Heredity **79** (1997) 228–230

Book reviews

Plant Genetic Conservation — The *In Situ* Approach. N. Maxted, B. V. Ford-Lloyd and J. G. Hawkes (eds). Chapman and Hall, London. 1997. Pp. 446. Price £27.50, paperback. ISBN 0 412 63730 8

This multi-author book includes 23 chapters arranged in four parts: (1) Introduction (two chapters); (2) Theory and Practice (12 chapters); (3) Case Studies (seven chapters), and (4) Discussion (two chapters). One of the chapters in Part 3, on *in situ* conservation for disease resistance, appears to be misplaced; it fits better with the concept-orientated accounts in Part 2. There are 36 contributors, representing 14 countries from all five continents; eight of the chapters are co-authored by one or more of the editors. Over 800 references are cited, including many from the 1990s. There is a detailed index.

The title of the book will appeal to two main audiences with overlapping interests: (i) those concerned with conserving plant genetic resources for human exploitation, mainly for agricultural and medicinal development, and (ii) those involved with conserving plant genetic diversity in its widest sense, irrespective of any tangible economic value. Several of the chapters in Part 2 of the book will appeal to both audiences. This section includes five chapters on genetic reserves (taxonomic prioritization, collation of ecogeographic data, reserve design, technical and political limitations, and management planning and monitoring), two on conservation applications of plant population biology (genetics and ecology), and five on other topics (molecular techniques, information management, forestry genetics, integrating plant and insect conservation, and local crop conservation). In contrast, the six case studies included in Part 3 are concerned solely with conserving genetic resources in crops and crop relatives, including wheat, rice and potatoes, in Israel, Turkey, south-east and central Asia, Ethiopia and Peru. Several important recent studies on genetic erosion in declining species of nature conservation importance receive no mention. The emphasis on economically important taxa could be guessed from the cover picture, which shows wheat harvesting in Algeria, but in my view should also have been signalled in the title.

The book's subtitle emphasizes its concern with developing protocols and methodologies for *in situ* conservation, including establishment of genetic reserves for conserving variation in wild relatives of cultivated species, as well as on-farm conservation of land races of the crops themselves. Advantages ascribed to *in situ* conservation include facilitation of continuing adaptive evolution in response to pests and diseases, and circumventing difficulties of cultivating recalcitrant and vegetatively propagated species. Few would disagree with these sentiments, and the book makes a convincing plea for increased emphasis on *in situ* conservation to complement the attention given to *ex situ* conservation, mainly by seed banking, that developed during the 1960s and 1970s.

The content of the book is clearly presented. Each chapter has sufficient background information to be free-standing and intelligible without recourse to other texts. This does mean, however, that some well-trodden ground is included, especially in some of the chapters in Part 2. As with many multi-author texts, there are a few inconsistencies between chapters; for example on-farm conservation is referred to as *circa situ* in the forestry chapter but *in situ* elsewhere. Authorities for latin names are inconsistently given, both within and between chapters. I noticed less than a dozen typographical and other minor errors. Diagrams and tables are clear and concise.

For students and practitioners of plant breeding and crop conservation, this book provides a valuable supplement to broader texts such as *The Conservation of Plant Biodiversity* (Frankel *et al.*, 1995). Those more concerned with endangered plant species *per se* still await a replacement for the already somewhat dated *Genetics and Conservation of Rare Plants* (Falk & Holsinger, 1991).

References

FALK, D. A. AND HOLSINGER, K .E. (eds). 1991. *Genetics and Conservation of Rare Plants*. Oxford University Press, Oxford.

FRANKEL, O.H., BROWN, A.H.D. AND BURDON, J.J. 1995. *The Conservation of Plant Biodiversity*. Cambridge University Press, Cambridge.

DAVID STEVENS
Countryside Council for Wales
Plas Penrhos
Ffordd Penrhos
Bangor
Gwynedd LL57 2LQ
U.K.

Plant Molecular Biology — A Laboratory Manual. Melody S. Clark (ed.). Springer-Verlag, Berlin. 1997. Pp. 529. Price DM 120.00, spiralbound softback. ISBN 3 540 58405 6.

This spiralbound softback manual, a multi-authored collection of chapters, is designed to encompass a wide range of plant molecular biology techniques. It is split essentially into three main parts. These parts are basic molecular biology; characterization of plant DNA and finally, genetic engineering methodology and analysis. Each section is written in the same manner with a small