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# NEW RECORDS AND NOMENCLATURAL NOVELTIES FOR THREE SPECIES OF *AGROSTIS* (POACEAE, POOIDEAE, POEAE) FROM CENTRAL AND SOUTH AMERICA AND ASSESSMENT ON THEIR CONSERVATION STATUS

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**Abstract.** Palacio, P. C.; A. M. Molina, Z. E. Rúgolo & A. S. Vega. 2023. New records and nomenclatural novelties for three species of *Agrostis* (Poaceae, Pooideae, Poeae) from Central and South America and assessment on their conservation status. *Darwiniana*, nueva serie 11(2): 719-727.

This paper reports seven new records of *Agrostis* in Central and South America: *A. boyacensis* in Bolivia, Peru and Venezuela; *A. lenis* in Colombia, Ecuador and Venezuela; and *A. mertensii* in Costa Rica. The lectotype of *Agrostis williamsii* is herein designated. This contribution includes synonymy, iconography, geographic distribution and habitat, phenology, conservation status according to IUCN categories of threat, uses, and a list of additional specimens examined.

Keywords. *Agrostis*; Central America; geographic distribution; grasses; lectotype; South America.

**Resumen.** Palacio, P. C.; A. M. Molina, Z. E. Rúgolo & A. S. Vega. 2023. Nuevos registros y novedades nomenclaturales para tres especies de *Agrostis* (Poaceae, Pooideae, Poeae) en América Central y del Sur, y evaluación del estado de conservación. *Darwiniana*, nueva serie 11(2): 719-727.

El presente trabajo reporta siete nuevos registros de *Agrostis* en América Central y del Sur: *A. boyacensis* en Bolivia, Peru y Venezuela, *A. lenis* en Colombia, Ecuador y Venezuela, y *A. mertensii* en Costa Rica. Se designa el lectotipo de *Agrostis williamsii*. El trabajo incluye la sinonimia, iconografía, distribución geográfica y hábitat, fenología, estado de conservación de acuerdo con las categorías de amenaza de la IUCN, usos y la lista de especímenes adicionales examinados.

Palabras clave. *Agrostis*; América Central; distribución geográfica; gramíneas; lectotipo; Sudamérica.

## INTRODUCTION

The genus *Agrostis* L. comprises about 200 species (Gallaher et al., 2022) and has a wide geographic distribution in temperate and cold regions of both hemispheres, as well as in mountains of tropical and subtropical regions. In the Americas, ca. 63 taxa have been recorded, and are widely distributed from Canada to Chile and Argentina (Soreng & Peterson, 2003). Particularly in South America, there is an important centre of species diversification in the Andean-Patagonian region, where there are some species only known from the type collection or from specimens with restricted geographical distribution (Rúgolo de Agrasar & Molina, 1997).

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Among South American endemic species are *Agrostis boyacensis* Swallen & García-Barr. (Colombia), *A. arvensis* Phil. (Chile) and *A. ambatoensis* Asteg. (Argentina), among others (Rúgolo de Agrasar & Molina, 1997; Rúgolo & Molina, 2012).

During the preparation of the taxonomic revision of *Agrostis* from Ecuador, some specimens were identified as new reports for Bolivia, Colombia, Costa Rica, Peru, and Venezuela. Partial taxonomic treatments and catalogues of *Agrostis* are reported for these countries: Bolivia (Rúgolo de Agrasar & Molina, 1993; Rúgolo & Molina, 2014), Colombia (Luteyn, 1999; García-Ulloa, 2005; Giraldo-Cañas, 2011; 2013; Giraldo-Cañas et al., 2016), Costa Rica (Pohl, 1980), Peru (Brako & Zarucchi, 1993; Tovar Serpa, 1993; Sylvester & Sylvester, 2020), and Venezuela (Hokche et al., 2008; Bono, 2010; Briceño, 2010; Dorr, 2014). Nevertheless, the lack of a complete and updated synopsis of the genus in the Americas merits the report of new records in the present contribution.

Based on the presence of several anthropic factors that cause the floristic modification in the environments where these species are found (Martínez Carretero, 2004), we conducted an update of their geographic distribution and a preliminary assessment of their conservation status.

