Having been involved with the treatment of amblyopia for more than 30 years my views have altered very little.

My work reported in 1964 still stands that a monitored period of total occlusion overcomes amblyopia quickest and best. As improvement occurs one can modify the techniques to part time, or partial, to achieve the final result.

However in the past 10 years or more I found the best answer was prevention of amblyopia and this was achieved by early peripatetic orthoptic screening in postnatal, infant, and preschool clinics.

This meant that squints and amblyopia were detected very early and, with prompt referral, required less specialist treatment; and amblyopia was only relative in depth and required only minimal occlusion to obtain a cure. Indeed most children were detected before amblyopia (as defined) had had time to occur.

I would urge the need to continue to strive for early screening and public education before the age of 4 years contrary to the Hall report.

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1 Hall DMB. *Health for all children*. Oxford: Oxford Medical Publication, 1989.

Cataract surgery

SIR,—The problem of the enormous backlog of cataract surgery in the third world will not I fear be solved by the methods advocated by Mr Arthur Steele.¹

I was fortunate to get my surgical training in Pakistan where my colleagues routinely did 150 cataract operations single-handedly in a 6 h session. Their technique was a Graefe knife incision, peripheral iridectomy, intracapsular lens extraction with forceps, or cryosurgery and one to three corneal sutures with 8/0 silk. The surgery was of superb quality and the results were excellent.

If we had performed the surgery with microscopes, three-stage incisions, IOLs, running 10/0 sutures, etc, then I suspect the rate would have fallen from 20–30 operations an hour to two to three an hour. The resulting cost would be so high that only the wealthy could afford treatment.

No-one would try to ignore the brilliant advances in ophthalmic surgery developed in the west. However I would urge my colleagues there to accept that for huge numbers of cataract blind in Africa and Asia such techniques may not be the most appropriate and that simple methods in expert hands can give excellent results at low cost.

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1 Steele A. Cataract surgery. (Editorial.) *Br J Ophthalmol* 1990; 74: 130–1.

Dominant cone dystrophy starting with blue cone involvement

SIR,—The authors of the paper¹ in vain looked for a blue gene defect. The blue-yellow colour vision defect they observed however finds its origin in the physiology of the retina. Pathology of the macular region, if fixation is preserved, gives rise to blue-yellow defectiveness regardless of the cause: X-linked or dominant inherited cone dystrophy, pigmentary dystrophy, intoxication by synthetocal antimalarial agents, and so on.²

Cone dystrophies start either foveolar or perifoveolar. The latter type is known as peripheral cone dysfunction and is characterised by a disturbed full field cone ERG, a relatively well preserved visual acuity and normal colour vision or an acquired type III blue-yellow colour vision defect.^{3,4} Static perimetry reveals a perifoveolar dip.² The blue-yellow defect, often dichromatic, is an exaggerated small field tritanopia. Case VI.6 is a good illustration. This patient could not read the 8° plate tests but made a classic tritan response with the 2° Panel D-15 test.

The dystrophic process affects the perifoveolar cones, including the blue cones which have their maximum density at 1.5° eccentricity. The blue cone-free foveolar region becomes enlarged resulting in a strong decrease in blue sensitivity.

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- 1 Van Schooneveld MJ, Went LN, Oosterhuis JA. Dominant cone dystrophy starting with blue cone involvement. *Br J Ophthalmol* 1991; 75: 332–6.
- 2 Pinckers A, Marré M. Basic phenomena in acquired colour vision deficiency. *Docum Ophthalmol* 1983; 55: 251–71.
- 3 Pinckers A, Deutman AF. Peripheral cone disease. *Ophthalmologica* 1977; 174: 145–50.
- 4 Noble K, Siegel IM, Carr RE. Progressive peripheral cone dysfunction. *Am J Ophthalmol* 1988; 106: 557–60.

Reply

SIR,—In an effort to be concise we have apparently not been sufficiently clear. The main conclusion of our article – concerning a progressive cone dystrophy and not a cone dysfunction – was that our family represents a distinct, as yet undescribed entity (last sentence of the abstract and last sentence of the last paragraph but one of the discussion).

It is now sufficiently well documented that genes coding for visual pigments may if subject to mutation, lead to ocular disease: X-linked cone dystrophy in the case of a deletion of the red cone pigment gene,⁵ autosomal dominant retinitis pigmentosa in the case of a mutation of the rhodopsin gene.^{2,3} Sufficient reason for us to ask for an analysis of the tritan gene (thus not as Dr Pinckers states: 'The authors . . . looked in vain . . .').

L N WENT
M J VAN SCHOONEVELD
J A OOSTERHUIS

- 1 Reichel E, Bruce AM, Sandberg MA, Berson EL. An electroretinographic and molecular genetic study of X-linked cone degeneration. *Am J Ophthalmol* 1989; 108: 540–7.
- 2 Drya TP, McGee TL, Reichel E, et al. A point mutation of the rhodopsin gene in one form of retinitis pigmentosa. *Nature* 1990; 343: 364–6.
- 3 Drya TP, McGee TL, Hahn LB, et al. Mutations with the rhodopsin gene in patients with autosomal dominant retinitis pigmentosa. *N Engl J Med* 1990; 323: 1302–7.

