



## *Pohlia* section *Apalodictyon* (Bryaceae, Bryophyta) in Central and South America

Guillermo M. Suárez\*<sup>1</sup> & María M. Schiavone<sup>2</sup>

<sup>1</sup> CONICET, Fundación Miguel Lillo, Miguel Lillo 251, (4000) San Miguel de Tucumán, Tucumán, Argentina; suarezgm@csnat.unt.edu.ar;

<sup>2</sup> Facultad de Ciencias Naturales e I.M.L., Miguel Lillo 205, (4000) San Miguel de Tucumán, Tucumán, Argentina.

With 4 figures and 2 maps

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**Abstract:** *Pohlia* section *Apalodictyon* is taxonomically studied for Central and South America. Three species are recognized in the study area (*Pohlia lonchochaete*, *P. magnifica* and *P. wahlenbergii*). *Mniobryum bolivianum* from Bolivia is proposed as a new synonym of *P. wahlenbergii*. Three new lectotypes are designated. We provide the first illustrations of *P. lonchochaete* and *P. magnifica*, two neglected species from southern South America and describe and illustrate all species observed. Distribution maps of the taxa in Latin America are presented.

### Introduction

*Bryum* Hedw. section *Apalodictyon* Müll.Hal. was erected by C.Müller (1848) to include 33 species, of which *B. carneum* With. and *B. albicans* (Wahlenb.) Röhl. were later transferred by Limpricht (1892) to *Mniobryum* Limpr. He characterized *Mniobryum* based on sporophytic characters, while the gametophytes were the same as those defined for *Pohlia* Hedw. (elimbate leaves, elongate to fusiform cells and costa percurrent). Since then, *Mniobryum* has been reduced to a subgenus (Amann 1893), while recognized by others (Brotherus 1903, 1924).

Shaw (1982) revised *Mniobryum* species from North America, Central America and the West Indies. He placed the genus and the species involved within *Pohlia*. In turn, Nyholm (1958) and Shaw (1981) used the name *Mniobryum* for a section of *Pohlia*. Ochyra et al. (2008) noted that *Mniobryum* corresponds to a name not validly published according to the International Code of Botanical Nomenclature and is a later name than *Apalodictyon*.

The section *Apalodictyon* is represented by four species in Europe (Hill et. al. 2006). In the Americas this section contains nine species (Suárez 2008), three of which are found in Latin America: *Pohlia wahlenbergii* (F. Weber & D. Mohr) A.L. Andrews, a bipolar species with some intermediate stations in the Tropics and *P. lonchochaete* (Dusén) Broth. and *P. magnifica* (Herzog) S. He, two neglected species recorded only in the southern region of Argentina and Chile, respectively.

This study includes species of *Pohlia* section *Apalodictyon* from Central and South America. We describe and illustrate the taxa represented. We also include distribution maps.

### Materials and methods

We studied types and specimens from B, BA, BM, C, CM, CONC, CR, FH, FR, G, H, HUA, IMBIV, JE, L, LPB, LPS, MICH, MO, NY, PC, TENN, UB, W, in addition to our own collections.

The specimens were studied morphologically with conventional techniques for bryophytes and mounted in water-glycerine-phenol or Hoyer's solution (Anderson 1954).

These species are listed alphabetically. Each one includes their specific name, basionym and all synonyms recognized in the specimens studied. Furthermore, we resolved to include only Central and South American specimens in order to facilitate reading (other specimens studied can be found in Suárez 2008). Finally, we present distribution data, habitat and nomenclature of the species.

### Results

#### Section *Apalodictyon* (Müll. Hal.) Ochyra (= *Mniobryum* Nyholm, nom. inv.)

≡ *Bryum* sect. *Apalodictyon* Müll. Hal. Synopsis Muscorum Frondosorum omnium hucusque Cognitorum 1: 291. 1848. ≡ *Bryum* subsect. *Apalodictyon* (Müll. Hal.) Podp. Rozprawy České Akademie Věd a Umění. Třída 2. Vědy Matematické, Přírodní 10(2): 49. 1901.

Plants small to moderately robust. Leaves lanceolate to ovate-lanceolate, distributed along the stem. Costa red. Axillary propagula present only in *P. lonchochaete*. Perichaetial leaves little or not differentiated from vegetative leaves. Seta long (2.3–4.5 cm), one per perichaetium. Capsule short-urceolate or pyriform; neck much shorter than urn; exothecial cells short-isodiametrical, with very sinuous walls. Exostome teeth apiculate, bordered, trabeculate; endostome segments perforate; cilia long and nodulose.

