BOISDUVALIA, A COMA-LESS EPILOBIUM (ONAGRACEAE)

Peter C. Hoch & Peter H. Raven
Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166 U.S.A.

ABSTRACT

Evidence from independent analyses of morphological and molecular variation in tribe Epilobieae shows no support for the continued recognition of Boisduvalia Spach. Absence of seed comas, the only consistent diagnostic feature of the genus relative to Epilobium, now appears to be a secondary loss; other characters reveal a close relationship of Boisduvalia to taxa within Epilobium. Therefore, all species of Boisduvalia are transferred to Epilobium, in order better to reflect phylogeny.

KEY WORDS: Onagraceae, Epilobium, Boisduvalia, New World

Tribe Epilobieae (Munz 1965; Raven 1976) is marked within Onagraceae as monophyletic by probable base chromosome number of $x = 9$ (Raven 1976, 1979), commissural stigmas (Eyde 1982), and dry type stigma surface (Heslop-Harrison 1990); most species (excluding mainly Epilobium sect. Chamaenerion) also have pollen released in tetrads (Skvarla et al. 1978). The tribe traditionally has comprised Epilobium (including sections Chamaenerion and more recently Zauschneria), characterized by the synapomorphy of seed comas (tufts of hair on the chalazal end of the seed), and Boisduvalia (Raven & Moore 1965), an entirely annual genus that lacks comas. Recent phylogenetic analyses of the tribe using either morphological data (Hoch & Crisci, in prep.) or variation in chloroplast DNA (Baum et al., in prep.) have revealed relationships among the taxa that are not reflected in the current taxonomy. Even though the exact relationships proposed among the taxa differ between these two studies, both demonstrate convincingly that recognition of Boisduvalia as a genus is not supported and that continuing to recognize it renders Epilobium paraphyletic.

These studies strongly suggest that Boisduvalia evolved from taxa with a coma. By analogy in support of that suggestion, two species of Epilobium and populations of a third have secondarily lost their comas (Munz 1965; Raven...
& Raven 1976; Seavey et al. 1976). Other characters that mark species or groups of species in Boisduvalia include capsule specializations and seed shape, but these may be associated with the loss of the coma and may be viewed more accurately as apomorphies within the group, rather than plesiomorphies within the tribe. Consequently, we here propose that Boisduvalia be placed in synonymy with Epilobium, and make the necessary nomenclatural changes, in order to make the names available for floristic treatments in progress.

The following nomenclatural changes include only names relevant to the transfers. For more complete synonymy of Epilobium and the sections, see Raven (1976); for complete synonymies of all species being transferred from Boisduvalia, see Raven & Moore (1965).


ACKNOWLEDGMENTS

We thank the National Science Foundation for support of this work through BSR-8906848. We also thank Kenneth Sytsma and Divide Baum for sharing unpublished results of their molecular analyses, Jorge V. Crisci for collaboration on the morphological phylogeny, and Paul Berry for comments on the manuscript.

LITERATURE CITED


View This Item Online: https://www.biodiversitylibrary.org/item/46862
DOI: https://doi.org/10.5962/bhl.part.16727
Permalink: https://www.biodiversitylibrary.org/partpdf/16727

**Holding Institution**
New York Botanical Garden, LuEsther T. Mertz Library

**Sponsored by**
The LuEsther T Mertz Library, the New York Botanical Garden

**Copyright & Reuse**
Copyright Status: In copyright. Digitized with the permission of the rights holder.
Rights Holder: Phytologia
License: http://creativecommons.org/licenses/by-nc-sa/3.0/
Rights: https://biodiversitylibrary.org/permissions

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.