Tetroncium and its only species, T. magellanicum (Juncaginaceae): distribution, ecology and lectotypification

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### Abstract


*Tetroncium magellanicum* (*Juncaginaceae*) was described by Willdenow in 1808, based on material collected by Commerson at the Strait of Magellan during Bougainville’s voyage around the world. Type material of this species was traced and a lectotype for the name is designated. A description of the species and notes on its ecology and conservation status are provided. For the first time, a detailed map showing the known distribution area of *T. magellanicum* is presented.

Additional key words: Gough Island, Herbarium Willdenow, lectotype, peatlands, southern South America, typification

### Introduction

The monotypic genus *Tetroncium* Willd. belongs to the small monocot family *Juncaginaceae* (*Alismatales*) and is sister to the other two genera of the family, *Cycnogeton* R. Br. and *Triglochin* L. (von Mering & Kadereit 2010). *Tetroncium magellanicum* Willd. is the only dioecious species in the family (Fig. 1B, 6). It is a perennial herb growing mainly in the peatlands of southern South America and some neighbouring islands (Fig. 1A, 4, 5).

*Tetroncium magellanicum* was described by Carl Ludwig Willdenow in 1808. In the protologue, Willdenow stated that the new genus and species are based on material collected by Commerson at the Strait of Magellan (Willdenow 1808). Philibert Commerson (sometimes spelled Commerson) was a French naturalist who accompanied Louis Antoine de Bougainville during his voyage around the world from 1766 to 1769 (Bougainville 1772). The botanical collections of this voyage reached Paris in 1774, and duplicates were subsequently distributed to several botanists and botanical institutions in Europe (Stafleu & Cowan 1976–1988).

*Tetroncium magellanicum* was mentioned in several publications on the early botanical exploration of southern South America (e.g. Hooker 1847; Gay 1849; Alboff 1896; Reiche 1907) and also in later works covering the flora of the region (e.g. Correa 1969; Moore 1968, 1983; Marticorena & Quezada 1985; Zuloaga & al. 2008). Franz Buchenau, who contributed significantly to our knowledge of *Juncaginaceae*, also added to our knowledge of *Tetroncium* (e.g. Buchenau 1868, 1882, 1903). However, the species has never been studied in full detail and Tomlinson (1982) correctly stated that little is known about it. For example, embryological and karyological data are lacking, and details of flower and fruit development as well as the mode of fruit dispersal are only incompletely known.

In the course of taxonomic studies in *Juncaginaceae* I noted that the name *Tetroncium magellanicum* has not been typified. Apart from typifying the species, I will...
also provide a description, information on its ecology, an assessment of its conservation status (according to the IUCN threat categories, IUCN 2001), and a distribution map based on data obtained from revised herbarium specimens and reliable literature sources.

**Material and methods**

Collections from Herbarium Willdenow (housed at the Botanic Garden and Botanical Museum Berlin-Dahlem, Freie Universität Berlin as the separate collection B-W; e.g. Hiepko 1972) and from several other major herbaria (see Acknowledgements for a full list) were revised to locate type material. Additionally, online databases of herbaria or virtual herbaria were reviewed, as well as the GBIF Data Portal (Global Biodiversity Information Facility 2007+), JSTOR Plant Science (2010+), Flora del Conosur (2009+), Flora Argentina (2012+), British Antarctic Survey (BAS) Higher Plants Herbarium (2009+), and UKOTs (UK Overseas Territories) Online Herbarium (2011+).

Altogether, more than 150 specimens of *Tetroncium magellanicum* were studied. Specimens that were only seen as a scan or photograph are marked with “[image!” in the list of specimens seen below. A lectotype for the name of this species is designated here according to the International Code of Nomenclature for algae, fungi, and plants (ICN, McNeill & al. 2012; Fig. 3C).

