and inflammation. The problem is that some of these accounts are lacking in focus. For example, the sections on liver disease, muscle disease, hypertension and clinical pharmacology, while comprehensive, consist of material which can be found in most standard textbooks. There is no particular effort to define those aspects which are, or might be, particularly amenable to the newer techniques of cell or molecular biology.

Again, the well-written haematology section gives a good account of the structure and function of haemoglobin, sickling disorders and red cell enzyme defects, but says little about the wealth of information that has been obtained in the last few years by cloning and sequencing the globin genes, an area of research which has probably told us more about human molecular pathology than any other. Despite the remarkable advances in our understanding of the workings of the immunoglobulin genes and of the development of the immune system, the only chapter on immunology deals with autoantibodies and disease, a good account but an odd choice for a book that sets out to highlight recent advances in molecular aspects of medicine. The book contains no mention of malignant disease, despite the recent achievements in the fields of oncogenes and surface markers. Other important areas of great potential for clinical application, including membranes, the

vascular endothelium and the chemistry of platelets and clotting factors, get scant mention or do not appear at all. In particular, it is disappointing to see a book on molecular mechanisms of disease appear in 1983 without a simple account for the non-specialist of the methods of recombinant DNA technology which promise to revolutionize the field over the next few years.

This book gives a competent and in some parts very good account of the chemistry of selected groups of human diseases. Where it seems to fall short of its aims, at least to me, is in its failure to highlight some of the particularly active areas of cell and molecular biology which are starting to make a

real impact on our understanding of molecular pathology. Could it be that it had too long a gestation time — there are very few references later than 1980? Perhaps the cumbersome process of producing a large, multi-author textbook is not compatible with catching the excitement of a field which is moving so fast. This is an important problem for authors and publishers alike. The information gap between clinicians and basic scientists is widening rapidly; both will lose out if it can't be bridged. □

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Mixed bag of cells

John Scholes

Cell Biology of the Eye.

Edited by David S. McDevitt.

Academic: 1982. Pp.570. £50, \$75.

TO ACHIEVE transparency, the eye chamber is sparsely populated by cells and so at face value of unlikely interest to cell biologists. However, the cornea and eye media contain abundant secreted matrix proteins and glycosaminoglycans, thought to be important generally in the formation and maintenance of tissues but usually inaccessible on account of their sparse interstitial distribution. Moreover, the lens substance comprises a family of stable proteins, the crystallins, purified almost to homogeneity by systematic cell autolysis during development. These biochemist's lures explain why the cell biology here has much less to do with any visual processes than with the inert media traversed by light on the way to the rods and cones.

Accordingly the first seven of the eleven chapters in *Cell Biology of the Eye* concern the cornea and lens. Among these, G. W. Hart reviews proteoglycans of the corneal stroma. *Inter alia*, the proteoglycans seem to shape the pattern of collagen fibrillogenesis, and this could be a valuable prototype for explaining the properties of more elusive matrix structures elsewhere. D. Gospodarowicz and L. Giguere deal with interactions between corneal cells and the extracellular matrix. In their laboratory, corneal cells have provided a definitive test-bed for the ideas that matrix factors are permissive for cell proliferation and foster epithelial growth.

The contributions dealing with the lens necessarily emphasize cellular rather than extracellular features. D.S. McDevitt, the editor, describes with S.K. Brahma immunocytochemical aspects of lens development, while T. Yamada reviews intriguing parallels between Wolffian lens regeneration *in vivo* and the trans-differentiation, seen in culture, of various eye cells to manufacture lens protein.

These reveal a peculiar leakiness in the crystallin gene cluster, but have not yet cast general light on mechanisms controlling gene expression.

Just four chapters at the end of the book deal with the retinal interface between light and sight. This means the coverage, if interesting, is anything but comprehensive. Perhaps neglected topics were deliberately chosen. Thus, one of the best-understood functions of the vitamin A family of compounds is surely as chromophores in vision, the main purpose of the eye. However, G. J. Chader reviews their pleiotropic roles elsewhere in the organism, emphasizing co-factor and hormone-like properties. What better introduction could this stimulating chapter have formed to another which is conspicuously lacking? The absent friend is the fast-moving cell biological topic of the enzymatic cascade between rhodopsin and cytoplasmic nucleotide messengers in retinal rods. This is dealt with only in passing by D. S. Papermaster and B. Schneider, who primarily review photoreceptor membrane assembly processes. Otherwise, there is a thoughtful chapter by R. E. Marc on the distribution of retinal cone cell types, and W. Morgan reviews aspects of retinal dopaminergic function.

It was enjoyable excavating this mixed bag free of charge, but much of the material could have been unearthed elsewhere, sometimes in more up-to-date form. Much was invested in the inert and transparent functions of the eye, at the expense of the retina. This emphasis could have been a deliberate choice, but other signs suggest editorial perfunctoriness, not least the abundant typographical errors which sometimes generate absurdities of meaning. □

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● **Darwin and Huxley.** Next week Oxford University Press issue a paperback edition of *Charles Darwin and T.H. Huxley: Autobiographies*, a book first published in 1974. Both "autobiographies" are little more than sketches, but the book is rounded out by a bibliography, chronologies and by an introduction by Sir Gavin de Beer. Price is £2.50.

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