

## REVIEWS

R.L. DRESSLER: *Phylogeny and classification of the orchid family*. Cambridge University Press, Cambridge. 1993. 314 pp, 16 plates. ISBN 0-521-45058-6. Price £ 35.00.

This book is essentially a much expanded and updated version of Dressler's well known 'The Orchids; natural history and classification' (1981), without the parts on natural history.

Dressler divides the orchid family in five subfamilies: Apostasioideae, Cypripedioideae, Epidendroideae, Spiranthoideae, Orchidoideae. The Epidendroideae have swallowed the Vandoideae, which he recognized in his earlier book. At the tribal and subtribal level there are many changes too. Most of these changes reflect increased knowledge and the results of in-dept studies, and are therefore likely to be improvements. The classification proposed is the most thorough and best-argued one currently available. Much is still tentative, however, and even the number of subfamilies and their circumscription can by no means be considered definitive. Dressler is an open-minded scientist, who never hides his doubts and uncertainties about his own system. He would be the first to point out weak spots in his scheme. In the same spirit I should like to offer some comments and criticisms.

It is only natural that Dressler is not familiar with each and every of the hundreds of genera that are currently recognized in the Orchidaceae. *Agrostophyllum*, a genus we find here tentatively included in the subtribe Glomerinae, is in my opinion misplaced there, and its position in the cladogram on p. 216 seems to me highly dubious. *Agrostophyllum* fits much better in the Podochilinae on account of the presence of endocarpic elaters, eight clavate pollinia with a distinct viscidium, and the (upper-) lateral inflorescences produced by most species, either or not in conjunction with terminal ones (*A. laterale* never produces terminal inflorescences). The only character state that could possibly separate *Agrostophyllum* from the other Podochilinae is found in the 'conical' (to call them *umbonate* would be more accurate) stegmata (i.e. silica bodies lining fibre bundles) of *Agrostophyllum*, as opposed to the spherical stegmata occurring in the Podochilinae sensu Dressler (excluding *Chitonochilus*, which is based on a peloric species of *Agrostophyllum*). To me, this only seems to indicate that the transition from umbonate to spherical stegmata occurred independently in the Podochilinae, and not just once in the entire family (p. 25). As to the function of these stegmata, Dressler (p. 23) remarks that they are "presumably a sort of structural reinforcement." It appears more likely to the reviewer that they are a kind of defense mechanism, possibly to prevent snails from damaging the vascular tissue.

According to Dressler (p. 199) "the Eriinae are fairly uniform in having eight pollinia", but *Sarcostoma* has four pollinia. I agree, however, that it is properly included in the Eriinae, being closely related to *Ceratostylis*. The hairy roots found in most Eriinae, a character not mentioned by Dressler, may be a significant synapomorphy.

In the group of genera sharing the character state 'no column foot, lip movable' (p. 207, series IV-C) only genera are included which do have a column foot, as well as some in which the lip is not movable (e.g. *Bogoria*, *Thrixspermum*). On the other hand, in series IV-B we are supposed to find genera possessing a column foot, whereas none of the listed genera have one. Clearly, something has gone wrong here.

There are many cladograms in this book, usually called phylogenetic diagrams, which illustrate particular hypothetical phylogenies. As they mostly have been constructed 'by hand' (p. 77), one wonders how these hypotheses came about in the first place.

Although there is a key to the subtribes, this book is not really useful as an identification guide, as the key is based on technicalities which are often difficult to observe (or even impossibly so in herbarium material), and individual genera are only listed, not characterized. There is no way to reach key IX.

The book is well produced and the colour plates with 96 photographs show what a diverse lot the orchids are. A few corrections are offered here: '*Calanthe spec.*' (Pl. 10 f. 56) = *C. micrantha* Schltr.; '*Glomera obtusa*' (Pl. 12 f. 70) is not that species, but probably *G. aurea* Schltr.; '*Mediocalcar abbreviatum*' (Pl. 13 f. 76) = *M. geniculatum* J.J. Sm.; '*Bulbophyllum subcubicum*' (Pl. 14 f. 82, as '*subcubium*') represents a very different, unrelated species of *Bulbophyllum*, which Jaap Vermeulen informs me may be a species of section *Polyblepharon*; Pl. 14 f. 83 is placed upside-down.

In spite of these criticisms this is a valuable book, that each serious orchidologist should possess. For the rest of the botanical community the earlier work mentioned in the beginning is to be preferred, being a more general introduction to the fascinating Orchid family.

ANDRÉ SCHUTTEMAN

D. HUNT: CITES Cactaceae Checklist. Royal Botanic Gardens, Kew and International Organization for Succulent Plant Study, 1992. 190 pp. Price £ 10.00. ISBN 0-947643-42-7.

M. SAJEVA & A.M. ORLANDO: Handbook for the identification of the Cactaceae included in the Appendix of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In: *Piante Grasse*, Suppl. of no. 4, Vol. 9, 1989.