## MATERIALS AND METHODS

Specimens belonging to the herbaria B, BAA, BAB, BLA, C, COL, CONC, F, G, K, L, LIL, LPB, LP, MA, MBM, MEXU, MVFA, P, QCA, QCNE, S, SI, SGO, US, VEN and W (acronyms according to Thiers (2023)) were analysed.

For georeferencing, the geographic coordinates (latitude and longitude) of the specimen labels were used. Since several herbarium collections do not have precise geographic coordinates, the location was searched using Google Earth 9.124.0.1 (https://earth.google.com/web). In all the cases the identity of the specimens and their geographic information were checked. Based on all these data, the IUCN conservation status of *A. boyacencis*, *A. lenis,* and *A. mertensii* throughout their range was determined using the GeoCAT tool (Bachman et al., 2011). This software is compatible with the IUCN Red List categories and criteria (IUCN, 2012). Of the five established criteria, only criterion B was used. This criterion uses the information on the geographic distribution of the taxa, represented as Extent of Occurrence (EOO) and Area of Occupation (AOO). According to Salariato & Zuloaga (2020) the EOO should be used for each species, since the AOO can lead to overestimation of risk when herbarium specimens are used. Maps were made with QGIS version 3.22.4 (QGIS Development Team, 2020).

## RESULTS

**Agrostis boyacensis** Swallen & García-Barr., Caldasia 2(8): 303. 1943. TYPE: Colombia, Boyacá, Nevado del Cocuy, Alto Valle de Las Lagunillas, 4000-4300 m, 12-IV-1938, *J. Cuatrecasas & H. García Barriga 1459* (holotype US!, isotypes: COL [barcode] 000006092!, SI fragment ex US [barcode] 000494!).

Iconography. Swallen & García-Barriga (1943: 304).

Geographic distribution and habitat. Colombia and Ecuador. It is reported for the first time in Bolivia, Peru, and Venezuela (Fig. 1). The species grows on moors from 1600-4500 m a.s.l. as ruderal.

Phenology. It flowers from August to December.

Conservation status. *Agrostis boyacensis* has a geographic range in the form of an EOO of 2,080,393 km$^2$. The conservation status of *A. boyacensis* based on extent of occurrence (EOO) is Least Concern (LC). Most of the documented specimen localities are within protected areas.

### Specimens examined

BOLIVIA. **La Paz.** Prov. Larecaja, viciniis Sorata, 1898, *Mandon 1290* (P). ECUADOR. **Chimborazo.** Canton Riobamba, Urbina, Páramo on east flank of Mt. Chimborazo, 3600 m, 5-X-1923, *Hitchcock 22016* (BAA). **Imbabura**. Canton Otavalo, Otavalo to Malchinguí, 2400-3000 m, 12-VIII-1923, *Hitchcock 20828* (BAA p.p. *Deyeuxia* sp.). **Pichincha**. Canton Distrito Metropolitano de

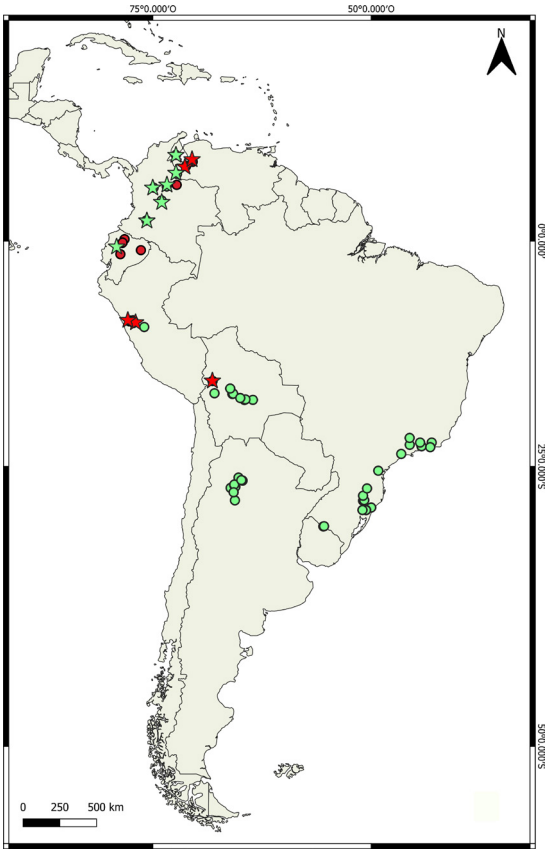


**Fig. 1.** Distribution map of *Agrostis boyacensis* (red circles and stars) and *A. lenis* (green circles and stars). In both cases, the stars indicate the new records in South America. Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1095/1322

