



A new subspecies of *Acrolejeunea arcuata*, and notes on typification, synonymy, and distribution of other Australasian Lejeuneaceae

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Abstract

Acrolejeunea arcuata subsp. *gradsteinii* is described for plants from the Wet Tropics of Queensland, Australia. This subspecies differs in its autoicy, oblong-elliptic underleaves, the female bract lobe not reflexed and with a rounded apex, and the second lobule tooth longer than the first. *Ceratolejeunea belangeriana* is confirmed for Australia on the basis of an early collection from Norfolk Island, and recent collections from Queensland. *Lejeunea tumida* is excluded from the flora of Australia, all Australian specimens identified as *L. tumida* are referable to other species. *Lejeunea sordida* is confirmed for Norfolk Island on the basis of material previously identified as *L. tumida*. *Hygrolejeunea rostrata* is lectotypified and moved from synonymy under *L. discreta* to synonymy under *L. lumbricoides*, which is newly reported for Australia from Norfolk Island. *Hygrolejeunea norfolkensis* is moved from synonymy under *L. discreta* to synonymy under *L. gracilipes*, which is newly recorded for Australia on this basis. A lectotype is proposed for *Lejeunea helmsiana*.

Key words: Australia, liverwort, new records, new synonymy, New Zealand, taxonomy

Introduction

Taxonomically and nomenclaturally the Lejeuneaceae is among the more challenging families of leafy liverworts (Gradstein *et al.* 2003), due in part to the complicated web of nomenclatural synonymy created by Stephani at the turn of the 20th Century (Gradstein 2006). Despite this impediment, significant progress has been made in documenting the Lejeuneaceae in hyper-diverse regions, notably the Neotropics (i.e. Gradstein & Buskes 1985, Gradstein 1994, Reiner-Drehwald & Goda 2000, Ilkiu-Borges 2005, Heinrichs *et al.* 2009) and southeast Asia (i.e., Mizutani 1970, Gradstein 1975, Piippo 1986, Pócs & Piippo 1999, Zhu & So 2001, Gradstein *et al.* 2002, Zhu & Gradstein 2005, Lee *et al.* 2010a, Sukkharak *et al.* 2010). The Australian region has also been the focus of taxonomic research in the Lejeuneaceae, with regional revisions of the family in Tasmania (Grolle 1982), subfam. Ptychanthoideae (Thiers & Gradstein 1989), and *Cololejeunea* (Spruce 1884: 291) Schiffner (1893: 121) (Thiers 1988) though recent collecting efforts have now outdated the latter (see Pócs & Streimann 1999, 2006, Renner 2011). Although some recent studies have been conducted on a small number of Australasian genera, including *Lejeunea* Libert (1820: 372) (Renner *et al.* 2009, 2010), many remain poorly known regionally. The lack of published studies, particularly for *Lejeunea* means that any new insight clarifying the status or occurrence of taxa in Australasia is valuable. The purpose of this paper is threefold, firstly to report a new taxon discovered in the Wet Tropics of Queensland during fieldwork in 2005, within *Acrolejeunea* (Spruce 1884: 115) Schiffner (1893: 128) a member of Lejeuneaceae subfam. Ptychanthoideae. Secondly to confirm the presence or absence in Australia of two species dubiously reported there. Thirdly, to treat two species having Australian types currently regarded as synonyms of *L. discreta* Lindenb. in Gottsche *et al.* (1845: 361). One of these species is newly lectotypified since the type gathering (and type specimens) comprised a mixture. As a result, a new subspecies of *Acrolejeunea arcuata* (Nees von