

A VALID NAME FOR THE TAXON KNOWN AS *TILLANDSIA BRYOIDES* AUCT. (BROMELIACEAE)

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Abstract. Donadío, S. 2011. A valid name for the taxon known as *Tillandsia bryoides* auct. (Bromeliaceae). *Darwiniana* 49(2): 131-138.

Tillandsia bryoides was sunken into the synonymy of *T. tricholepis* because all the elements of the lectotype (*P. Lorentz 128*, BM) belong to the latter species. However, there are many vouchers from different herbaria (some of them cited as reference material in several publications) previously identified as *T. bryoides*, that in fact correspond to a new species of *Tillandsia* subgen. *Diaphoranthema*. This new species has yellow, sessile, solitary flowers and a glabrous floral bract, and grows in central Peru, Bolivia, and central and northwestern Argentina. This paper provides a valid name for this species, an illustration, distribution data, and a discussion of the relationships with its morphologically closest species.

Keywords. Bromeliaceae; *Diaphoranthema*; taxonomy; *Tillandsia*.

Resumen. Donadío, S. 2011. Un nombre válido para el taxón conocido como *Tillandsia bryoides* auct. (Bromeliaceae). *Darwiniana* 49(2): 131-138.

Tillandsia bryoides fue incluida en la sinonimia de *T. tricholepis* porque todos los elementos del lectotipo (*P. Lorentz 128*, BM) pertenecen a esta última especie. Sin embargo, se observaron en el campo, en distintos herbarios y en diversas publicaciones, materiales que fueron previamente considerados como *T. bryoides* y que en realidad corresponden a una nueva especie de *Tillandsia* subgen. *Diaphoranthema*. Esta nueva especie tiene flores solitarias, sésiles, amarillas y una bráctea floral glabra, y crece en el centro de Perú, en Bolivia, y en el centro y noroeste de Argentina. En este trabajo se establece un nombre válido para esta especie, junto con una ilustración detallada, datos de distribución, y una discusión de sus relaciones con las especies morfológicamente más afines.

Palabras clave. Bromeliaceae; *Diaphoranthema*; taxonomía; *Tillandsia*.

Tillandsia bryoides was validly described by J. G. Baker (1878) using A. Grisebach's name which appears on the specimen label of *Lorentz 128*. Four more additional vouchers appear in a separate paragraph following the original description: Gillies s.n. "On trees and bushes at the foot of the Cordillera, near Mendoza" (= *T. pedicellata* (Mez) A. Cast.; W. Lobb s.n. "South Chili" (= *T. tricholepis* Baker); *Glaziov 3124* "South Brazil" (= *T. tricholepis*) and Christie s.n. "Paraná" (= *T. tricholepis*), all of them housed in K except for *Lorentz 128* which Baker had seen in BM (Till,

pers. comm.). One year later, Grisebach (1879) modified the description of *T. bryoides* based on material from "near Córdoba", "near Tucumán" (= *Lorentz 73*), and "near Jujuy", but describing longer leaves (8,5-10 mm vs 6,3-8,5 mm), shorter bracts (4,2-5,3 mm vs. 6,3-8,5 mm) and dismissing the possibility of 1-flowered inflorescences (2-3-flowered vs. 1-3-flowered). Nomenclatorically he created a younger and invalid homonym to Baker's name. About half a century later, Smith (1935) amended the description of *T. bryoides* because it "was described from a mixed sheet and

the original description unfortunately contained both elements. One element had already been described as *T. tricholepis*, so that the description is amended here to fit the previously undescribed second element. The only definite correction is that the spikes never have more than a single flower instead of: 'Flowers 1-3' ". Based on Smith's (1935) statements and the data published in his monograph (Smith & Downs, 1977: 879) the original material on which Baker had described *T. bryoides* was a mixture of individuals of different taxa, and Smith established what part of the original material corresponded to his amended description of *T. bryoides*, being the lectotype of that name (see McNeill et al., 2006: Article 9.12, Ex. 7), and what part corresponds to *T. tricholepis*. Smith and Downs (1977) stated for the first time that this lectotype (as "holotype") is housed in BM with one duplicate ("isotype") in M. These two specimens as well as further duplicates in G, GH, and WU all turned out to be *T. tricholepis*.