Quito, ruderal at Universidad Católica, 0° 10' S, 78° 29' W, 2850 m, 9-XII-1984, *Lægaard 53461 B* (QCNE). PERU. **Ancash.** Prov. Yungay, Quebrada Llanganuco, Sendero María Josefa, bosque húmedo de *Polylepis* con monte arbustivo, ca. 3750-3800 m, 18-IV-1999, *Olivera 1318* (SI); Laguna Chinancocha, 16-IV-1999, *Olivera 1239* (SI). **Junín.** Prov. Huancayo, Huancayo-Acopalca, 3400 m, 25-VII-1945, *Infantes 2321* (BAA), 20-VII-1945, *Infantes 4339* (LIL), 3900 m, 20-VII-1945, *Infantes 443* (BAA, LIL); 25-VIII-1947, *Infantes 4508* (LIL). VENEZUELA. **Mérida**. Munic. Libertador, La Otra Banda, near Mérida, 1600 m, 22-IX-1942, *Lasser 437* (BAA); Páramo de Misintá, Pico Bartolo, 27-XI-1943, *Luces 283* (VEN).

**Agrostis lenis** Roseng., B. R. Arrill. & Izag., Gram. Urug. 23. 1970. TYPE: Uruguay, Rivera, Cañada entre Curticeiras y Farrapos, ruta 5, 31-I-1958, *Rosengurtt B-7107* (holotype MVFA [barcode] 0000129!; isotypes MVFA [barcode] 0000132 digital image!, MVFA [barcode] 0000129!, MVFA [barcode] 0000130!).

Iconography. Rúgolo de Agrasar & Molina (1992: 233).

Geographic distribution and habitat. Argentina, Bolivia, Brazil, Peru, and Uruguay. It is reported for the first time in Colombia, Ecuador, and Venezuela (Fig. 1). The species grows at 1000-4000 m a.s.l., in humid, muddy, sandy lands, in hillsides, between bushes in the forest, by the side of the road or in cultivated fields.

Phenology. It flowers from December to April.

Uses. The species is considered an insignificant fodder (Rosengurtt et al., 1970).

Conservation status. *Agrostis lenis* has a geographic range in the form of an EOO of 8,250,350 km$^2$. The conservation status of *A. lenis* based on extent of occurrence (EOO) is Least Concern (LC). Most of the documented specimen localities are within protected areas close to urban centres exposed to pollution or habitat fragmentation.

## Specimens examined

ARGENTINA. **Tucumán.** Depto. Chicligasta, Laguna del Tesoro, 1880 m, 12-IV-1963, *Krapovickas & Cristóbal 11110* (LIL); Estancia Las Pavas, 1200 m, 10-XII-1925, *Venturi 4024* (LIL, SI); Cuesta del Clavillo, 13-XII-1976, *Kiesling 1230* (SI). Depto. Tafí, Portezuelo del Garabatal, 2700 m, 25-XII-1933, *Parodi 10562* (BAA); Clavillo del Aconquija, 2800 m, I-1937, *Job 1396* (BAA, LP); La Queñoa, 3000 m, 27-I-1933, *Parodi 10763* (BAA); La Angostura, 1800 m, 24-I-1908, *Lillo 7356* (LIL); La Mesada, 21-I-1947, *Borsini s.n.* (LIL); Valle Tafí, II-1919, *s. leg*. (LIL). Depto. Burruyacú, Estancia Los Pinos, Rodeo de la Carpa, 20-I-1947, *Borsini 879* (LIL); Cerro del Campo, 1500 m, 6-I-1929, *Venturi 7870* (LIL).

