Theor Appl Genet (1989) 78:904

Book reviews

Schlegel, R. A.; Halleck, M. S.; Rao, Potu N.: Molecular Regulation of Nuclear Events in Mitosis and Meiosis. Series on Cell Biology. Orlando, Florida: USA Academic Press. 375 pp. $ 85.00.

This book is mainly concerned with the transformations that the nuclear envelope and chromatin undergo during mitosis and meiosis; spindle formation and chromosome movement are only marginally dealt with. The 11 chapters are written by outstanding researchers in their respective fields. A concise overview on the disintegration and re-assembly of the nuclear envelope, including the related phosphorylation of the lamina proteins, is provided by Stick. Yasuda, Mueller, and Bradbury describe the organization of chromatin and the putative conformational rearrangements that take place during chromosome condensation. They further deal with histone modifications, speculating broadly on their regulatory role. A thorough and most valuable analysis of mitotic regulation processes is undertaken in three chapters contributed by Rao and coworkers. While supporting the general view that protein phosphorylation plays a key role, they also point out that it is still not certain whether it is the cause or the consequence of the observed structural alterations. Accordingly, the need to search for further regulating factors is emphasized. Protein phosphorylation and its enzymology are the main topics of the remaining chapters. In particular, the effect of egg cytoplasm on phosphorylation is extensively discussed. While some degree of overlapping between topics is unavoidable in a multi-author book like this, it seems to me that the chapter on cytoplasmic activities by Masui and Shibuta could have been omitted without loss, as all aspects covered by it are more deeply dealth with in other contributions. References are up to 1985. The book can be recommended to anyone who is more than just superficially interested in mitosis and meiosis.

F. Wanka, Nijmegen

Hartl, D. L.; Freifelder, D.; Snyder, L. A.: Basic Genetics. 1. Ed. Boston Portola Valley: Jones and Bartlett 1988. 505 pp.; Several figs. and tabs. Hard bound. £ 23.95.

This textbook is a brief and instructive introduction to classical and molecular genetics. It is excellently illustrated with colour and black-and-white figures, and the text is comprehensively written and clearly arranged. A summary, key terms, and interesting problems at the end of each chapter are useful additions to the text and facilitate the understanding and learning of the genetic facts. A small disadvantage is the somewhat unbalanced length of the different chapters: in some cases they are not adequate with respect to the importance of the subject, e.g., population genetics, the genetics of evolution, and quantitative genetics are presented in 65 pages; the genetics of bacteria and phages, however, in only 30 ones. On the other hand, the contents of those 30 pages are such that the most important facts are dealt with. Transposition in bacteria is covered in only 2 pages, and it would be desirable to have a scheme of a bacterial transposon as well as to explain that transposition in bacteria (as in other organisms) is not always replicative.

Without any doubt readers of this book will obtain solid knowledge of basic genetics in most fields.

E. Günther, Greifswald

Edwards, J. H.; Lyon, M. F.; Southern, E. M (eds.): The Prevention and Avoidance of Genetic Disease. 1st edn. London: The Royal Society 1988. 157 pp., 35 figs., 45 tabs. Hard bound £ 34.50.

Now that infections and nutritional diseases are progressively being eliminated, genetic diseases are becoming relatively more important and are now major causes of illness and death, particularly in children. Recent advances in molecular biology have opened up the prospect of cloning genes and, consequently, the prevention of these diseases by genetic counselling and prenatal diagnosis. These advances were discussed at an international meeting organized by the Royal Society in April 1987. This volume contains the papers and discussions of this meeting. The first paper presents an overview on the importance of genetic counselling and prevention of genetic diseases (Edwards). Most of the papers deal with molecular human genetics: human gene mapping (Robson), molecular cytogenetics (Ferguson-Smith), the role of genomic diagnosis (Weatherall et al.), molecular diagnosis of cystic fibrosis (Tsui et al.), Duchenne muscular dystrophy (Worton et al.), Huntington's disease (Harper et al.) and prospects for the complete molecular map of the human map (Southern). The prevention of congenital malformations (Nevin) and Down's syndrome (Mikkelsen) are reported in two papers. Three papers deal with the nature and causes of mutation in man (Caskey, Evans) and animals (Lyon).

This book reflects the 1987 state of our knowledge in this field of molecular genetics, which has advanced rapidly since 1987. It will be of interest to research and clinical geneticists as well as to pediatricians and physicians dealing with genetic counselling.

F. H. Herrmann, Greifswald

Fraley, R. T.; Frey, N. M.; Schell, J. (eds.). Current Communications in Molecular Biology: Genetic Improvements in Agriculturally Important Crops. Progress and Issues. Cold Spring Harbor: CSH Laboratories 1988. xi+116 pp., 3 figs., 6 tabs. Soft bound $ 25.00.

The slim *Current Communications* always originate from symposia and contain extended summaries of 3 to 8 pages supplied with important references. Thus, they provide a quick up-to-data overview and the chance to look up details in cited publications provided they have already been published.

The present booklet in the series covers the rapid development of plant genetic engineering and its impact on agriculture as presented at a Banbury Center conference (the data of which is not given). The concise paper summaries highlight recent advances from plant transformation methods to herbicide, virus and insect resistance, respectively. But besides this, the growing importance of field testing, evaluation, product development and respective governmental regulations (from the US perspective) is stressed and covers nearly one-third of the booklet. This part reminds us in the research community that "those working at transforming crops should be aware of the perceptions of the public and the shapers of those perceptions" (M. M. Simpson).

The book is worth reading especially for those at the edges of the field seeking quick and more general information.

U. Wobus