Information given on labels of historic specimens is usually limited, and important specifications such as (exact) collection dates or localities are often missing. Primary literature such as original travelogues of expeditions and secondary literature was consulted to decipher, verify and – wherever possible – complement available label information. Godley’s accounts of botanical exploration of the Southern hemisphere (Godley 1965, 1970) were especially valuable in this respect. Furthermore, the following online resources were used: Taxonomic Literature II (TL-2, Stafleu & Cowan 1976–1988 and supplements), JSTOR Plant Science Collection of Plant Collectors (JSTOR Plant Science 2010–) and the HUH Index of Botanists (Harvard University Herbaria 2011–).

The distribution map was created using georeferenced localities obtained from revised herbarium specimens and reliable literature sources. Georeferencing of localities was facilitated by the use of electronic gazetteers such as GEOnet Names Server (GNS 1994+), GeoNames (2012) or Google Earth (Google 2012), and the map was generated using the EDIT mapViewer (2012).

**Results and discussion**


**Notes** — The material of *Tetroncium* that Willdenow had on hand at the time of writing the description was named “*Triglochin reflexum*” and sent to him by the late Professor Martin Vahl from Copenhagen (Willdenow 1808; Fig. 2). Willdenow noticed its distinctness from *Triglochin* and described the new genus (Willdenow 1808).

Little is known about the identity of *Cathanthes* Rich., a name established only seven years after *Tetroncium*...
Fig. 2. Protologue of *Tetroncium magellanicum* Willd. (Willdenow 1808; from microfiche, library of the BGBM).

by Richard (1815). Richard’s brief description of *Cathanthes* in his listing of genera of “Juncaginaceae” reads as follows: “[Lilaea.] Cathanthes, floribus dioici, reclinatis, etc., a sequente diversa. [Triglochin. Schuchzeria.]” (Richard 1815). Kunth (1841) and Hooker (1843) cite *Cathanthes* as a synonym of *Triglochin*. This statement seems well supported by the few characters noted in the protologue as *Tetroncium*. This seems possibly the result of a spelling error.

*Tetroncium magellanicum* Willd. in Mag. Neuesten Entdeck. Gesammten Naturk. Ges. Naturf. Freunde Berlin 2: 17. 1808. – Lectotype (designated here): “Habitat ad Fretum Magellanicum” [Strait of Magellan], [December 1767]. Commerson s.n. (B-W 17531-02 0! http://data.bgbm.org/herbarium/BW17531020 Fig. 3C; isolectotype (B-W 17531-02 0). The other specimen is an isolectotype. The lectotype and isolectotype at B are available online as high-resolution images through the Digital Herbarium (Röpert 2000+). Duplicates of Commerson’s collection of *Tetroncium magellanicum* (representing isolecotypes) were found in BM, C, G and P. Most of these isolecotypes (and further historic material mentioned below) are accessible online via JSTOR Plant Science or the collection databases of the herbaria, respectively.

Notes — Material of *Tetroncium magellanicum* located in Herbarium Willdenow comprises two sheets placed in one of the typical blue folders of this historic collection. They are labelled “*T. magellanicum* 1” and “*T. magellanicum* 2” (B-W 17531-01 0 and B-W 17531-02 0). This material clearly matches the details of the protologue, the label attached to the folder gives the locality as cited above and the designation “*Triglochin reflexum*” written in Willdenow’s hand (Fig. 3A). The name “*Tetroncium magellanicum*” and the literature reference written on this label on the folder was later added by D. F. K. Schlechtendal, as explained by the note “Schlechtendal p.”, i.e. Schlechtendal pater (Latin for father), written by his son D. F. L. Schlechtendal. Another, smaller label on the folder, reading “*Vahl. W.*”, was also written by D. F. L. Schlechtendal and indicates that the material originated from Vahl and Willdenow (Fig. 3B).

It seems certain that both specimens were in the hands of Willdenow. Therefore, a lectotype has to be designated. The first of the two sheets in Herbarium Willdenow consists of a female and a male plant. In contrast, only a male plant is mounted on the second sheet. However, the latter bears an additional label reading “*Triglochin magellanicum*” written by Willdenow himself (P. Hiepko, pers. comm.; Fig. 3C) and it is therefore chosen here as lectotype (B-W 17531-02 0). The other specimen is an isolecotype.