Based on the amendment and commentaries made by Smith (Smith, 1935; Smith & Downs, 1977), it can be inferred that at least part of the voucher *P. Lorentz 128* housed in BM included elements of *T. bryoides*, in agreement with the original description published by Grisebach in Baker (1878) and amended by Smith (1935). But when Till (1989) looked for the lectotype of *T. bryoides* in BM, he only found half a sheet labelled as *P. Lorentz 128* with elements of *T. tricholepis*. After a recent consultation (John Hunnux, pers. comm.), no other sheet of *P. Lorentz 128* could be found in BM. The study of the duplicate kept in M (M-0111455) and another one found in MPU revealed that they both include only elements of *T. tricholepis*. The herbaria K and particularly CORD (Hunziker, 1960) and GOET, where *P. Lorentz* deposited his collections, do not possess duplicates of *P. Lorentz 128*. This search for isotypes of *T. bryoides* only produced two old specimens, K000321909 and GOET000424, labelled as probable isotypes of *T. bryoides*, but without information about the collector and locality, and they only include elements of *T. tricholepis*. All these facts support the inclusion of *T. bryoides* into the synonymy of *T. tricholepis*, already suggested by Till (1989). However, there is still a taxon of *Tillandsia* subgen. *Diaphoranthema* from central and northwestern Argentina, central Peru, Bolivia, and

northwestern Paraguay, with yellow, sessile, solitary flowers and a glabrous floral bract, that has been known as *Tillandsia bryoides* (cf. Castellanos, 1945; Schinini et al., 2008; Subils, 2009), that Till (1989) distinguished as *T. bryoides* auct. This paper provides precisely a valid name for that taxon, an illustration, and a discussion of the relationships with its morphologically closest species.

Tillandsia minutiflora Donadío, sp. nov. TYPE: Argentina, San Juan, Depto. Valle Fértil, San Agustín de Valle Fértil, ladera del cerro, frente camping ACA, 850 m s.m., sobre Acacia, 14-XII-1987, M. E. Múlgura, C. Antuña & E. A. Ulibarri 704 (holotype, SI). Fig. 1.

Tillandsiae tricholepidi similis, sed caulibus brevioribus, 1,5-3,5(-6) cm longis, foliis 3-nervatis, angustioribus, 0,5 mm latis; pedunculis semper reductis et 1-floris et bractea florali glabra, 1-nervia, mediae sepalorum aequans bene differt.

Epiphytic, perennial, tiny herbs, with adhesive, reduced roots. Stems short, 1.5-3.5(-6) x 0.3 cm (leaves included). Leaves densely imbricated, spiral, appressed, erect, 5.5-6 x 0.5-0.7 mm; sheath thin, translucent, 2 x 1.7 mm, 3-nerved, blade shortly subulate, 3.5-4 x 0.5-0.7 mm. Inflorescence reduced to 1 flower partially hidden among the apical leaves. Flowering peduncle very short or reduced, which does not elongate by the fruit ripening. Peduncle bracts 2, similar to the leaves (in shape), but 1-nerved (exceptionally 3-nerved) and without foliose apex, 2.5-3.5 x 1.2-1.4 mm. Floral bract subulate, thin, glabrous (exceptionally with 2 or 3 apical trichomes), 1-nerved, half the length of the sepals, 2.5-3 x 1.5 mm. Flowers minute, 6.5 x 1.5 mm (calix tube diameter). Sepals lanceolate, (4-)5(-7)-nerved, 4.8-5.5 x 1.2 mm densely lepidote on the distal half. Petals linear-oblong, 5.5-6.5 x 1 mm, yellow. Stamens 2.6 mm, deeply included, filament 1.5 mm, anthers at the level of the stigma, 1.1 mm. Gynoecium 2 mm, ovary as long as the style, stigma subcapitate. Ovules numerous. Capsule cylindrical, oblong, 20 x 0.5-1 mm, valves straight. Seeds many, comose.

