Editorial: Abnormal PERG

We can hardly be expected to be experts in all aspects of ophthalmology, and nowhere is this more true than in the field of electrodiagnostics. There must be only a mere handful of practising ophthalmologists who understand the niceties of the subject. It is a pleasant surprise, therefore, to see a paper in this issue of the *BJO* which is not only easily understandable but appears to be a real advance in the subject, enabling, as I see it, a clear distinction to be made between macular and optic nerve disease.

The author, Dr G Holder, reminds us that there is good evidence of a receptor and inner nuclear site of generation of the conventional flash ERG, whereas the pattern evoked response PERG probably arises in the region of the ganglion cell layer. A simplistic view of the situation would be that the former is a predominantly receptor cell response to a crude stimulus, whereas the PERG, requiring a degree of integrated neural activity for its appreciation and response, is in fact being processed, as it were, nearer to the brain. Putting it crudely, one might say that the flash was just a stimulus but the pattern was a message.

The present paper explains with great clarity two principal components of the PERG, a positive component at about 50 ms and a negative at about 95 (called respectively P50 and N95). It was found that the P50 component showed abnormalities where retinal or macular dysfunction occurred, but in optic

nerve disease the N95 component was mainly involved. This seemed to support the view that the N95 component might be generated in the region of the ganglion cells, being affected in optic nerve disease by retrograde degeneration.

It has to be admitted that the average clinician during his ordinary working day gives little thought to electrodiagnostic testing, regarding it as something esoteric and not of much practical value except perhaps to unmask malingerers or predict retinitis pigmentosa. In fact, of course, the potential of this field of study of the visual functions is enormous. We may find before long that electronic studies of function begin to take a more important place in our clinical examination than the familiar but admittedly inaccurate subjective studies of visual acuity and visual field. Thus from being a somewhat rarified laboratory exercise it now seems possible that the electrodiagnostic mode of study of visual function might in the end give us accurate objective data as to the quantity, quality, and location in the field of visual function together with the possibility of identifying the exact anatomical location of any malfunction.

As I mentioned at the beginning of this note, it was really delightful to read a paper on what it has to be admitted is a fairly esoteric subject and to be able to understand it and enjoy it. Our journal cannot have too many such papers.

RJHS