

Book reviews

Hohn, Th.; Schell, J.: Plant Gene Research, Plant DNA Infectious Agents. Wien, New York: Springer 1987. XIV + 348 pp., 76 figs. Hard bound DM 176,00.

It was a real pleasure to review the book "Plant Gene Research, Plant DNA Infectious Agents." Research on plant DNA infectious agents, in particular, plant viruses and *Agrobacterium*, has not only provided basic knowledge and applications, but also has had a tremendous impact in plant molecular biology and plant biotechnology. Most of the fundamental information presently available is present in this book, which is composed of chapters written by experts in their field. In addition to the wide scope of topics, the up-to-date nature of the data is remarkable. Compiling such a comprehensive book, appearing in 1987 and based on papers also published in 1987, deserves a real compliment. For anyone working in the field of plant molecular biology and plant biotechnology, this book is a very valuable contribution. The topics described in the various chapters speak for themselves, they need not to be reviewed here. It is a pity that the topics are limited to the molecular biological tools and that no attention is paid to the approach of biological problems that can be tackled with these tools. This, however, does not detract from the value of this book.

G. J. Wullems, Nijmegen

Burgess, R. (ed.): Protein Purification: Micro to Macro. (UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 68.) New York: Liss 1987. 510 pp. Hard bound.

"Protein Purification: Micro to Macro" is the proceedings of a Cetus-UCLA symposium held at Frisco/CO, March 29–April 4, 1987, and is the 68th volume of the UCLA Symposia series on molecular and cellular biology.

Interest in protein purification has increased dramatically as more and more enzymes important in research, and to pharmaceutical and industrial concerns are identified. Protein biochemists in academic laboratories need the more sensitive and more effective procedures to purify various proteins, which in many cases are in microscale. On the other hand, industrial genetic and chemical engineers have to develop techniques for producing proteins at the kilogram to ton level. Moreover, these products have to be consistent, well-defined, and highly purified – in some cases exceeding 99.99% purity. During the past few years, the technology for purifying proteins has advanced very rapidly. The newest and most important aspects on protein purification are discussed both theoretically and practically in this book. Topics include micropurification and analysis, protecting proteins during purification and storage, precipitation and phase partitioning methods, chromatograph, overproduction of proteins in bacteria and other hosts, coping with problems of insolubility and proteolysis, and scale-up considerations.

This book will be of interest to protein and cellular biochemists and genetic and chemical engineers, and will be a valuable reference book to those researchers in the pharmaceutical and biotechnological industries and academic institutes in this field of study.

Li Yiqin, Beijing

Zubay, G.: Genetics. Menlo Park/CA: Benjamin/Cummings Publ. 1987. 973 pp. Many figs. Hard bound \$ 39.95.

During the past few years, a considerable number of new genetics textbooks have been published. This is a reflection of the need for up-to-date information on all aspects of this field. Inspecting these various textbooks makes one aware of the difficulties of such a task. The fantastic speed of which this science is unfolding makes the undertaking to compose a textbook, which is likely to be outdated in at least some areas at the time of publication, very admirable.

Another problem connected with any approach to design a textbook in genetics is that few if any scientists today are qualified to judge all areas of this field of biology with the same degree of competence and balance. To me, Fincham's textbook remains the most remarkable example of this type. An alternative is to invite colleagues to contribute or critically revise parts of a comprehensive approach. This is what Zubay chose. Colleagues contributing to this genetics textbook are J. W. Bodley, F. J. Bollum, A. B. Burgess, R. R. Burgess, L. Cavalli-Sforza, S. Cohen, M. Dworkin, I. Geis, M. Gottesman, S. Gottesman, J. Marmur, R. Palmiter, R. C. Peterson, F. R. Salemne, and J. Sambrook. According to the Preface, many others were involved in the review process, and the book has gone through several levels of preparation: in the first instance, a review for scientific quality by authorities in that particular area; second, a check-up for style, level, and explanations; finally, a general revision for readability by a professional editor.

Because of the tremendous effort put into preparing the book, one expects extraordinary completeness and correctness, as well as a high didactic level. I have used this book (together with others) for a basic genetics course for first year university students, and from that experience, I conclude that the book is, in general, excellent. The text is clearly written, and the figures are in most cases very suitable and instructive, displaying as high a level of homogeneity in presentation as does the text. The inclusion of sections on methodology is very appropriate in a modern textbook of genetics.

Nevertheless, criticism cannot be put aside, in particular considering the extended efforts made in preparing this book. Important issues, such as the cob-box system (cytochrome b), which certainly presents one of the few examples of gene regulation and its genetic study in eukaryotes, is not treated at all. The term P element is not found in the index, and the part on transposable elements in general is not sufficiently clear and organized. One would be better off to read parts of Finnegan's review when preparing lectures on that topic (which shows that the topic can be treated more clearly). In some details, astonishing inaccuracies or even unexcusable mistakes are present. The most obvious example is figure 14.4 (p. 542) on the life cycle of *Drosophila*. The fly is drawn with wings at the border of the 3rd thoracic and the 1st abdominal segment and halteres at the border of the 2nd and 3rd thoracic segment. Also other – somewhat more correct (!) – drawings make it unlikely that the person carrying out the drawings has even seen such an animal.

Apart from such problems in details, the book certainly represents a very respectable approach in assembling all important aspects of modern genetics in a balanced form. I consider it as one of the best textbooks in genetics presently available.

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