The lectotype and isolecotype at B are available online as high-resolution images through the Digital Herbarium (Röpert 2000+). Duplicates of Commerson’s collection of *Tetroncium magellanicum* (representing isolecotypes) were found in BM, C, G and P. Most of these isolecotypes (and further historic material mentioned below) are accessible online via JSTOR Plant Science or the collection databases of the herbaria, respectively.

Label information of the type material in B does not include a collection date or a locality apart from Fretum Magellanicum. However, labels attached to one of the isolecotypes present in Paris (P01759004) give further information on the date and locality where it was collected. The inscription “Xbri 1767” indicates that the material was collected in December 1767. This is confirmed by the fact that the passage of the Strait of Magellan lasted from December 1767 to January 1768 (Bougainville 1772). Several labels list localities where the species was found in the Strait of Magellan: “Baye française, Baye Bougainville, Port Galant & in Sylvis Commersonianis”. In alipbus Commersonianis, Port Bougainville”. However, it remains unclear in which of these precise localities the material was collected.

The label on the isolecotype of *Tetroncium magellanicum* in C was written by M. Vahl (information from P. Wagner via O. Seberg/P. Petersen, pers. comm.), the botanist who sent the material to Willdenow. A specimen located in the Herbarium Genève (G00098732) and another in the Herbarium HAL (HAL0109729), both annotated as type material (by R. R. Haynes & L. B. Holm-Nielsen in 1985 and by N. Tkach in 2010, respectively) could represent further isolecotypes. However, in both cases the source could not be identified with certainty and the spec-
Trigonochin magellanicum" was used by Willdenow on the herbarium sheet (see small label on lectotype, Fig. 3C). Both names were cited by Kunth (1841) as synonyms under Tetroncium magellanicum, but this did not result in the valid publication of these names (see ICN Art. 36.1(c), McNeill & al. 2012).

Wildenow (1808) referred to this name in the protologue of Tetroncium magellanicum. The name “Triglochin magellanicum” was used by Willdenow on the herbarium sheet (see small label on lectotype, Fig. 3C). Both names were cited by Kunth (1841) as synonyms under Tetroncium magellanicum, but this did not result in the valid publication of these names (see ICN Art. 36.1(c), McNeill & al. 2012).
Illustrations — Hooker (1843: t. 534; 1847: t. 128, fig. 6); Correa (1969: 36, fig. 15).

Description — (based on own observations and measurements of herbarium material and partly on Hooker 1847; Buchenau 1903; Moore 1968, 1983; see also Fig. 6) — Perennial, rhizomatous, glabrous herb, 5 – 25( – 35) cm tall. Rhizome ascending, up to 20 cm long, 2 – 4( – 6) mm in diameter, producing aboveground stems towards the apex. Stems ascending or erect, branching near base, densely covered with brown leaf remains at base and with leaves towards apex. Leaves distichous, equitant, simple, linear-ensiform (sword-shaped), acute, (15 – 20) – 100( – 120) × 1.5 – 3 mm, rigid, coriaceous, with basal sheath but without ligule or auricles. Plants dioecious, scapose; scapes erect, 25 – 200 ( – 250) mm long. Inflorescences terminal, dense, c. 10 – 50 mm long, ebracteate spikes of up to 30 flowers; pedicels very short (c. 0.5 mm) or absent. Male flowers: tepals 4, yellowish with reddish brown spots, concave or conchiform, broadly ovate, acute or subobtuse, 1.2 – 2 × 0.5 – 1.5 mm. Stamens 4, inserted opposite tepals and at their base, (sub)sessile; anthers yellowish, extrorse. Female flowers: tepals 4, as in male flowers but narrower, ovate to ovate-lanceolate. Carpels 4, subulate, fused from base to about ½ their length, with 1 basal anatropous ovule per carpel; styles divergent. Fruits 4-locular (or possibly unilocular with incomplete septa), dry, indehiscent, reflexed, reddish brown, narrowly conical, with long persistent beaklike styles, 4 – 8( – 10) × c. 1 mm, smooth, usually 1-seeded through abortion of 3 ovules. Seeds anatropous, brown, narrowly ovate, endospermic (Hooker 1847; Shaffer-Fehre 1987). Pollen dispersed in monads, subspheroidal, inaperturate, medium-sized, exine reticulate (Kupriyanova 1948; Grayum 1992). Chromosome number unknown.

