Research article

Reinstatement of the Patagonian moss *Ulota glabella* Mitt. (Bryophyta, Orthotrichaceae)

Ricardo GARILLETI¹,*, Belén ALBERTOS², Isabel DRAPER³, Juan Antonio CALLEJA⁴ & Francisco LARA⁵

¹² Departamento de Botánica y Geología, Facultad de Farmacia, Universidad de Valencia, 46100 Burjassot, Spain.
³⁴⁵ Departamento de Biología (Botánica), Facultad de Ciencias, Universidad Autónoma de Madrid, 28049 Madrid, Spain.
³⁴⁵ Centro de Investigación en Biodiversidad y Cambio Global, 28049 Madrid, Spain.

* Corresponding author: belen.albertos@uv.es
¹ Email: ricardo.garilleti@uv.es
³ Email: isabel.draper@uam.es
⁴ Email: juan.calleja@uam.es
⁵ Email: francisco.lara@uam.es

Abstract. In 1842, J.D. Hooker collected a number of mosses on Hermite Island (Cape Horn region). From one of those gatherings, *Hooker 141*, four species of *Ulota* have been described: *U. luteola*, *U. fuegiana*, *U. glabella*, and *U. eremitensis*. The first two species are widely accepted, whereas the identity of the latter two has been recently discussed, and the names are now synonymized under *U. fuegiana*, the more widely distributed species in the Tierra del Fuego archipelago. Our studies, based on recent collections of Orthotrichaceae from Patagonia, show that specimens different from those of *U. fuegiana* and agreeing with the protologues of both *U. glabella* and *U. eremitensis* are common in Patagonia. Comparisons with type material of all four names demonstrate that the type for *U. glabella* is in such bad condition that it cannot be used, and an epitype should be selected. In this paper, we comment on the whereabouts of the collection *Hooker 141* and the species described from it, discuss the distinct identity of *U. glabella* and its relationship with *U. eremitensis* as well as its differentiation from other species, present a diagnostic description of *U. glabella* and, finally, select an epitype to fix the application of this name.

Keywords. Epitype, South America, *Ulota eremitensis*, *Ulota fuegiana*, *Ulota macrocalycina*.


Introduction

Species identification of bryophytes often depends on the analyses of well-preserved sporophytes. This is especially true in Orthotrichaceae Engl. (Orthotrichaceae Arn.), where peristomes are usually essential
for identification. On many occasions, the best and sometimes only discriminatory characteristics are the number of pieces, structure, arrangement, position when dry and ornamentation of the exostome and the endostome. However, these structures are delicate and it is not uncommon for them to deteriorate or even disappear in preserved specimens. This is observed in collections of different ages, but is especially relevant for historical material, which is often sparse and which in some cases constitutes the nomenclatural types of species in dispute. The degradation of these original specimens has sometimes been aggravated by successive studies involving their dissection. An added complication in the case of this tribe of mosses is that it is not uncommon for the original collections to be an admixture of several species that are very similar to each other (for problems in *Ulota* D.Mohr., see Caparrós et al. 2016; Garilleti et al. 2016, 2020; Muñoz-Puelles et al. 2017). This makes the separation of damaged specimens challenging. In many cases for which the material is currently seriously damaged, it is still possible to interpret the author’s concept of a species based on three data sources: the protologue; the interpretations of other authors who evaluated in detail the original specimens when they were in good condition; and finally, the study of recent materials with which to contrast previous descriptions.

One case that combines every problem outlined above is the collection *Hooker 141*, which is a mixed gathering of damaged material from which several species have been described. It was collected by Joseph Dalton Hooker (1817–1911) in Hermite Island, one of the many islands in the Cape Horn region (southern South America). This collection has been studied, chronologically, by Hooker himself and Wilson (Hooker 1847), Mitten (1860), Malta (1927), and Wang & Jia (2016). From this single gathering, four species have been described, namely *Ulota luteola* (Hook.f. & Wilson) Wijk & Margad., *U. fuegiana* Mitt., *U. glabella* Mitt., and *U. eremitensis* Mitt. The two first taxa are currently widely accepted but the taxonomic status of the latter two has been recently debated (Wang & Jia 2016), and they have been subsumed under *U. fuegiana*, one of the commonest species of *Ulota* in the southern extreme of South America.

Our own studies, based on the interpretation of the protologues of these species, the analysis of their types, and the study of recent collections – including some from the Cape Horn region – have led us to disagree with Wang & Jia (2016), and to recognize the existence of three distinct species, as previously delimited by Malta (1927). In this paper, we detail the different interpretations of this group of species, re-evaluate the taxonomic and nomenclatural status of *Ulota glabella* and *U. eremitensis* and discuss the problems arising from the poor conservation of their types.

**The different interpretations of the collection *Hooker 141***

Hooker visited the Hermite archipelago between September 19th and November 7th, 1842, as assistant-surgeon and botanist to the 1839–1843 Antarctic Expedition of James Clark Ross. Hooker had great expectations about the cryptogamic potential of this stage of the expedition, and on August 25th, just before leaving the Falkland Islands for Cape Horn, he wrote to his father, the botanist William Jackson Hooker: “It is, however, among the Mosses and other Cryptogams that I shall hope for novelty in the S. extremity of the American Continent... You will not wonder that after spending so long a time in the Antarctic regions, I should be most anxious to complete the Botany of this desolate part of the world, by going even to the Horn, and that any new Moss or Lichen from such latitudes appears of infinitely more value to me than a new *Palm* or *Rafflesia* would to you” (Huxley 1918). And it seems that he was not disappointed at all, as he later considered this region as “the great botanical centre of the Antarctic Ocean […] Fuegia is richer in Mosses than any other Antarctic island: perhaps no part of the globe of equal extent yields more or finer species than Hermite Island. During the short stay of the Antarctic Expedition one hundred different kinds were found; and the naturalist, who is accustomed to collecting this tribe of plants, is well aware that a protracted search is needful in order to exhaust the Mosses of even a limited area” (Hooker, quoted in Ross 1847). Hooker collected more than 150 moss samples on Hermite Island, many of them mixed gatherings, kept in BM (Natural History Museum 2020).
From his collection 141 from Hermite Island, Hooker described in collaboration with William Wilson (Hooker 1847) *Orthotrichum luteolum* Hook.f. & Wilson (≡ *Ulota luteola*), with more or less crisped leaves and a hairy calyptra. They also indicated a “var. β”, with a naked calyptra, an uncommon feature for the genus *Orthotrichum* Hedw., and certainly rare in *Ulota* D.Mohr. Nevertheless, this variety was not validly published since it was not given a name. Hooker renumbered those specimens as no. 141b for *O. luteolum* and 141a for the var. β, and these were distributed to Kew (now at BM), E, NY, and PC.