#### *Pohlia lonchochaete* (Dusén) Broth., Die Natürlichen Pflanzenfamilien I(3): 1204. 1909. Figs 1–2, Map 1

≡ *Webera lonchochaete* Dusén, Reports of the Princeton University Expeditions to Patagonia, 1896–1899, Volume viii, 1[2], Botany 8(3): 94, 20 t., 10 f. 7–9. 1903. Type: ARGENTINA, Patagonia, 1 Feb 1897, J. Hatcher 122 (LECTOTYPE, DESIGNATED HERE: FH!, isoclectotype: NY!).

Plants small, brown-green, almost opaque, forming loose turfs. Stems 11–21 mm long, reddish brown, simple, rounded in cross section, with central strand well developed; axillary hairs not observed. Vegetative leaves distributed along the stem, something comose towards the apex, flexuose when dry, patent when wet, 0.9–1.8 ×

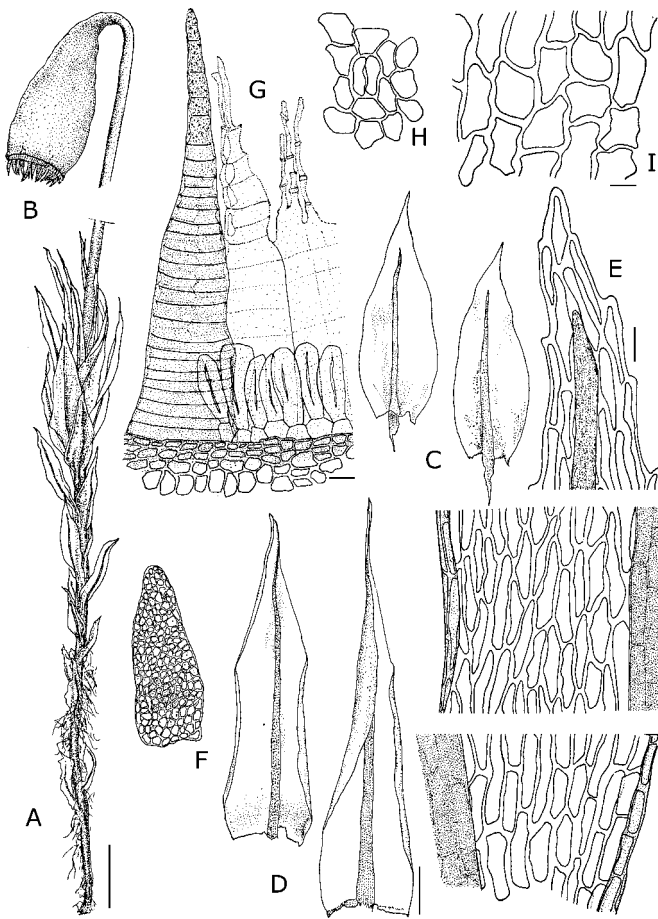


Fig. 1. *Pohlia lonchochaete*. A. Habit, wet. B. Seta and capsule. C. Leaves. D. Perichaetial leaves. E. Upper, median and basal laminal cells. F. Propagule. G. Peristome teeth. H. Stoma. I. Exothelial cells. Scale bars: A, B = 1 mm; C, D = 0.5 mm; E–I = 25  $\mu$ m. (From Lectotype.)

0.2–0.4 mm, lanceolate to ovate-lanceolate, apex acute; margins recurved, dentate in upper 1/2–1/3 of lamina; costa robust, percurrent; laminal cells firm-walled; upper laminal cells short to long fusiform, 30–100  $\times$  5–10  $\mu$ m; middle laminal cells short- or long-rectangular to rhomboidal, 37–86  $\times$  8–13  $\mu$ m; basal cells rectangular, 28–75  $\times$  10–18  $\mu$ m. Propagula axillary, 200–400  $\mu$ m wide, 1 per leaf, reddish-brown, triangular, without leaf primordia (Fig. 2). Synoicous. Perichaetial leaves longer than the vegetative leaves. Setae 29–45 mm long, brown to reddish-brown. Capsules pendulous, ellipsoid-pyriform, 2.0–2.2  $\times$  0.9–1.2 mm, neck poorly differentiated; exothelial cells irregularly short- to long-rectangular, walls flexuose, 45–100  $\times$  28–64  $\mu$ m; stomata cryptopore; annulus of 1 row of vesicular cells; exostome teeth yellow, 380–430  $\mu$ m long, trabeculate, bordered, papillose; endostome hyaline,

