

significant proportion of associated tumours, confirming that this is indeed the causative gene. This provides a fitting climax to a subject that has had a relatively short incubation time but has already generated a large body of existing results.

ALAN WRIGHT

Human Immunogenetics. Basic Principles and Clinical Relevance. Immunology series volume 43. Ed S D Litwin. (Pp 856; \$180.00.) New York: Marcel Dekker, 1989.

This book is a multi-authored volume, comprising a total of 32 chapters which are distributed between five sections: an introductory section which focuses on the experimental approaches and tools of immunogenetics (the reader is assumed to be already familiar with basic concepts in genetics and immunology) and one section each to cover the immunogenetics of immunity, histocompatibility, tumour and viral antigens, and blood and serum components. Clinical applications are discussed at various stages in the book and individual chapters are devoted to immunodeficiency and to HLA and disease. The stated intention is that this book should be suitable for "advanced undergraduate, graduate and medical students in immunology, genetics, microbiology, cell biology, or pathology as well as a reference for clinicians and researchers in these disciplines and virology, hematology, allergy, infectious diseases, and oncology". However, the volume suffers from a number of drawbacks. First, the balance of the book is oddly tipped towards the immunogenetics of tumour and viral antigens (205 pages) while some mainstream topics are given scant consideration, for example, the marvellous progress that has recently been made in defining T cell receptors has largely been overlooked. Secondly, a great deal of the text is out of date with only a very small number of the 2500 references referring to material published more recently than 1986. As a consequence some of the information provided is factually incorrect. Although some chapters are both authoritative and lucid (for example, the review on immunoglobulin genes), many others fall short

of this standard. Overall there is the impression that the book is not a very coherent sum of its individual components and there are many instances of unnecessary repetition and occasional inconsistencies between chapters (for example, in relation to surface marker nomenclature). However, with a total of 48 authors, it is perhaps not altogether surprising that the book is very uneven regarding the content and style of individual chapters. While it is to be hoped that such deficiencies may be remedied in future editions of this volume, the content of the present book does not compare favourably with that of several existing books which deal with more specific aspects of human immunogenetics and have been written by one or two authors, for example, *Molecular immunology*, edited by Hames and Glover (IRL Press, 1988) and *The natural history of the major histocompatibility complex* by Klein (John Wiley, 1986). In the fast evolving field of human immunogenetics there remains a need for a single definitive textbook that is both wide ranging and up to date.

T STRACHAN

Human Chromosomes—Manual of Basic Techniques. Ed Ram S Verma, Arvind Babu. (Pp 240; £15.95 paperback.) New York: Pergamon Press, 1989.

The authors claim that this book is primarily written for those in the field of human cytogenetics who wish to improve their laboratory skills. It is more than that, providing not only detailed protocols but also the essential theoretical background to the methods used. The text covers the various approaches to culture of a comprehensive range of specimens, all of the commonly used banding techniques (as well as a very interesting review of the use of restriction enzyme/Giemsa banding), in situ hybridisation, and a chapter on DNA isolation, probe production, and Southern blotting. The book is excellently illustrated and the extensive reference sections at the end of each chapter provide a rich source for further reading.

The style of the book, as with most laboratory manuals of this type, could not be described as bed time reading, but it has a logical and well structured

format. At times the authors are rather dogmatic, especially in their comments on analysis, where they impose arbitrary values on the number of cells they consider essential for diagnosis. Safety in the laboratory is not well dealt with; one comment on the essential need for a gas burner in a laminar flow hood would not only be considered bad practice in the UK, but is potentially dangerous. It was a surprise to find that high resolution banding was considered to be a specialised technique and did not appear in the main culture methods section; most cytogeneticists would now consider this to be a routine laboratory method. Perhaps the major omission is the lack of non-radioactive in situ hybridisation techniques which, although the authors consider them to be of great interest, are given no more than a cursory paragraph. Perhaps developments in this field will be included in the next edition. These are minor criticisms of an excellent reference work which should be on the bench of all clinical cytogenetics laboratories. It will be a welcome source of information for cytogeneticists already in the field and essential reading for those in training.

No one can say that clinical cytogenetics is not evolving when they read the wide range of techniques available, so well presented in this book.

TONY ANDREWS

The Selfish Gene. Richard Dawkins. 2nd ed. (Pp 352; £17.50 hardback, £5.95 paperback.) Oxford: Oxford University Press, 1989.

Who has not read Richard Dawkins's *The selfish gene* since it first appeared in 1976? Most biologists are now familiar with his idea of the gene as a survival machine, a sort of mindless and blind replicator only concerned with its survival through natural selection. This new edition is bigger with more than double the number of references, and includes two additional chapters: 'Nice guys finish first' based on a television programme, and 'The long reach of the gene' based on his *The extended phenotype* (Oxford: Freeman, 1982). According to *The New York Times* this is "... the sort of popular science writing that makes the reader feel like a genius". It is thus comparable

to Stephen Hawking's *A brief history of time*, which is also a best seller and which attempts to do for cosmology what Dawkins does for natural selection. For anyone with an interest in theoretical biology written in an interesting and seductive manner this is a must.