Mitten (1860) studied the duplicate now held at NY and recognized four morphotypes, which led him to take the following actions: 1) rename *Orthotrichum luteolum* as *Ulota fulvella* Mitt. nom. inval.; 2) validate Hooker & Wilson’s var. β creating *U. glabella*; and 3) describe two new species, *U. eremitensis* based on a morphotype with a naked calyptra and shorter capsule than *U. glabella*, and *U. fuegiana* based on another morphotype with a hairy calyptra. The specimens seen by Mitten (NY) were incomplete and he could only study intact peristomes in *U. eremitensis* (poorly described, but drawn on a label with the holotype of this species, NY[00737687]!), and he was unable to describe the spores of any of the species. Thus, his descriptions were mainly based on gametophytic characters (leaf margin crenulation, number of rows of differentiated basal cells, calyptra hairiness, but also the relative size of capsule and seta), lacking the very important discriminatory characters of the peristome.

Mitten (1860) supplemented the meagre description of *Ulota luteola* (≡ *U. fulvella*) provided by Hooker and Wilson, establishing that this is the only species of the group of taxa from Hooker’s collections 141a and 141b with a thin band of differentiated basal marginal cells, only one to three cells wide, whereas the other species have broad bands of more than five cells. Another important character is the entire, non-crenulate leaf margins, whereas the exostome is vaguely described as formed by eight pairs of teeth split at the apices, a character that Mitten deemed to be of importance. Concerning the other species that he described, *U. fuegiana* is similar to *U. luteola*, being discriminated from the latter by its less densely hairy calyptra, the leaves with margins irregularly eroded towards the apex, and the many series of pellucid cells at the basal margins. *Ulota glabella* was characterized by its naked calyptrea, leaves not crisped, and the finely crenulate (“*margine minute crenulato*”) leaf margins. Mitten did not find peristomes in the specimens he studied (NY[00737690]!, NY[00737691]!, Fig. 1A–D) and therefore nothing is said about this taxonomically important structure. *Ulota eremitensis* was very similar to *U. glabella*, since it also has naked calyptrea and finely crenulate margins, and the differences were related to the growth-form of the colonies – subpulvinate in *U. glabella* and in little tufts in *U. eremitensis* – and the seta : capsule size relationship. Mitten described the peristome of *U. eremitensis* with an exostome of eight pairs of teeth divided at the apices, and an endostome of eight very thin segments (“*angustis capillaribus*”), almost as long as the teeth. Mitten drew this peristome in the holotype of this species (NY[00737687]!). The lack of detailed peristome descriptions sometimes makes the interpretation of Mitten’s taxa challenging. See Table 1 for the main differences between these four species according to Mitten (1860).

The revisionary work by Malta (1927) is of particular interest, as he assessed the full scope of the genus in South America through the study of almost all the available material at the time, including original specimens at BM and PC that Mitten could not study. Malta considered *U. luteola* and *U. fuegiana* as different, well-defined species. Regarding *U. eremitensis* and *U. glabella*, Malta did not find any differences between them except for the size and color of the capsules, so he considered them as conspecific, and synonymized *U. eremitensis* under *U. glabella*.

Malta highlighted three diagnostic characters in his description of *U. glabella*, but he used several others in the differentiation of the species. Two of them were previously noted by Mitten, namely the naked calyptrea and the finely serrate leaf margins (“Rändern fein gesägten”), which can be interpreted as the finely crenate margins of Mitten’s work. The third character is a new feature not previously described, the sheathing perichaetial leaves with a broad, high base that abruptly tapers to a blunt tip. Other important

<table>
<thead>
<tr>
<th></th>
<th><em>U. luteola</em></th>
<th><em>U. fuegiana</em></th>
<th><em>U. glabella</em></th>
<th><em>U. eremitensis</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth form</td>
<td>procumbent</td>
<td>little tufts</td>
<td>subpulvinate</td>
<td>little tufts</td>
</tr>
<tr>
<td>Leaf margin</td>
<td>entire</td>
<td>entire, eroded</td>
<td>finely crenulate</td>
<td>finely crenulate</td>
</tr>
<tr>
<td>Rows of differentiated basal marginal cells</td>
<td>1</td>
<td>several</td>
<td>several</td>
<td>several</td>
</tr>
<tr>
<td>Seta : capsule size relation</td>
<td>1 : 2</td>
<td>1 : 2</td>
<td>1 : 2</td>
<td>1 : 3</td>
</tr>
<tr>
<td>Exostome teeth</td>
<td>8, divided at apex</td>
<td>8, variably divided</td>
<td>unknown</td>
<td>8, divided at apex</td>
</tr>
<tr>
<td>Endostome</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
<td>8 filiform segments</td>
</tr>
<tr>
<td>Vaginula</td>
<td>unknown</td>
<td>naked</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Calyptra</td>
<td>hairy</td>
<td>few appressed hairs</td>
<td>naked</td>
<td>naked</td>
</tr>
</tbody>
</table>

Fig. 1. Examples of the conservation of the type material of *Ulota glabella* Mitt. A–D. Holotype, consisting of a single specimen in two sheets (A–B from NY[00737690]; C–D from NY[00737691]). E. Isotype (PC[PC0101534]). Photographs by R. Garilleti.
characters are the papillose costa, usually an overlooked feature, the exostome of eight teeth splitting into 16, papillose and with lines in the upper part, and the endostome of eight or 16 segments somewhat knotted and papillose. It is not possible to safely say on which specimen this peristome description is based, as all the duplicates revised by Malta have lost this structure. One possibility is that it was based on specimens of *U. eremitensis*, as this is the only one that seems to have had perfect peristomes at that time. Nevertheless, it is also possible that Malta did not use original specimens for his description, but rather another intriguing specimen collected by Dusén (S) from Westhoff Island cited in his study. This particular specimen will be discussed later.

