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book review

How Daisies conquered the world

Systematics, Evolution, and Biogeography of Compositae, by V. A. Funk, A. Susanna, T. F. Stussey & R. J. Bayer (eds.)

International Association for Plant Taxonomy, Vienna, 2009, 965 pp. ISBN: 978-3-9501754-3-1

<http://www.compositae.org/>

Compositae, or Asteraceae as they are known among the younger botanists, accompany most of us from early childhood, when we play with daisy flowers in some family garden or park, throughout our life - and even beyond, with the white *Chrysanthemum* on our graves. It is probably the biggest flowering plant family on earth, exceeding with its 24,000 – 30,000 species perhaps even the orchid family, and has colonized most of the available habitats from the Arctic tundra of Greenland to the Sahara Desert, most oceanic islands, the summits of the Andes and the Patagonian steppes. There are trees and shrubs, lianas, herbs and annuals in the family, and Compositae have even evolved C_4 photosynthesis (*Flaveria*).

Analysing the phylogenetic relationships in this family and its historical biogeography and character evolution is a mammoth task that requires the collaboration of many skilled systematists and biogeographers. To coordinate and bundle the efforts in Compositae systematics, *The International Compositae Alliance* (TICA) was founded in 2000 and several international conferences were organized in the following years. During one of them, the 2006 *Conference on Systematics & Evolution of the Compositae* in Barcelona (Spain), it was decided to publish a comprehensive book to summarize the current knowledge on Compositae systematics, biogeography, and evolution. This book would build on previous comprehensive treatments of the family by Bremer (1994) and Kadereit & Jeffrey (2007) that both already discussed the then available combination of morphological and molecular data.

Even though the book at hand is based on conference presentations, it is far more than that: all chapters have been enlarged and updated, and in the final form the book now includes contributions from 80 authorities, covering in 44 chapters all tribes and major groups of Compositae. More-

over, the authors here present an up-to-date summary phylogenetic tree for the entire family, which now allows testing of specific evolutionary questions (free download of the meta-tree from TICA's website at <http://www.compositae.org/>).

Starting with a review of the historical work on the systematics of the family (going back at least to the 17th century), the authors next discuss the economic importance (from lettuce to sunflowers the family has several important crop species), and the evolution of chromosome numbers and ploidy level, secondary chemistry, micro-characters (trichomes, etc.), pollen, and floral morphology. The following chapter 10 is then the first mainly phylogenetic chapter. It tackles one of the key questions in Compositae systematics: the search for the sister group of the family. No final answer can be given but quite a bit of morphological and molecular evidence points to a small family of herbs, the Calyceraceae (c. 60 species in 4 genera, all in southern South America). The following chapters then give detailed accounts for all the twelve subfamilies and their 40 or more tribes. While the focus in each of the chapters is clearly on systematics and taxonomy, based on molecular data and morphology, the biogeography is also analysed and, if available, some information on the ecology (habitat, dispersal, pollination biology) is presented. The authors also discuss the geographic origin of the family: probably South America, where the ancestral lineage might have split from the Calyceraceae lineage some 40 million years ago, in the Eocene. At the end of the book, an illustrated glossary introduces the reader to all the micro- and macro-characters that make determination of Compositae in the field often painful.

All in all, the editors and in fact all the contributing authors can be proud of this highly recommended book. It is a must for everybody interested in the systematics and biogeography of this

family. With new sequence data and new technologies becoming available, some parts of the presented phylogenies will certainly change. Some of the open questions will hopefully be solved soon, but I strongly believe that it will take a long time before this book is outdated.

The book can be ordered for 110 US\$ from <http://www.compositae.org/>, and by e-mail to compositaebook@gmail.com. All profits go to the International Association for Plant Taxonomy (IAPT) (<http://www.botanik.univie.ac.at/iapt/>).

References

Bremer, K. (1994) *Asteraceae: Cladistics & Classification*. Timber Press, Portland.

Kadereit, J.W., & Jeffrey, C. (2007) *Asteraceae*. In *The families and genera of vascular plants*, vol. 8 (ed by K. Kubitzki). Springer, Berlin.

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book review

The Making of a Biogeographer: the life of Jack Briggs

A Professorial Life. An Autobiographical Account, by John C. Briggs
Xlibris Corporation, 2009, 272 pp. ISBN 13 (TP): 978-1-4415-8881-4
<http://academicautobiography.com/>

With “A Professorial Life” John (Jack) Briggs, an icon in the field of Biogeography, follows the advice of Renaissance sculptor Benvenuto Cellini, who suggested that every person should write their autobiography. At the outset Briggs defines his autobiography as an interlace between professional and personal life that feed on each other and can’t be separated. Since he is turning 90 this year, Briggs has experienced enough changes both in the discipline and in society to have material for an insightful book. His book broadly covers three main areas: his personal life, a career in academia, and his main scientific contributions. His personal life is entertaining. I found his accounts of early fishing and hunting in wild California to be full of nostalgic charm. His short foray in the Air Force during WWII, followed by some hairy flights and landings in people’s fields in his personal airplane soon after the war, brought back a long lost sense of adventure. Jack Briggs married four times (his first wife married fifteen times!) and has nine children and many grandchildren. Thus his diatribes denouncing the poor state of education in the US, and his writing of a scientific children’s book (*A Mesozoic Adventure*, which incidentally my kids

thoroughly enjoyed) clearly come from personal experience and frustration. A recurrent theme in the book is his interest in real estate. I quickly lost count of the number of houses that the Briggs household moved in and out of, bought and sold, I am wondering if Jack Briggs knows this number himself.

The autobiography then moves into the scientific aspect of Briggs’ life. It is very interesting to try to figure out how Briggs’ career choices shaped his biogeographic thinking. As a child and young man, Briggs extensively camped and fished in Yosemite National Park, California, and later worked as a ranger at Crater Lake National Park in Oregon. His personal love of the wild streams of the Western US translated in graduate work on the ecology of trout and salmon rivers. As a graduate student at Stanford, which was then still in the intellectual footsteps of David Starr Jordan, he learned to know fishes in the best possible place to do so. As was common then, while being a broad systematist, he also specialized in a particular group of fishes. He focused his attention on gobiesocids, or clingfishes, a group of unique fishes with a sucking disk on their underside that,