Depto. Río Chico, Escaba, 2100 m, 21-XII-1913, *Monetti 1755* (LIL). BOLIVIA. **Chuquisaca**. Prov. Azurduy, ca. 1 km NW of summit on road across Cerro Viscachani from Tarvita to Azurduy, 2700 m, 14-III-1999, *Wood & Serrano 14482* (LPB). **Cochabamba**. Prov. Ayopaya, cuenca Río Tambillo, Estancia Pajchanti, 3045 m, 26-IV-1989, *Baar 360* (LPB). Prov. Chapare, Central Eléctrica Corani, km 61,4, carretera Cochabamba-Chapare, 2700 m, 26-VI-1989, *Kessle & Kelschebach 272* (LPB, SI); Incachaca, 2250 m, 2-III-1929, *Steinbach 9497* (BAA, LIL, US); Aduana, 3000 m, 16-III-1929, *Steinbach 9695* (LIL). **La Paz**. Prov. Inquisivi, Carabuco, along the road between Choquetanga and the Carabuco Power Station, 3000-3200 m, 16° 50' S, 67° 19' W, 27-I-1990, *Lewis 37026* (MEXU). **Santa Cruz**. Prov. Manuel M. A. Caballero, Comarapa to Cochabamba, 2650 m, 24-III-1981, *Renvoize & Cope 4073* (LPB). **Tarija**. Prov. Aniceto Arce, próximo a comunidad de Rejará, ladera exp. S, 2680 m, 29-II-1992, *Slanis et al. 179* (LIL); 2440 m, 1-III-1992, *Slanis et al. 180* (LIL); 3050 m, en bosques de *Alnus*, 2-III-1992, *Slanis et al. 184* (LIL). BRAZIL. **Paraná.** Piraquara, Pinhais, 14-XII-1952, *Hatschbach 2936* (BAA, LIL); Entrada da Graciosa, Alto da Serra, *Hatschbach 2937* (BAA, MBM, SI); Gral. Carneiro, 20 km north of Irati, 7-XII-1971, *Smith et al. 15712* (B). **Rio de Janeiro.** Itatiaia, Rio de Janeiro, 2800 m, 17-I-1925, *Chase 8285* (SI, US); Teresópolis, Parque Nacional da Serra dos Orgaos, entre abrigos 3-4, 10-XII-1960, *Castellanos 23073* (LIL). **Rio Grande do Sul.** Paso Fundo, Vacaria, 30-XII-1970, *Valla & Arzivenco 1424* (SI); Vacaria, Estación Experimental, 30-XII-1972, *Arzivenco s.n*. (BLA, BAB); 3-II-1972, *Arzivenco s.n.* (BLA, BAA); Lago São Bernardo, 1-II-1974, *Normann 410* (SI); Parque Nacional dos Aparados da Serra, Cañón de Itaimbezinho, 3-II-1973, *Normann s.n.,* (BLA, BAA); São Francisco de Paula, 5 km antes da cidade, 2-II-1973, *Normann et al. 358* (BAA, BAB); 29-I-1964*, Barreto s.n*. (SI ex BLA); Entre Canela y São Francisco de Paula, 31-I-1965, *Barreto s.n*., (BAA, BLA); Aparados da Rocinha, p. Bom Jesus, 1000 m, 18-I-1950, *Rambo 45410* (LIL). **Santa Catarina.** Campo dos Padres, 1700 m, 22-I-1957, *Rambo 60086* (B). **São Paulo.** Campo Do Jordao, Serra Mantiqueira, 1575 m, 20/21-V-1925, *Chase 9915, 9828* (SI); Campos de Jordán y Dist. P. Capell S. J., 15-XII-1951, *s. leg*. (MA); Tupaceretam, XII-1934, *Araujo 172* (BAA). COLOMBIA. **Antioquia.** Munic. Medellín**,** Bosque bajo de la cumbre cerca de Santa Elena, camino entre Medellín y Río Negro, 16-X-1947, *Barkley & Gutierrez 1424* (BAB, LIL). **Cundinamarca.** Bogotá, Nueva Granada, Chapinero, 2640 m, X-1859, *Lindig 1031* (SI, P); Guadalupe, 3200 m, VIII-1899, *Lindig s.n.* (SI); Páramo between Bogotá and Choachí, vegetation dominated by *Espeletia* and grasses, 3320 m, 7-I-1974, *Davidse et al. 5552* (BAB, LIL). **Nariño.** Munic. Cumbál, Cumbál páramo, 4000 m, 19-III-1941, *von Sneidern 376* (BAB, LIL). ECUADOR. **Pichincha.** Locus natalis, cum altit. s. m. crescit prope Quito in Pratis et pascuis vulgaris, floret loto anno, *W. Jameson 182* (P). PERU. **Huánuco**. Pachitea ENE of Huanuco ca. 21 air km, 13 km ESE of Puerto Rancho jct. on rd to Panao, 2498 m, 9° 51' S, 76° 2' W, 6-III-2007, P. *Peterson et al. 20351* (US). URUGUAY. **Rivera.** Cañada entre Curticeiras y Farrapos, 7-I-1960, *Rosengurtt B-8091* (BAB, MVFA). VENEZUELA. **Táchira.** Munic. Córdoba, Cabeceras del Río Quinimarí, vecindades de Las Copas, al pie de la Peña de Pata de Judío, debajo del páramo de Judío, 15 km al S de san Vicente de La Revancha, 30 km al S de Alquitrana, SW de Santa Ana, 2400 m, 10/11-III-1968, *Steyermark & Dunstterville 100578* (VEN).

