



Darwiniana

ISSN: 0011-6793

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Instituto de Botánica Darwinion

Argentina

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CLADISTIC ANALYSIS OF THE FAMILY CRYPHAEACEAE (BRYOPHYTA) WITH
EMPHASIS ON CRYPHAEA: A STUDY BASED ON A COMPREHENSIVE
MORPHOLOGICAL DATASET

Darwiniana, vol. 5, núm. 1, 2017, pp. 51-64

Instituto de Botánica Darwinion

Buenos Aires, Argentina

Available in: <http://www.redalyc.org/articulo.oa?id=66952298005>

Abstract

The first comprehensive phylogenetic analysis of the Cryphaeaceae (Bryophyta), a pleurocarpic moss family, is conducted on the basis of morphological characters. The data set comprised 73 characters: 10 continuous and 63 discrete. Taxon sampling involved nine genera and 46 species of Cryphaeaceae, 32 species belonging to Cryphaea. Outgroup sampling included 23 species from 21 genera and 13 families of pleurocarpous mosses. The phylogenetic analyses were conducted using parsimony as the optimality criterion following an implied weighting approach. The results did not support the monophyly of Cryphaeaceae as it excluded *Dendroalsia abietina* from the family. The clade composed of the remaining genera (clade A) was diagnosed by a short seta (0.26-0.30 mm), costa present throughout the innermost perichaetial bract, conical operculum and appressed leaves in dry condition. The analyses furthermore recovered Cryphaea as paraphyletic and Dendrocryphaea as polyphyletic. Cryphaea included *Schoenobryum concavifolium*, *Cyptodontopsis leveillei*, and *Dendrocryphaea lamyana* which were thereby separated from the other species of Dendrocryphaea. Character mapping revealed that, as a consequence of the unexpected placement of crucial species, diagnosis should be considerably modified.

Keywords

Implied weighting, parsimony, pleurocarpous mosses, systematics, taxonomy.

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