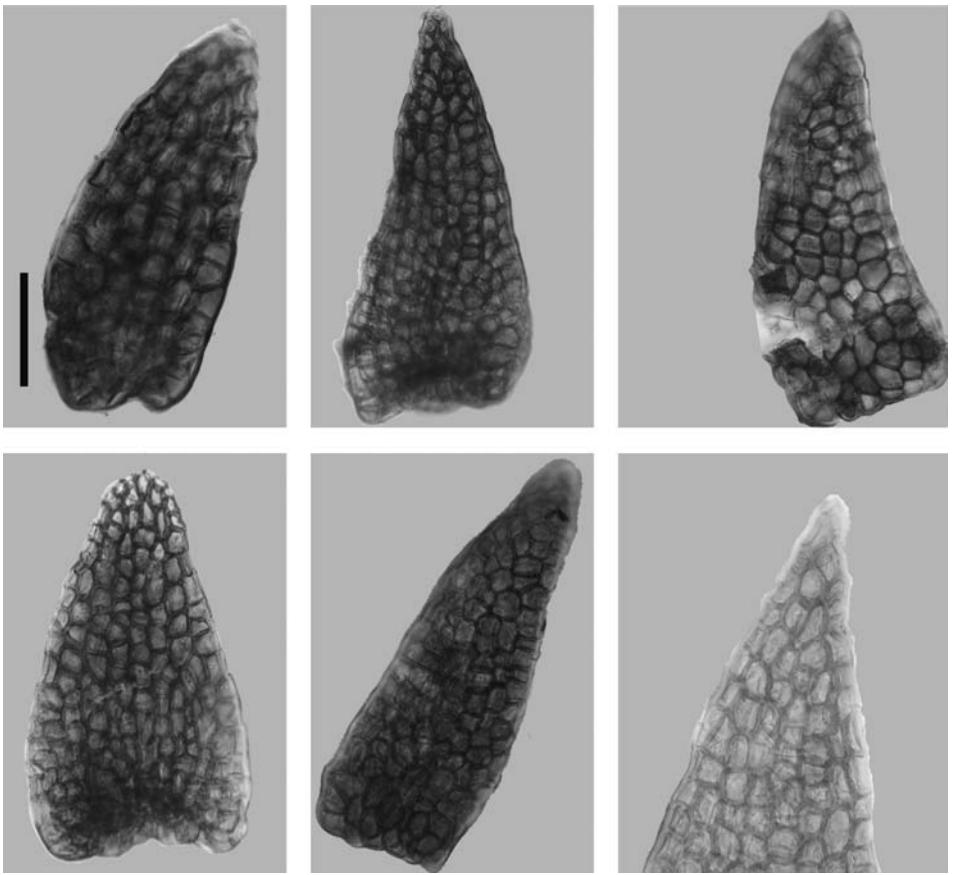


Fig. 2. *Pohlia lonchochaete*. Propagules. Scale bar: 80  $\mu\text{m}$ . (From Lectotype.)

yellow, 400  $\mu\text{m}$  long, basal membrane high (280  $\mu\text{m}$ ), slightly papillose, segments perforate, papillose, cilia nodulose. Operculum conical. Spores 12–17  $\mu\text{m}$  in diameter, papillose.

SPECIMENS STUDIED: ARGENTINA. Cordillera of S. Patagonia, on ground, Feb.1897, J.Hatcher (FH, NY).

DISTRIBUTION AND HABITAT: *Pohlia lonchochaete* is a southern species only known from the original description in Santa Cruz province, Argentina (Map 1). It has been found between plants of *Aulacomnium palustre* (Lindb.) Schwäegr. He (1998) mentioned the species in Chile based on a Dusén (1903) record. After an extensive literature review, we could not locate this record so we have decided to exclude *P. lonchochaete* from Chilean bryoflora, until now.

The distinctive character of the species are the dark brown, opaque propagula, without leaf primordia (Fig. 2) (Suárez & Schiavone 2007). *Pohlia lonchochaete* may be



Map 1. Known distribution of *Pohlia lonchochaete* (●) and *Pohlia magnifica* (■) in southern South America.

confused with *P. sphagnicola* (Bruch & Schimp.) Broth. and *P. nutans* (Hedw.) Lindb., but both species are lacking propagules. Also, *P. sphagnicola* is dioicous, *P. nutans* paroicous and *P. lonchochaete* synoicous.