The recent revision by Wang & Jia (2016) reduced the number of accepted species. They concurred with Malta’s opinion about the conspecificity of *Ulota glabella* and *U. eremitensis*, but considered that “*U. glabella* is virtually identical with *U. fuegiana* in terms of leaf crisping, peristome structure, stomata position and calyptra hairiness” and consequently they listed *U. glabella* and *U. eremitensis* under *U. fuegiana*. These authors did not find serrate leaf margins and considered that *U. fuegiana* can have naked calyptrae. In support of their opinion on the variability of the hairiness of the calyptra in *U. glabella*, they referred to the very sparsely hairy calyptra of the dubious specimen from Westhoff Island cited by Malta (1927).

In summary, currently, there are two interpretations of the two species with naked calyptrae described by Mitten. The first one by Malta (1927), who considers that a single species is involved, different from others in the genus, and the second one by Wang & Jia (2016), who considers that the forms with naked calyptrae are simply part of the variability in *Ulota fuegiana*.

**Material and methods**

This work is based on the study of the original collections by Hooker (BM, duplicates at E, NY and PC), as well as a significant number of recent collections (MAUAM, NY, VAL), including some from the original locality of *U. glabella*, Hermite Island in the Cape Horn region. In total, 124 modern specimens were studied (Fig. 2, Appendix), 91 of them of *U. fuegiana*, 27 of *U. glabella*/*U. eremitensis*, and, for further comparison, six specimens of *U. macrocalycina* Mitt. All original specimens available were studied, with the only exception being the types of *U. luteola*, lost in transit in 2013 (Muñoz-Puelles *et al.* 2017). Acronyms of herbaria follow Index Herbariorum (Thiers continuously updated).

Original specimens were studied under a stereo microscope to avoid damage. Modern collections were also prepared on permanent slides and fully studied under a compound microscope.

**Results**

*The South American species of Ulota D.Mohr. with naked calyptrae*

Based on the revision by Wang & Jia (2016), there would only be one species of *Ulota* in South America with constantly glabrous calyptrae, *U. macrocalycina*. In addition to this feature, this species has other relevant differentiating characters that strongly support its discrimination: 1) the prostrate growth with upright secondary branches, forming dense tufts; 2) the very short leaves (1.3–1.5 mm long), erect, straight or slightly undulate with blunt to obtuse apices; 3) the perichaetial leaves differentiated, longer than the vegetative ones; 4) the stomata located at urn base; 5) the endostome of eight completely smooth and hyaline segments; and 6) the verrucose spores, 30–35 µm wide. The growth form and the position and size of the leaves are uncommon characters sufficient to safely distinguish this characteristic species with a stereoscopic microscope or even a hand-lens. The type material of this species ([Chile] Strait of Magellan, Port Famine; Sep. 1851; *Lyall s.n.*; holotype: NY[00737693]; isotypes: BM[BM000879991]!, BM[BM000879992]!, BM[BM000879993]!) is preserved in good condition, particularly the isotypes at
BM, but also the holotype, which includes drawings by Mitten. The identity of this species is thus well supported.

Nevertheless, at least one other species with naked calyptrae consistently appears in Patagonia and, especially, in Tierra del Fuego. This plant is clearly different from *Ulota macrocalycina* and *U. fuegiana*, even considering the variability of *U. fuegiana* to include naked calypters, as supported by Wang & Jia (2016). The more outstanding characters (Figs 3–4) for its discrimination are: 1) leaves undulate to somewhat curved with crenulate-serrate margins and papillose costa; 2) perichaetal leaves differentiated; 3) naked calyptra with a dark beak; 4) stomata present throughout the capsule; 5) brown-orange to pale orange exostome, formed by eight pairs of teeth with a tendency to split, but usually remaining joined at the tips; and 6) brown-orange to pale orange endostome of eight segments, occasionally with remains of incomplete intermediates, ornamented on both sides with irregular small and compact tufts of very high papillae.

![Origin of the studied specimens. The *locus classicus* of *Ulota glabella* Mitt. is marked with a star.](image)

**Fig. 2.** Origin of the studied specimens. The *locus classicus* of *Ulota glabella* Mitt. is marked with a star.
Table 2. Main differential characters between *Ulota glabella* Mitt. and *U. fuegiana* Mitt.

<table>
<thead>
<tr>
<th>Character</th>
<th><em>U. glabella</em></th>
<th><em>U. fuegiana</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf margin</td>
<td>crenate-denticulate</td>
<td>entire</td>
</tr>
<tr>
<td>Leaf costa</td>
<td>papillose</td>
<td>smooth</td>
</tr>
<tr>
<td>Perichaetial leaves</td>
<td>as long as vegetative leaves,</td>
<td>longer than vegetative leaves,</td>
</tr>
<tr>
<td></td>
<td>with sheathing base</td>
<td>without sheathing base</td>
</tr>
<tr>
<td>Calyptra</td>
<td>naked</td>
<td>variably hairy, hairs short and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>papillose</td>
</tr>
<tr>
<td>Lid basal ring</td>
<td>broad and red</td>
<td>narrow and orange</td>
</tr>
<tr>
<td></td>
<td>from urn base to near mouth,</td>
<td>in the upper ⅔ of the urn,</td>
</tr>
<tr>
<td></td>
<td>entering neck</td>
<td>mainly in central area</td>
</tr>
<tr>
<td>Stomata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exostome color and configuration</td>
<td>brown-orange to pale orange;</td>
<td>whitish to yellowish;</td>
</tr>
<tr>
<td></td>
<td>trabeculae not developed</td>
<td>trabeculae well developed</td>
</tr>
<tr>
<td>Exostome position when dry</td>
<td>recurved against exothecium</td>
<td>recurved and applied against</td>
</tr>
<tr>
<td></td>
<td>but not applied</td>
<td>exothecium</td>
</tr>
<tr>
<td>Ornamentation of external side of teeth</td>
<td>reticule well developed from</td>
<td>reticule somewhat convex and</td>
</tr>
<tr>
<td></td>
<td>upper ⅜–⅜ with aligned crests</td>
<td>papillae at lower ⅜–⅞, but with</td>
</tr>
<tr>
<td></td>
<td>and papillae, sometimes more</td>
<td>scattered or longitudinally</td>
</tr>
<tr>
<td></td>
<td>uniformly papillose</td>
<td>aligned papillae upwards</td>
</tr>
<tr>
<td>Endostome configuration</td>
<td>8+n, brown-orange to pale</td>
<td>8, whitish or hyaline,</td>
</tr>
<tr>
<td></td>
<td>orange, usually thin, filiform</td>
<td>filiform and fragile</td>
</tr>
<tr>
<td></td>
<td>and fragile, but sometimes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>thicker and persistent</td>
<td></td>
</tr>
<tr>
<td>Endostome ornamentation</td>
<td>upper ⅝ with tufts of papillae,</td>
<td>variably papillose, usually</td>
</tr>
<tr>
<td></td>
<td>rarely more homogeneously</td>
<td>almost smooth, sometimes</td>
</tr>
<tr>
<td></td>
<td>papillose; with trabeculae</td>
<td>coralloid in appearance; without</td>
</tr>
<tr>
<td></td>
<td></td>
<td>trabeculae</td>
</tr>
</tbody>
</table>