ALAN EMERY

Biochemical Genetics: A Laboratory Manual. Emmanuel Shapira, Miriam G Blitzer, James Miller, Diane K Africk. (Pp 145; £19.50.) New York, Oxford: Oxford University Press. 1989.

This book makes no pretence of being anything more than a bench book on biochemical genetics, as illustrated by its contents and general quality of presentation. Part I deals with enzyme assays, describing general procedures and buffers, and methods for specific enzymes using fluorimetric, spectrophotometric, and radioisotope techniques. It should be noted that all but two of the methods are for lysosomal enzymes, indicating a distinct bias in the contents of this section, which presumably reflects the specialised interests of the authors.

Part II is on diagnostic tests for metabolic disorders, specimen collection, and handling. There are sections on urine spot tests, thin layer chromatography of a number of types of metabolite, quantitative amino acid analysis, organic acid analysis by gas chromatography, and free and esterified carnitine assays. An appendix tabulates the clinical presentation of a range of disorders, including those of lysosomal storage, the urea cycle, and amino acid and organic acid metabolism.

There are obvious reservations about a book of this nature. One is that it is a simple recipe book of methods in use in the authors' laboratory and there is no critical appraisal of the techniques. Moreover, some of these methods, that for quantitative amino acids for example, are only valid for one particular type of analyser, and the information is of very limited value for a laboratory with alternative instrumentation. A second is that it might encourage a belief that methods like chromatography of amino acids and organic acids, and interpretation of the results, are straightforward matters which are learned easily. Recent

experience of quality control of urine amino acids in the UK has shown that this, and similar procedures, should not be undertaken lightly.

In conclusion, it is difficult to imagine that this book will have a wide appeal. Most established workers in this field would want to search widely before introducing a new technique. In general, it is accepted that biochemical genetics is best concentrated in centres where expertise already exists and newcomers, who might be attracted by this book, should be relatively few in number.

JOHN HOLTON

Human Gene Mapping 10. 10th International Workshop on Human Gene Mapping. (Pp 1147; £122.10.) Basel: Karger. 1989.

The First International Human Gene Mapping Workshop (HGM1) was held at Yale University in 1973 and the proceedings appeared in a slim monograph listing 31 confirmed autosomal assignments and offering a tentative map of 13 loci on the X chromosome. Sixteen years and a revolution in molecular biology later, the Tenth Workshop returned to Yale and has generated a tome to dwarf any telephone directory containing information on some 5000 mapped genes and DNA markers. This is essential reference material for the increasing numbers of scientists working on the human genome, as well as for those providing a service for patients with genetic disorders.

The information is presented in various ways to make it accessible to the reader. Committees assigned to individual chromosomes have produced reports summarising the data and highlighting additions and changes. The committee on clinical disorders and chromosome deletion syndromes has collated the information in a format which clinicians will find useful. Almost a third of the publication is taken up with the catalogues of 3400 DNA segments and 945 cloned genes. Abstracts of workshop presentations constitute another large section. One bar to communication and source of irritation is the exclusive use of D numbers throughout the text, necessitating repeated reference to the index of DNA segments. Since most

researchers use probe names in their everyday work, it would be helpful if these could also be given, perhaps in brackets.

Past workshops have managed to keep abreast of the increasing amounts of data on DNA markers and physical mapping, but presentation of data on genetic distances has been haphazard and incomplete. For a DNA marker of interest, one could readily find details of the probe, vector, and polymorphism, probably some indication of the cytogenetic localisation, and perhaps some ordering information, but seldom details of the genetic distance from nearby markers or disease loci. To meet this need, HGM10 includes summary scores from Bronya Keats's database of pairwise lod scores taken from published reports and workshop submissions. These scores, together with information on order derived from multipoint linkage maps and physical mapping data, have been used to construct genetic maps for each chromosome. This commitment to the compilation of linkage data is most welcome and would be all the more useful if the source of the primary data could also be listed.

HGM10 was made possible by an on-line database which allowed entry and modification of data by the 26 workshop committees and facilitated publication of the final report in only three months, a remarkable achievement. More sophisticated computerisation will be needed as the volume of information increases and there may well be changes in the way the data are contributed and validated by the scientific community. Certainly the format by which the compiled data are made available will have to change as the remaining 97% of the genome is mapped, otherwise we shall all need to reinforce our book shelves.

JOHN R W YATES

Genetic Variants and Strains of the Laboratory Mouse. 2nd ed. Ed Mary F Lyon, Anthony G Searle. (Pp 876; £90.00.) Oxford: Oxford University Press. 1989.

A brief period in the late sixties, studying as an undergraduate in Hans Gruneberg's department, taught me that mouse geneticists are different