

New synonyms of *Pohlia wahlenbergii* (Bryaceae) in the austral regions

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Pohlia wahlenbergii (F.Weber & D.Mohr) A.L. Andrews is a distinct species which is easily distinguished by the lax leaf areolation of broad, oblong-rhomboidal cells, mostly 15–25 µm wide, as well as the glaucous-green to pale green colouration of the plants. It is associated with moist and wet habitats, such as seepage, springs, glacial outwash, ditches, and stream margins, and as is the case with the majority of hydrophytic mosses, it exhibits remarkable variation in habit as well as leaf and cell size. This has given rise to the recognition of many ecological expressions as infraspecific taxa but, surprisingly, *P. wahlenbergii* has a relatively short list of heterotypic synonyms at species level. The latter refer mostly to species described from the Southern Hemisphere, as *P. wahlenbergii* is a bipolar species (Ochyra *et al.*, 2008) with some transitional locations in the tropics of the Latin American Cordillera (Shaw, 1982; Suárez & Schiavone, 2010).

Several heterotypic synonyms for *Pohlia wahlenbergii* have been recognized: *Bryum alticaule* Müll.Hal. (Clarke, 1973) and *B. philonotum* Müll.Hal. (Matteri, 1997) from southern South America, *B. amplirete* Müll.Hal. (Clarke, 1973) from subantarctic South Georgia, *B. himsii* R.Br.bis. (Sainsbury, 1948, 1955) from New Zealand, *Mniobryum tasmanicum* Broth. (Dixon, 1926; Sainsbury, 1948; Shaw, 2006) from Tasmania, and *Mniobryum bolivianum* Broth. (Suárez & Schiavone, 2010) from Bolivia. In addition, Greene (1986) and Suárez & Schiavone (2010), without any comment, placed *Bryum austroalbicans* Müll.Hal. in synonymy with *P. wahlenbergii*.

Bryum austroalbicans was described by Müller (1883, 1889) on the basis of the specimens collected from Îles Kerguelen by Dr F. C. Naumann, a surgeon and naturalist to the German Transit-of-Venus Expedition of 1874–1875 on the ship *S.M.S. Gazelle* under the command of Captain Georg Freiherrn von

Schleinitz, and was subsequently reported from subantarctic South Georgia (Cardot & Brotherus, 1923). When completing the treatment of *Pohlia* Hedw. for a synoptic flora of South Georgian mosses, Clarke (1973) was unable to trace either the original material of this species or the voucher specimen from South Georgia. However, on account of the discussion in Müller (1889), he speculated that this species could be a juvenile or etiolated expression of *P. wahlenbergii* var. *glaciale* (Brid.) E.F.Warb. Herein, this assumption is confirmed after examination of the small original specimen deposited in the Brotherus herbarium in H which certainly represents *P. wahlenbergii*.

Müller (1883, 1889) described another species from Îles Kerguelen, *Bryum aptychoides* Müll.Hal., and considered it to be distinct in its leaf arrangement from all congeners in the subantarctic archipelago. A single shoot of the original material was traced in the Brotherus herbarium at H and it clearly belongs to *Pohlia wahlenbergii*. Accordingly, the two species must be considered conspecific with *Pohlia wahlenbergii*, which is quite common in Îles Kerguelen, often growing in masses in seepages, on stream banks, and in outwash scree slopes (Ochyra, personal observation).

Apart from Îles Kerguelen, the German Transit-of-Venus Expedition operated in other parts of the austral region, including among other places, southern South America. On the basis of the relatively small collection of mosses made by Dr F. C. Naumann, Müller (1889) recognized 12 species from the Strait of Magellan area, four of which he had previously described as new to science (Müller, 1883). However, one of the latter, *Bryum alticaule*, was invalidly published as no description was given. Müller (1883) wrote only: '82. Br.[yum] (Senodictyon) alticaule n. sp. A Bryo glaciali differt, ut Philonotis calcarea a Ph. fontana' and this phrase certainly does not constitute a diagnosis. Later, Müller (1885) in his *Bryologia fuegiana*, used '*Bryum alticaule*' again as a

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nomen nudum, although he gave a direct reference to his initial publication of the taxon by citing ‘in Musci Naumann. Kerguelensibus’. However, he also provided detailed locality data for this species, namely ‘Staten Island [Isla de los Estados], Blossom Bay, in turfosis montosis, Febr. 1882: Spegazzini’.

Bryum alticaule was validly published by Müller (1889) in the volume summarizing the results of the German Transit-of-Venus Expedition (Engler, 1889–1890). The species was described from the material collected in Punta Arenas on the Brunswick Peninsula and subsequently Broth. (1903) transferred it to the genus *Mniobryum* Limpr. as *M. alticaule* (Müll.Hal.) Broth. The original collection in the Bescherelle herbarium in BM was studied by Clarke (1973) who found it to be conspecific with *Pohlia wahlenbergii*, a conclusion recently confirmed by Suárez & Schiavone (2010). Moreover, Müller (1889) described the specimen from Isla de los Estados [‘Staaten Island’], collected by Spegazzini, and cited in *Bryologia fuegiana* (Müller, 1885), as a new variety, *B. alticaule* var. *robustius* [he incorrectly used the masculine gender for the varietal name — var. ‘*robustior*’]. Examination of the original material of this taxon showed that it is inseparable from the typical expression of *P. wahlenbergii*.

Finally, Cardot & Broth. (1923) described a second variety of the species, *Mniobryum alticaule* var. *crassinerve* Broth., which occurred in the Brunswick Peninsula in southern Patagonia and in the Falkland Islands. This is a relatively large plant that, apart from its broader leaves and costa, matches well with the typical phenotypes of *Pohlia wahlenbergii*. Accordingly, the following taxonomic and nomenclatural novelties are proposed.