Cause of blindness in the Central African Republic

SIR,—It was with much interest I read the recent paper by Dr Andrew Potter.¹

One of the important early steps in the development of a national prevention of blindness programme is the assessment of the dimensions of the problem of blindness and a characterisation of the leading causes of blindness in a particular country or region. The findings in the Central African Republic show that cataract and uncorrected aphakia

accounted for more than half the blindness, a finding in common with many countries.

Quite rightly Dr Potter suggests that one solution to the problem of cataract blindness would be to train eye workers to perform intracapsular cataract extractions (ICCE). One argument made in support of the more expensive operation of extracapsular cataract extraction (ECCE) with intraocular lens implantation has been the permanence of the correction of the surgically-induced aphakia. The aphakic glasses used after intracapsular extraction can become broken or lost and frequently are not replaced.

Few data are available on the proportion of people who have had intracapsular surgery and who continue to wear their corrective glasses. I was wondering whether Dr Potter had information on the proportion of people who were blind because of uncorrected surgical aphakia, and also the proportion of aphakics who in fact remain blind after surgery either because of surgical complications or loss of their aphakic glasses.

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- 1 Potter A. Causes of blindness and visual handicap in the Central African Republic. *Br J Ophthalmol* 1991; 75: 326–8.

Reply

SIR,—Those of us working in Africa are well aware of the problem of uncorrected aphakia. There are a number of reasons for this problem. Spectacles may not have been provided at the time of the original cataract extraction. Patients may not have found the money for their purchase. The glasses may well have been broken or lost at a later date. Other patients are unable to make the effort to adapt to the larger image and visual distortions. Still others were given a prescription for a pair of glasses which when they presented it to a private optician found the cost prohibitive. A depressing litany of excuses that I regularly encounter.

From my 4 years' work in the Central African Republic I found that uncorrected aphakia accounted for 8% of bilateral blindness. This included a majority who had one eye blind from unoperated cataract and the other aphakic eye without spectacle correction. Of 26 patients with bilateral aphakia without spectacle correction eight had other problems that could not be improved with glasses (optic atrophy, maculopathy, pupillary membrane, retinal detachment, and phthisis.)

Now the alluring prospect of extracapsular cataract extraction (ECCE) with intraocular lens implant is suggested for Africa. This could solve the problem of uncorrected surgical aphakia. But is it realistic for rural Africa at the present time?

ECCE is a more complex surgical procedure requiring sophisticated equipment (needing maintenance) and a longer training for the surgeon involved who would have to be a fully trained medical doctor. Intraocular lenses are more expensive than aphakic spectacles. In the Central African Republic there is only one permanent centre for cataract surgery. It is in the capital Bangui. The whole of the rest of the country and the majority of the population are very infrequently served by visiting surgeons who may spend up to a week in any one place. Such provincial hospitals and dispensaries may well not have mains electricity.

The patients who attend for surgery are elderly and poor. Some may have travelled for two or three days from their homes on foot.

Each has to be accompanied by a sighted relative who must feed, wash, and accompany them to the toilet. The maximum time that they will tolerate being absent from home is about 10 to 12 days. Follow-up after discharge is virtually impossible for the surgeon will no longer be available and the patients cannot be expected to attend for so little assumed benefit.

All this must be taken into consideration before contemplating a change from ICCE to ECCE.

It is also true (even though it may depress us) that what many elderly illiterate patients, and the families on whom they depend, want from their surgery is restoration of functional sight so that even though an aphakic patient without spectacle correction is technically blind (visual acuity below 3/60) the patient is at least able to navigate unaided around the homestead. The change from PLP to counting fingers at 1 metre may be adequate for this.

What really would benefit hundreds of thousands of cataract-blind people in Africa would be more surgeons willing to dedicate themselves to serving in rural areas. This would be many times more useful than investing in technology.

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BOOK REVIEWS

Perspectives in Glaucoma: Transactions of First Scientific Meeting of The American Glaucoma Society. Eds M Bruce Shields, Irvin P Pollack, Allan E Kolker. Pp 290. £51.60. John Wiley: Chichester, West Sussex. 1988.

This volume records the transactions of the inaugural meeting of the American Glaucoma Society. In the preface the editors explain its triple aims: to allow the views of the society on glaucoma management to reach a wide audience; to document the founding of the society; and to honour the memory of the late Dr Charles Phelps, one of the society's founder members. The book succeeds in all these aims.

