
 Book reviews

Jensen, U.; Fairbrothers, D.E. (eds.): Proteins and Nucleic Acids in Plant Systematics. Proceedings in Life Sciences. Berlin, Heidelberg, New York: Springer 1983. xi+408 pp., 148 figs. Hard bound DM 114,-.

At an international symposium held at the University of Bayreuth FRG having the identical title as the book in question, scientists of 11 countries exchanged ideas and information on the molecular aspects of plant phylogenetic research and plant classification. The 26 contributions delivered at the meeting review the present state of plant macromolecular systematics, with nucleic acids, structural and seriological proteins as parameters. Phylogenetic information comes from nucleotide sequence analysis, t-RNA sequence data, comparative oligonucleotide cataloging of ribosomal RNA, as well as from differentiation of nuclear DNA. More information is available on protein sequencing and monoclonal antibodies, the latter have limited importance in phylogenetic studies. Particular proteins contributing to phylogenetics studies and taxonomical problems are treated in great detail: phycobiliproteins, ferridoxine, polypeptides, isoenzymes, seed and pollen proteins. The application of serological techniques contributed much to immunotaxonomic studies, to microevolution and to the solution of inter- and intraspecific relationships. The symposium drew to a close with statements and conclusions. It is generally agreed that evolution is a result of random gene changes acted on by natural selection and genetic drift. Phenotypic morphological characters are considered important, as are gene structures. For phylogenetic studies, however, the comparison of sementides (information carrying molecules) have special significance. Conspicuously, lipids are not taken into consideration in systematics and phylogenetic studies.

H. F. Linskens, Nijmegen

Pühler, A.; Timmis, K.N. (eds.): Advanced Molecular Genetics. Berlin, Heidelberg, New York, Tokyo: Springer 1984. ix + 347 pp., 98 figs. Hard bound DM 89,-.

This manual contains most of the important methods in the field of molecular genetics, in a series of simple and more complicated experiments summarized in eight chapters: Basic

methods, Mutagenesis, Gene cloning, Gene expression, DNA sequencing, Electron microscopy, Transcription and DNA replication.

Each chapter is subdivided into one or more fairly distinct "articles", many of which with the editors Pühler and/or Timmis as (co-)author(s).

Except for the sole "article" in chapter six (Electron microscopy) and the "article" -Gene cloning: an introduction- all other "articles" are edited in a consistent and therefore very surveyable way: each of them consists of a general introduction, a description of at least one experiment, materials and references. The consistency is further conveyed in such a way that each experiment is split into a second, more detailed introduction, most of the time followed by an objective or objectives and procedure(s), and frequently appended by items as: results, materials, final comments, discussion or a combination of them. It is because of this clear and consistent composition that the book is a pleasure to read.

The editors have the opinion that the book will serve as a basis for the teaching of molecular genetic techniques in formal predoctoral as well as postdoctoral laboratory courses. I personally have my doubts about the latter one, because at the postdoctoral level one goes back to the original articles instead of using a manual such as this. Moreover, the references cited in this book are clearly meant as background information and are quite old, so that they have little up-to-date value. For example, the "articles" - Molecular epidemiology by colony hybridization using cloned genes -, - Determination of coding regions on multicopy plasmids: Analysis of the chloramphenicol acetyltransferase gene of plasmid pACYC184 - and - Cloning with plasmid vectors - have references published in 1983; four more "articles" have 1982 references; and in the rest (22 "articles") the references are not dated younger than 1981. Consequently, the title of the book promises more than it delivers and a more appropriate title would be: "Recent methods in molecular genetics".

Nevertheless, the editors have succeeded in making a laboratory manual that covers a broad spectrum of the subjects in molecular genetics and is therefore highly recommended reading. Solely because there is no list of abbreviations, the book does not deserve the predicate: carefully and well-edited.

M. M. A. van Herpen, Nijmegen