Pohlia wahlenbergii (F.Weber & D.Mohr) A.L. Andrews

Bryum austroalbicans Müll.Hal., Bot. Jahrb. Syst. 5: 78. 1883 [‘austro-albicans’] = *Webera austroalbicans* (Müll.Hal.) Kindb., Enum. Bryin. Exot. Suppl. 1: 96. 1889 = *Mniobryum austroalbicans* (Müll.Hal.) Broth. in Engl. & Prantl, Nat. Pflanzenfam. 1(3): 553. 1903. **Type citation:** all new species described by Müller (1883) were collected ‘auf der Expedition S.M.S. “Gazelle” [in 1874–1875] von Dr. Naumann’ and this species is included in the section ‘I. Bryologia Kerguelensis’; later Müller (1889: 15) provided detailed data on the type material as follows: ‘Ins. Kerguelen, inter Bartramiam (12.1.75). — Christmas harbour, Mt. Crozier (12.1.75)’. **Lectotype** (selected here): ‘Mniobr. austro-albicans (CM) Kerguelen leg. Naumann’ — H-Brotherus! First synonymized by Greene (1986: 207).

Bryum aptychoides Müll.Hal., Bot. Jahrb. Syst. 5: 78. 1883 = *Webera aptychoides* (Müll.Hal.) Kindb., Enum. Bryin. Exot. Suppl. 1: 96. 1889 = *Mniobryum*

aptychoides (Müll.Hal.) Broth. in Engl. & Prantl, Nat. Pflanzenfam. 1(3): 553. 1903, **syn. nov.** **Type citation:** all new species described by Müller (1883) were collected ‘auf der Expedition S.M.S. “Gazelle” [in 1875–1876] von Dr. Naumann’ and this species is included in the section ‘I. Bryologia Kerguelensis’; later Müller (1889: 15) provided detailed data on the type material as follows: ‘Ins. Kerguelen, Winter harbour (13.1.75); Betsy Cove: forma minor, inter Bartramian subexiguam’. **Lectotype** (selected here): ‘Mniobr. aptychoides (CM) Kerguelen leg. Naumann’ — H-Brotherus!

Bryum alticaule Müll.Hal., Forschungsgr. Gazelle 4: 37. 1889 (XII) [*Bryum alticaule* Müll.Hal., Bot. Jahrb. Syst. 5: 83. 1883, *nom. nud.*; *Bryum alticaule* Müll.Hal., Flora 68: 403. 1885, *nom. nud.*; *Webera alticaulis* Müll.Hal. in Kindb., Enum. Bryin. Exot. Suppl. 1: 96. 1889, *nom. nud.*] = *Mniobryum alticaule* (Müll.Hal.) Broth. in Engl. & Prantl, Nat. Pflanzenfam. 1(3): 554. 1903. **Type citation:** Punta Arenas, in solo humido, sylvae Fagi antarcticae ([Naumann] 7.2.76). **Lectotype** (selected here): ‘Bryum alticaule CMüll. Magellans Strasse, Punta Arenas 7 Feb 76 Dr Naumann 16’ — BM-Bescherelle! **isotype:** HBG! First synonymized by Clarke (1973: 73).

Bryum alticaule Müll.Hal. var. *robustius* Müll.Hal., Forschungsgr. Gazelle 4: 37. 1889 [‘robustior’] = *Webera alticaulis* (Müll.Hal.) Kindb. var. *robustior* (Müll.Hal.) Paris, Index Bryol.: 1344. 1898 = *Mniobryum alticaule* (Müll.Hal.) Paris var. *robustius* (Müll.Hal.) Paris, Index Bryol. Ed. 2, 3: 260. 1905, **syn. nov.** **Type citation:** Staaten-Insel, Blossom Bai in turfosis montanis (2.82, sterile: Dr. Spegazzini, **Lectotype** (selected here): ‘Bryum alticaule C.Müller Loc: Isla de los Estados, Bay Blossom in turfosis alpinis Leg: Spegazzini No. 418 2/1882’ — LIL-Matter! (ex LPS 40105).

Mniobryum alticaule (Müll.Hal.) Broth. var. *crassinerve* Broth. in Cardot & Broth., K. Svensk. Vet. Akad. Handl. 63(10): 36. 1923 [*Webera alticaulis* (Müll.Hal.) Kindb. var. *crassinervis* Cardot in Cardot & Broth., *nom. nud. in synonym.*], **syn. nov.** **Type citation:** Patagonia austr.: Punta Arenas, Rio Minas (522). W. Falkland: inter Many Branch H^r and Port Howard (697). **Lectotype** (selected here): ‘Herb. J. Cardot. *Webera alticaulis* (C.M.) Par. var. *crassinervis* Card. var. nova Iles Malouines: entre Many Branch Harbour et Port Howard Leg. Halle et Skottsberg 1907. n. 697’ — H-Brotherus!; **isolectotypes:** PC!, S!

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Taxonomic Additions and Changes: *Pohlia wahlenbergii* (F.Weber & D.Mohr) A.L.Andrews (*Bryum aptychoides* Müll.Hal., *syn. nov.*; *B. alticaule* Müll. Hal. var. *robustius* Müll.Hal., *syn. nov.*; *Mniobryum alticaule* (Müll.Hal.) Broth. var. *crassinerve* Broth., *syn. nov.*). *Bryum austroalbicans* Müll.Hal., *B. aptychoides* Müll.Hal., *B. alticaule* Müll.Hal., *Mniobryum alticaule* (Müll.Hal.) Broth. var. *crassinerve* Broth. — *new lectotypes*.

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