NOMENCLATURE: *Webera lonchochaete* Dusén was erected by Dusén (1903), based on specimens collected by Hatcher in 1897 and transferred by Brotherus (1909) to *Pohlia*. Isotypes of Hatcher 122 were found in FH and NY, however, we decided to choose the FH specimen as the lectotype because of the good conditions of the

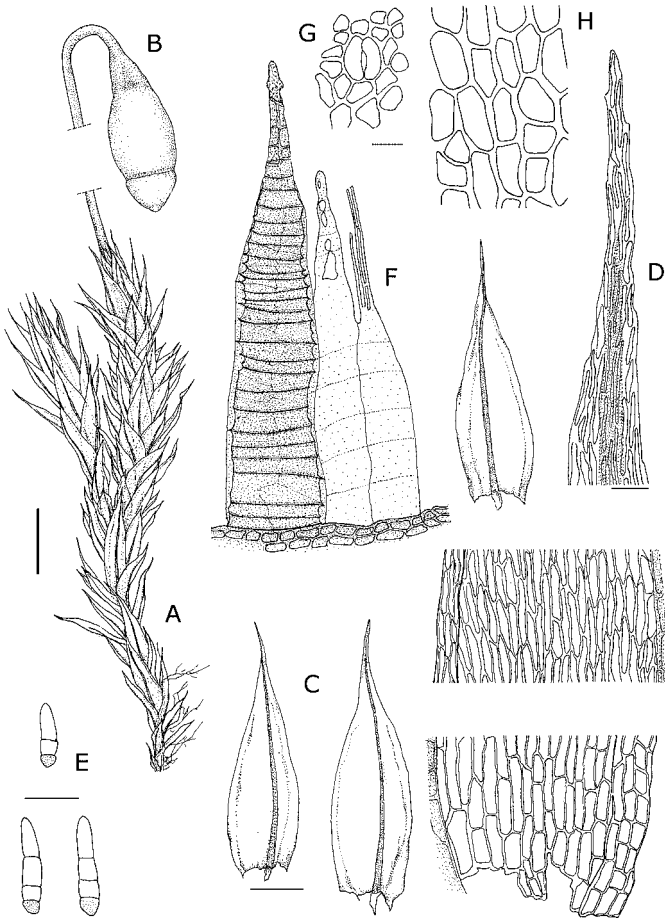


Fig. 3. *Pohlia magnifica*. A. Habit, wet. B. Seta and capsule. C. Leaves. D. Upper, median and basal laminal cells. E. Axillary hairs. F. Peristome teeth. G. Stoma. H. Exothecial cells. Scale bars: A, B = 1 mm; C = 0.5 mm; D–H = 25  $\mu$ m. (From G.Suárez & F.Osorio 382 LIL).

plants. Additionally, two specimens (Hatcher 16 and s/n) determined by Bartram as *P. lonchochaete* were located (NY), but both belong to *P. wahlenbergii*.

***Pohlia magnifica*** (Herzog) S.He, Journal of the Hattori Botanical Laboratory 85: 152. Fig. 3, Map 1

1998.  $\equiv$  *Webera magnifica* Herzog, Revue Bryologique et Lichénologique 23: 76. 1954. Type: CHILE, Fl. V. West patagonien Istmo de Ofqui, 1939, A.Grosse 41 (LECTOTYPE, DESIGNATED HERE: B!, isolectotype: JE!).

Plants small to medium, dark green at the base, somewhat lighter and bright green towards the apex. Stems 10–15 mm long, simple or with 1–2 subfloral innovations; in cross section rounded elliptical, with reduced central strand. Axillary hairs 25–55  $\mu$ m



Map 2. Known distribution of *Pohlia wahlenbergii* (■) in Central and South America.

long, with 2–3 brown basal cells and 1–2 distal hyaline cells. Vegetative leaves densely distributed along the stem, imbricate when dry, spreading when wet,  $1.4\text{--}3.0 \times 0.4\text{--}0.6$  mm, oblong-lanceolate; apex acute; margins entire, recurved in the apex; costa robust, short excurrent, reddish. Laminal cells long-rectangular, thick-walled,  $20\text{--}55 \times 3\text{--}8$   $\mu\text{m}$ , short-rectangular toward the insertion,  $18\text{--}35\text{--}(45) \times 8\text{--}17$   $\mu\text{m}$ . Dioicous. Perichaetia and perigonia terminal; perichaetial leaves similar to vegetative leaves. Setae 23–31 mm long, reddish; capsules pendulous, pyriform to ellipsoidal,  $2.0\text{--}2.7 \times 0.9\text{--}1.2$  mm, neck shorter than urn; exothecial cells small,

irregularly subquadrate, 30–60 × 13–38 µm, with sinuose walls; stomata superficial to cryptopore; annulus of 2(–3) rows of vesicular cells; exostome teeth reddish-brown, 500–730 µm long, trabeculate, bordered; endostome hyaline, papillose, 480–680 µm long; membrane basal high; segments perforate, papillose, cilia long, nodulose (usually more than 3). Operculum conic, short-mucronate. Spores 7–10 µm in diameter, smooth.

SPECIMENS STUDIED: CHILE. Parque Pumalín, Ventisquero El Amarillo, camino al nivalis, 20. Feb. 2005, G.Suárez & F.Osorio 382, 405 (LIL).

