

BOOK REVIEW

BREMER, K. (with assistance of A. A. Anderberg, P. O. Karis, B. Nordenstam, J. Lundberg, and O. Ryding) 1994. **Asteraceae: Cladistics and Classification**. (ISBN 0-88192-275-7, hbk). Timber Press, Portland, Oregon. \$79.95 (hbk). 752 pp., 89 figures, 24 tables, 6" x 9".

Often viewed as a nontraditionalist for his early espousal of cladistic methodology, Kåre Bremer has produced a monograph of the Asteraceae in the finest Benthamian tradition. This is no easy task in today's world of multiple sources of comparative data and conflicting taxonomic opinions among the disproportionately populous community of synantherologists. However, Bremer, who heads a Swedish research team in studying the systematics of the Old World composite tribes, has become a recognized authority on the Asteraceae as a whole. Bremer has created a handbook of genera and suprageneric taxa set in the context of insights from recent phylogenetic research and of unresolved problems. However, unlike recent symposium volumes which provide a forum for disparate views and often uneven treatments, this volume is the expression of relationships and classification seen from a single perspective.

The book is composed of four introductory chapters and 19 systematic chapters that treat the three subfamilies and 17 tribes in detail. The introductory chapters cover 1) a brief overview of cladistic methods, 2) the history of classification of the Asteraceae, 3) morphological criteria, and 4) the origin of the family and major unresolved problems relevant to the family as a whole. Each of the systematic chapters provides 1) an overview of the variation in and past treatments of the subfamily or tribe, 2) a new or recently published cladistic analysis, 3) discussion of the taxon's evolution, and 4) formal descriptions of the subtribes and genera. The treatments of the Inuleae, Plucheeae, Gnaphalieae, Calenduleae, Helenieae, Heliantheae, and Eupatorieae were contributed in whole or part by Bremer's associates.

Bremer's goal is "...not to provide a final classification of the Asteraceae, but rather to review the strengths and weaknesses of current classification to facilitate further revisions by future taxonomists" and "to provide a fairly even and consistent treatment of the tribes". In my opinion, he has succeeded in both. Even though the treatments of the Old World tribes are given somewhat more attention because the Stockholm group is most familiar with them, the disparity does not create a noticeable unevenness, and the added insights are a plus for the North American synantherologist who has not ventured beyond the Isthmus of Tehuantepec.

In a sense, the value of the book depends on the audience. I believe that it will be of greatest use to students, to herbarium curators, and to amateur and general taxonomists. These people can use it as a reference to the genera of composites, as well as to understand the evolution of the family as whole. However, professional synantherologists, who already have references with generic descriptions, will find the value to be in the cladistic analyses and discussions. Bremer could have maintained the force in his views, as well as greatly reduced the size and price, by forgoing the generic descriptions. In fact, the information present is summarized in coded form in the data matrices provided.

Along this same line, one could criticize the cladistic analyses because the monophyly of the generic OTUs is not explicitly substantiated in the text or tables. One must wonder whether variable characters of certain large genera are coded for the most plesiomorphic state of a synapomorphic transition or whether the most plesiomorphic of a symplesiomorphic transition (relative to segregates) was used. This may not be a problem for the suprageneric classification if the segregate and the large potentially paraphyletic genus are treated in the same subtribe.

However, the suprageneric classification is problematic in cases such as *Dendroseris*, which is treated in its own subtribe. Sanders et al. (1987) reviewed the suggestions for the origin of this oceanic island endemic. Included are *Hieracium* (probably sect. *Stenotheca*), *Sonchus*, *Stephanomeria*, and a few other small genera. Bremer cites a paper that suggests the transfer of sect. *Stenotheca* to *Crepis*. Each of these four possible ancestors is in a separate subtribe. In Bremer's cladogram, *Dendroseris* is several branches and 10 steps away from *Stephanomeria*, 6 steps away from *Crepis*, and one step away each from *Hieracium* and *Sonchus*. Undoubtedly, sect. *Stenotheca* should have been treated as a separate OTU and/or the large genera should have been represented by potentially monophyletic subgroups to more accurately assess the subtribal alignment of *Dendroseris* and circumscription of the pertinent subtribes.

Bremer and his associates have thoroughly referenced the pertinent literature. However, I did find at least one minor error. T. F. Stuessy is omitted as a co-author of Sanders et al. (1987). This is especially unfortunate because Prof. Stuessy designed the study, obtained funding, led the field work, and kept a reign on me while I carried out analyses and drafted the initial text.

Overall, I recommend this book based on its scholarly production and provocative content. Depending on one's needs, this may be a "must have" reference. However, many specialists may wince at having to buy another large, expensive review of the Asteraceae.

Literature Cited:

SANDERS, R. W., T. F. STUESSY, C. MARTICORENA, and M. SILVA O. 1987. Phytogeography and evolution of *Dendroseris* and *Robinsonia*, tree-Compositae of the Juan Fernandez Islands. *Opera Bot.* 92: 195-215.—Roger W. Sanders.



Sanders, Roger William. 1994. "BOOK REVIEW." *SIDA, contributions to botany* 16, 387–388.

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