**Agrostis mertensii** Trin., Linnaea 10(3): 302. 1836. *Agrostis laxiflora* Poir. var. *mertensii* (Trin.) Griseb., Fl. Ross. 4 (13): 442. 1852. *Agrostis canina* var. *mertensii* (Trin.) Kuntze, Revis. Gen. Pl. 3[3]: 338. 1898 TYPE: United States of America, Alaska, Unalaschka, 1829*, D. Mertens s.n*. [lectotype LE-TRIN (LE-TRIN1622.01, plant 1) designated by Widén (1971: 52) not seen; isolectotypes BAA fragment ex LE-TRIN [barcode] 00001355!, S (S-G-263 fragment ex LE-TRIN!)].

*Agrostis gelida* Trin*.,* Mém. Acad. Imp. Sci. Saint-Pétersburg. Sér. 6, Sci. Math. Seconde Pt. Sci. Nat. 6 (2, Bot.): 343. 1841. TYPE: Peru, ex Andibus de Pasco Peruviae, ad nives aeternas, *E. F. Poeppig s.n.* (holotype LE-TRIN [LE-TRIN1613.01] not seen; isotype US fragment [barcode] 00156431!).

*Agrostis ghiesbreghtii* E. Fourn., Pl. Mex. 2: 97. 1886. TYPE: Mexico, Oaxaca, 1842, *M. Ghiesbreght s.n.* (holotype P [barcode] 00740574!; isotype US [barcode] 00156357!).

*Agrostis williamsii* Phil., Anales Univ. Chile 94: 12. 1896. TYPE: Chile, Talca, II-1879, *F. Philippi 186* (lectotype, designated here, US [barcode] 556354!; isolectotype: W [barcode] 19160040638!).

*Agrostis poeppigiana* Phil., Anales Univ. Chile 94: 13. 1896. TYPE: Chile, O'Higgins, praedii Cauquenes, Valle andina, Cajón de los Cipreses, *H. Von Dessauer s.n.* (holotype SGO [barcode] SGO000000052!; isotypes BAA [barcode] BAA00003100!, BAA00003101!, SGO [barcode] SGO000000053!).

*Agrostis boliviana* Mez, Repert. Spec. Nov. Regni Veg. 18(1-3): 1. 1922. TYPE: Bolivia, Tarija, 3000 m, 22-I-1904, *K. Fiebrig 2821* [lectotype designated by Rúgolo & Molina (2012: 115), BAA [barcode] 00000014!; isolectotypes BAA fragment ex K [barcode] 00000211!, G [barcode] 000992l6!, K [barcode] 000308377!, L [barcode] 0819974!, 0819973!].

