

ranging as in the earlier chapters of the book, with the exception perhaps of the control of gene expression in eukaryotes. Some aspects, such as rearrangements of antibody genes, multigene families and the rapidly expanding field of homeotic mutants are covered in the section on development and differentiation, but I did feel that the overall treatment of this area was not as thorough or comprehensive as it deserves to be.

The final section of the book deal with population and ecological genetics, including the factors which govern the frequency of genes in populations, selectionist versus neutralist arguments, speciation, evolution and eugenics. Again a surprisingly wide range of topics is packed into these closing chapters.

A final feature of the book which contributes to its use as a teaching aid is the exhaustive section of questions and problems and the lists of references at the end of each chapter. The sheer number of these is a tribute to the author's thoroughness, as indeed are the indices of subjects and authors, both of which are comprehensive and reliable.

The strengths of the previous edition of Strickberger were partly its breadth of coverage of genetics, rather than the depth of detail with which it treated individual topics, and partly the simplicity and clarity of the style. Another great advantage of the author's approach was that the explanations of genetic phenomena were developed from a firm understanding of the biology of the system. These features have been retained in the new edition, and it is still invaluable as a source of reference for lighting up some of the more obscure corners of the subject. The overall impression one gets of the new edition is of a book which has had new material included at the cost of some compression and deletion of material present in previous editions: diagrams are in three colours instead of black and white, but apart from this, little has altered in the general style and presentation. It therefore appears to represent a kind of neutral evolution in which changes have taken place at the molecular level without much effect on the overall phenotype.

The best part of the book is still the clarity and breadth of its coverage of formal genetics: the molecular biology is competently done, but the treatment is not as comprehensive as in some of the other texts on the market. However, the range of subject matter covered by modern genetics is now so wide as to make it difficult if not impossible for a single author to cover the whole field, and it is to Monroe Strickberger's great credit that this book is still one of the available best general textbooks of genetics.

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Molecular form and function of the plant genome.

Lous van Vloten-Doting, Gert S. P. Groot and Timothy C. Hall (eds.). Plenum Press, New York and London. 1985. Pp. xii + 693. Price \$82.50 (US).

This is the proceedings of the fourth Plant Molecular Biology Advanced Study Institute held in July 1984, and one of the most salutary effects of reading the book is the realisation of the speed with which this field has progressed since the first Institute was held in 1977. The book comprises a series of sections of variable length, and contributions of variable quality and coverage—some being full of experimental details, others giving a slightly broader coverage but only a few providing an overview of a field. There are brief sections on the structure and function of the plant genome, nitrogen fixation, RNA ligation, genetical manipulation of plants, herbicides, viral genomes and mitochondrial genes. There are longer treatments of certain other topics; the assets and limitations of new techniques (this includes a long contribution on quantitative cytochemistry which seems a little out of place here), a section on structure and function of plant nuclear genes (again the use of aphidicolin to synchronise plant cells is of interest but why it is considered in this section is not clear), on protein accumulation, on Ti and Ri plasmids and a substantial series of papers on the structure and function of chloroplast genes. The end result is an overview of aspects of many fields of plant molecular biology. The excitement of the field certainly comes across but is that sufficient reason to buy the book? You can read much of the substance of many of the contributions in current journals and certainly the vast majority are of the kind that would be published in the standard scientific literature. You therefore have to come back to the old problem regarding the justification for publishing proceedings of symposia of this kind, whose primary function is as a forum for the informal interchange of ideas and information between workers in the field. What one does not find is the considered appraisal of a field, although there is one exception to this generalisation, a paper by Gressel titled "Biotechnologically conferring herbicide resistance in crops: the present realities". Gressel is not concerned so much with the technological details of this field but with the implications of the approaches generally adopted and the end result is an interesting and stimulating contribution. Neither can one get comprehensive coverage of a topic; how can one possibly do this, for example, for the structure and function of plant genomes in two papers, or for nitrogen fixation in three papers? For those at a postgraduate and postdoctoral level in plant molecular biology, who are entering the field or want to get a feel for the progress being made by their fellow workers in related fields, and who want the information conveniently presented in one book, then these proceedings will be useful but also very expensive. For others, I'm hard pressed to recommend it.

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