Distribution and habitat. *Tillandsia minutiflo-*

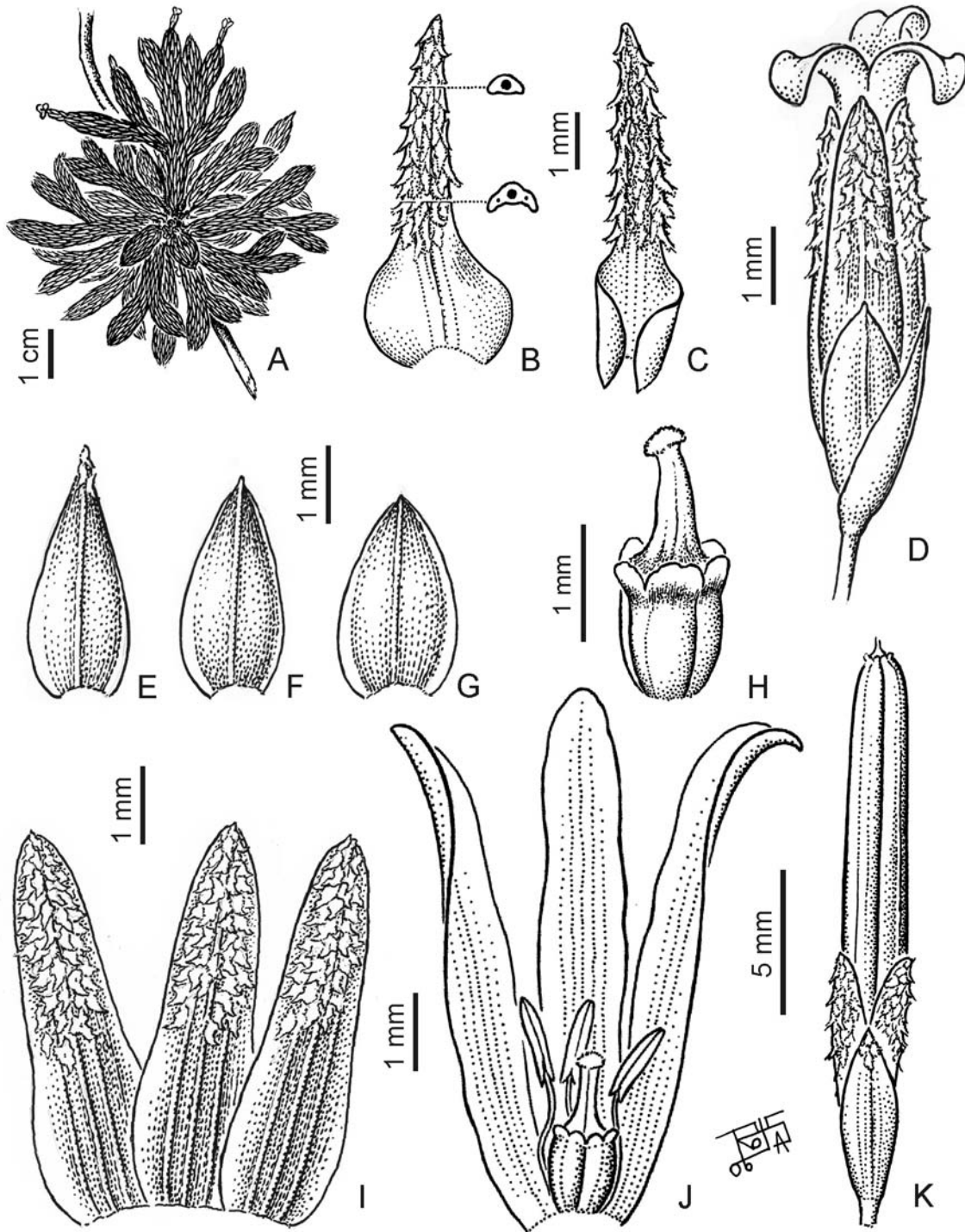


Fig. 1. *Tillandsia minutiflora* sp. nov. **A**, habit. **B-C**, leaves. **D**, flower with floral bract (front) and one peduncle bract (right). **E-F**, peduncle bracts. **G**, floral bract. **H**, gynoecium, the protuberances at the top of the ovary are typical for the alliance of *T. loliacea* Schult. & Schult. f., *T. tricholepis*, and *T. minutiflora* but need not be developed in every case. **I**, calyx, abaxial view. **J**, corolla unfolded, androecium (partly) and gynoecium. **K**, fruit. From Múlgura *et al.* 704 (SI), taken from Subils (2009) with modifications.

ra grows from central Peru (Till, 1989, sub *T. bryoides* auct.) through Bolivia up to central Argentina and northwestern Paraguay, with a disjunct area in southern Buenos Aires (Sierra de la Ventana). Its geographical distribution includes areas with altitudes between 600 and 2600 m (Till, 1989, sub *T. bryoides* auct.). *Tillandsia minutiflora* is an epiphytic species usually growing on bushes and small trees in "del Monte" phytogeographical province, but it can also colonize rocks.