**Reinterpretation of Ulota glabella Mitt.**

The morphological similarities between the second South American species of *Ulota* with naked calyptrae and the protologue of *U. glabella* (Mitten 1860) or the more precise description and drawings by Malta (1927) suggest that they are the same species. On the other hand, the analyses of abundant modern specimens show that *U. fuegiana* and *U. glabella* are actually two distinct species that are well distinguished by a set of characters (Table 2, Fig. 4), of which the most important are the hairiness of the calyptrae, the color of the peristomes, the endostome ornamentation, the highly developed exostomial trabeculae in *U. fuegiana*, and the papillosity of the leaf margin and costa in *U. glabella*. Of these, the characters with the greatest discriminatory value are the peristomial ones.

The holotype of *U. eremitensis* (NY[00737687]!) preserves remains of the peristome, including basal portions of endostome segments. Although the state of the material discourages the use of microscopic preparations to analyze these structures, the stereoscopic microscope shows that the segments are colored in the same way as those of *U. glabella*. The main difference between *U. glabella* and *U. eremitensis* as defined by Mitten (1860) was the size relationship between capsule and seta (1:2 in the former and 1:3 in the latter). In our study of recent specimens, we found a continuous gradation between both extremes, supporting Malta’s view of a single variable species. Nevertheless, some differences in the peristome coloration and ornamentation are found along this size gradient and it cannot be discarded that *U. eremitensis* may be a different species. More intensive studies with an integrative taxonomic approach are needed to answer this issue. Until these studies can be completed, we consider *U. glabella* and *U. eremitensis* to belong to the same taxon.
Species description

*Ulota glabella* is a morphologically complex species, with overall similarities not only to *U. fuegiana* but also to *U. pusilla* Malta and *U. macrodontia* Dusén ex Malta. The characters listed in Table 2 that differentiate it from *U. fuegiana* are only part of the morphological complexity of *U. glabella* and are not useful to discriminate it from other species. To better delimit *U. glabella*, we provide a complete description here.

Division Bryophyta Schimp.
Subdivision Bryophytina Engl.
Class Bryopsida McClatchie
Subclass Bryidae Engl.
Superorder Bryanae Goffinet & W.R. Buck
Order Orthotrichales Dixon
Family Orthotrichaceae Arn.
Tribe Orthotricheae Engl.
Genus *Ulota* D.Mohr.

*Ulota glabella* Mitt.
Figs 1, 3, 4A–D


**Type**: CHILE • [Región de Magallanes y de la Antártica Chilena: Provincia Antártica Chilena, Comuna de Cabo de Hornos] Hermite island, Cape Horn; 19 Sep.–7 Nov. 1842; J.D. Hooker 141a; holotype: NY[00737690]!, NY[00737691]!; isotypes: BM[BM000919960]!, E[E00052655]!, E[E00052673]!, PC[PC0101534]!, PC[PC0108133]!.

**Epitype**: CHILE • Región de Magallanes y de la Antártica Chilena: Comuna de Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Hoste, E side of Estero Fouqué, opposite Punta Blanca near river draining small lake; 55°09′49″ S, 069°31′00″ W; 2–15 m a.s.l; on *Nothofagus betuloides*; 21 Jan. 2012; R. Garilleti 2012-077A; MAUAM[5160], here designated (for images of details of the epitype, see Figs 3 and 4B, D).


**Type**: CHILE • [Región de Magallanes y de la Antártica Chilena: Provincia Antártica Chilena, Comuna de Cabo de Hornos] Hermite island, Cape Horn; 19 Sep.–7 Nov. 1842; J.D. Hooker 141, p.p.; holotype: NY[00737687]!.

*U. hermitei* Besch., Mission Scientifique du Cap Horn 1882–1883, Vol. 5 (Botanique) 274 (Bescherelle 1889), nom. illeg., type of earlier name included.

