remarkable advances which have taken place during this decade in our understanding of haemoglobin, iron metabolism, immunoglobulins and T cell receptors, oncogenes and leukaemia viruses, enzyme deficiencies, complement, phagocytosis, and haemostasis. This is a most impressive list and the chapters are uniformly good.

The initial chapter on methods of molecular genetics sets the scene. The following five chapters on all aspects of haemoglobin are excellent and the use made of the globin gene as a 'general gene' in order to introduce many of the molecular biological terms is most effective. The chapter on the thalassaemias is, perhaps, a little succinct, but this could not be said for Perutz's impressive contribution. Cellular and viral oncogenes are very well covered, as is phagocytosis. The last six chapters cover haemostasis and, in many ways, reflect the different levels that molecular biology has penetrated into the different fields. The chapter on fibrinogen is particularly good, but perhaps is more amenable to the molecular biological approach than, for example, platelets. The chapter on Haemophilia and von Willebrand's disease attempts to cover a rapidly expanding field and, within no doubt the limitations of the publisher's deadline, is very successful.

Clearly, in a book like this, there are omissions. Most are minor, but it is surprising that haemopoietic growth factors are not covered, or that the initial chapter does not cover the theory of RFLP analysis, so widely used in medical genetics.

Overall *The molecular basis of blood diseases* is a great success and will (and should) appeal to all haematologists, as well as anyone interested in molecular biology in medicine. Library copies will be in great demand and personal copies should be kept under lock and key.

IAN PEAKE

Malay Archipelago

By A R Wallace. (£27.50.) Oxford: Oxford University Press. 1987.

Why review this book in the *Journal of Medical Genetics*? To some, the choice may seem idiosyncratic, but the reissue of this 19th century classic emphasises how intimately the work of the Victorian naturalists and evolutionary biologists relates to the origin of what we now know as genetics. Wallace's contribution has, understandably, been overshadowed by that of Darwin and while this book of his travels deals only in general terms with evolutionary problems, it is important in showing us how his ideas were founded in his practical work, as well

as what kind of person he was. There is a close parallel here between *Malay Archipelago* and *Voyage of the Beagle*.

To reread the book, as I did, after an interval of decades, was pure enjoyment, as well as giving a sense of amazement as to how the hazards and privations of natural history in almost unexplored terrain were coped with so cheerfully. I only wish that the editor had been allowed a longer and more comprehensive introduction; while some readers will already be familiar with Wallace and his work, most will not. Otherwise the publisher deserves our thanks for bringing this long out of print classic back into general circulation.

PETER S HARPER

Biological Activities of Alpha₁-fetoprotein

Volume 1. Edited by Gerald J Mizejewski and Herbert I Jacobson. (Pp 262; £120.00.) Boca Raton, Florida: CRC Press. 1987.

As every medical geneticist knows, alphafetoprotein (AFP) is an extremely useful marker of fetal malformations. It was the prototype for a set of oncofetal antigens, proteins expressed mainly in fetal tissues, but also showing resurgence in adults in the presence of certain types of tumour. AFP is unusual among the oncofetal antigens in that very high concentrations (up to 3 mg/ml) are found in fetal blood at the end of the first trimester, so that for a brief period it vies with albumin for predominance among the plasma proteins.

Instinctively one feels that a protein of such quantitative importance must have an obvious physiological function. If this is the case, it has been hard to find. Controversies abound, particularly over the role of AFP as an oestrogen carrier, well established in the rat, but unlikely in man. Does it have a key function in immunosuppression in pregnancy, in the control of sexual differentiation, or in potentiating organogenesis? Can it help to describe it as a fetal analogue of albumin, or is that simply begging the questions?

This volume, the proceedings of a satellite symposium of the 7th International Congress of Endocrinology, provides few answers. Sixteen detailed and well referenced chapters bear witness to the industry and ingenuity of a distinguished panel of investigators, but the summing up makes it clear that no hypothesis on the function of AFP is yet in the ascendant. The book is well edited and expensively produced and will probably find a place in the libraries of the better funded research

institutes. I doubt that it will be required reading for those who only seek to use AFP in the prevention of neural tube defects or in refined screening for Down's syndrome.