Tetroncium differs from the other genera of Juncaginaceae mainly in its dioecy and flower merosity (dimerous vs. trimerous in Triglochin and Cycnogeton). Further differences include seeds with endosperm, the general habit, as well as leaf form and structure (ensiform, rigid and coriaceous in Tetroncium vs. semiterete, ± succulent in Triglochin and flattened, strap-shaped, ± spongy in Cycnogeton).

Note — Willdenow (1808; Fig. 2) as well as Hooker (1843) erroneously described the flowers apart from the gynoecium as trimerous instead of dimerous. This was clarified by Hooker (1847; see also Fig. 6) and later discussed by Buchenau (1882). Further morphological and developmental studies are needed to examine flower and fruit structure in more detail.

Distribution — The distribution area of Tetroncium magellanicum comprises mainly southern South America (Patagonia and Tierra del Fuego) northwards to c. 40° S in western Argentina and to c. 37° S in Chile (Fig. 4, 5). Collections from Parque Nacional Nahuel Huapi in the Andes (Argentina) as well as Parque Nacional Nahuelbuta and Parque Nacional Chiloé in the Chilean Coastal Range represent the northern limits of the distribution of the species. It is also distributed in the Falkland Islands (East and West Falkland) but is absent from the Lafonia region of East Falkland probably due to summer drought there (Broughton & McAdams 2005). Furthermore, Tet-
roncium is found on Gough Island in the South Atlantic Ocean (Wace 1961; Groves 1981) but is not known from the other islands of the Tristan da Cunha group (N. Gremmen, pers. comm.).

Fig. 4 and 5 give the first detailed maps of localities representing the known distribution area of the species. Previously, only a map showing a rough outline of the distribution area (without Gough Island, Camp 1947) and a map limited to Tierra del Fuego (Moore 1983) had been published.

Habitat and ecology — Tetroncium magellanicum is found in different peatland types, especially Sphagnum bogs and cushion bogs. These peatlands are part of the characteristic vegetation sometimes termed Magellanic moorland (e.g. Moore 1983; Arroyo & al. 2005 and references within). T. is common in continental bogs dominated by Sphagnum magellanicum Brid., where the moss forms orange or reddish carpets or hummocks (Fig. 1A). Tetroncium magellanicum predominantly occurs in wetter parts of the peatlands and is frequently found accompanied by, e.g. Carex magellanica Lam. (e.g. Kleinebecker & al. 2007). In Pacific bogs dominated by cushion-forming vascular plants Tetroncium is associated with cushion plants such as Astelia pumila (J. R. Forst.) Gaudich. and Donatia fascicularis J. R. Forst. & G. Forst. or Drosera uniflora Willd. (e.g. Dusén 1900; Moore 1983; Kleinebecker & al. 2007; A. Vogel, pers. comm.; B. Ruthsatz, pers. comm.). In a transition zone both peatland types intermingle or occur mosaic-like side by side (Kleinebecker & al. 2007). Tetroncium is also frequent in this S. magellanicum cushion plant mixed type and along a moisture gradient in all three types (Kleinebecker & al. 2007). Highest frequencies were, however, recorded from S. cuspidatum Ehrh. ex Hoffm. hollows (exclusively found in continental Sphagnum bogs and Sphagnum-cushion mixed bogs) and wet S. magellanicum carpets often surrounding hollows of continental bogs (Kleinebecker & al. 2007).

Habitats belonging to the Magellanic moorland are continuously distributed from the extreme south of the continent to around 43° S in Chile and from sea level to above treeline (Pisano 1983). Tetroncium magellanicum is not only known from most parts of this region but also from outlying areas of moorland vegetation occurring further north, e.g. in the Cordillera de Pichuč (Chiloé Island) and the Cordillera de Nahueclúta, both in the Chilean coastal range (Ruthsatz & Villagrán 1991; Arroyo & al. 2005; see Fig. 4, 5).

