Book reviews

The Production and Uses of Genetically Transformed Plants. M. W. Bevan, B. D. Harrison and C. J. Leaver, (eds). Chapman and Hall (London) in association with The Royal Society. 1994. Pp. 111. Price £40.00, hardback. ISBN 0 412 60060 9.

In the Spring of 1993, 10 years after the discovery of a technique for introducing foreign genes into the plant genome via *Agrobacterium tumefaciens*, a discussion meeting on plant genetic engineering was held at the Royal Society. Speakers at the meeting were asked to contribute short review papers dealing with different aspects of plant transformation technology, and this volume contains those papers collected together, in the form in which they originally appeared in the Transactions of the Royal Society. There are 14 papers in total, with an average length of 7 printed pages (more than it might seem, since the book is in A4 format, with 2 columns to a page), plus introductory and closing remarks by the editors. The book is handsomely produced, and has a reasonably comprehensive if rather quirky index.

This publication is very different from most volumes of conference proceedings, which are of little interest to anyone except specialists well-advanced in their research careers. Here we have a collection of articles which are written in an approachable style, which individually provide clear summaries of their sub-topics, and which taken as a whole provide a wide-ranging survey of plant genetic engineering as of 1993. It is remarkable how far this technology has advanced in 10 years, from the first experiments which suggested what might be possible, into something like maturity. Contributors to the volume include some well-known names in the field, from the international scientific community both inside and outside academic institutions.

The subjects covered in this volume are all the favourite and fashionable ones in plant genetic engineering. Possibly, a reader familiar with the field might complain that the contents are rather predictable; thus we have chapters by Caroline Dean on *Arabidopsis* as a model system for cloning genes, Mark Stitt on using transgenic plants to investigate metabolic regulation, control of ripening by Grierson and Schuch, and so on. However, on reading these chapters, one is struck by the fact that these people have become well-known names for good reason, namely that they are experts in their subjects, and are able to convey the essence of their expertise in a succinct and comprehensible manner. Of course, not all the chapters are written at quite the same level, but the volume does not suffer from the marked variability in content from chapter to chapter that is normal in conference proceedings. Further subjects covered include genetic engineering of plants for resistance to viruses, fungi and insects, manipulation of defence and stress responses,

plastid engineering, the more academic areas of transcriptional control and RNA splicing, and the more technological areas of rice transformation, production of industrial materials, and commercialisation of genetically engineered crops. There are one or two areas that are not covered which could well have been included; production of antibodies (and other proteins), manipulation of fertility, and new transformation methods (biolistics is hardly mentioned) are several that spring to mind.

The one major criticism that could be made of this volume is that many of the chapters are just a little too short, and a number bear the signs of having been given the Procrustean treatment to reduce them to a rigidly applied size limit. This is a pity, as the extra space required to allow the authors to express themselves fully would not have been that great. As it is, the chapters tend not to contain quite enough information to make the topic fully comprehensible to undergraduate students. Several chapters would also have benefitted greatly from the addition of a diagram or two. Despite this caveat, the reviewer has found that chapters from this volume have been well received by second- and third-year undergraduates as topics for essays and tutorial discussions. Possibly first-year postgraduates would also find the book a useful survey of this rapidly widening area of research.

In summary, perhaps not a volume for the specialist's bookshelf, but one that can be warmly recommended to University, College and Departmental libraries. If it were only half the price (in paperback?), it could also be recommended to anyone who wants to inform themselves or others about how far plant genetic engineering has progressed in 10 years.

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Crossover: Concepts and Applications in Genetics, Evolution and Breeding — An Interactive Computer-Based Laboratory Manual. Jack E. Staub. The University of Wisconsin Press, Madison. 1994. Pp. 359 (+3.5" DS DD Macintosh formatted floppy disk). Price £27.00, comb-bound. ISBN 0 299 13564 0.

'Crossover', is a combination of a ring-bound laboratory manual and Macintosh software (built with and requiring HyperCard) which is designed to teach some of the principles of genetics (heavily biased towards plant genetics and