Observations. *Tillandsia minutiflora* is morphologically close to *T. tricholepis*, and differs by the shorter, slender stems, and narrower leaves with 3-nerved sheath, 1-nerved bracts (both peduncle and flower), inflorescence always 1-flowered, with a very reduced peduncle which does not elongate with fruit ripening, and a glabrous floral bract, shorter than the sepals. After the study of numerous vouchers, and cultivation of abundant material of *Tillandsia tricholepis*, there is a strong morphological support to consider *T. pedicellata* as a valid independent taxon from *T. tricholepis* because the former has deep purple flowers, sepals glabrous and 3-nerved, bracts 1-nerved, and leaves with 3-nerved sheath. To clarify the limits among *Tillandsia tricholepis*, *T. pedicellata*, and the new species *T. minutiflora*, an additional comparative table is here presented (Table 1).

Additional material examined

Tillandsia minutiflora sp. nov. (paratypes)

ARGENTINA. Buenos Aires. Depto. Tornquist, Sierra de la Ventana, *Hicken s.n.* (SI-31944). **Catamarca.** Depto. Ambato, Rodeo, Quebrada del Nogal Marcado, 15-II-1959, *Carenzo 896* (LIL). Depto. Santa María, 8 km. from Santa María towards Tafí del Valle, 23-II-1994, *Leuenberger 4326* (CORD); La Hoyada, 25-I-1908, sine colector s.n. (SI-31951). **Chaco.** Depto. General Güemes, a 22 km del cruce de la ruta Juana Azurduy en dirección N hacia Nueva Pompeya, 16-XI-1990, *Fortunato 1368* (SI). **Córdoba.** Sine data, Kurtz 11990 (SI). Depto. Calamuchita, Valle de los Reartes, Castellanos 46 (SI). Depto. Colón, Jesus María, eastern side of the Sierra Chica, 11 km W of

Ascochinga along the street to La Cumbre below Las Tres Cascadas, 04-II-1990, *Till 5014* (SI). Depto. Ischilín, unos 10 km E de Villa Quilino, rumbo a San Pedro Norte, 10-XI-1972, *Hunziker 22017* (CORD); Los Tartagos, 31-III-1944, *O'Donnell 667* (LIL). Depto. Punilla, Cerca de la orilla del Lago San Roque, 09-IX-1945, *Hunziker 6079* (CORD); Sierra Chica, Falda W, Cavalango, 25-VI-1950, *Hunziker 8410* (CORD); En quebrada vecina al Lago San Roque, 02-IX-1945, *Hunziker 6065* (LIL). Depto. San Alberto, Villa Cura Brochero, along the street from Mina Clavero to the Cumbre de Achala, 13 km above Niña Paula towards Piedra La Tortuga, 4 km before Pje. Río los Sauces, 16-II-1990, *Till 5220* (SI). Depto. San Javier, Yacanto, 1925, *Vattuone 1* (SI). Depto. Totoral, Cerro de Totoral, General Mitre, 26-II-1936, *Giardelli 285* (SI). **La Rioja.** Depto. General Juan Facundo Quiroga, Malanzán, subiendo al cerro al E del cerro "El Elefante", 12-I-2009, *Donadio 185* (SI). Depto. San Blas de los Sauces, Quebrada de los Sauces, frente de la casa Ochoahuasi, IX-1931, *Hicken s.n.* (SI-31958). Salta. Depto. Anta, J. V. González, Campos del Norte, 07-II-1987, *Palací 882* (MCNS). Depto. Cafayate, Cerro Amarillo, en granito al E de Cafayate, 02-VI-1987, *Palací 954* (MCNS). Depto. Capital, Parque San Martín, 28-XI-1985, *Palací 256* (MCNS). Depto. Rivadavia, Misión La Paz, sobre Río Pilcomayo, 01-I-2003, *Scarpa 536* (SI); Rivadavia banda sur, Cañada Honda, 28-III-1986, *Palací 551* (MCNS). **San Juan.** Depto. Valle Fértil, alrededores del dique del Valle Fértil, 21-IV-1995, *Biurrun 4114* (SI); San Agustín de Valle Fértil, 23-XI-1986, *Haene 468* (SI); San Agustín de Valle Fértil, 20-I-1989, *Haene 788* (SI). **Santiago del Estero.** Depto. Guasayán, de Santa Catalina a Guampacha, 14-IV-1979, *Rotman 207* (SI). **Tucumán.** Depto. Tafí del Valle, Rincón de Quilmes, Valles Calchaquies, 17-II-1996, *Isasmendi s.n.* (LIL-600299). Depto. Trancas, Vivos, 08-XII-1921 (fl), *Schreiter 2029* (LIL); Vivos, 03-XII-1922 (fl), *Venturi 1978* (SI).