M. SAJEVA et al.: Handbook for the identification of the Cactaceae included in the Appendix of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In *Piante Grasse*, Suppl. of no. 4, Vol. 12, 1992.

Hardly any plant group has been more extensively collected, grown and studied by plant-amateurs, than the Cactaceae. Many plant-lovers prefer orchids as their subject of interest, but the number of people actually cultivating cactae certainly outnumber those growing orchids, carnivorous plants, fuchsias etc.

The enormous popularity of the cactae led to a steady flow of publications in the last decades. Scientific publications as well as popular ones treated taxonomic questions, collecting and collections, cultivation and so on. Of particular interest were a great number of articles in journals dedicated to the specialized plant-amateur. The amateur cactologist Backeberg's '*Die Cactaceae*' (1958–1962) and later '*Cactus Lexicon*' (1966, and subsequent editions) were for a long time considered standard literature reference.

Two main developments enhanced the necessity for new standards in nomenclature, as found in David Hunt's 'CITES Cactaceae Checklist', reviewed here. Firstly many new descriptions were made by plant-amateurs not fully aware of the nomenclatural implications of their writings. This led to a number of unnecessary or invalid names, misinterpretations and often to unnecessary splitting. Secondly, rare species became the object of over-collection and – sometimes – illegal trade.

For the implementation of the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES), a guide, even a preliminary one, was urgently needed. The CITES-funded project for this checklist led to the establishment of a database. I understood that financing for the updating of the database, so that a more complete and definite checklist may be published in a few years, is still quite difficult. David Hunt's task was gigantic, and although some critical remarks have to be made, he is to be congratulated with the book.

The checklist consists of four parts, including an extensive introduction plus reference literature, a list of genera and principal synonyms, the Cactaceae binomials in current usage, as well as regional checklists for about 35 different countries and regions. The introduction deals with a variety of subjects, including more 'technical' questions as well as principal ones. It is suggested that a new manual on Cactaceae, covering all accepted and provisionally accepted species, is to be expected by 1995. This is really to be hoped for, but considering the enormous task still lying ahead, and the lack of money, one wonders how Hunt will manage. It is interesting to note that Hunt's search for a widely accepted software programme ended in using 'flat' dBase III+ data-tables. Experience with cooperation between Dutch Botanic Gardens – all using different hard- and software in matters of plant collections and specializations – led to the same solution in the Netherlands. For the compilation of data various publications were used, the 'European Garden Flora', the 'Cactus Lexicon', 'Repertorium Plantarum Succulentarum', merged with data from 'Index Kewensis'. Accepted names were distinguished from synonyms, provisionally accepted names – like those proposed by Backeberg but not mentioned in the 'European Garden Flora' – are separately indicated, as well as IUCN conservation ratings and CITES Appendix I species. An important remark is that all names accepted in the above mentioned works, along with names reported in trade are included, although they may not be *correct* or *valid*. Therefore Hunt correctly employs the term 'names in current usage' and not 'Names in Current Use' in the sense envisaged by the International Association for Plant Taxonomy (IAPT).

Especially his description of the sources available as a basis for this checklist reveals Hunt's dilemma: after the only ever overall monograph (Britten & Rose, 1919–1923) was published, thousands of new taxa were described, many changes of classification were proposed, various generic names abandoned; and Backeberg's widely accepted publications are – as Hunt puts it – "handicapped by the author's very narrow concepts of genera and species" and "a disregard for specimen-based typification". And to make things worse, very few genera were comprehensively monographed.

Although the author decided to generally follow the IOS generic list, some exceptions are made, all of which are discussed and clarified. The bibliography is extensive,

but I missed reference to L.E. Groen's 'Catalogue of succulents in Dutch Botanic Gardens' (1990).

The main difficulty with the checklist is the absence of authority regarding the plant names. Especially because many accepted names will give rise to discussions between taxonomists as well as among amateurs, or – even more likely – between the two, the absence of author-references hampers correct perception of what is meant. As I understood in CITES-discussions, this aspect will be dealt with in a following edition. Another problem is the limitation of the list to species, leaving out subspecies or varieties. It would be a great advantage if this gap could be filled in the next edition, although I am aware of the fact that this would several times multiply the complexity of the author's task.

Especially for Appendix I species this checklist should in fact not be read without the very useful additions, made by a group of Italian cactologists, headed by Maurizio Sajeve, published in 'Piante Grasse'. In the two publications Appendix I Cactaceae and other succulent plant family species are treated per species. Full synonymy is given, accompanied by a short description of the plant and of its distribution. All species are illustrated with good colour photographs.

Apart from some shortcomings, which he will be dealing with in a future edition, Hunt's Checklist is extremely useful, carefully composed, and very much recommended.

J. DE KONING