Other material studied

CHILE – Región Aysén del General Carlos Ibáñez del Campo • Provincia de Aysén: Comuna de Cisnes, Parque Nacional Queulat, portezuelo Queulat; 44°36′03″ S, 072°25′39″ W; 550 m a.s.l.; sobre *Ribes magellanicum*; 28 Dec. 2016; R. Garilleti and F. Lara; VAL-Brief • Provincia de General Carrera: Comuna de Río Ibáñez, Ruta Austral (7), 2.9 km al S de Puente Las Ovejas, ca valle del río Murta; 46°12′48″ S, 72°48′13″ W; 325 m a.s.l.; ramosas de *Fuchsia magellanica*; 31 Dec. 2016; F. Lara 1612/117; collected by F. Lara and R. Garilleti; MAUAM. – Región de Los Lagos • Provincia de Palena: Comuna de Chaitén, Parque Nacional Corcovado, portezuelo Moraga; 43°20′59″ S, 072°24′04″ W; 600 m a.s.l.; *Ribes magellanicum*; 25 Dec. 2016; R. Garilleti 2016-193f; collected by R. Garilleti and F. Lara; VAL-Brief • Comuna de Puyehue, Parque Nacional Puyehue, ladera S del volcán Haque, proximidades del complejo Antillanca; 40°46′28″ S, 072°12′29″ W; 1035–1050 m a.s.l.; cara inferior de ramillas horizontales de *Nothofagus pumilio*; 14 Jan. 2017; R. Garilleti
GARILLETI R. et al., Reinstatement of *Ulota glabella* (Orthotrichaceae)

2017-102e; collected by R. Garilleti and F. Lara; VAL-Brief. – **Región de Magallanes y de la Antártica Chilena** • Provincia Antártica Chilena: Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, extremo NE del Seno Aragay, en el istmo de la Península de Brecknock; 54°35’05″ S, 71°38’42″ W; alt. 0–100 m; epífito en *Berberis ilicifolia* en la costa; 5 Feb. 2011; *J. Larraín 33961*, p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de


**Description**

Plants growing in small cushions. Leaves non crisped, undulate to somewhat curved, (2.0–)2.5–3.15 × 0.4–0.6 mm; leaf margin crenulate-serrate, more strongly towards apex, with protruding papillae. Costa dorsal cells papillose. Lamina cells with 1(–2) single or ramified papillae. Differentiated basal marginal cells in more than five rows. Perichaetial leaves differentiated, with sheathing base, abruptly narrowed towards lamina and with blunt to obtuse apex. Vaginula naked, 0.4–0.7 mm long. Calyptra naked with dark beak, 1.5–1.9 mm long. Seta 2.75–4.0–5.7 mm long. Capsule fusiform when dry and...
full of spores, cylindrical when dry and empty, somewhat wider below its middle, 1.35–2.2 mm long including neck; ribs moderately marked, concolorous with rest of exothecium. Stomata scattered from urn base and neck to near capsule mouth. Exothecial bands thin, scarcely differentiated, formed by 2–3 cell rows with walls not strongly thickened. Operculum plane-convex, with broad reddish basal rim. Peristome double. Exostome of 8 pairs of teeth with tendency to split, but usually remaining joined at tips, brown-orange, sometimes paler, 230–325(–356) µm long; external side (outer peristome layer = OPL) ornamented in basal section by reticule with tall papillae, in upper ⅕–⅕ with longitudinal crests and aligned papillae, sometimes uniformly papillose; inner side (primary peristome layer = PPL) with scattered tall papillae, becoming denser at tips and sometimes longitudinally aligned at base. Endostome

of 8 segments, occasionally with remains of incomplete intermediates, brown-orange, sometimes paler, filiform and fragile, sometimes wider and more persistent; uni-biseriate at base, uniseriate above, almost as long as teeth; external side (PPL) smooth in basal ⅔, in the upper ⅓ smooth but ornamented with clusters of high papillae, with appearance of tufts, which can protrude laterally, much less frequently with lines; inner surface (inner peristome layer = IPL) with base ornamented by low reticulum with coralloid aspect or by papillae, in upper parts smooth and with papillae in clusters as in PPL, rarely more or less homogeneously papillose with these clusters not or hardly developed; trabeculae differentiated. Spores finely papillose, 20–30 μm in diameter.

Discussion

The assimilation of *U. glabella* with *U. fuegiana* by Wang & Jia (2016) was based on the interpretation that the calyptrae of the latter vary from very hairy to naked and on the lack of serrate margins in the specimens they studied. The two other cited characters, the stomata position and the crisping of the leaves, are more or less variable within this species and, in the case of leaf position, sometimes difficult to describe, which results in the same curvature of leaves being described differently by different authors. The specimens we identified as *U. glabella* have leaves with crenulate-serrate or crenulate-papillose margins (Fig. 3E), exactly like those described by Mitten (1860) and drawn by Malta (1927). Concerning the development of hairs on the calyptra, although this feature can show variability both in the genus *Ulota* (Caparrós et al. 2011; Garilleti et al. 2020) and other Orthotricheae (Lara et al. 2020), it rarely displays a complete gradation from hairy to naked calyptrae (Caparrós et al. 2014). Among the numerous specimens of *U. fuegiana* that we have studied, none have been found with naked calyptrae; all of them have short, thick and papillose hairs variably abundant. The identity of the specimen from Westhoff Island with some hairs cited by Malta (1927) and used by Wang & Jia (2016) in support of their position is doubtful. In addition to the presence of hairy calyptrae, the spores of this specimen (Malta 1927) are noticeably large (40–50 μm), far greater in size from those of *U. fuegiana*, which measure, according to our observations, 25–30(–34) μm. Such large unicellular spores are found in South America only in *U. magellanica* (Mont.) A.Jaeger and *U. pusilla*. The discriminant characters for *U. magellanica* are discussed in Garilleti et al. (2015). *Ulota pusilla* is morphologically close to *U. glabella*, as it has crenate-serrate leaf margins, an orange-tinged peristome and a similar shape of the capsule. Its endostome has 8+n segments, with the intermediates sometimes well-developed. It is not impossible that the sample from Westhoff Island, used by Malta to describe the spores and peristomes of *U. glabella*, may in fact correspond to *U. pusilla*. Malta himself pointed out the great similarity of this specimen with the latter species. Confirmation of the identity of the Werthoff Island specimen has not been possible at the present time, since the Stockholm Herbarium is currently under renovation and access to its collections is closed.

An epitype for *Ulota glabella* Mitt.

As shown in this paper, *U. glabella* is a distinct species with clear morphological characters discriminating it from *U. fuegiana*. Nevertheless, the holotype of *U. glabella* was already in imperfect condition (Fig. 1A–D) when this species was published and today all the extant isotypes are similarly damaged (e.g., Fig. 1E). Thus, the discriminatory characters for this species, particularly those differentiating it from *U. fuegiana*, are lost, suggesting that recent confusion with this species has likely occurred because of the poor condition of the type material, which prevents any critical comparison between the species.