DISTRIBUTION AND HABITAT: *Pohlia magnifica* is recorded only in southern Chile (Isthmus Ofqui). Matteri (1985) recorded this species from Puerto Toro and it has been recently found in the Pumalin Park, Glacier "El Amarillo". It forms loose clumps among rocks, sometimes mixed with *Bryum argenteum* Hedw. and some Bartramiaceae in areas dominated by *Racomitrium lanuginosum* (Hedw.) Brid.

*Pohlia magnifica* is distinguished from other American species of *Pohlia* by the excurrent leaf costa. The plants are always densely foliate with leaves appressed to the stem.

NOMENCLATURE: This species was erected by Herzog (1954) as *Webera magnifica* Herzog and transferred to the genus *Pohlia* by He (1998). Isotypes of the original specimen are deposited in B and JE. The specimen from JE is here designated as the lectotype.

***Pohlia wahlenbergii*** (F.Weber & D.Mohr) A.L.Andrews, Moss Flora of North America 2: 203. 1935. Fig. 4, Map 2

≡ *Hypnum wahlenbergii* F.Weber & D.Mohr, Botanisches Taschenbuch 280, 475. 1807. ≡ *Bryum wahlenbergii* (F.Weber & D.Mohr) Schwägr., Species Muscorum Frondosorum, Supplementum Primum 2: 92, pl. 70. 1816. ≡ *Webera wahlenbergii* (F.Weber & D.Mohr) Fűrnr., Flora 12 (2, Ergänzungsblätter): 35. 1829. ≡ *Mniobryum wahlenbergii* (F.Weber & D.Mohr) Jenn., A manual of the mosses of Western Pennsylvania: 146. 1913.

*Mniobryum alticaule* (Müll.Hal.) Broth., Die Natürlichen Pflanzenfamilien I(3): 554. 1903. ≡ *Bryum alticaule* Müll.Hal., Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie 5: 83. 1883. Type: CHILE. Punta Arenas, 7 Feb 1876, Naumann (isotype: HBG!)

*Mniobryum philonotum* (Müll.Hal.) Broth., Die Natürlichen Pflanzenfamilien I(3): 553. 1903. ≡ *Bryum philonotum* Müll.Hal., Flora 68: 403. 1885. Type: Fuegia, Staten Island, Penguin Rookery, in paludosis alpinis montis Buenos Aires, Feb 1882, Spegazzini 107 (lectotype: LPS!, isolectotype: H!).

*Mniobryum austro-albicans* (Müll.Hal.) Broth., Die Natürlichen Pflanzenfamilien I(3): 553. 1903. ≡ *Bryum austroalbicans* Müll.Hal., Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie 5: 78. 1887.

*Mniobryum amplirete* (Müll.Hal.) Broth., Die Natürlichen Pflanzenfamilien I(3): 553. 1903. ≡ *Bryum amplirete* Müll.Hal., Die Internationale Polarforschung 1882–1883, Die Deutschen Expeditionen 2: 296. 1890. Type: Süd Georgien, 14. Jan. 1883, H. Will 49 (LECTOTYPE, DESIGNATED HERE): HBG!, isolectotype: H!).

*Mniobryum bolivianum* Broth., Bibliotheca Botanica 87: 81. 1916. Type: BOLIVIA. Anquelligen Stellen im unteren Chocayatal, 3100 m, Mai 1911, T.Herzog 2618 (JE!); am Bachrand im obersten Llavetal, 4200 m, Mai 1911, T. Herzog 4834 (JE!). SYN. NOV.

*Webera rigidifolia* Dixon & Badhw., Records of the Botanical Survey of India 12: 170. 1938. Type: INDIA, Himalaya, Raspanum Valley, below Mussoorie, 5–6000 ft., 11. June 1925, W.Dudgeon 1045 (BM!)