*Agrostis scabrifolia* Swallen, Contr. U.S. Natl. Herb. 29(6): 264. 1948. TYPE: Colombia, Santander, Páramo de Tamá, above Cueva, 3100-3200 m, 27-X-1941, *J. Cuatrecasas, R. E. Schultes & E. Smith 12608* (holotype US 1850358!).

*Agrostis abietorum* Swallen, Contr. U.S. Natl. Herb. 29(9): 403. 1950. TYPE: Guatemala, San Marcos, along road between San Sebastián at km 8, 18 miles northwest of San Marcos, Volcán Tajumulco, 2700-3800 m, 15-II-1940, *J. A. Steyermark 35652* (holotype F [barcode] 0046562!; isotype US fragment [barcode] 00156356!).

Iconography. Rúgolo de Agrasar & Molina (1997: 145).

Geographic distribution and habitat. This species is circumboreal (Hultén 1968, 1973). In South America it is present in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Peru, and Venezuela in mountainous regions from the sea level to 4000 m. In the Northern Hemisphere it grows in Canada, Mexico, Greenland and the United States of America. It is reported for the first time in Costa Rica. (Fig. 2). Also in volcanic ash, on rocky outcrops, near the river in loamy soils.

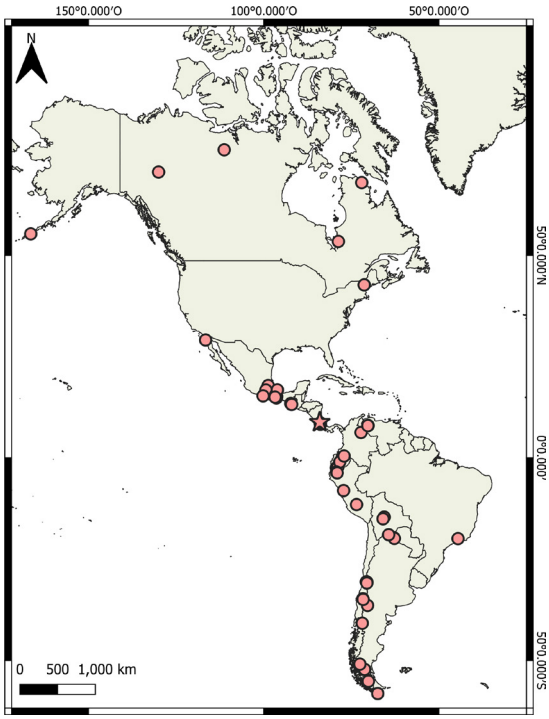


**Fig. 2.** Distribution map of *Agrostis mertensii*. Stars indicate new records in Central America. Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1095/1322

Notes. Rudolf A. Philippi (1896) described *Agrostis williamsii* based on materials collected by F. Philippi in Andes of Talca (Chile), in February 1879, originally deposited at SGO (*F. Philippi 186*).

In order to analyze the type collection of this taxa, two additional specimens were studied at US and W herbaria. Both contained type fragments of *F. Philippi 186* ex SGO. *Philippi 186* (US) is composed of two complete plants, accompanied by a photocopy of the original specimen deposited at SGO (Fig. 3A). It also includes a label mentioning that it is a portion of the type specimen. In relation to the specimen housed at W, it contains two floriferous culms and the original label with F. Philippi's handwriting (Fig. 3B).

On the other hand, *F. Philippi s.n.* (SGO 63140) was misidentified by C. Muñoz in 1957 as type material since it does not agree with the type protologue. Presently, the specimen *F. Philippi 186* was not found at SGO (J. Arriagada Torres, Pers. Comm.).


**Fig. 3.** Type collection of *Agrostis williamsii*. **A,** lectotype (*F. Philippi 186*, US). **B,** isolectotype (*F. Philippi 186*, W). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1095/1322

According to Muñoz Pizarro (1960), many of the type specimens of the Philippi's species have disappeared from this herbarium. On this basis, the specimen *F. Philippi 186* (US) is here selected as the lectotype.

Phenology. It flowers from November to May.

Conservation status. *Agrostis mertensii* has a geographic range in the form of an EOO of 89,489,000 km$^2$. The conservation status of *A. mertensii* based on extent of occurrence (EOO) was Least Concern (LC). Most of the documented specimen localities are within protected areas close to urban centres exposed to pollution or habitat fragmentation.

