Book Reviews

A genetic approach to plant biochemistry. A. D. Blonstein and P. J. King (eds). Springer, Vienna, New York. 1986. Pp xi+291. Price DM 128, -. ISBN 3 211 81912 6.

When purchasing a volume of a series, information on the philosophy behind the series, the main subjects dealt with, the possible connection between the volumes, the type of readers to whom it fits, etc., would be useful. Unfortunately, this volume of the series *Plant gene research—Basic knowledge and application* lacks the number as well as the introductory paragraph to the series. Nevertheless, the real content of the present book forms a valuable source of general and specific information on plant biochemistry, treated from a genetic point of view.

The phenomenon “mutation” has been placed in a central position. Mutants are indispensable to geneticists for labelling chromosomes and for studying structure and function of genes, and organisation of the genome. To biochemists, physiologists and developmental biologists, mutations are also essential tools for the elucidation of the mechanisms behind biochemical and developmental processes. This book contains a lot of interesting information for those working on fundamental or applied subjects. In the first chapters specialists review gibberellin mutants, genetic aspects of abscissic acid, photosynthetic mutants, and molecular perspectives of maize alcohol dehydrogenase. The next chapters deal with nitrate assimilation, symbiotic nodulation and nitrogen fixation, and endosperm proteins. The last three chapters treat plant–pathogen interactions, gametophytic gene expression and *in vitro* isolation of auxotrophs. Unfortunately, the book lacks any mention of the biochemical genetics of primary and secondary metabolites.

The text is clearly presented, and the chapter subdivisions are consistent throughout the book. All chapters give an extended list of relevant references up to 1985 and the book contains a useful subject index. The (rather low number of) figures and tables are well-documented.

This attractive book can be recommended as a reference source to plant research-workers and graduates in the field of physiology, biochemistry, genetics, genetic engineering and plant breeding.

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Oxford surveys of plant molecular and cell biology. Volume 3. B. J. Miflin (ed). Oxford University Press, Oxford. 1986. Pp 477. Price £20.00. ISBN 0 19 854202 X.

In 1832, William Toone's *Glossary and etymological dictionary of obsolete and uncommon words, antiquated phrases and proverbs illustrative of early English literature* was published. It was and still is a jolly good read (how important, for example, to know that a “Wittol” is “one who knows himself to be a cuckold and is content”), but Toone seems to have started the book in a fit of enthusiasm which subsequently evaporated (or maybe the publisher's deadline got too close for comfort) since the letters A–C take up the first 201 of the 467 pages. A similar, albeit less extreme, organisation seems to have been used in the third volume of the *Oxford surveys of plant molecular and cell biology*—of the ten full reviews, the first (on legume storage proteins and their genes) takes up nearly a quarter of the space. Happily, though, there is no evaporation of interest here, and we are treated to a series of excellent reviews on organelle genetics, RFLPs, rRNA genes, nitrogen fixation, phytochrome, fruit ripening, and heat shock responses. These reviews are pitched at a very useful level for a plant scientist wishing to be brought up to date in areas with which he is less familiar than he should be, although I noted in one or two a tendency to concentrate in rather unnecessary and exclusive detail on the authors' own research. The presentation of the book is also reasonably good—certainly an improvement on the rather uneven and unpleasant print of the last volume in the series. There is a liberal sprinkling of typographical errors which are nearly all inconsequential, although I noted in one place that “anther culture” had become “another culture” and I marvelled at the stout souls who treated soybean embryos with abscissic acid at 10^5 M. (How did they get it all to dissolve? “I say, Chuck, can I borrow your cement mixer?”).

My major reservation was probably over the “News and Views” section, containing four very short articles, which does not seem at all appropriate to a publication coming out rather infrequently. The subjects of these chapters did not seem to be any more topical than the others and were just as worthy of full reviews. I also found the omission of the titles of articles in the reference lists in this section somewhat irritating.

Several themes recurred throughout the book. One is the great use in molecular studies of the stocks produced in breeding work—mutants and more particularly chromosome addition and substitution lines. This is a resource which is not available in anything like the same