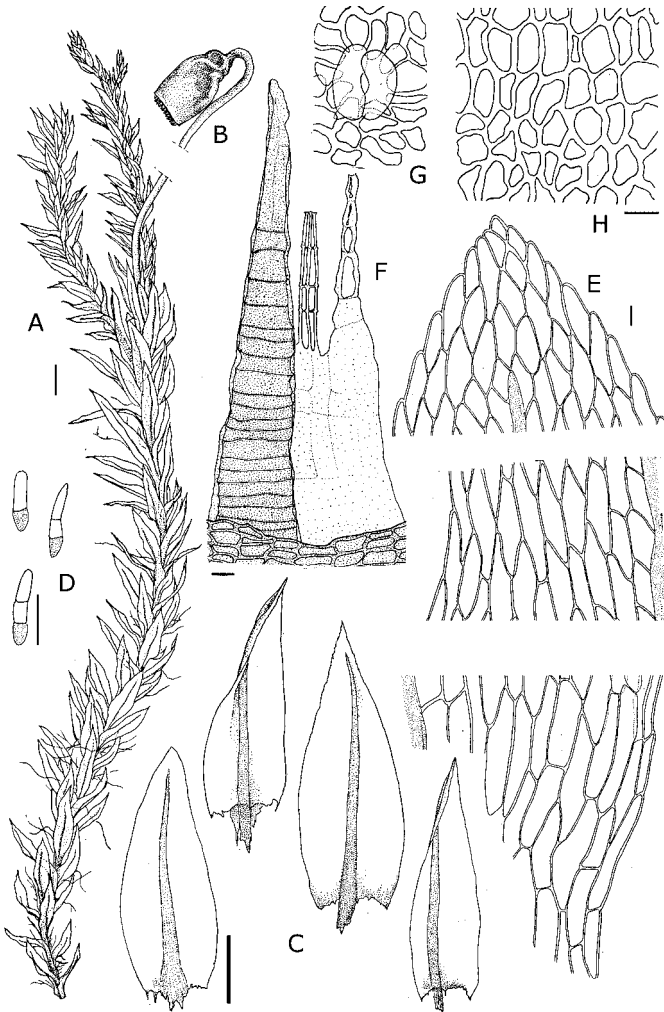


Fig. 4. *Pohlia wahlenbergii*. A. Habit, wet. B. Seta and capsule. C. Leaves. D. Axillary hairs. E. Upper, median and basal laminal cells. F. Peristome teeth. G. Stoma. H. Exothecial cells. Scale bars: A, B, C = 1 mm; D, E, F, G, H = 25  $\mu$ m. (From Matteri & Barthe 104 BA).

Plants small to robust, light green to deep red, forming lax or compact cushions, pure or mixed with other species. Stems 4–30(–55) mm long, simple or with 1–3 subfloral innovations, green or red, round in cross section, central strand well developed; axillary hairs 50–70  $\mu$ m long, with 1 brown basal cell and 1–2 distal hyaline cells. Vegetative leaves distributed along the stem, densely imbricate, or lax and somewhat squarrose when dry, spreading when wet, 0.6–2.0  $\times$  0.3–0.6 mm, lanceolate to ovate-lanceolate; apex acute to blunt, margins plane, serrulate toward apex; costa robust, ending before the apex, green or red at base or totally red; laminal

cells thin-walled, apical cells short rhomboidal, 45–95 × 8–18 µm; middle laminal cells broad, oblong-lanceolate, 65–170 × 8–20 µm; basal cells short-rectangular, 25–70 × 8–14 µm, red. Dioicous. Perigonia and perichaetia terminal; perichaetial leaves poorly differentiated, to 2 mm long, concave. Setae 25–40 mm long; capsules reddish, pendulous, short and wide pyriform or urceolate, 1.5–2.5 mm long, neck distinct, short; exothecial cells isodiametric, with walls very sinuose, 15–50 × 15–30 µm; stomata cryptopore, numerous; annulus absent; exostome teeth brownish to reddish brown, 420–450 µm long, triangular acute, trabeculate, bordered, strongly papillose near the apex; endostome hyaline to yellowish, 400 µm long, basal membrane high, segments keeled, broadly perforate, cilia long, nodulose. Operculum short-conic. Spores 13–27 µm in diameter, finely papillose.

SELECTED SPECIMENS STUDIED: MEXICO. MÉXICO, pradera alpina de *Calamagrostis tolucensis*, ladera W del Iztaccihuatl, arriba del salto, valle de Ayoloco, 19°08'N, 98°43'W, 4000 m, 19 Nov 1966, J.Rzedowski 23478b (MO); VERACRUZ, Ixtaccihuatl, Jan 1904, C.Purpus 8111 (NY); MICHOACÁN, vicinity of Morelia, Rincón, 2050 m, 09 May 1912, G.Arsène 9436 (NY). CENTRAL AMERICA. GUATEMALA. SUCHITEPÉQUEZ, southwestern lower slopes of Volcán Zunil, vicinity of Finca Asturias, NE of Pueblo Nuevo, 1200–1300 m, 01 Feb 1940, J. Steyermark 35324 (NY). DOMINICAN REPUBLICA. LA VEGA, vicinity of pyramids, 13.8 km S of Valle Nuevo, 44.7 km S of Constanza, humid steep ravine (Arroyo Domingo) and adjacent fields, 7400 ft., 30 Apr 1982, J.Shaw 5656 (NY); vicinity of La Lagunita, 2800–2900 m, on very moist sunny soil along stream, in open cloud-shrouded pine forest, Jul 1967, D.Norris et al. 5474 (NY).