Since all original material is “demonstrably ambiguous and cannot be critically identified for purposes of the precise application of the name to a taxon” (ICN Art. 9.9, Turland et al. 2018), it is necessary to select an epitype with well-preserved differentiating features, mainly those of the peristome, to serve as an interpretative type that fixes the application of this name. We have chosen as epitype a specimen collected by R. Garilleti from Hoste Island, Tierra del Fuego archipelago (Chile), belonging to the
same biogeographic region as Cape Horn. Details of this specimen as well as the holotype and isotypes supported by it are in the description of the species. It is completed with the details in Figs 3 and 4B, D.

Acknowledgements

We thank the curators of BM, E, NY, and PC for providing material used in this study. A heartfelt thanks to William R. Buck for kindly inviting the first author to the 2012 expedition to the Cape Horn region, and for sending his own samples from that and other campaigns. The Chilean Corporación Nacional Forestal (CONAF) gave to RG and FL authorization to collect mosses in the territories managed by this national service and they are deeply thanked for that. We thank Sarah Young for her revision of the English language. This research was funded by the Spanish Ministries of Economy and Competitiveness (grant CGL2013-43246-P), and Economy, Industry and Competitiveness (grant CGL2016-80772-P).

References


Garilleti R., Mazimpaka V. & Lara F. 2015. Ulota larrainii (Orthotrichoideae, Orthotrichaceae, Bryophyta) a new species from Chile, with comments on the worldwide diversification of the genus. Phytotaxa 217 (2): 133–144. https://doi.org/10.11646/phytotaxa.217.2.3


Hooker J.D. 1847. I. Flora Antarctica. Part II., Botany of Fuegia, the Falklands, Kerguelen’s Land, etc. In: The Botany of the Antarctic voyage of H.M. discovery ships Erebus and Terror in the years 1839–1843 under the command of Captain Sir James Clark Ross, Kt., R.N., F.R.S., &c.: 208–405. Reeve Brothers, London.


Manuscript received: 20 July 2020
Manuscript accepted: 28 September 2020
Published on: 3 December 2020
Topic editor: Frederik Leliaert
Desk editor: Radka Rosenbaumová

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d’histoire naturelle, Paris, France; Meise Botanic Garden, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Real Jardín Botánico de Madrid CSIC, Spain; Zoological Research Museum Alexander Koenig, Bonn, Germany; National Museum, Prague, Czech Republic.
GARILLETI R. et al., Reinstatement of Ulota glabella (Orthotrichaceae)

Appendix. Additional material examined.

Ulota fuegiana Mitt.