D J H BROCK

Recent Advances in Inborn Errors of Metabolism
 Edited by K Tada, J P Colombo, and R J Desnick.
 (Pp 332; £44.60.) Basel: Karger. 1987.

This book is the proceedings of the Fourth International Congress of Inborn Errors of Metabolism, which was held in Japan in May 1987. Books like this can be out of date by the time they appear, containing nothing new. However, the editors are to be commended for ensuring that the papers have been published as a printed volume so quickly. A wide range of highly topical subjects has been selected and all the chapters written by those who are active in research, providing an authoritative view of their subject. There are sections on recent progress in the diagnosis and treatment of organic acidaemias, urea cycle disorders, lysosomal storage disorders, and various aspects of phenylketonuria, including the future for gene therapy. Several chapters are devoted to the molecular basis of these disorders and to new mechanisms of inborn errors including peroxisomal disorders and defects of processing of enzymes after polypeptide synthesis (post-translational disorders). There are also review chapters describing the identification of the cystic fibrosis gene locus and on the clinical and metabolic aspects of non-ketotic hyperglycinaemia. The chapters are generally short, pithy, and of a high standard.

This is an excellent volume that achieves its goal of informing about recent advances. I strongly recommend it to all those looking for an update in inborn errors of metabolism.

J V LEONARD

Genetics and Epithelial Cell Dysfunction in Cystic Fibrosis

Edited by J R Riordan and M Buchwald. (Pp 240; \$46.00.) New York: Alan R Liss. 1987.

For the past five years basic research on cystic fibrosis has been dominated by two themes. One has concentrated on the most notable expressed abnormality in the disease, the disturbance of chloride transport in epithelial cells. By dissecting and analysing aberrant chloride uptake in ever greater depth, it has been hoped to discover the specific protein abnormality which underpins the

plethora of signs and symptoms that characterises cystic fibrosis. The other approach, called reverse genetics, seeks to move from linked DNA markers to the mutant gene itself, and then by cloning, sequencing, and data base comparisons, to make deductions about the nature and function of the expressed protein product.

Both approaches have attracted powerful groups of investigators. Although many of the currently solved inborn errors of metabolism have yielded to protein analysis, more intractable disorders like muscular dystrophy needed reverse genetics. In chronic granulomatous disease there was a splendid and triumphant fusion of the two approaches. In cystic fibrosis it is entirely probable that the validation of any candidate gene may need a substantial input from transport physiologists.

This book, the proceedings of a symposium held in Canada in November 1986, is primarily concerned with physiological investigations of chloride transport in epithelial cells. Nine of the 17 chapters record the various investigations being made on sweat glands, and on respiratory and tracheal epithelium. Aficionados of the work of Quinton, Boucher, Riordan, Pedersen, Frizzell, and Widdicombe will find little that has not been published elsewhere, but may enjoy having it all reviewed in a single text. Michael Welsh's laboratory is not represented, a curious omission.

Molecular genetics is covered in three chapters. This subject is moving so fast that any conference proceedings are likely to be little more than an historical footnote to the search for the cystic fibrosis gene. The contribution from Bob Williamson's group deals mainly with strategies, and disappointingly predates the discovery of closely linked markers which are already in routine use in most service laboratories. No mention is made of the first candidate gene which so excited the scientific world when it was published in *Nature* in 1987.

It is reasonable to expect that the costs of important conferences should be partly defrayed by the publication of their proceedings. Those not able to attend (this one was by invitation) can savour the atmosphere and catch up with the state of the art in a fast changing field. However, given the straitened financial circumstances of most university and hospital libraries, conference organisers have a heavy responsibility to publish timously and in full. These proceedings carry no discussions of the submitted papers and have taken almost a year to appear. I think it would be unreasonable to recommend the book to any but the most committed and involved cystic fibrosis research groups.

D J H BROCK