BOLIVIA. Chuquisaca. Prov. Oropeza, entre Sucre y La Palca, II-1979, *Ceballos 352* (SI). **Tarija.** Prov. Cercado, Barrancas, 09-XI-1977, Coro 258/77 (LIL).

PARAGUAY. Alto Paraguay. Depto. Mayor

Table 1. Morphological differences among *Tillandsia tricholepis* Baker, *T. minutiflora* Donadío and *T. pedicellata* (Mez) Castellanos.

Character	<i>T. tricholepis</i>	<i>T. minutiflora</i>	<i>T. pedicellata</i>
Stems, length	Long (4-)7-11(-15) cm.	Short 1.5-3.5(-6) cm.	Short 1.5-3.5(-6) cm.
Branches, diameter (leaves included)	4-6 mm	3 mm	5 mm
Leaves (fresh)	6-9 x 1.5 mm	5.5-6 x 0.5-0.7 mm	7.5 x 0.8 mm
Leaf blade, position	Appressed, straight (erect), or patent straight to slightly recurved	Appressed, straight (erect)	Appressed, straight (erect)
Sheath, nervation	5-nerved	3-nerved	3-nerved
Inflorescence, number of flowers	Few, (1-)2-5(-7)	1-flowered	1-flowered
Inflorescence, peduncle at anthesis	Developed	Reduced	Reduced
Inflorescence, peduncle at fruit ripening	Developed to reduced	Reduced	Developed (sometimes reduced)
Bracts (peduncle and flowers), nervation	6-7-nerved	1-nerved	1-nerved
Bracts (peduncle) differentiation respect to the leaves	Clearly distinct from the leaves (in shape) with foliose apex becoming shorter towards the distal end of the peduncle	Similar to the leaves (in shape), but 1-nerved and without foliose apex	Similar to the leaves (in shape), but 1-nerved and without foliose apex, becoming shorter towards the distal end of the peduncle
Bracts (peduncle), number	2-6	2	2
Bracts (peduncle at fruit ripening), arrangement	Dispersed along	Does not correspond	Only at the base (when the peduncle develops)
Bracts (peduncle), pubescence	Densely lepidote all over the surface	Loosely lepidote at the margin and apex	Densely lepidote at the apex
Bract (flower), relative length	As long as the sepals	½ the sepal length	As long as the sepals
Bract (flower), apex	Without foliose apex	Without foliose apex	With foliose apex
Bract (flower), pubescence	Densely lepidote all over the surface	Glabrous	Densely lepidote at the apex
Sepals, nervation	7-nerved	(4-)5(-7)-nerved	1-3-nerved
Sepals, pubescence	Loosely lepidote at the apex	Densely lepidote in the distal half	Glabrous
Flower, colour	Yellow	Yellow	Deep purple

Pablo Lagerenza, Mayor Pablo Lagerenza, 10-IV-1978, *Schinini 15008* (SI).

Tillandsia pedicellata (Mez) A. Cast.

