H 9JR. Tel: 071 383 6244; Fax: 071 383 6662. Books are supplied post free in the UK and for BFPO 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 date, and full name. (The price and availability are occasionally subject to revision by the publishers.)

NOTICES

Biomedical Optics Society

The International Symposium on Biomedical Optics Europe '93 will be held on 1-5 September 1993 at the Semmelweis Medical University, Budapest, Hungary. Further information: Direct Communications GmbH, Att Ms Karin Burger, Xantener Strasse 22, D-1000 Berlin 15, Germany. (Tel: ++49-30-881 50 47; Fax: ++49-30-882 20 28.)

Second World Association of Sarcoidosis and Other Granulomatous Disorders (WASOG)

The Second World Association of Sarcoidosis and Other Granulomatous Disorders (WASOG) meeting will be held in Los Angeles, California, USA, from 8-11 September 1993. The scientific sessions will be devoted to the epidemiology, genetics, immunopathogenesis, and clinical aspects of sarcoidosis and other granulomatous disorders. For further information: Dr Om P Sharma, Room 11-900, LAC/USC Medical Center, 1200 N State Street, Los Angeles, CA 90033, USA (Tel: (213) 226-7923; Fax: (212) 226-2738.)

First International Ophthalmology Symposium

The first international symposium on ophthalmology will be held on 9-11 September 1993 at the Palais des Congrès, Bordeaux, France. The congress is organised by the Universities of Bordeaux and Miami, and the Bascom Eye Institute. For details: Mme D Pouvreau, BSC Palais des Congrès, 33300 Bordeaux-Lac, France. (Fax: (33) 56 43 17 76.)

Association for Eye Research

The Association for Eye Research will meet, jointly with the European Club for Ocular Fine Structure (ECOFs) in Granada, Spain, 15-18 September 1993. For further details: Professor Dr B Carreras, Local Organiser AER-93, Martinez Campos, 10-2A, 18005 Granada, Spain.

German Ophthalmological Society

The 91st meeting of the German Ophthalmological Society (DOG) will be held on 19-22 September, 1993, in Mannheim, Rosengarten, Friedrichsplatz, Germany. The topics include: laser in ophthalmology (especially laser and glaucoma, excimer laser); plastic surgery in ophthalmology; and cataract and intraocular lenses. Further details: Deutsche Ophthalmologische Gesellschaft (DOG), Im Neuenheimer Feld 400, 6900 Heidelberg, Germany. (Tel: 06221/41 1787; Fax: 06221 58 46 16).

ECORA

The European Community Ophthalmic Research Association (ECORA) will hold its first scientific annual meeting in Bonn, Germany on 4-6 October 1993. For more details: Professor Dr M Spitznas, Universitäts-Augenklinik, Sigmund-Freud-Strasse 25, D-5300 Bonn 1, Germany.

Third International Symposium on Recent Developments in Immunopathology of Intraocular Inflammation

The third international symposium on recent developments in immunopathology of intraocular inflammation will be held in Miami, Florida, USA on 10-14 October 1993. Further details: Secretariat, Third International Eye Symposium, Department of Microbiology and Immunology, PO Box 106960 (R-138), Miami, FL 33101, USA. (Tel: (305) 547-6683; Fax: (305) 548-4623.)

SCOTCAEN

The first Scottish national conference for accident and emergency nursing will be held on 14-15 October 1993 at Heriot-Watt University's Edinburgh Conference Centre. Further information from: Douglas Coull, Organising Secretary, Accident and Emergency Department, Edinburgh Royal Infirmary, Laiston Place, Edinburgh EH3 9YW. (Tel: 031 229 2477 ext 2502 or 2201; Fax: 031 228 1694.)

International Advanced Vitreo-Retinal Surgery Course

The first international advanced vitreo-retinal surgery course organised by the Aditya Jyot Research Foundation will be held on 19-21 October 1993 at YB Chavan Auditorium, Bombay, India. Further details: Dr S Natarajan or IAVRSC, Organising Secretary, Dr Ambedkar Road, Dadar TT, Bombay 400 014, India. (Tel: (91-22) 4141341; Fax: (91-22) 413 7373.)