Book reviews

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Principles of Gene Manipulation. An Introduction to Genetic Engineering

I was very pleased to have been given a copy of Principles of Gene Manipulation to review, because someone had 'borrowed' my second edition and forgotten to bring it back, which I think says a great deal about the usefulness of this book.

Now in its third edition, Old and Primrose have revised and updated their textbook and, as a result of the rate of progress in this field, have increased its size and scope. The areas covered are: introduction, basic techniques, cloning in E. coli using various vectors, construction of genomic and cDNA libraries, DNA sequencing, cloning in other microorganisms, plant and animal cells and expression of cloned gene products, applications to medicine and industry (including a section on patients), and appendices of useful information. Generally the coverage is very thorough, but I would have liked to have seen more information and examples in the section dealing with the application of DNA technology to medicine. The authors restrict themselves to a brief description of prenatal diagnosis of haemoglobinopathies and do not mention any of the exciting recent advances in human gene mapping using DNA probes combined with linkage analysis and somatic cell hybridisation. Nor is there any mention of the progress in the understanding of cancer made possible by the application of recombinant DNA techniques. Perhaps it is asking too much for an introductory text, but I do feel that more space should have been devoted to describing the way in which the technology has allowed such a variety of problems to be tackled.

However, in its coverage of the techniques themselves this is an admirable book. It is well written, clearly illustrated, and contains plenty of useful references. I would recommend this updated edition to any undergraduate or research worker in biology or medicine. I only hope that this book will spend a little longer on my bookshelf than did its predecessor!

Duncan Shaw

Genetics

It can be argued that in the last few years so much has been learned of the genetics of man that the Medical Geneticist now has little need of a text book of general genetics. However, for those who do not share this view, there are several excellent texts including, for example, John Fincham's Genetics in this country, and Irwin Herskowitz's Principles of Genetics in North America. Strickberger's Genetics has now reached its third edition and therefore must have a following.

It is designed as a comprehensive course in general genetics. Certainly it is all embracing with illustrative examples chosen from micro-organisms, fungi, higher plants, and animals including man, and all the usual subjects are covered, including a section on gene manipulation. Statistical methods are dealt with particularly well. It is well illustrated with two tone diagrams and each chapter concludes with a list of references for further reading and a number of problem exercises, but unfortunately no answers are provided.

This is an attractive, very readable, and up to date text book with much to recommend it, especially for those who are not concerned only with the genetics of man.

Alan E H Emery

Gene Expression in Muscle

This book represents the proceedings of a meeting sponsored by the Muscular Dystrophy Association of America, held at Totts Gap, Pennsylvania in October 1983. The purpose of the meeting was to bring together available information on gene expression in muscle in an attempt to gain insights into the pathogenesis of Duchenne muscular dystrophy. The topics chosen for analysis range from the clinical phenotype of Duchenne dystrophy, alterations of gene expression in muscle disease, regula-
tion of muscle growth, and control of muscle protein isoforms, to recombinant DNA approaches to investigate muscle gene expression. A lot of the data presented have been published elsewhere and this is often a recipe for a poor quality book. However, this is definitely not the case for this book for two reasons. Firstly, most of the authors have attempted to slant their presentation where possible towards clinical problems and, secondly, the text is interspersed with questions raised by participants during the presentation of the various papers and answers by the authors. Plenum Press have shown a considerable amount of skill in blending the text with discussion, and the overall effect is to produce a tremendously interesting, exciting, and lively book. The standard of questions was high and very penetrating. This is particularly so in the chapter by Blau, where she presents a new theory concerning defective myoblast development in dystrophy. Perhaps the weakest part of the book is the section on molecular genetic approaches. Here, there is only one paper on Duchenne dystrophy by Kunkel and the chapter is very superficial and out of date in a rapidly moving field. More emphasis on this area, rather than contractile protein gene families which get four chapters, would have led to a more balanced and interesting section. Overall, the book is highly recommended and required reading for basic scientists wishing to know more of muscle disease, and for neurologists and neurogeneticists curious about the working of muscle cells.

Frank S Walsh

Advances in Human Genetics

This collection of reviews consists of five topics, each written by an outstanding authority in the particular field. This particular selection of authors, together with the generous space available for each chapter (around 50 pages), gives a quality and consistency rarely seen in review series. The selection of topics enhances the overall interest of the volume, four of the five chapters being on topics which have seen marked, even spectacular, advances in the past few years.

Three of the chapters deal with important human enzymes or protein groups and their genetic disorders. These are glucose-6-phosphate dehydrogenase by Luzzatto and Battistuzzi, steroid sulphatase deficiency by Schapiro, and genetic mutations affecting human lipoprotein metabolism by Zannis and Breslow. All three are outstanding, giving someone only partially familiar with the subject not only a comprehensive account of what is known, but also an appreciation of how these specific mutations can bear on general principles, such as X inactivation, XY homology, and receptor function. They cover not simply genetics, but deal also with much basic biochemistry, comparative studies in different species, and clinical aspects. All three chapters are up to date considering the rapid evolution of the topics; this reflects the active involvement of the authors in new developments. Nevertheless, one suspects that there has been a considerable publication delay as most recent references (after 1983) only appear in brief addenda and are not fully integrated into the main text. This is especially relevant for molecular genetic developments.

The remaining two chapters, mutation in human populations by Crow and Denniston, and cytogenticities of pregnancy wastage by the Boués and the late Alfred Gropp, are very different from the other three, but no less interesting. Crow and Denniston give a clear and authoritative account of a difficult topic, while the detailed information on chromosomally abnormal early pregnancies is of great practical value, particularly as first trimester prenatal diagnosis gathers momentum.

There can be few workers in Medical Genetics, whether laboratory scientists or clinicians, who will not find the whole of this volume valuable and enjoyable. The editors deserve credit for their choice of authors; they and the publishers should attempt to ensure that publication delay for this series is minimal so that an excellent volume can have maximum impact and use.

Peter S Harper

Branched Chain Amino and Keto Acids in Health and Disease

This book comprises papers resulting from the International Symposium on Branched Chain Amino and Keto Acids in Health and Disease held in Göttingen in 1983. Despite the date of the meeting, the resultant publication has been reviewed during production and many of the chapters include references to 1983 and 1984, making this a useful, current, and fairly comprehensive review of the subject.

This book comprises three main sections con-