ARGENTINA. **Buenos Aires.** Depto. Tornquist, El Coral, 20-III-1948, *Fabris 27* (SI). **Catamarca.** Depto. Ambato, Ruta Prov. 1, de Buena Vista a Singuil, 02-XI-2008, *Zuloaga 10580* (SI). Depto. Andalgalá, Cuesta de la Chilca, 10-XI-2008, *Slanis 49 11-2008* (SI). Depto. Tinogasta, La Mesada 73,5 km N of Fiambalá on Ruta Provincial 43, 14-XII-1998, *Leuenberger 4695* (CORD). **Córdoba.** Sine data, II/1925, *Lossen 189* (SI). Depto. Capital, Achala, Sierra Grande, 28-I-1920, *Castellanos s.n.* (SI-31959). Depto. Punilla, San Esteban, 09-I-1938, *Nicora 1697* (SI). Depto. San Alberto, Villa Cura Brochero, along the street from Mina Clavero to the Cumbre de Achala, 13 km above Niña Paula towards Piedra La Tortuga, 4 km before Pje. Río Los Sauces, 16-II-1990, *Till 5217* (SI). Depto. San Javier, Yacanto, 1925, *Vattuone 1a* (SI). **Jujuy.** Depto. Humahuaca, N de Humahuaca, 03-I-1992, *Kiesling 8129* (SI). Depto. Tilcara, Maimará, Ruta 9, 30-III-1993, *Deginani 320* (SI); Pucará, 10-IV-1986, *Palací 545* (MCNS); Tilcara, 20-IX-1985, *Palací 188* (MCNS); Tilcara, Cerros a 1 km al W de la Ruta N° 9, 28-XII-1989, *Novara 9226* (MCNS). Depto. Tumbaya, El Volcán, 10-VII-1922, *Castellanos s.n.* (SI-31955); Quebrada de Humahuaca, Laguna de Volcán, 07-XI-1974, *Subils 2030* (CORD). **La Pampa.** Depto. Lihuel Calel, Sierra de Lihuel Calel, Cerro "de la Sociedad", ladera N, 16-X-1979, de *Azkue s.n.* (SI-75440). **La Rioja.** Depto. Capital, Estribación oriental de la Sierra de Velasco, La Lancha, camino a El Cantadero, 04-III-1944, *Hunziker 5031* (CORD); Pelagio B. Luna, Sierra Velasco, rancho La Esperanza., 15-IV-1951, *Sparre 8689* (LIL). Depto. Coronel Felipe Varela, Cuesta de Miranda, Ruta Nac. 40, de Villa Unión a Chilecito, 09-I-2009, *Donadío 79* (SI); Río Miranda, 26-II-1941, *Burkart 12278* (SI); Ruta Nacional 40, de Guandacol a Chilecito, Cuesta de Miranda, 12-II-2011, *Zuloaga 12817* (SI). Depto. General Belgrano, Cumbre de la Sierra de Olta, 08-II-1940, *Castellanos 33503* (LIL). Depto. General Juan Facundo Quiroga, Northern foot of the Sierra de Porongo, ca. 4 km E of Malanzan, 13-II-1990, *Till 5181* (SI); Ruta Prov. 28, desde El Portezuelo hacia Malanzán, 12-I-2009, *Donadío*