In southern Chile, Magellanic moorland occurs together with subantarctic evergreen forest dominated by Nothofagus betuloides (Mirb.) Oerst. (e.g. Dusén 1903; Ruthsatz & Villagrán 1991). Further east such peatlands can also be found in the transition zone to deciduous forest dominated by N. pumilio (Poepp. & Endl.) Krasser and N. antarctica (G. Forst.) Oerst. Tetroncium grows in clearings or open parts of these Nothofagus woodlands.

Habitats on the Falkland Islands are bogs, dwarf shrub heath and acid grassland (Moore 1968, 1983). On Gough Island Tetroncium magellanicum is one of the few
abundant flowering plants found in high-altitude bogs, i.e. *Sphagnum*-dominated peat bogs above 600 m (Wace 1961; N. Gremmen, pers. comm.).

The species is usually found from sea level to about 500 m. Higher altitudes of up to 1300 m are only recorded from the northernmost part of the distribution area (e.g. Parque Nacional de Nahuelbuta, *Ricardi* 5697 & *Marticorena*, CONC; Zuloaga et al. 2008).

*Tetroncium* is predominantly found in wetter sites and tolerates frequent and prolonged periods of inundation. Sometimes only upper leaves and inflorescences emerge from the water.

Patagonian bog ecosystems are characterized by extremely nutrient-poor conditions and *Tetroncium magellanicum* appears to be highly efficient in nutrient acquisition (Schmidt & al. 2010).

**Phenology** — Flowering and fruiting in summer, mainly from December to January (sometimes to April). The species is probably wind-pollinated as are most other species of the family. Fruits of *Tetroncium magellanicum* are indehiscent (pers. obs.). Their long, rigid appendages formed by the persistent styles might serve dispersal by animals such as birds. However, pollination as well dispersal mechanisms have not been directly observed. Male and female plants can grow intermingled (see, e.g. specimen *James* 1500, BM, SI) but unisexual populations can be also separated by some distance (R. W. Woods, pers. comm.). This implies that *T. magellanicum* is able to reproduce vegetatively, probably through regeneration from rhizome fragments.

**Proposed IUCN conservation status** — Least Concern (LC). *Tetroncium magellanicum* is relatively widespread in southern South America, locally abundant, and not under immediate threat. However, as in the Northern Hemisphere, peatlands in the Southern Hemisphere are increasingly threatened by drainage (e.g. for urban development or road construction) and other land use changes, in particular peat mining. In recent decades, the number of peat extraction sites has risen continuously especially in Tierra del Fuego, and further extraction permits have been issued (e.g. Blanco & de la Balze 2004, Iturraspe & Uriuolo 2004; Grootjans & al. 2010; A. Vogel, pers. comm.).

*Tetroncium magellanicum* is not confined to continental *Sphagnum* bogs, which are most affected by this growing trend in peat extraction, but also occurs in oceanic cushion bogs, which are protected to a higher degree. Nevertheless, conservation assessments might become more important in the future, especially on a regional scale.

Fortunately, a relatively high proportion of southern South American wetlands are protected as part of National Parks or National Reserves (e.g. Parque Nacional Tierra del Fuego in Argentina, Bernardo O’Higgins National Park and Cabo de Hornos National Park in Chile). However, protection of different peatland types is unbalanced, and *Nothofagus* forests further north in the coastal range containing disjunct areas of peatlands have been reported to be under threat (Arroyo & al. 2005). Further threats to fragile wetland ecosystems include the introduction of non-native species and tourism.

Gough Island is recognized as a nature reserve and an ordinance entitled “Conservation of Native Organisms and Natural Habitats (Tristan da Cunha) Ordinance 2006” which replaced the previous conservation ordinance from 1976 gives protection to all native plants including *Tetroncium magellanicum*. The island was also inscribed to the UNESCO World Heritage List in 1995 (modified in 2004) as part of the Gough and Inaccessible Islands World Heritage Site. Nevertheless, threats to the island’s ecosystems are not to be underestimated and include (further) introduction of non-native species and climate change (e.g. Jones & al. 2003; Middleton & Kleinebecker 2012).

