



## Article

# Common but new: *Bartramia rosamrosiae*, a “new” widespread species of apple mosses (Bartramiaceae, Bryophytina) from the Mediterranean and western North America

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## Abstract

Recent phylogenetic analyses challenged the traditional generic concept of the Bartramiaceae (apple mosses), especially with regard to the largest genus *Bartramia*. Although molecular analyses revealed the three *Bartramia* sections (*Bartramia*, *Strictidium* and *Vaginella*) to be monophyletic, they appeared in different parts of the inferred phylogenies and thus rendered the genus itself polyphyletic. In addition, *Anacolia laevisphaera*, a tropical montane species, appeared in the section *Strictidium*, weakening its character as a typical Mediterranean element. Although morphologically similar to members of the section, such as *B. stricta*, *A. laevisphaera* has been generally treated within the genus *Anacolia* based on sporophytic characters. In fact, *Anacolia laevisphaera* is often confused with *B. stricta* in sterile condition. A thorough analysis revealed another surprise, in placing *A. laevisphaera* sister to the Southern South American samples of *Bartramia stricta*, while the Mediterranean populations of “*B. stricta*” cluster with the Australian *B. breutelii*. Subsequent morphometric studies revealed three morpho-species in accordance with the polyphyletically resolved *B. stricta*. Here we describe the new species *Bartramia rosamrosiae* to accommodate the Mediterranean and western North American populations of what was traditionally treated as *B. stricta*.

**Key words:** Bartramiaceae, Bryopsida, Chile, mosses, phylogeny, taxonomy

## Introduction

*Anacolia* Schimper (1876: 513) and *Bartramia* (Hedwig 1801: 164–165) are two members of the Bartramiaceae, the only family of the order Bartramiaceae (Quandt *et al.* 2007), which belongs to the diplolepidous-alternate mosses. Two species of these genera have puzzled American bryologists for a long time, due to their similar gametophyte: *Anacolia laevisphaera* (Taylor 1846: 56) Flowers (1935: 155), described from the Pichincha volcano in Ecuador, and *Bartramia stricta* Bridel (1803: 132) described from the Magellan’s Strait after materials collected by Commerson. They could only be differentiated using sporophytic characters, as *Anacolia laevisphaera* has gymnostomous, rugulose capsules, while in *Bartramia stricta* they are striate and have a peristome. However, they are usually sterile, which lead to the assumption that the range of *Anacolia laevisphaera* reached the southern tip of South America. Nevertheless, Matteri (1983) was able to show gametophytic differences between the strictly southern South American *B. stricta* and the northern South American/Central American/African populations of *Anacolia laevisphaera*. But