Región de Magallanes y de la Antártica Chilena • Provincia Antártica Chilena: Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, ENE arm of Seno Courtenay, S of glaciers; 54°34′39″ S, 71°10′42″ W; wet Nothofagus antarctica forest with numerous small streams and waterfalls, on Berberis; 2 Feb. 2011; W.R. Buck 57274; NY • along the northern shore of Isla Clementina across from the widest part of sound from adjacent Isla Geogiana; 54°41′31.5″ S, 71°45′32.0″ W; on slope below ridge in a Nothofagus and Drimys stand with streamlet, on Berberis stem and branches in sun; 31 Jan. 2011; J.R. Shevock 37354; NY • along the southeastern shore of Isla Basket at Bahía Murray between Punta Vera and Punta Liliana; 54°44′20.0″ S, 71°34′09.0″ W; at tidal area of sound in a Nothofagus and Drimys stand with Gaultheria shrubs, on branches of Gaultheria shrubs in sun; 1 Feb. 2011; J.R. Shevock 37395; p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, NE end of Seno Aragay at isthmus to Península Brecknock; 54°34′59″ S, 71°38′38″ W; Magellanic tundra at base of large rock outcrops, on Berberis; 5 Feb. 2011; W.R. Buck 57489; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Seno Courtenay, segundo brazo al E (en sentido S-N); 54°34′36″ S, 71°13′28″ W; bosque denso de Nothofagus betuloides bajo gran cascada, con río que lo cruza, epífito en Berberis ilicifolia en el interior del bosque; 2 Feb. 2011; J.Larrain 33788; collected by J. Larrain and K. Mighill; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, brazo más austral del Seno Bluff, bahía protegida; 54°27′29″ S, 71°23′10″ W; vegetación de tundra magallánica, pantanos de Astelia pumila-Donata fascicularis, epífito en Berberis ilicifolia; 20 Jan. 2011; J.Larrain 33278, p.p.; NY • ibid.; epífito en Pilgerodendron uviferum; 20 Jan. 2011; J.Larrain 33276, p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Brazo SW del Seno Chasco, al final del seno, en la costa junto al istmo donde comienza la Península Brecknock; 54°34′27″ S, 71°37′57″ W; tundras magallánicas y afloramientos rocosos, epífito en Chilotrichum diffusum en la costa; 24 Jan. 2011; J.Larrain 33461; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, extremo NE del Seno Aragay, en el istmo de la Península de Brecknock; 54°35′05″ S, 71°38′42″ W; tundras en ladera empinada con roca suelta, afloramientos rocosos, y bosquetes de Nothofagus betuloides-Drimys winteri y Pilgerodendron uviferum dispersos, epífito en Berberis ilicifolia en la costa; 5 Feb. 2011; J.Larrain 33961, p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Península de Brecknock, NW of Isla Geogiana, seno sin nombre; 54°36′33″ S, 71°48′53″ W; bosque de Nothofagus betuloides exp. SW, epífito en Berberis ilicifolia en el interior del bosque; 30 Jan. 2011; J.Larrain 33639; collected by J. Larrain and K. Mighill; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Península de Edwards, faldeos al E del Monte Edwards; 54°38′01″ S, 71°28′20.5″ W; tundras y bosquetes de Nothofagus betuloides-Drimys winteri, afloramientos rocosos y bloques erráticos, epífito en Nothofagus muerto; 3 Feb. 2011; J.Larrain 33836; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Península de Edwards, SW of Isla Clementina across from the widest part of sound from adjacent Isla Geogiana; 54°36′33″ S, 71°48′53″ W; bosque de Nothofagus betuloides exp. SW, epífito en Berberis ilicifolia en el interior del bosque; 30 Jan. 2011; J.Larrain 33639; collected by J. Larrain and K. Mighill; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Seno Bluff, Puerto Saco; 54°26′31″ S, 71°18′28″ W; playa al sur de la bahía y bosques circundantes, epífito en Berberis microphylla junto al río; 20 Jan. 2011; J.Larrain 33243, p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Seno Bluff, Puerto Saco; 54°26′32″ S, 71°18′23″ W; tundras magallánicas de Astelia pumila y bosques de Nothofagus betuloides-Drimys winteri, epífito en Berberis ilicifolia; 20 Jan. 2011; J.Larrain 33249, p.p.; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, Seno Courtenay, segundo brazo al E (en sentido S-N); 54°34′36″ S, 71°13′28″ W; bosque denso de Nothofagus betuloides bajo gran cascada, con río que lo cruza, epífito en Berberis ilicifolia en el borde del bosque; 2 Feb. 2011; J.Larrain 33782; collected by J. Larrain and K. Mighill; NY • Comuna Cabo de Hornos, Parque Nacional
scattered trees of *Drimys winteri*, on *Berberis*; 20 Jan. 2011; *W.R. Buck* 56813; NY • Comuna Cabo de Hornos: Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, W side of Seno Brujo, ca 10 km NW of Puerto Alegria; 54°29′50″ S, 71°33′55″ W; Magellanic tundra with *Pilgerodendron* and scattered patches of *Nothofagus*, on *Berberis*; 22 Jan. 2011; *W.R. Buck* 56893; NY • ibid.; on *Pilgerodendron uviferum*; 22 Jan. 2011; *W.R. Buck* 56882; NY • Comuna Cabo de Hornos: Parque Nacional Alberto de Agostini, N shore of Isla Macias on Canal Brecknock at Paso Aguirre; 54°42′03″ S, 71°32′22″ W; Magellanic tundra with rock outcrops, on *Berberis*; 3 Feb. 2011; *W.R. Buck* 57429; NY • ibid.; Magellanic tundra with rock outcrops, on *Berberis*; 3 Feb. 2011; *W.R. Buck* 57451; NY • Comuna Cabo de Hornos: Parque Nacional Alberto de Agostini, Tierra del Fuego, ENE arm of Seno Courtenay S of glaciers; 54°34′39″ S, 71°10′42″ W; wet *Nothofagus betuloides* and *Drimys*, with hepatic carpet on forest floor, at base of cliff, on *Berberis*; 29 Jan. 2011; *W.R. Buck* 57115; NY • Comuna Cabo de Hornos: Parque Nacional Alberto de Agostini, SW shore of Isla Georgiana at widest part of channel opposite Isla Clementina; 54°40′47″ S, 71°44′58″ W; coastal *Nothofagus betuloides-Drimys winteri* forest with hepatic carpet, on *Berberis*; 31 Jan. 2011; *W.R. Buck* 57229; NY • Comuna de Hornos: Parque Nacional Alberto de Agostini, Tierra del Fuego, ENE arm of Seno Courtenay S of glaciers; 54°34′39″ S, 71°10′42″ W; wet *Nothofagus antarctica* forest with numerous small streams and waterfalls, on *Berberis*; 2 Feb. 2011; *W.R. Buck* 57271, p.p.; NY • Comuna Cabo de Hornos: Parque Nacional Cabo de Hornos, Islas Wollaston, Isla Wollaston, W shore of Caleta Loberos at S end of Seno Alberto; 55°43′12″ S, 67°25′45″ W; exposed grassy slope with rock exposures and *Nothofagus* forest in stream valleys, on branch of *Nothofagus betuloides*; 26 Jan. 2005; *W.R. Buck* 48170; NY • Comuna de Timaukel, Isla Grande de Tierra del Fuego, Parque Nacional Alberto de Agostini, ribera N del Seno Agostini, faldeos del Monte Buckland; 54°28′33″ S, 70°18′39″ W; valle ancho de lecho pedregoso, en la costa, epífita en *Gaultheria* en el borde del bosque, en la costa; 25 Jan. 2011; J. Larraín 33502, p.p.; collected by J. Larraín and J. Shevock; NY • Isla Brecknock along southeastern shore near Cape Atracadero and across channel from Isla Macias; 54°41′13.0″ S, 71°32′36.8″ W; *Nothofagus* and *Drimys* stand along small stream, on branches of *Berberis* along streambank in sun; 3 Feb. 2011; *J.R. Shevock* 37470; NY • Isla Grande de Tierra del Fuego, eastern branch of Seno Courtenay in narrow fiord below glacier; 54°34′43.4″ S, 71°10′29.0″ W; at edge of *Nothofagus* and *Drimys* forest in hummock area, on branches of *Berberis* in sun; 2 Feb. 2011; *J.R. Shevock* 37413, p.p.; NY • Isla Grande de Tierra del Fuego, end of Seno Chasco about Puerto Consuelo; 54°32′19.5″ S, 71°31′49.3″ W; pockets of *Drimys* and *Nothofagus* forest with grassland and granitic rocks on slopes, on *Berberis* stems in grassland in sun; 23 Jan 2011; *J.R. Shevock* 37125, p.p.; NY • Isla Grande de Tierra del Fuego, in unnamed sound directly east of Seno Mama; 54°34′45.7″ S, 71°33′45.0″ W; *Nothofagus* and *Drimys* forest, cascading stream over granitic bedrock, on *Berberis* branches in sun; 4 Feb. 2011; *J.R. Shevock* 37510, p.p.; collected by J.R. Shevock and M. von Konrat; NY • Isla Grande de Tierra del Fuego, north end of north-central arm of Seno Courtenay; 54°30′27.0″ S, 71°20′30.0″ W; Magellanic tundra with granitic outcrops along rivulet, on branches of *Berberis* along rivulet in grassland in sun; 2 Feb. 2011; *J.R. Shevock* 37432, p.p.; NY • Isla Grande de Tierra del Fuego. Peninsula Roland at southeast end of Seno Sargazos; 54°26′11.3″ S, 71°31′40.0″ W; *Marsippospermum* grassland with scattered *Drimys* and *Nothofagus*, stems of *Berberis* above stream in sun; 21 Jan. 2011; *J.R. Shevock* 37066; NY • Isla Grande de Tierra del Fuego, Seno Brujo just north of Puerto Alegria, east-facing slopes with cascading streams originating from glaciers over granitic rock; 54°30′00.0″ S, 71°33′55.0″ W; *Marsippospermum* grassland with scattered *Drimys* and *Nothofagus*, on branches of hardwood shrubs along streambank in sun; 22 Jan. 2011; *J.R. Shevock* 37104, p.p.; NY • Isla Grande de Tierra del Fuego, South of Canal Cockburn, southeast end of Seno Bluff at Puerto Saco; 54°26′24.5″ S, 71°18′53.5″ W; *Nothofagus betuloides* forest with ericaceous shrubs over granitic rock below glacier, on *Berberis* branches in sun; 20 Jan. 2011; *J.R. Shevock* 37014, p.p.; NY • Isla Grande de Tierra del Fuego, south of Canal Cockburn, southermost arm of Seno Bluff; 54°27′31.0″ S, 71°23′14.3″ W; forest of *Drimys winteri* and *Marsippospermum* grassland with ericaceous shrubs, on *Pilgerodendron*; 20 Jan. 2011; *J.R. Shevock* 37030, p.p.; NY • ibid.; on *Berberis* branches in sun; 20 Jan. 2011; *J.R. Shevock* 37031; NY • northeastern side of Isla London in an unnamed large bay
just west of Islote Muela; 54°40′20.0″ S, 71°56′44.5″ W; grassland at edge of Nothofagus and Drimys stand with streamlet in sun, on Berberis branches; 30 Jan. 2011; J.R. Shevock 37268; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, Isla Grande de Tierra del Fuego, S of Canal Cockburn, SE end of Seno Bluff, Puerto Saco; 54°26′31″ S, 71°18′29″ W; wet Nothofagus forest with multiple glacier-derived streams, twig; 20 Jan. 2011; W.R. Buck 56774; NY • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini; SE coast of Isla Gordon in unnamed sound ca 10 km W of eastern tip of island on the Brazo Sudoeste of the Beagle Channel; 54°58′38″ S, 069°30′39″ W; extensive, dense forest of Nothofagus betuloides along NNE exposed slopes, branches of Berberis ilicifolia; 20 Jan. 2012; R. Garilleti 2012-020; VAL-Brief • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, SE coast of Isla Gordon in unnamed sound NW of Estero Penhoat across the SW arm of the Beagle Channel; 54°59′37″ S, 69°28′31″ W; open shrubby formation of Nothofagus betuloides, Berberis ilicifolia, Gaultheria mucronata and Chilotrichium diffusum in the shore, surrounding a dampened area, on Berberis ilicifolia; 20 Jan. 2012; R. Garilleti 2012-040Ab; VAL-Brief • Comuna Cabo de Hornos, Parque Nacional Alberto de Agostini, south-central coast of Isla Gordon, Caleta Caracoles, NW of Estero Fouqué along SW arm of Beagle Channel; 55°01′57″ S, 069°31′01″ W; on Nothofagus pumilio; 15 Jan. 2007; J. Larraín 26401A; collected by J. Larraín and R. Vargas; VAL-Brief • cruzando pasarela Río Ñadis; 47°29′49″ S, 72°56′51″ W; on Nothofagus dombeyi; 19 Jan. 2007; J. Larraín 26796B; collected by J. Larraín and R. Vargas; VAL-Brief. – Región de Magallanes y de la Antártica Chilena • Provincia de Magallanes: west of city of Punta Arenas, Brunswick Peninsula; 53°09′43.2″ S, 71°01′21.4″ W; on Nothofagus trunk roadbank in filtered light; 18 Jan. 2011; J.R. Shevock 36981; collected by J.R. Shevock and B. Shaw; NY • Comuna Cabo de Hornos, Isla Navarino, Parque Etnobotánico Omora; 54°56′40″ S, 67°39′12″ W; on Nothofagus pumilio; 10 Jan. 2012; R. Garilleti 2012-00X1; VAL-Brief • ibid.; sobre madera muerta; 10 Jan. 2012; R. Garilleti 2012-00X2; VAL-Brief • ibid.; sobre Nothofagus pumilio; 11 Jan. 2012; R. Garilleti 2012-00X3; VAL-Brief.