**Additional specimens seen** — **ARGENTINA: PROVINCIA DEL NEUQUÉN:** Departamento Bariloche: Parque Nacional Nahuel Huapi, Laguna [Lago] Ortiz Basualdo, terreno pantanoso, 7 Jan 1952, *O. Boelcke* 5366 & *M. N. Correa* (SI [image!]); Parque Nacional Nahuel Huapi, Pampa Linda, Mallín Amer, high raised bog above Lago Mascardi, alt. 1000 m, 8 Dec 1973, *V. Markgraf* s.n. (P); Parque Nacional Nahuel Huapi, between Puerto Blest and Lago Frías, alt. 750 m, 18–19 Dec 1978, *S. Laegaard* 12533 (K). — **PROVINCIA SANTA CRUZ:** Dpto. Lago Argentino: Brazo Norte, Valle de la Cristina, ac de los Cipreses, al este lago Pearson, alt. 450 m, 17 Feb 1953, *F. B. Vervoort* 4496 (NY, P); Brazo Onelli, Mallín al NW del puesto abandonado Neumann, alt. 350 m, 26.2.1953, *F. B. Vervoort* 4564 (NY); Mayo Glacier, Shipton Expedition to Patagonia (Lago Argentino) 1958–59, in small bog in clearing in *Nothofagus betuloides* wood, near the front of the glacier, 49°80’–51°S, 72°–73°30’W, alt. c. 400 ft., 30 Jan 1959, *P. W. James* 1500 (BM, SI [image!]). — **PROVINCIA DE TIERRA DEL FUEGO, ANTÁRTIDA E ISLAS DEL ATLÁNTICO SUR:** Departamento Río Grande: Source grande de Río Grande, alt. 400–450 m, 6 Mar 1896, *N. Aliboff* s.n. (SI [image!]), nahe Lago Verde an Ruta B, 9 Jan 1989, *J. Poelt* s.n. (M); Departamento Ushuaia: St. Vincent’s Bay [Buen Thetis or Thetis Bay], Captain Cook’s first voyage, H.M.S. Endeavour, 1768–1771, in collibus subalpinus, 14 Jan 1769, *J. Banks* & *D. Solander* s.n. (BM); Ushuaia, in a bog in the *Nothofagus pumilio* forest, above the town, alt. c. 300 m, 1 Feb 1940, *R. Santesson* 396 (K, P); Lago Victoria, turbera, 7 Nov 1965, *Luis Mendonza* s.n. (BAB [image!]); Estancia Harberton, Moat Bay, alt. c. 60–100 ft., hill behind lake, growing in *Astelia* bog, 1 Jan 1966, *R. N. P. Goodall* 247 (RNG); Estancia Harberton, Harberton swamp, alt. c. 60–100 ft., in *Sphagnum*, deeply buried, only 2–3 ins. Showing, 1 Feb 1966, *R. N. P. Goodall* 300 (RNG); Estancia Harberton, Harberton swamp, NW end near fence, elev. 0–60 m, plants growing in green and reddish *Sphagnum*, *Sphag-
num very wet and easily broken apart, showing above moss, 28 Dec 1966, R. N. P. Goodall 443 (BAB [image!]); NY, RNG, SI [image!]); Estancia Harberton, Harberton swamp, elev. 0–60 m, growing in Sphagnum roots, have haustoria of Nanodea