176 (SI). **Mendoza.** Sine data, *Carette s.n.* (SI-31946). Depto. Luján de Cuyo, Crucecita, XII-1906, *Carette s.n.* (SI-31947); Lunlunta, 24-II-1936, *Ruiz Leal 3820* (LIL); Potrerillos, XI-1912, *Sanzin 30* (SI). Depto. San Rafael, 31 km W de 25 de Mayo, 03-III-1989, *Leuenberger 3958* (SI, B). **Río Negro.** Dpto. San Antonio, Sierra Grande about 100 km S of San Antonio, 20-XII-1938, *Eyerdam 23534* (SI). **Salta.** Depto. Cachi, Recta de Tintín, 05-IV-1987, *Palací 925* (MCNS). Depto. Cafayate, Cerro Amarillo, al E de Cafayate, 02-IV-1987, *Palací 955* (MCNS). Depto. Capital, Quebrada de San Lorenzo, 20-IX-1972, *Subils 1450* (CORD). Depto. La Poma, Ruta Nac. 40, El Cajón, *Zuloaga 11243* (SI). Depto. Los Andes, San Antonio de los Cobres, 18-II-1986, *Palací 387* (MCNS). Depto. Molinos, Tacuil, 02-IV-1988, *Palací 1112* (MCNS); Tacuil, 02-IV-1988, *Palací 1113* (MCNS). Depto. Rosario de Lerma, a 3 km de el Gólgota, rumbo a Chorrillos, Quebrada del Toro, 11-III-1984, *Toledo 947* (MCNS); Santa Rosa de Tastil, Quebrada del Toro, km 97, 04-I-1990, *Palací 1129* (MCNS). **San Juan.** Depto. Angaco, Sierra de Pie de Palo, subiendo por el camino al Mogote Los Corralitos, en la Quebrada del Molle, 28-XI-1980, *Hunziker 23694* (CORD). Depto. Jáchal, La Ciénaga. Ruta Provincial 491, de Rodeo hacia Huaco, 06-I-2009, *Donadío 52* (SI). Depto. Valle Fértil, alrededores del dique del Valle Fértil, 21-IV-1995, *Biurrun 4114 b* (SI); Astica, 14-XI-1986, *Haene 175* (SI); Cerro Morado, 28-V-1959, *Cuezzo 2966* (LIL); Laderas de cerros Sa. de Elizondo, 16-XII-1987, *Múlgura 801* (SI). Depto. Zonda, El Palque, O de Pachaco, 14-I-1987, *Kiesling 6767* (SI).

BOLIVIA. **La Paz.** Prov. Murillo, Hacienda Huajchilla, 18 km SE of La Paz (La Florida), along the Río La Paz, 07-IX-1986, *Solomon 15577* (SI).

Tillandsia tricholepis Baker

ARGENTINA. **Catamarca.** Depto. Ancasti, Alrededores del dique de Ipizca, 17-XI-1984, *Subils 3682* (CORD). Depto. Paclin, El Saltón, en el Arroyito de los Ovejeros, frente al Lago Sumampa (sobre el camino entre Ruta 67 y La Viña), 20-IX-1970, *Hunziker 20665* (CORD); 11 km from La Merced on road over the Cuesta del Totoral towards La Viña, on the La Viña side of

pass, 24-II-1994, *Leuenberger 4341* (CORD). **Chaco.** Sine data, *Meyer 2* (SI). Depto. San Fernando, Isla Soto, 18-XII-1974, *Burkart 30778* (SI). **Córdoba.** Sine data, 1919, *Castellanos 670* (SI). Depto. Colón, Jesús María, en muros de la Iglesia Colonial, 21-VII-1942, *Burkart 12916* (SI); Jesús María, muro de la Iglesia San Isidro, II-1936, *Giardelli 284* (SI); La Calera, El Diquecito, 12-X-1960, *Ariza Espinar 981* (CORD). Depto. Río Primero, Laguna de los Ludueña, entre Río Primero y Santa Rosa, 20-IV-1985, *Subils 3806* (CORD). Depto. Río Seco, Ruta Provincial 10, Sebastián Elcano, 20-X-1984, *Subils 3313* (CORD). **Corrientes.** Depto. Capital, Corrientes, 11-XI-1934, *Burkart 6897* (SI). Depto. Mburucuyá, Lomas de Vallejo, 06-X-1954, *Burkart 19312* (SI). **Formosa.** Sine data, XII-1918, *Jorgensen 2800* (SI). **Jujuy.** Depto. Dr. Manuel Belgrano, Abra de Las Lajitas, 14-II-1995, *Deginani 811* (SI); Camino al Cucho, Río Los Blancos, 19-III-1979, *Cabrera 30212* (SI). Depto. Ledesma, Camino de Fraile pintado a El Aibal, 12-XI-1992, *Kiesling 8178* (SI); Ledesma, 23-II-1940, *Burkart 11431* (SI); "Picada al Arroyo Negrito" Puesto, Parque Nacional Calilegua, 19-VIII-1985, *Judica 36* (SI). Depto. San Pedro, Moralito, 12-VII-1922, *Castellanos s.n.* (SI-32228); Ruta Prov. 56, 2 km de la Villa Turística de Palpalá camino a La Mendieta, 13-XII-1998, *Morrone 3318* (SI). Depto. Santa Bárbara, alrededores de Finca La Campana, 12-XII-1998, *Ahumada 8953* (SI); de Santa Clara a Abra de los Morteros, 21-XI-1980, *Cabrera 32194* (SI). **Misiones.** Depto. General Manuel Belgrano, Deseado, Chacra de Carlos Macoviak, antigua Ruta 19, ca. 2000 m de la Ruta 101, 16-XII-1997, *Múlgura de Romero 1917* (SI). **Salta.** Depto. Anta, Coronel Olleros, 21-IX-1957, *Meyer 21177* (LIL); Parque Nacional El Rey, 10-VII-1979, *Chalukian 871* (MCNS); Selva basal, 10-VI-1981, *Chalukian 1405* (MCNS); Embalse, 25-I-1979, *Rumíz 489 b* (MCNS); Ruta provincial n° 20: Parque Nacional El Rey, proximidades de Finca del Rey, 25-IX-1972, *Subils 1459* (CORD). Depto. Capital. Ciudad de Salta, 18-V-2003, *Novara 11964* (MCNS). Depto. Guachipas, Alemania, camino a Cafayate, km 80, 07-I-1990, *Palací 1138* (MCNS). Depto. La Caldera, Mojotoro, 17-XI-1942, *Burkart 13012* (SI). Depto. La Viña, Dique Puerta de Díaz, 5 km al oeste de Coronel Moldes, 04-XII-1983, *Novara 4149*