SOUTH AMERICA. CHILE. ANTARTICA CHILENA, Cabo de Hornos, Isla Navarino, Parque Etnobotánico Omora, 3 km W of Puerto Williams, 54°56'26–31"S, 67°38'53"–67°39'36"W, 5100 m, *Nothofagus* forest and peat bog, 22 Nov 2001, W.Buck 40970, 40999, 41337 (NY); CONCEPCIÓN (Región VIII), University of Concepción Campus waterfalls, 36°50'S, 73°02'W, 80 m, 05 Oct 2001, on soil over cliff, R.Ireland & G.Bellolio 32203 (MO); CURICÓ, cajón del río Terra, en rocas a orillas del agua del río, 640 m, 18 May 1973, M.Mahú 9336 (MO); LOS LAGOS (Región X), Valdivia, Isla Mancera, calle del Fuerte, en suelo, 20 m, 17 Feb 1978, M. & H.Mahú 24073 (MO); MAGELLANES, ca. 5 km W of Punta Arenas on road to Andino, 700 m W of CONAF center, 53°09'39"S, 71°00'58"W, peatland and adjacent *Nothofagus* forest 20 Nov 2001, W.Buck 40659 (NY); OSORNO, Yervas Buenas, orilla del camino, en roca húmeda 20 m, 17 Jan 1986, M.Mahú 22539 (MO); SANTIAGO, cuesta La Dormida, matorral de *Litraea* y *Baccharis*, en rocas con corriente de agua, 1120 m, 02 Ago 1980, M.Mahú & O'Shea 13127 (MO); VALAPARAÍSO (Región V), Prov. San Antonio, El Quisco, Punta de Talca, Quebrada Gualilemu, frente a la cooperativa de Empleador, particulares, en pared de roca, 20 m, 20 Sep 1979, M.Mahú 12725 (MO). COLOMBIA. NARIÑO, Municipio Ipiales, Cascada frente al Santuario de las Lajas, musgo sobre suelo mojado, 00°47'N, 77°34'W, 2800 m, 07 Nov 1988, S.Churchill & A.Arbelaez 15982, 15994 (MO); Parque Nacional Puracé, Laguna de San Rafael, musgo sobre talud, 02°22'N, 76°21'W, 3370 m, 12 Jun 1991, B.Ramírez 3744 (MO), Tolima, cerca del Nevado del Ruiz, carretera a Murillo, páramo, 3885–3975 m, musgos sobre suelo en roca vertical, 3885 m, 04°56'N, 75°17'W, 3900 m, 09 May 1991, S.Churchill & J.Betancur 17909 (MO), Municipio de Pasto, a 3 km E de la población de Dolores, 1°10'N, 77°11'W, 3000 m, 25 Apr 1991, B.Ramírez 3602 (MO); LAS CALDAS, carretera Manizales-Bogota, km 12 desde el batallón de infantería n° 22 (Ayacucho), 05°01'N, 75°23'O, colecciones realizadas sobre bosque secundario sobre las pendientes, 2440–2460 m, 13 Apr 1999, sin colector 16362 (MO, NY). ARGENTINA. NEUQUÉN, Villa Angostura, camino Angostura-Bariloche, km 62, al borde de arroyo, con *Philonotis scabrifolia* y *P. vagans*, 22 Dec 1965, Matteri & Barthe 104 (BA); RÍO NEGRO, Frías, camino Pt. Alegre a Pt. Blest, sobre tierra húmeda, Jul 1965, Matteri & Barthe 175b (BA); ISLAS MALVINAS, Port Stanley in a Dairy Paddock, 21 Oct 1932, A.Bennett 15a (MO); TIERRA DEL FUEGO, Depto. Ushuaia, Bahía Buen Suceso, ladera sur del morro Sur, bosque denso de *Nothofagus betuloides* y *Drymis winteri*, con sotobosque denso, 54°47'S, 65°14'W, entre rocas en el lloradero litoral, 21 Jan 1986, C.Matteri & M.Schiavone 3553 (MO), Lapataia, picada al Fagnano, 11 Jan 1974, C.Matteri 1735 (BA), Paso Garibaldi, Ladera Este, 20 Jan 1974, C. Matteri 1896 (BA). BOLIVIA. LA PAZ, Murillo, Cañon de Ovejuyo, ladera de exposición norte, Puna y vegetación altoandina, musgo sobre pared