mucosa, 29 Apr 1967, R. N. P. Goodall 795 (P); Bahía Aguirre, c. 5 km E of Puerto Espagnol, 54°53'S 65°54'W, 30–80 m, boggy ground with Astelia, 14 Feb 1968, D. M. Moore 1831 (K, RNG); Río Lashifashaj valley, c. 1 km N of Laguna Victoria, 54°48'S, 67°27'W, Sphagnum swamp, 1 Mar 1968, D. M. Moore 2082 (BAB [image!]); RNG); Estancia Harberton, Cambaceres Bay, in swamp, 3 Dec 1968, R. N. P. Goodall 1882 (RNG); Loma Larga Forte, 900 ft., in open burned woods, not grazed, 22 Jan 1968, R. N. P. Goodall 1309 (B http://data.bgbm.org/herbarium/B100089525); hill to the North of abandoned settlement at Bahía Thetis, top of hill is Astelia formation with numerous small pools, each edged with Tetroncium, sterile at this time, 20 Nov 1969, R. N. P. Goodall 2311 (RNG, SI [image!]); Tierra del Fuego australis, Rancho Hambre, 54°45'S, 67°54'W, turbal sphagnoso, abierto, copiosamente, 140 m, 16 Jan 1970; H. Roivainen s.n. (RNG); Lapataia, growing in Sphagnum swamp surrounding Laguna Negra, to the West of Río Lapataia, 2 Mar 1970, R. N. P. Goodall 2424 (BAB [image!]); SI [image!]!); Lapataia, Laguna Negra, in wet Sphagnum swamp, 6 Dec 1970, R. N. P. Goodall 2634 (RNG); Pink Mountain, edge of mountain torrent at SE edge of mountain and in Sphagnum swamp at base of mountain, 2000 to 1500 ft., 11 Mar 1971, R. N. P. Goodall 3700 (SGO); Mitre Península of Isla Grande, Bahía Buen Suceso, 54°48'S 65°20'W, 14 Oct 1971, T. R. Dudley, R. N. P. Goodall & G. Crow 272 (BAB [image!]); Tra Lapataia ed il lago Roca (osteu di Ushuaia), torbiera nella parte orientale della Laguna Negra, sui cuscini di Sphagnum, Spedizione Scientifica Italiana Mares AMF in Patagonia, Terra del Fuoco ed Antartide organizzata dal Gruppo Ricerche Scientifiche Tecniche Subacqueo di Firenze, 23 Jan 1974, R. E. G. Pichi Sermolli & P. Bizzarri 7539 (K, P, SI [image!]); Ushuaia, Weg zum Nationalpark /camino al Parque Nacional, 27 Dec 1976, P. Seibert 183 & al. / T.B.P.A. 2213 (BAB [image!], M); at Passo Garibaldi, alt. 750–800 m, 26–31 Jan 1979, S. Laegaard 13296 (K); Cordon del Toro at Host. Alakus, W of Ushuaia, alt. 600 m, 1–4 Feb 1979, S. Laegaard 13338 (K); Isla de los Estados, Bahía Franklin, ente Caleta Le Croix y lago Gaona, 54°52'S 64°41'W, abondante localmente en charcos en turbera dominada por Astelia, 10 Dec 1999, F. Biganzoli 699 (SI [image!]).