## Specimens examined

ARGENTINA. **Chubut.** Depto. Futaleufú, Lago Menéndez, I-1904, *Tessleff 5926* (BAA, BAB). **Jujuy**. Depto. San Antonio, Los Colorados, 2962 m, 27-IV-2015, *C.M. Martín 568* (SI). Depto. Valle Grande, entre Tres Morros y C. Hermoso, 1931 m, 17-IV-2016, *C.M. Martín 897* (SI). **Neuquén.** Depto. Minas, destacamento Gendarmería Cerrillos, Cerro Morado, ± 1600 m, 12-II-1985, *Gómez & Rossow 2646* (BAB). **Salta.** Depto. Santa Victoria, Santa Victoria, 19 km hacia La Quiaca, 3900 m, 8-III-1972, *Vallejos 125* (LIL); Cerca Santa Victoria, 2700 m, 22-II-1966, *De La Sota 4152* (LP). **Santa Cruz**. Depto. Güer Aike, camino a Puesto Dos Antonios, 255 m, 51°37' S, 71°10' W, 10-II-1978, *Ambrosetti & Méndez 754* (BAB). BOLIVIA. **Cochabamba.** Prov.

Chapare, 3200 m, 18-I-1929*, Steinbach 8830* (LIL); Prov. Chapare, 8 Km al NW de Colomi, Candelaria, Pie de Gallo, zona Chimparancho, 3200 m, 23-IV-1989, *Beck et al. 18105* (BAB, LPB, SI). **Tarija**. Prov. O'Connor, Cuesta de Cóndor, 2500 m, IV-1978, *Coro 989/78* (LIL). BRAZIL. **Pres. de Itatiaia**. VI-1871, *Glaziou 5434* (BAA, P, US). CANADA. **Nunavut**. Vicinity of south end of Contwoyto Lake, 65° 45' N, 111° 15' W, 21/24-VIII-1962, *s.n. 9395* (US). **Quebec.** Ungava and Labrador**,** Gape Hope Island, 52° 30' N, 78° 40' W, 17-VI-1942, *Dutilly s.n.* (US), In bogs and around lakes. Wakeham Bay, 61° 56' N, 72° 00' W, 16-IX-1942, *M. G. Duman 2621* (US), Nastapoka Sound. East Coast of Hudson Bay, 4-VIII-1939 *C. E. Abbe 3721* (US). **Yukon.** Ross River**,** 118 m NE of Ross River (Pelly River Crossing) at confluence of Jeff creek and MacMillan River. River shore with *Betula*, *Picea glauca*, and *Carex aquatilis*, 1012 m, 63° 00' N, 130° 23' W, 18-VII-2005, *P. M. Peterson et al. 18647* (US). CHILE. **VI Región del Maule.** Prov. Colchagua, El Flaco, 25-I-1948, *Barros 7704* (BAA); Prov. Talca, II-1879, *F. Philippi 236* (SGO). **VIII Región de La Araucanía.** Prov. Bío Bío, Santa Bárbara, Mininco, 8-I-1951, *Barros 9943* (BAA); Laguna de La Laja, I-1969, *Fabris & Crisci 7607* (p.p. *A. leptotricha*, LIL). **VII Región del Biobío.** Antuco, III-1832, *Poeppig 22* (BAA). **X Región de Los Lagos.** Prov. Valdivia, Cordillera Pelada, Co. Mirador, 40° 10' S, 73° 29' W, 1-II-1965, *Ricardi et al. 1203* (CONC). **XI Región de Magallanes y de la Antártica Chilena.** Prov. Ultima Esperanza, Co. Donoso, Río de Las Chinas, 50° 44' S, 72° 31' W, 9/11-II-1987, *Arroyo et al s.n.* (CONC). Prov. Magallanes, Tierra del Fuego, 12-III-1902, *Holmberg & Calcagnini 125* (SI). Prov. Antártica Chilena, Isla Bayly, costa Canal Washington, 55° 38' S, 67° 35' W, 25-II-1980, *Pisano 5103* (SI). COLOMBIA. **Cundinamarca.** Munic. La Calera, Paramo de la Siberia, Cordillera Oriental, 3000-3500 m, 26-X-1952, *Humbert 26843* (P). **Norte de Santander**. Cordillera Oriental, Paramo de Tamá, arriba de la Cueva, 3100-3200 m, 27-X-1941, *Cuatrecasas et al. 12608* (US). COSTA RICA. **Cartago.