

***Trematodon ambiguus* (Hedw.) Hornsch. (Bryopsida) in the Spanish Pyrenees**

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Abstract – The presence of *Trematodon ambiguus* from two localities in the Aragonian Pyrenees (Spain) is indicated, being its only records for the Iberian Peninsula. Data on its ecology are included and the species is proposed as threatened.

***Trematodon* / Bruchiaceae / Iberian Peninsula / Spain / distribution / ecology / conservation**

Resumen – Se indica la presencia de *Trematodon ambiguus* en dos localidades del Pirineo de Aragón, siendo las únicas localidades ibéricas conocidas de este musgo. Se incluyen datos de su ecología y se propone su consideración como especie amenazada.

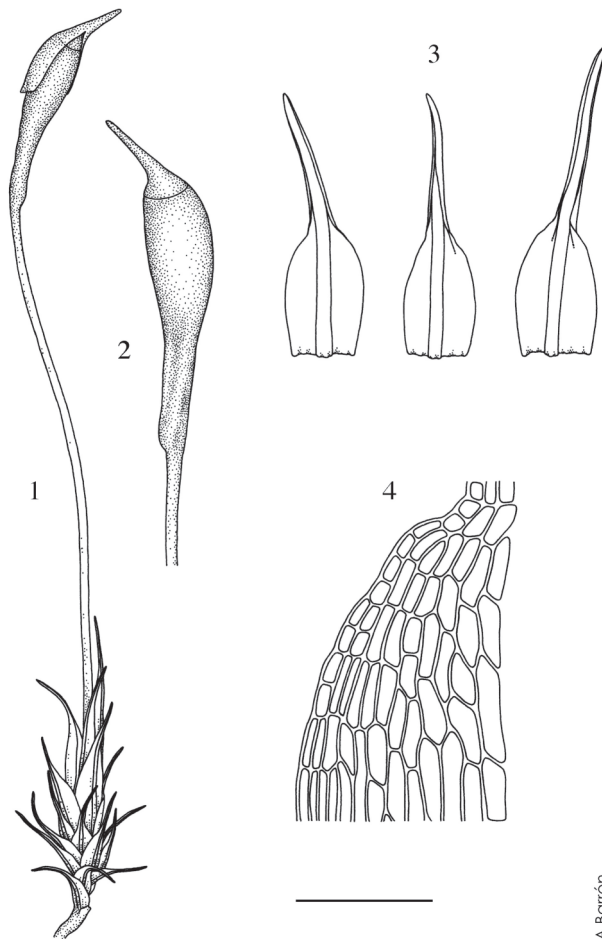
***Trematodon* / Bruchiaceae / Península Ibérica / España / distribución / ecología / conservación**

INTRODUCTION

Trematodon Mich. (Bruchiaceae) is a nearly cosmopolitan genus that encloses *circa* a hundred species, only five in Europe (Dierßen, 2001). *Trematodon ambiguus* is known from North and South America and Eurasia.

Trematodon ambiguus has been recorded in many European countries (Duell, 1984), although always as a rare species of irregular distribution both in space and time. It seems to be more frequent in Fennoscandia (Nyholm, 1981), but in the rest of the continent, its records are sparse and sporadic. Moreover, the available data indicate that the species has become rarer, it was more common in the XIXth century than in the XXth one. For example, in Great Britain, it has not been found since 1883 (Smith, 1980) and in Belgium, it was collected four times from 1884 till 1904 (Demaret & Castagne, 1961), but much more sporadically until 1988 (Stieperaere, 1991). The most recent notice comes from Poland (Stebel & Ochyra, 1997), where this moss was found several times during the 19th century and the first half of the 20th, but only once in the second half of this last century.

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Fig. 1. *Trematodon ambiguus* (Hedw.) Hornsch. (VIT 30016). **1:** Habit. **2:** Capsule. **3:** Vegetative leaves. **4:** Cells in the upper half of the sheathing leaf base. Scale bar: 1: 2 mm; 2: 1 mm; 3: 0.7 mm; 4: 70 μ m.

