

flux of styles. Although the chapters are cross referenced, a few strategically placed summary chapters would have given the book a more cohesive feel and helped the uninitiated in choosing an appropriate technique and method of analysis.

Perhaps a more serious limitation of the book is its high price of £75. Texts covering similar ground such as *Molecular Systematics* (Hillis *et al.*, 1996, 655 pages) and *Molecular Genetic Analysis of Populations* (Hoelzel, 1998, 445 pages) are available as paperbacks at £37.95 and £29.95. For £75, both of these texts could be bought and one could still have change left for a couple of bottles of wine. This is a shame, as it stacks the odds against well thumbed copies of *Molecular Tools for the Screening of Biodiversity* residing on postgraduate students' shelves.

Despite the pricing obstacle to this book's broader success I am sure it will be widely consulted as a laboratory or library copy. It is a very useful text for researchers interested in the application of molecular techniques to study relationships among organisms and genes, and the editors and authors are to be congratulated for the production of a valuable contribution to the field.

References

- HILLIS, D. M., MORITZ, C. & MABLE, B. K. (1996). *Molecular Systematics*. 2nd edition. Sunderland, Massachusetts: Sinauer.
HOELZEL, A. R. (1998). *Molecular Genetic Analysis of Populations: a practical approach*. 2nd edition. Oxford: IRL.

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The Genus *Cypripedium*. Phillip J. Cribb. Portland, Oregon: Timber Press/Royal Botanic Gardens Kew. 1997. 301pp. ISBN 0 88192 403 2. US \$39.95, UK £29.99 (hardback).

This compact, well-produced book is Phillip Cribb's second contribution (following *Paphiopedilum*: Cribb, 1987) to the monography of the relatively primitive (two-anthered, synsepalic) and wonderfully exotic slipper-orchids. It also offers a strong iconographic element, incorporating 26 full colour plates of watercolours by no less than 12 artists (lending the volume a vaguely competitive air) and 97 photographs, most of excellent quality but suboptimally organized within each of the 27 composite plates. The bulk of the text consists of thorough, formal morphological descriptions linked to less formal discursive passages that bear the stamp of the author's personality; they cover all 45 known species of *Cypripedium* plus four natural hybrids. Each is illustrated by a full-page composite line-drawing and a distribution map, plus appended details of materials consulted.

The second-largest section (sublet to Holger Perner) covers Cultivation and Hybridisation with sufficient detail and enthusiasm to further encourage horticult-

turally inclined readers already hooked by the strong aesthetic appeal of the slipper-orchids. However, this act of generosity leaves only 68 pages for the harder science present in the volume, covered in 11 sections of 2–17 pages each. The Introduction is followed by Morphology, surprisingly omitting most anatomical characters. Life History owes much to the excellent specialist tome of Rasmussen (1995). Cytology is passed over briefly, reflecting not ignorance but paucity of variation within the genus. In contrast, Ecology does reveal some areas of profound ignorance; paucity of knowledge of mycorrhizal associates is especially surprising. Uses by herbalists is paradoxically juxtaposed with outlines on Conservation, emphasizing the large proportion of endangered south-east Asian endemics in the genus.

Cribb's personalized account of the heroic (and very expensive) long-term campaign to conserve, and more recently to reintroduce (Ramsay & Stewart, 1998), the single British clone of *Cypripedium calceolus* is uncompromisingly supportive, as befits one of its leading lights. However, to this particular student of mass mortality in the fossil record, any credible justification for such substantial resourcing is more emotive than scientific, given the often large and genetically identical populations of this species that persist in mainland Europe.

The only noteworthy weakness of the book is the 54-page gap that separates the section on Phylogeny and Biogeography from the Classification and associated artificial key. Given the considerable amount of recent work on slipper-orchid phylogeny (summarized by Cribb's molecular colleagues at Kew: Cox *et al.*, 1997), one might have hoped that a closer link could be drawn between phylogeny and classification. Admittedly, the grail-like goal of a monophyletic synthesis – an objective clearly recognized by the author – is made more complex by the many incongruities evident between the two trees presented in the book (an unpublished morphological majority-rule tree by Cribb & Simpson and a 5S rDNA cladogram by Cox, 1995). Incongruities also exist between either of the phylogenies in this volume and the more rigorous ITS rDNA study of Cox *et al.* (1997), which also usefully elaborated the generic re-delimitations and cladistic biogeographic hypotheses of Albert (1994). Nonetheless, it would be interesting to see the morphological features of the *Cypripedium* species mapped across the molecular trees; this is likely to be a feature of the forthcoming slipper-orchid volume of *Genera Orchidacearum* (Pridgeon & Cribb, eds, *subm.*).

In summary, despite the odd qualm about the harder science, this is an excellent book; it is well produced, well written, comprehensive and, given its lavish illustrations, very attractively priced. It is deservedly selling well.

References

- ALBERT, V. A. (1994). Cladistic relationships of the slipper orchids (Cypripedioideae: Orchidaceae) from congruent morphological and molecular data. *Lindleyana* 9: 115–132.
- COX, A. V. (1995). *The Utility of 5S rDNA in Phylogenetic Reconstructions*. PhD thesis, University of Reading, UK.

- COX, A. V., PRIDGEON, A. M., ALBERT, V. A. & CHASE, M. W. (1997). Phylogenetics of the slipper orchids (Cypripedioideae: Orchidaceae); nuclear rDNA ITS sequences. *Pl. Syst. Evol.* 208: 197–223.
- CRIBB, P. J. (1987). *The Genus Paphiopedilum*. London: Collingridge.
- PRIDGEON, A. M. & CRIBB, P. J. (eds, subm.). *Genera Orchidacearum. 1. Apostasioideae, Cypripedioideae*. Oxford: Oxford University Press.
- RAMSAY, M. M. & STEWART, J. (1998). Re-establishment of the lady's slipper orchid (*Cypripedium calceolus* L.) in Britain. *Bot. J. Linn. Soc.* 126: 173–181.
- RASMUSSEN, H. M. (1995). *Terrestrial Orchids: From Seed to Mycotrophic Plant*. Cambridge: Cambridge University Press.

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