** Canton Oreamuno, devastated area near crater old Volcán Irazú, 28-VI-1966, *Pohl & Calderón 9957* (MEXU). **San José.** Canton San Jose, Along Interamerican Hwy ca. 25.0 km SW of road to La Cima and 4.1 km NW of Cerro La Asunción, E end of abandoned section of road, 11-IX-1979, *Stevens 14272* (MEXU). ECUADOR. **Azuay.** Canton Cuenca, Parque Nacional Cajas, NW of Cuenca, 21-IV-1990, *Peterson et al. 8862* (QCNE). **Cañar.** Canton Azoges, Páramo aprox. 20 km NE of Azogues, 13-II-1988, *Lægaard 70064* (QCNE). **Loja.** Canton Catamayo, km 6 on the new road Loja-Catamayo (La Toma), 6-IV-1985*, Lægaard 54031* (QCNE); Parque Nacional de *Podocarpus*, along trail to Lag. de Compadre, near Lag. de Compadre, 25/26-III-1992, *Lægaard 101936* (QCA, QCNE). **Sucumbíos**. Canton Sucumbíos, Páramo Mirador, SW of Playón de San Francisco, S Río Chingual headwaters, growing in páramo of *Espeletia* and *Calamagrostis*, 15-V-1990, *Peterson et al. 9161* (QCNE). **Tungurahua.** Canton Baños, Lake El Cable, Llanganati Mountains, Eastern Cordillera, 3800 m, 15-VIII-1969, *Edwards 113* (P). GUATEMALA. **San Marcos.** Munic. Asunción Tacaná, junto a la línea divisoria Mexico-Guatemala, en el camino Talquián-Cima del Volcán Tacaná, sobre la vereda de los trigales, 19-X-1985, *Dávila et al. 178* (MEXU), en el Volcán Tacaná por el camino de Talquián (Mexico) a la cima del volcán, por la línea divisoria Mexico-Guatemala, 5-II-1987, *Martínez et al. 19543* (MEXU). MEXICO. **Guerrero.** Munic. General Heliodoro Castillo, Tlacotepec, 3500 m, 5-XII-1963, *J. Rzedowski 18167* (US). **Oaxaca.** Munic. Oaxaca de Juárez, Between Mitla & Cerro San Felipe, 14-II-1966, *W. R. Ernst 2765* (US). PERU. **Cuzco.** Prov. Paucartambo, Paucartambo, Tambo Tres Cruces, 3760 m, IV-1914, *Weberbauer 6923* (F). **Junín.** Prov. Huancayo, Huancayo, Acopalca, 4000 m, 26-VI-1960, *Kunkel 498* (BAA). USA. **Alaska**. Islas Aleutianas, Adak Island, Lake Betty area, 86 m, 51° 49' N, 176° 38' W, 18-VIII-2006, *S. Talbot ADA029-15* (US); Tanaga Island, 11 m, 51° 46' N, 177° 57' W, 19-VIII-2005, *S. Talbot TNG030-22* (US). **New Hampshire.** Coös, White Mountain National Forest, 1290 m, 44°17' N, 71°16' W, 12-VIII-2007, *P. M. Peterson et al. 20884* (US), White Mountain National Forest, just below Mt. Washington summit, 1838-1900 m, 44° 16' N, 71° 18' W, 12-VIII-2007, *P. M. Peterson et al. 20895* (US). VENEZUELA. **Trujillo**. Munic. Boconó, Parque Nacional Guaramacal, Páramo y subpáramo, Laguna del Pumar y alrededores, 3000 m, 7-XI-2003, *S. M. Niño et al. 1481*, *1489* (US), Páramo de Guaramacal, Sector "Las antenas", 3120 m, 23-IX-2000, *S. M. Niño et al. 1357* (US).

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