(CORD). Depto. Orán, Orán viejo, 16-I-1957, *Burkart 20310* (SI); Pichanal, 14-XI-1913, *Rodríguez 1119* (SI); Ruta Prov. 132, 29 km de la Ruta Nac. 50 camino a Santa María, pasando 6 km la Finca Totó, 16-XII-1998, *Morrone 3435* (SI); Ruta 34, km 1290, 3 km. al S del arroyo de los Monos, 11-V-1989, *Novara 8893* (MCNS); Urundel, 13-II-1944, *Soriano 718* (SI). Depto. Rivadavia, Rivadavia banda sur, Cañada Honda, 28-III-1986, *Palací 550* (MCNS). Depto. Rosario de la Frontera, La Hollada, 06-XI-1985, *Palací 201* (MCNS); Termas VI-1931, *Hicken s.n.* (SI-32243). **San Juan.** Depto. Capital, Capital, III-1931, *Correa s.n.* (SI-32240). Santa Fe. Depto. Castellanos, Colonia Margarita, I-1905, *Wolfhügel s.n.* (SI-32230). **Santiago del Estero.** Depto. Choya, Sierra de Guasayán, Quebrada de Moquijata, 12-X-1989, *Ulibarri 1690* (SI). Depto. Guasayán, de Santa Catalina a Guampacha, 14-IV-1979, *Rotman 207 a* (SI); Sierra de Guasayán, Quebrada de Conzo, 21-III-1989, *Ulibarri 1648* (SI); **Tucumán.** Depto. Capital, El Duraznito, 06-I-1924, *Venturi 2799* (SI). Depto. Leales, Chañar Pozo, XII-1919, *Venturi 738* (SI). Depto. Lules, 15-VII-1911, *Lizer 20* (SI). Depto. Trancas, de Ruta Nac. 9 a Ticucho, 2 km de Ruta 9, 30-X-2008, *Zuloaga 10475* (SI).

BOLIVIA. Santa Cruz. Prov. Florida, easternmost rocky foothills of the Andes, above narrowest point at La Angostura on highway from Santa Cruz to Samaipata, 9-I-1998, *Nee 47868-a* (SI). Prov. Vallegrande, Vallegrande, Estrada Mataral-Vallegrande, 6 km S de Mataral, 10-XII-2002, *Forzza 2319* (SI); Tarija. Prov. Gran Chaco, 30 km N de Yacuiba, Campo de la Tapia, cerca de Caiza, 2 km E de la ruta a Villa Montes, 7-IV-1977, *Krapovickas 30975* (SI).

BRASIL. Sine colector s.n. (SI-32224). **Mato Grosso do Sul,** Munic. Corumbá, 18-III-1906, *Etchichury 52* (SI).

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