



Type studies on *Archilejeunea* (Lejeuneaceae, Marchantiophyta): five new synonyms and a new combination

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Archilejeunea (Spruce 1884: 88) Stephani (1888: 113) is a pantropical genus with about 28 species in two subgenera, subg. *Archilejeunea* with five species and the remaining ones in subg. *Dibrachiella* (Spruce 1884: 90) Schiffner (1893: 130) (Gradstein & Buskes 1985). The genus has been well-studied in the Neotropics and Australia (Gradstein & Buskes 1985; Thiers & Gradstein 1989; Gradstein 1994; Gradstein & Schäfer-Verwimp 2012) but the treatments of the African and Asiatic species are incomplete or outdated (e.g., Stephani 1911; Verdoorn 1934; Vanden Berghen 1951; Udar & Awasthi 1981a, 1982; Mizutani 1993; Gradstein *et al.* 2002). Several species have not been studied since their first publication. Moreover, recent molecular-phylogenetic studies indicate that *Archilejeunea* is not monophyletic (Wilson *et al.* 2007). Members of *A.* subg. *Archilejeunea* were resolved in a clade with *Caudalejeunea* (Stephani 1890: 18) Schiffner (1893: 129) and *Schiffneriolejeunea* Verdoorn (1933: 89), while those of *A.* subg. *Dibrachiella* resolved in a distant clade with species of *Spruceanthus* Verdoorn (1934: 151) and *Ptychanthus* Nees (1838: 211). As a result, the genus urgently needs revision.

In the framework of a molecular and morphological study of *Archilejeunea*, we have examined the type specimens of several *Archilejeunea* species. Based on the results of the type study five new synonyms and one new combination are proposed here. *Archilejeunea helenae* Pócs & Gyarmati (2006: 104), *A. linguifolia* Stephani (1911: 708), and *A. mauritiana* Stephani (1895: 60) are synonymous with *A. brevilobula* Stephani (1911: 706), *A. elobulata* Stephani (1911: 707), and *A. abbreviata* (Mitten 1863: 167) Vanden Berghen (1951: 117), respectively. *Archilejeunea apiculifolia* Stephani (1924: 558) and *A. falcifolia* Stephani (1910: 196) are synonyms of *A. planiuscula* (Mitten 1861: 111) Spruce ex Pearson (1892: 4). *Archilejeunea nobilis* (Gottsche 1882: 353) Spruce ex Pearson (Pearson 1892: 4) is transferred to *Marchesinia* Gray (1821: 689) and is an older name for *Marchesinia madagassa* Stephani (1912: 144).

Formal treatment

The format of this note follows Söderström *et al.* (2012).

Archilejeunea abbreviata (Mitt.) Vanden Berghen, *Rev. Bryol. Lichénol.* 20: 117. 1951 (Vanden Berghen 1951).

≡ *Lejeunea abbreviata* Mitt., *J. Proc. Linn. Soc., Bot.* 7: 167. 1864 [1863] (Mitten 1864 [1863]). Type:—Cameroun. Bagroo River, 1861, Mann *s.n.* (holotype NY!).

= *Archilejeunea mauritiana* Steph., *Hedwigia* 34: 60. 1895 (Stephani 1895). Type:—Mascarenes. “Insula Maurice”, *J.B. Mougeot s.n.*, hb. Lindenberg 6904 (holotype G!), *syn. nov.*

For further synonyms, see Vanden Berghen (1951).

Archilejeunea brevilobula Steph., *Sp. Hepat.* 4: 706. 1911 (Stephani 1911). Type:—Madagascar. 1904, Voeltzkow *s.n.* (holotype G!).

= *Archilejeunea helenae* Pócs & Gyarmati, *Cryptog., Bryol.* 27: 104. 2006 (Pócs & Gyarmati 2006). Type:—Madagascar. Mananara Nord Biosphere Reserve, wet lowland rainforest, epiphyllous, 250–350 m, Aug. 1998, Pócs & Szabó 9878/FM (holotype EGR!), *syn. nov.*

Archilejeunea elobulata Steph., *Sp. Hepat.* 4: 707. 1911 (Stephani 1911). Type:—Central African Republic. 1902, *Chevalier s.n.*, hb. Corbière 59 (holotype G!)
= *Archilejeunea linguifolia* Steph., *Sp. Hepat.* 4: 708. 1911 (Stephani 1911). Type:—Cameroon. Bipindi, *Zenker 3539* (isotypes BR!, E!), **syn. nov.**

Archilejeunea planiuscula (Mitt.) Steph., *Sp. Hepat.* 4: 731. 1911 (Stephani 1911).
≡ *Lejeunea planiuscula* Mitt., *J. Proc. Linn. Soc., Bot.* 5: 111. 1861 (Mitten 1861) ≡ *Ptychocoleus planiusculus* (Mitt.) Verd., *Ann. Bryol. Suppl.* 4: 126. 1934 (Verdoorn 1934). Type:—Burma. Rangoon, *McClelland s.n.* (holotype NY!)
= *Archilejeunea apiculifolia* Steph., *Sp. Hepat.* 6: 558. 1924 (Stephani 1924). Type:—India. Karnataka, 1911, *Pfleiderer 20* (holotype G!).
= *Archilejeunea falcifolia* Steph., *Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr.* 85: 196. 1910 (Stephani 1910). Type:—Papua New Guinea. *Rechinger 4614* (holotype G!), **syn. nov.**

For further synonyms, see Thiers & Gradstein (1989) and Gradstein *et al.* (2002).

Archilejeunea planiuscula is a polymorphic species, widely distributed in Indo-pacific regions. Verdoorn (1934) reduced *A. apiculifolia* to a synonym under his *A. mariana* (= *Archilejeunea planiuscula*) [non *A. mariana* (Gottsche 1845: 337) Stephani (1911: 729) (Gottsche *et al.* 1845; Stephani 1911)], but Udar & Awasthi (1981a, 1981b) treated *A. apiculifolia* as a separate taxon on the basis of mostly apiculate and only occasionally rounded leaf apices and a leaf-lobe vs. lobule ratio of 2:1. As both characters are present in the variability of *A. planiuscula*, *A. apiculifolia* becomes a synonym of *A. planiuscula*.

Marchesinia nobilis (Gottsche) X.Q. Shi, R.L. Zhu & Gradst., **comb. nov.**

≡ *Lejeunea nobilis* Gottsche *Abh. Naturwiss. Vereins Bremen* 7: 353. 1882 (Gottsche 1882) ≡ *Archilejeunea nobilis* (Gottsche) Spruce ex Pearson, *Forh. Vidensk.-Selsk. Kristiania* (8): 4. 1892 (Pearson 1892). Type:—Madagascar. *Rutenberg 1570* (holotype G!).
= *Marchesinia madagassa* Steph., *Sp. Hepat.* 5: 144. 1912 (Stephani 1912). Type:—Madagascar. 1898, *Leloutres.n.* (holotype G, n.v.), **syn. nov.**
= *Marchesinia moelleriana* Pearson, *Ark. Bot.* 19(5): 10. 1924 (Pearson 1924). Type:—Kenya: Mt. Elgon, Kaimosi. 1920, *Lindblom* (holotype S, n.v.) (syn. fide Jones 1970).

This species is well-recognized by rounded-entire leaf apices, plane underleaf margins and entire female bracts and bracteoles (Wigginton 2004; Gradstein 2012).

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