CHILE: X REGIÓN DE LA ARAUCANIA: Provincia de Malleco: Parque Nacional de Nahuelbuta, centro del parque, 37°43'S, 73°02'W, 1250 m, 28 Dec 1968, M. Riccardi 5697 & C. Marticorena 1858 (CONC [image!], SI [image!]). — X REGIÓN DE LOS LAGOS: Provincia de Chiloé: Isla Grande de Chiloé, altiplanicie central (campos), Jan 1902, M. Espinosa s.n. (SGO); Cordillera San Pedro, wet hollow in campaña, 15 Nov 1958, E. J. Godley 4744a (BM); Cordillera San Pedro, wet hollows in open campaña, 18 Nov 1958, E. J. Godley 503 (SGO); Isla Grande de Chiloé, Cordillera de Puchén, 42°22'S, 73°59'W, 640 m, 12 Feb 1983, C. Villagrán 4907 (CONC [image!]); Licalidad, en turbera esfagnosa, 42°29'S, 73°50'38'W, 495 m, 18 Feb 2010, S. Pizano 455 (CONC [image!]). — PROVINCIA DE PALENA: 5.9 km N jct. rsds. to Palena and Chaitén, Villa Sta. Lucia, bog in Notofagus forest, 560 m, March 1985, T. F. Stuessy & al. 7170 (CONC [image!]). — XI REGIÓN AYSÉN DEL GENERAL CARLOS IBÁÑEZ DEL CAMPO: Provincia de CAPITÁN PRAT: [Messier Channel], Halt Bay [Bahía Halt], 21 Mar 1868, R. O. Cunningham s.n. (K); [Sarmiento Channel], Puerto Bueno, 8 Dec 1868, R. O. Cunningham s.n. (K); Glaciar “Hammick”, 48°50'S, 74°13'W, común en pantanos, ± 30 m, 28 Dec 1967, S. F. Anliot 6033 (SGO); Villa O‘Higgins, Cuenca del Río Mosca, sub-cuenca del Río Claro, 48°27'S, 72°28'W, 785 m, 20 Mar 2003, N. García 21 (CONC [image!]). — XII REGIÓN DE MAGALLANES Y DE LA ANTÁRTICA CHILENA: Provincia de Última Esperanza: [Sarmiento Channel], Puerto Bueno (Puerto Bono), Expédition de la Magicienne, 1876–1879, lieux humides et tourbeux, 15 Feb 1877, L. Savatier s.n. (P 2 sheets), [Wellington Island], Eden [Puerto Edén], Expédition de la Magicienne 1876–1879, 24 Jan 1879, L. Savatier s.n. (K, P 3 sheets); Canal Smith, February 1900, R. [s.c., s.n.] (SGO). Canal Smith [Canal Smyth, Smyth Channel], January 1924, M. Gisinde s.n. (M); Puerto Eden, Wellington Is., lowland bog, near sea, 6 Dec 1958, E. J. Godley 631a, 632b (BM); Bahía del Indio, Lote San Isidro, Río Yumbel, interior, en turberales herbaceus, 25 Feb 1973, E. Pisano V. 3968 (RNG); Seno Unión, N side, Ancón Sin Salida, 95 m, 52°9'S, 73°21'W, Y201, bog with scattered trees, 10 Jan 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 876 (RNG); Seno Unión, 52°25'S, 73°35'W, 13 Jan 1976, Ulrich Eschke / T.B.P.A. 695 (BAB [image!]); Isla Pizano, Caleta Ocasión, Abra Leackey’s Retreat, 150 m, 51°44'S 74°1'W, S231, rocky hill summit, wet seepage area, 16 Jan 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 1003 (BAB [image!]); Isla Pizano, Caleta Ocasión, Abra Leackey’s Retreat, 80m, 51°44'S, 74°1'W, S231, coastal bog, Donatia/Tetroncium dominant, 18 Jan 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 1069 (BAB [image!], RNG); Isla Reniel Norte, Canal Smyth, 51°54'S, 74°12'W, W231, bog, 24 Jan 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 1152 (BAB [image!], RNG); Isla Vidal Gorram, Seno Nantuel, Bahía María Angélica, 30 m, 51°53'S, 74°41'W, W251, Donatia bog, 1 Feb 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 1237 (BAB [image!], RNG); Isla Vidal Gorram, Seno Nantuel, Estero Lobos, 51°53'S, 74°41'W, W251, Donatia bog, 4 Feb 1976, O. Dollenz, D. M. Moore, E. Pisano V & A. A. Sánz / T.B.P.A. 1395 (RNG); Isla Virtudes, Canal Ellías, Puerto Virtudes, 51°33'S, 74°54'W, P261, bog, pool with organic bottom material,
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von Mering: *Tetroncium* and its only species, *T. magellanicum* 7 Jan 1956, N. M. Wace 76 (BM, BOL); X St. Gonydale Raised Bog, alt. 1500 ft, 18 Jan 1956, N. M. Wace 99 (BM); Tafelkop, in wet high altitude mire/grassland, 40° 20'S, 9°54'W, 500 m asl, 21 Sep 2006, R. M. Wanless s.n. (MJG).

*Note* — Specimens with the abbreviation “T.B.P.A.” and a number were collected during the project *Transecta Botánica de Patagonia Austral* (Boelcke & al. 1985).

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