Ulota macrocalycina Mitt.

Chile – Región Aysén del General Carlos Ibañez del Campo • Provincia Capitán Prat: de Cochrane hacia el sur por la carretera, km 26; 47°25′28″ S, 72°44′32″ W; ca 400 m a.s.l.; epífito en Nothofagus pumilio; 15 Jan. 2007; J. Larraín 26401A; collected by J. Larraín and R. Vargas; VAL-Brief • cruzando pasarela Río Ñadis; 47°29′49″ S, 72°56′51″ W; ca 70 m a.s.l.; epífito en Nothofagus dombeyi; 19 Jan. 2007; J. Larraín 26796B; collected by J. Larraín and R. Vargas; VAL-Brief. – Región de Magallanes y de la Antártica Chilena • Provincia de Magallanes: west of city of Punta Arenas, Brunswick Peninsula; 53°09′43.2″ S, 71°01′21.4″ W; 320 m a.s.l.; on Nothofagus trunk roadbank in filtered light; 18 Jan. 2011; J.R. Shevock 36981; collected by J.R. Shevock and B. Shaw; NY • Comuna Cabo de Hornos, Isla Navarino, Parque Etnobotánico Omora; 54°56′40″ S, 67°39′12″ W; on Nothofagus pumilio; 10 Jan. 2012; R. Garilleti 2012-00X1; VAL-Brief • ibid.; sobre madera muerta; 10 Jan. 2012; R. Garilleti 2012-00X2; VAL-Brief • ibid.; sobre Nothofagus pumilio; 11 Jan. 2012; R. Garilleti 2012-00X3; VAL-Brief.