basis of a single essay which repays reading, and a few reviews supported by a balanced and rich bibliography. What is needed is a ‘benchmarks in aging’ to include the papers of Price, Farr, Pearl, Lotka, Haldane, Medawar, and others, which will deserve the company of Murphy, supported with some descriptive papers on the lives and deaths of a wide variety of species, and of human cells in culture.

J. H. Edwards

**Blood Groups and Diseases. A Study of Associations of Diseases with Blood Groups and Other Polymorphisms**


This book is a natural companion to the authors' other large work, the second edition of 'The Distribution of the Human Blood Groups and Other Polymorphisms' (1976), and together they represent an unrivalled source of information on blood groups and other polymorphisms as they occur in populations, both healthy and diseased.

Two-thirds of the book is taken up with the Tables that bring together data from virtually the whole of the world literature on the subject, express it in a uniform way, and add appropriate published control samples where these were not included in the original source material. Each Table documents the frequency of the different alleles of a particular polymorphic system in people with and without a particular disease, and calculates the relative incidence (risk) with a \( \chi^2 \) for the difference from unity. The data from each published study of a particular association are tabulated and a \( \chi^2 \) for homogeneity is provided. The basic arrangement of the Tables is by polymorphic system (ABO, MN, Rhesus, ABH secreter, haptoglobin, and PTC tasting), with each subdivided into disease type (infectious and parasitic, neoplasms, endocrine and metabolic diseases, etc).

Having set out all the raw data with complete bibliographical details, the book then provides summaries and analyses of various kinds, starting with tabular summaries that allow the overall trends to be seen more clearly. The 1976 report from the HLA and Disease Registry of Copenhagen is also reproduced at the end of the book as an appendix.

The remaining third of the book is concerned with synthesis and interpretation, and it is these 15 short chapters that give the book such a wide appeal. Obviously it was essential to include the histocompatibility antigens in any general discussions of disease associations and there is a clear explanation of linkage, association, and that trendy merger of the two, linkage disequilibrium, but the appendix on HLA association does not discuss the findings in any depth. Readers seeking this information would do better to turn to 'HLA and Disease' (1977) edited by Jean Dausset and Anne Svejgaard, Munksgaard, Copenhagen, a volume that also has an appendix to the main theme, a summary of blood groups and disease by Dr Mourant!

There is no-one better equipped to assess and then distil the evidence contained in the thousands of entries in the Tables, and though the associations are slight compared to what we have come to expect of HLA associations, the evidence is often very impressive. The association of carcinoma of the stomach with blood group A (A/O relative incidence 1.21) is now based on 161 surveys and over 63,000 cases. Heterogeneity between different studies can sometimes be very revealing as in the case of peptic ulcers, where the association with group O turns out to relate primarily to duodenal ulcers and in particular to those that bleed. It is typical of the book that an interesting piece of information like this is not allowed to rest as an 'isolated fact'. It crops up again when considering thrombosis and haemorrhage generally, because haemorrhage of various kinds is associated with group O, and thrombosis with group A, and factor \( \text{VIII} \) levels are higher in people of group A than group O. I could describe many such trains of thought that enliven the text and produce a flurry of hypotheses that the interested clinician could investigate.

It is, however, the broader ideas on what selective factors maintain the balanced polymorphisms, or account for the variations between populations, that are likely to provoke the most discussion. With probably at least a third of conceptions ending in miscarriage, pregnancy has always demanded attention from those interested in selection. Mourant concludes that there certainly is selective loss of A and B fetuses carried by group O mothers and seeks an opposing selective effect preventing populations from becoming entirely of group O. He turns his attention to the major epidemic infections and is disappointed that documented associations with particular infections are more often with A than O. This disappointment seems premature, for influenza infections are associated with group O and this is probably a general tendency for most viral infections. William McNeil's 'Plagues and Peoples' documents devastating epidemics in the past that were probably virus infections, and it may be that there has been
undue emphasis on a few classic, easily recognised infections, like smallpox and the plague, in historical records and Mediaeval 'flu has been overlooked.

The book is produced to a high standard and my only complaint is a minor one: the text does not always stick to the subheading under which it is placed, and, for example, a discussion on the size of the population units between which variation becomes important for any polymorphism ends up under 'neoplasms'.

For those actively involved in the study of disease associations the Tables and bibliography alone justify the £25.00. The rest of us can reasonably expect all but the smallest libraries we use to have a copy of this and 'The Distribution of the Human Blood Groups and Other Polymorphisms'. Ideas may change but the carefully compiled Tables in both these volumes will remain an invaluable source of information for a long time to come.

MARCUS E. PEMBREY

Inherited Disorders of the Skeleton

There is a great need for monographs on the genetics of the various system specialities, so that both this book and the series of which it is the first example are to be welcomed. The book provides a thumbnail sketch of the clinical features and the genetics of over 120 different disorders affecting the skeleton. The 'inherited disorders' of the title is taken fairly literally, in that common but non-Mendelian conditions, such as congenital dislocation of the hip, talipes equinovarus, and idiopathic scoliosis are not discussed, though several rarer malformations and 'anomalads' with no known genetic basis are included. Roughly half of the conditions covered are illustrated by useful black and white photographs, which add greatly to the book's value. The vast majority of them appear to be of the author's own patients, attesting to his wide experience in this field.

The grouping of various types of disorder into chapters seems at times rather arbitrary. I suspect that this was done to make the chapters of manageable length, but it also causes difficulties in finding one's way around, especially in the first three chapters entitled 'Skeletal dysplasias without significant spinal involvement' (this, curiously, includes achondroplasia and chondrodysplasia punctata), 'Skeletal dysplasias with significant spinal involvement', and 'Miscellaneous skeletal dysplasias' (which includes several syndromes not usually thought of as skeletal dysplasias). Similarly, the three chapters entitled 'Osteoscleroses', 'Cranio-tubular dysplasias', and 'Craniotubular hyperostoses' separate some entities which, superficially, seem to have quite a lot in common.

Partly as a result of its organisation, the book is not as helpful as it might have been where the diagnosis is not known. This could have been remedied by including some flow diagrams for differential diagnosis in such clinical problems as short limbed dwarfism of pre- and postnatal onset, increased bone density, the child who appears to have a storage disorder, and so on, and by a more consistent attempt to lay down definitive criteria for each condition. Another useful innovation would be to show growth curves for some of the dwarfing conditions on a gentile chart, indicating where possible the expected adult height.

Although the blurb on the jacket says that the book is 'based on the case histories of more than 1000 patients...examined by the author in genetics clinics in Southern Africa', and Professor Beighton's experience and authority are evident on every page, the book is in fact based, as it must be, at least equally on a review of the relevant literature. References up to 1977 are quoted and their content and bearing, particularly on the questions of genetics, expertly summarised. One occasionally wishes the author would allow his personal references and practices more play when discussing contentious or difficult issues. For example, how does he actually counsel the sporadic case of pseudoachondroplasia? How thoroughly would he want to examine the apparently normal parents of a child with Freeman-Sheldon or Larsen syndrome?

The references are unfortunately grouped under different topics at the end of each chapter. It would save a lot of page turning if the references for each topic were given immediately after the relevant section of text.

These are relatively minor quibbles compared with the positive value of the book. Professor Beighton has done clinical geneticists, paediatricians and orthopaedic surgeons a service in presenting a great deal of information in reasonably short and readable form. It is hoped that he will keep the book up to date with frequent new editions. The publishers are to be congratulated on making the book portable without lowering standards of production.

N. R. DENNING

The Study of Man. An Introduction to Human Biology