The distinguished authors and representatives of the society in the first 12 chapters provide a highly readable, scholarly, and entertaining account of some of the latest and most exciting developments that have taken place in the understanding and hence the rational management of glaucoma in recent years. Drance gives an excellent review article on the role of intraocular pressure in the development of glaucomatous damage of the optic disc. Hayreh reviews the relationship between glaucoma and ocular vascular disease, and Quigley gives an informative and helpful chapter on the clinical examination of the nerve fibre layer. Many of the authors in this book pay tribute to the contributions of Dr Phelps to glaucoma research, and chapter 3 is devoted entirely to

his research interests and achievements. This chapter is written by Mansour Armaly and leaves the reader in no doubt as to the tremendous contribution to the understanding of glaucoma made by Phelps; it also shows in what high regard he was held by all who knew him.

Chapters 5 to 12 concentrate more on recent research efforts and the development of new modes of treatment. Like the first four chapters they are well written, brief enough to keep the reader's attention, and contain a wealth of references that will be of use to anyone undertaking research in these fields.

Section V is concerned with current concepts in filtering surgery, and this was the least satisfactory section of this book. The critical appraisal and scientific approach which so exemplify the first half of the book give way to more of a 'personal experience' approach. This may reflect the authors' desire to pass on their surgical views to a readership less surgically orientated than most ophthalmologists practising in the UK. Some rather sweeping statements and generalisations appear unsupported by references. It was surprising to read that up to 14% of trabeculectomies performed in the USA require a choroidal tap for shallow/flat anterior chambers, as drainage of choroidal effusions after trabeculectomy must be one of the rarest of surgical procedures in the UK. It was disappointing, though perhaps inevitable owing to the three years that have passed since the meeting was held, that the success of 5FU could not yet be confirmed. Its role in repeat filtering surgery is now well established. Moreover, a chapter on the successful use of single plate Molteno tubes appears, yet present knowledge now favours the use of the two-plate Molteno tube because of greater efficacy. There was also no mention of the use of expandable intraocular gases, which have proved very useful for reforming flat anterior chambers after drainage surgery.

Section VI entitled 'Advances in management of glaucoma,' covers some recent aspects of glaucoma research, and topics such as YAG laser trabeculoplasty and the use of P-aminoclonidine to prevent post-laser pressure spikes are included. There is an excellent chapter by Elliot Werner on the difficulties involved in determining whether visual field loss has progressed between successive examinations. This is an important chapter which should become a required reference for papers claiming success or otherwise of a particular glaucoma treatment. However, the chapter on a new treatment for thrombotic glaucoma is not in keeping with the standards set in the rest of the book. It relates the authors' experience of a new method of laser iridotomy in the treatment of thrombotic glaucoma carried out on four eyes, one of which was normotensive and one had a vision of only light perception. It describes the pretreatment IOP as 39 mm Hg, and then makes the incomprehensible statement that 'this was adequate in two of the four eyes.'

In conclusion, this book is successful and instructive and provides a suitable commemoration of the inaugural meeting of the American Glaucoma Society as well as a glowing tribute to the memory of Charles Phelps. It will be of particular interest to ophthalmologists concerned with the management of glaucoma patients and to those with a research interest in glaucoma.

PETER K WISHART

Eye Diseases in Hot Climates. 2nd Edn. By John Sandford-Smith. Pp 242. £12.00. Butterworth: London, 1990.

The second edition of Mr Sandford-Smith's excellent book on eye diseases in hot climates is written primarily for the general medical officer, ophthalmic assistant, or ophthalmic nurse working in areas of the world with limited eye care services. After dealing briefly with the basic sciences and examination of the eye the author systematically describes the important eye conditions seen in developing countries in the context of their diagnosis and management.

Trachoma, onchocerciasis, xerophthalmia, and leprosy are all dealt with in detail, including the most recent information on the simplified classification for trachoma, the relationship between vitamin A deficiency and child mortality, the introduction of ivermectin for the control of onchocerciasis and the use of multiple drug treatment in the management of leprosy. All these sections will be of interest not only to the non-ophthalmologist working in developing countries but also to the expatriate ophthalmologist whose previous clinical experience with these blinding diseases is likely to be minimal.

The text is written in a simple and easily readable style and is excellently illustrated with line diagrams and colour plates. This book is essential reading for all doctors and paramedical workers involved in delivering eye care in developing countries of the world.

ALLEN FOSTER

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NOTE

Ophthalmology in Developing Countries

A symposium on Ophthalmology in Developing Countries will be held on 12-13 March 1991 under the auspices of the Francis I Proctor Foundation for Research in Ophthalmology of the University of California School of Medicine at San Francisco, California, USA. Details from Extended Programs in Medical Education, Room LS-105, University of California, San Francisco, California 94143-0742, USA.

Correction

We regret that in the November 1991 issue of the British Journal of Ophthalmology two figures were transposed. Figs 1A and 1B on page 685 (paper by Spaide *et al*) should be Figs 1A and 1B on page 698 (paper by Erny *et al*) and Figs 1A and 1B on page 698 should be Figs 1A and 1B on page 685. The legends are correct as they stand. Loose leaf copies of both corrected papers are provided in this issue.