confusion back to the pre-Mendelian days of Darwin and Wallace themselves.

Dr Cronin has approached her subject with considerable scholarship. Not only has she reviewed many important scientific papers but she has also dug out many other more obscure, but illuminating, documents. She draws on the extensive correspondence of Darwin and Wallace, and Darwin's amendments to successive editions of *The Origin Of Species*. Particularly interesting is an unpublished paper by W. D. Hamilton, which tries to rescue theories of speciation from the dogma of premating and post-mating isolation. Unfortunately, the historical detail has led to some of the explanations of biological processes, intended for non-scientific readers, being rather compressed. I feel that those who are interested principally in learning about the role of 'selfish genes' in evolution would do well to start with Richard Dawkins' lucid account of the subject.

The 'Whig' view of history, in which past events are seen as leading inexorably to our present happy state, has long been rejected by historians. Fashionable or not, Helena Cronin's history of Darwinism is unashamedly Whiggish, and her approach is justified by its success. She shows that the legacy of Darwin and Wallace has been developed greatly in the last 30 years, with the result that altruism is understood in its essentials, while many other problems (not only sexual selection, but speciation, sex, culture and the human mind, to name but a few) can now be tackled boldy, instead of being seen as insurmountable obstacles for Darwinism.

This book can be strongly recommended to all geneticists who are interested in the evolution of their subject.

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Advanced Methods in Plant Breeding and Biotechnology. (Biotechnology in Agriculture No. 4). D. R. Murray (ed.). C.A.B. International, Wallingford, U.K. 1991. Pp. 370. Hardback, price, £49.95. ISBN 0 85198 706 0.

This book details modern biotechnology practice as it relates to plant breeding. It has 14 chapters, each written by separate contributors. This book is not, and does not intend to be, a laboratory manual. The chapters are, without exception, good reviews in their area and are extensively referenced with considerable information in text and tables. Each chapter deals with a separate aspect. For instance, there are chapters on genetic resistance to viruses (Timmerman) and bacteria (Whalen), chapters on transformation using *Agrobacterium* (Grant *et al.*), electroporation (Rathus and Birch) and microprojectiles (Franks and Birch), and chapters describing how research into plastid genome (Pelletier), mitochondrial genomes (Rose), and physiological stress (Cullis) can lead to important plant breeding strategies.

The book's emphasis is stronger on biotechnology than plant breeding. Murray's introductory chapter is enjoyable and informative, setting out where biotechnology can make an impact and discussing the potential problems of releasing transgenic organisms. Perhaps this chapter could also have emphasized the enormous successes of traditional plant breeding approaches.

Weeden's chapter on chromosome organization and gene mapping is interesting although from a personal perspective I would argue that the future for RAPDs may not deserve the emphasis given. I was pleased to see that *in situ* hybridization is mentioned in the paper by Mouras *et al.* ('Transferred genes in genetically modified plants'), a tool which has been ignored in other chapters. This chapter is slightly out of style with the others, being more methodological.

The chapter describing resistance to fungal diseases (Chakravorty and Scott) is very informative and addresses the biology of host pathogen interaction, although it does not concentrate on the plant breeding aspects. I particularly enjoyed the plant chapter on breeding for resistance to insects (Gatehouse), an area which, until now, I knew little about.

Although considerable information is given on tissue culture and its use in transformation, for example, Parrott *et al.* (describing somatic embryogenesis) and elsewhere, nobody properly addresses the problems of somaclonal variation (and associated karyotype reorganization, changing methylation status and gene copy numbers) which, I think, is of importance to any transformation system involving culture steps.

One problem with multiple author books is unavoidable repetition as people introduce sections which have already been extensively reviewed. Whilst this does occur, the extent does not frustrate the reader. The cover says that the book should be 'particularly valuable for postgraduate students'. This book will be most useful for those entering into the biotechnology/plant breeding disciplines. However, a student with, for example, an interest in gene delivery systems may want more guidance on how to select the right one from the range of options.

The production of the book is good and the index adequate. My only major criticism is the poor quality of the black and white plates which often have terrible contrast. From the authors, rather than publishers, perspective the quality of the diagrams was lower than the text.

Interestingly, at the time this book was written the work from *Arabidopsis* appears to have made no significant contribution. With the enormous push in this area I hope that this will change. Perhaps an important criterion for an overall summary is 'am I pleased to have a copy'. The answer is, without doubt, 'Yes'.

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