

**PHYLOGENETIC SYSTEMATICS AND EVOLUTION OF THE  
GENUS *HYMENOPHYLLUM* (HYMENOPHYLLACEAE:  
PTERIDOPHYTA)**

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**ABSTRACT**

In this study we address the phylogenetic relationships within the genus *Hymenophyllum*. Our sampling includes the segregate monotypic genera *Cardiomanes*, *Serpillopsis*, *Rosenstockia*, and *Hymenoglossum*, representatives of the five subgenera proposed for *Hymenophyllum* by Morton, and of the section *Microtrichomanes*. Using morphology, cytology, and nucleotide sequences (*rbcL*, *rps4-trnS*, *rbcL-accD*), we obtained a fully resolved topology with several clades well supported. We confirm the monophyly of two clades within the Hymenophyllaceae. *Serpillopsis* and *Rosenstockia* are nested in *Hymenophyllum* within a derived clade, while *Cardiomanes* and *Hymenoglossum* are positioned within a basal grade. Although some of the phylogenetic associations that were previously proposed within *Hymenophyllum* are supported, many traditionally defined infrageneric taxa are not resolved as monophyletic: subg. *Hymenophyllum* and *Sphaerocionium* are paraphyletic, and the broad subg. *Mecodium*, whose homogeneity had never been questioned, appears polyphyletic.