vertical de una vertiente, 16°32'S, 68°01'W, 3902 m, 6 Jun 2004, C.Aldana 139 (MO), Prov. Franz Tamayo, Pelechuco, along the Pelechuco road between the cumbre and elevation point of 3900 m, 69°08'W, 14°47'S, 4540 m, high altitude areas, humid grasslands and rocky areas with massive glaciers above rocks by creekside, 12 Nov 1988, M.Lewis 88-1623 (LPS, B), 88-1611 (LPS), Prov de Murillo, Nevado Huayna Potosí, near Abra Zongo, 16°17'S, 68°08', 4800 m, waterfall, 24 Apr 1979, Marko Lewis 79-1911 (MO, NY); Sorata, 10,000 ft., Feb 1886, H.Rusev 3193 (NY), Depto. Tarija, Prov. Arce, "Sidras", slopes of Loma Las Lagunas, 1 km, W of Agricultural experimental Station in comunidad sidras, 22°14'S, 64°33'W, 980 m, a hot, super-humid forest with dense understory, 08 Oct 1984, M.Lewis 84-2333 (LPS). PERÚ. JUNÍN, Prov. Huancayo, ortl, des passes Huaytapallana, 30 km von Huancayo in Richtung Parihuanca, Fels, Erde, Mauer, Baun, Strauch, Holz, see, Bach, 4550 m, 08 Jul 1977, P. & E.Hegewald 9185 (MO); APURIMAC, Prov. Andahuaylas ort. Quebrada Pallca bei Quishuara, 4500 m, 03 Jul 1977, P. & E.Hegewald 8943 (MO). ECUADOR. IMBABURA, E side of Cerro Cotacachi, NW of Cotacachi, 0°22'N, 78°20'W, 3750 m, wet bank along creek, 21–22 Nov 1978, M.Lewis 78-2667 (NY); NAPO, Quebrada and W bank of Lago Micacocha, Paramo Swamp, 78°11'W, 0°35'S, 3950 m, 03 Nov 1979, submerged, L.Holm-Nielsen 20846 (MO, NY); PICHINCHA, along road 71 from Interamerican Highway toward Santo Domingo de los Colorados, 0°20'S, 78°40'W, moist bank, 15 km, 06 Jun 1975, M.Crosby 10832 (MO, NY), Volcán Atacazo, W slope, 17 km from San Juan, *Polylepis* forest, 78°38'W, 0°20'S, 2850 m, 25 Aug 1980, L.Holm-Nielsen & E.Azanza 25142 (MO, NY); QUITO, Road Quito-Nono-Pacto, between Nono and Tandayapa, partly disturbed montane rain forest, 78°37'W, 0°2'S, 2400 m, on humid rock shelf, 24 Mar 1979, L.Holm-Nielsen 16122 (NY).

**DISTRIBUTION AND HABITAT:** *Pohlia wahlenbergii* is distributed in Europe, Africa, Australasia, North, Central and South America. In the Andean region it is recorded from Ecuador to Tierra del Fuego (Map. 2). It lives on the ground in open areas in grasslands and forests, from sea level to 5000 m a.s.l. in Ecuador. *Pohlia wahlenbergii* is characterized by the size of its laminal leaf, which are larger than those in other species of *Pohlia* (65–170 × 8–20 µm), as well as by the urceolate capsule and lack of an annulus.

**NOMENCLATURE:** *Pohlia wahlenbergii* was described as *Hypnum wahlenbergii* by Weber & Mohr (1807), later transferred to *Webera*, *Bryum*, *Mniobryum* and finally to *Pohlia* by Andrews (1935). Two infraspecific taxa have been recognized within this species: *Pohlia wahlenbergii* var. *glacialis* and *P. wahlenbergii* var. *calcareae*. The var. *glacialis* has been reduced to synonymy (Shaw 1982) (accepted in this work) and var. *calcareae* has been proposed for synonymy. After reviewing a large number of samples from around the world (Suárez 2008), it was found that *P. wahlenbergii* exhibits marked variability according its habitat, however the specific characteristics remain constant.

**ADDITIONAL NOTES:** Shaw (1982) in his revision of the species of *Pohlia* of North America, Central America and the West Indies, reduced *Mniobryum* and the involved species under *Pohlia*. *Mniobryum* has been reduced to a subgenus by Amann (1893) and later restored to the generic level by Brotherus (1903, 1924). Arts (1995, 2001) in turn, remarked about some possible relationships between certain species of *Pohlia* and *Leptobryum* and synonymized *M. bracteatum* E.B.Bartram, a plant of Guatemala, under *L. wilsonii* (Mitt.) Broth. (now included in *Pohlia* by Ochyra et al. 2008 and Suárez 2008). *Mniobryum bolivianum*, from Bolivia, was a neglected species with unknown taxonomic status (Suárez & Schiavone 2008). After reviewing the type material of this species is proposed as a new synonym of *P. wahlenbergii*. Similarly, *M. magnirete* Broth., is a herbarium name assigned to a plant from Chile and is indistinguishable from *P. wahlenbergii*.

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