



Notes on Early Land Plants Today. 72. Infrageneric classification and new combinations, new names, new synonyms in *Frullania* (Marchantiophyta)

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Abstract

The liverwort family Frullaniaceae is circumscribed to include the single genus, *Frullania*, and has a complex and confusing taxonomical history. An overview is provided for the infrageneric classification adopted for the forthcoming worldwide checklist based on recent morphological and molecular studies. The genus is preliminarily subdivided into eleven subgenera, *F.* subg. *Chonanthelia*, *F.* subg. *Diastaloba*, *F.* subg. *Diversitextae*, *F.* subg. *Frullania*, *F.* subg. *Homotropantha*, *F.* subg. *Mammillosae*, *F.* subg. *Meteorioopsis*, *F.* subg. *Microfrullania*, *F.* subg. *Saccophora*, *F.* subg. *Steerea*, and *F.* subg. *Thyopsiella*, as well as several sections. However, some of the subgeneric divisions are only doubtfully recognized because there is still insufficient knowledge to arrive at a decision regarding their systematic status and placement. The taxa may be either originally not well described, not restudied recently or molecular analyses point to a more complex internal structure of the respective group. Fourteen new synonyms, eight new combinations, five new names, eight lectotypifications, and one new variety are provided.

Introduction

Frullania Raddi (1818: 9) is worldwide in distribution and is one of the largest and taxonomically most complex genera of leafy liverworts with more than 2,000 published names ascribed to the genus (von Konrat *et al.* 2010).

The current contribution follows the series of Early Land Plant Today Notes and is similar in content, structure and format to Söderström *et al.* (2015) that likewise deals with *Plagiochila* (Dumortier 1831: 42) Dumortier (1835: 14). The current paper provides only an overview of the infrageneric classification adopted as part of the forthcoming worldwide checklist of liverworts (Söderström *et al.*, in press). We do not attempt here to provide a full synopsis of the over 30 sections and subsections that have been historically described. The paper also includes several new synonyms, new combinations, new names and lectotypifications. *Schusterella* Hattori *et al.* (1972: 330), *Amphijubula* Schuster (1970: 298) and *Steerea* Hattori & Kamimura (1971: 429) have been considered segregate genera of *Frullania*, but are now considered synonyms of this genus (Engel 1978, Hattori & Mizutani 1982, Stotler & Crandall-Stotler 1987, Schuster 1992, von Konrat *et al.* 2006, 2011b, Hentschel *et al.* 2009). *Neohattoria* Kamimura (1962: 218) has also historically been placed in *Frullania* (Hattori & Mizutani 1982, Stotler & Crandall-Stotler 1987). However, the authors are actively investigating recently collected material identified as *Neohattoria* using molecular tools to test this relationship. Whereas the circumscription of Frullaniaceae can be deemed sufficiently clarified, the subgeneric classification of *Frullania* is still a matter of much controversy (e.g., Hentschel *et al.* 2009, Uribe 2011).

The content of the paper is in two parts. First, an infrageneric classification is provided, including only those subgenera and sections that are recognized in the forthcoming liverwort worldwide checklist (Söderström *et al.*, in