Heredity **68** (1992) 381–382

Book reviews

Cell Activation: Genetic Approaches. Advances in Regulation of Cell Growth. (Vol. 2) James J. Mond, C. Cambier and Arthur Weiss (eds). Raven Press, New York. 1991. Pp. 350. Price £78.00 Hardback. ISBN 0 88167 819 8.

As the title indicates this is the second volume in a 'new' series on the regulation of cell growth. The first was published in 1989 and so it would appear that additions will be made on a biennial basis. The editors and editorial advisory board are all distinguished USA resident scientists and so it seems reasonable to anticipate that the series stands a good chance of becoming well established. This volume contains 14 chapters on a wide range of subjects; it begins with a review of the structural requirements for presentation of an influenza viral antigen to antigen-specific cytotoxic T lymphocytes. Subjects covered in the subsequent chapters include the regulation of gene expression in *Dictyostelium*, the role of c-*fes* in myeloid differentiation, transactivation of gene expression by CREB proteins, identification of G protein mutants, CD28 signal transduction pathway in T lymphocytes, adrenergic receptors, the function of CD4 and CD8 in T cell activation, the developmental regulation of *egr-1*, use of transgenic systems for analysis of the function of *src* kinases, segment polarity genes in *Drosophila* and signal transduction through the T cell antigen receptor.

As I started to read the individual chapters I found myself questioning the aims of the volume, why the individual chapters and subjects were chosen and what audience the editors intend for the book. The editors do not allude to such questions in their brief three-sentence preface. The title of the volume suggests that their intention is to present a group of articles to illustrate some of the different genetic approaches which have been used to analyse signal transduction pathways. However, it soon became evident that the diversity in the subject material, in itself no bad thing, was less desirably matched by a diversity in style and format of the writing such that the presumed aim was not achieved. The diversity is best illustrated in the first two chapters. Chapter 1, in which the use of HLA-A2 mutants to analyse structural requirements for viral peptide presentation to cytotoxic T cells is described, is an eight-page review of work from the authors' laboratories, cites 19 references, reads like a research paper and, for me, was almost totally inaccessible. Its potential saving grace, namely the opportunity to describe the elegant methodology used in such studies in a manner understandable to those who are not fully conversant with the intricacies of MHC, was not procured. By contrast, Chapter 2 is almost four times as long, cites 148 articles and provides a beautifully lucid account of the signal transduction processes involved in the regulation of morphogenesis, cell-type differentiation and gene expression during multicellular development in *Dictyostelium*. After an excellent introduction the article focuses on how the role of the cAMP receptor and associated G proteins, which are involved in the process of aggregation, have been analysed using molecular biological techniques. I found it an enlightening view of the world of research in *Dictyostelium* (and an impressive world it is too). The remaining chapters include examples from across the spectrum of quality; clear and well presented articles are interspersed with others in which the content, style and illustrations leave much to be desired. For me, this variation in the quality of the contributions had the overall effect of reducing the value of the book and left me wondering what the editors had asked from the contributors and why they did not do something to smoothen the dramatic heterogeneity (or perhaps they did?). So, all in all, I have very mixed feelings about the book. I suspect that there is demand for a series which covers the progress of research in the control of cell growth particularly if, as in this volume, it covers a broad range of subjects and so aids cross-fertilization of ideas and methods. It will be interesting to see if *Advances in Regulation of Cell Growth* survives and matures into such a series.

STEPHEN PENNINGTON
Department of Human Anatomy & Cell Biology
University of Liverpool
PO Box 147
Liverpool L69 3BX

Plant Evolutionary Biology, L. D. Gottleib and S. K. Jain (eds). Chapman and Hall, London. 1988. Pp. 429. Price £57.00 Hardback. ISBN 0 412 29290 4. Price £25.00 Softback. ISBN 0 412 29230 5.

The development of evolutionary biology has been characterized by fragmentation of its subject matter and the establishment of numerous subdisciplines. Once created, these subdivisions tend to evolve independently and become increasingly specialized. Fragmentation and specialization are encouraged by a research environment in which initimate knowledge of narrow subjects is more highly rewarded than a less detailed understanding of a broader range of topics and a teaching environment in which information is dispersed in self-contained modules with insufficient emphasis on integration.

Specialization within evolutionary biology has the undesirable side-effect of suppressing the synthetic approach which is vital for the balanced development of the discipline. It is therefore fortunate that there have been evolutionary biologists with the conviction to reject specialization and to embrace the findings of disparate subdisciplines in order to