CHARACTERIZATION OF THE SPECIES

The Pyrenean specimens of *Trematodon ambiguus* (Fig. 1) are plants about 15 mm tall, including the sporophyte. Leaves are 1.5-1.7 mm long, with an entire border and an oblong sheathing base, suddenly narrowed into a very long subula mainly formed by costa. Cells in the central part of this leaf base are longly rectangular, $37-65 \times 7.5-17 \mu\text{m}$, 3-8 times as long as wide, narrower in the margin and shorter in the base shoulder. Perichaetial leaves are a bit larger, more gradually narrowed into subula and have a wider base.

Sporophytes have a long yellow seta (7-9 mm), bearing a somewhat curved capsule, more curved in dry than in moist, with a very long neck (about a

half of the whole capsule length) light but clearly strumose and having many superficial stomata. The calyptra is cucullate, the capsule lid rostrate and the peristome single, with 16 deeply divided teeth with small papillae and sharp vertical striations. Spores are papillose and 27-30 μm in diameter.

PRESENCE OF *TREMATODON AMBIGUUS* IN SPAIN

The first reference of *Trematodon ambiguus* for the Spanish Pyrenees is found in Husnot (1876), in the description of a bryological itinerary along Benasque Pass and Vallibierna Valley. In this publication, it is told how Fourcade had earlier seen this moss in the forest close to Cabaña de Ribereta, but despite his efforts, Husnot could not find it.

However, the presence of *Trematodon ambiguus* in this area of the Aragonian Pyrenees (Fig. 2) is confirmed, more than a hundred years later, by two collections made by the authors in two close localities, on different dates separated by seventeen years:

SPAIN. Huesca: Benasque. Vallibierna, between Puente de Coronas and Llosás, 31TCH0520, 2100 m, *P. Heras* 27/07/1985, VIT 6916; Pleta de Llosás, 31TCH0620, 2190 m, *P. Heras & M. Infante* 11/09/2002, VIT 30016.

The lithological substrate of the whole area is granitic. In the first locality, between Puente de Coronas and Llosás, *Trematodon ambiguus* lives on sandy soil on a very humid talus under a slightly dense *Pinus uncinata* Ramond ex DC. forest, with an understorey dominated by *Rhododendron ferrugineum* L. and *Vaccinium myrtillus* L. The moss carpet over the humiferous soil of this forest is composed of *Hylocomium splendens* (Hedw.) Schimp., *Rhytidiadelphus triquetrus* (Hedw.) Warnst. and *Pleurozium schreberi* (Brid.) Mitt., together with *Sanionia uncinata* (Hedw.) Loeske, *Barbilophozia hatcheri* (A. Evans) Loeske, *B. lycopodioides* (Wallr.) Loeske, *Mnium spinulosum* Bruch ex Schimp. and *Diplophyllum taxifolium* (Wahlenb.) Dumort., whereas the talus with *Rubus idaeus* L. where *T. ambiguus* may be present, are usually covered by *Pogonatum aloides* (Hedw.) P. Beauv., *Lophozia ventricosa* (Dicks.) Dumort. subsp. *ventricosa*, *Bryum creberrimum* J. Tayl. and *Weissia wimmeriana* (Sendtn.) Bruch & Schimp.

In the second locality, Pleta de Llosás, a sediment-filled basin of glacier origin, *T. ambiguus* is found on wet gravelly soil, at the base of a talus with *Lophozia ventricosa* (Dicks.) Dumort. subsp. *ventricosa*, *Pogonatum urnigerum* (Hedw.) P. Beauv. and *Pohlia elongata* Hedw., on the banks of a stream, while *Blindia acuta* (Hedw.) Bruch & Schimp. occupies nearby areas under similar conditions.

Both populations are located in the subalpine belt and bear abundant sporophytes.

These are the only Iberian populations known to this date and also the south westernmost ones in Europe. According to its life strategy (short-lived itinerant), the permanence of *Trematodon ambiguus* in a given place is brief, vanishing from its former localities. It is probably due to this behaviour that Husnot was unable to find it during his stay at Vallibierna in the second half of the 19th century. However, the persistence of the species in the area is demonstrated. This presence seems to be quite stable, considering its copious sporophyte production and ability to colonise easily suitable nearby enclaves.



Fig. 2. Presence of *Trematodon ambiguus* (*) in the Iberian Peninsula.

Its generous fructification together with the fact that this valley in the Aragonian Pyrenees lies inside a protected area (Posets – Maladeta Natural Park) allows to be somehow optimistic from the point of view of the species conservation. Nevertheless, taking into account its tiny Iberian distribution area and the remoteness of the closest European populations, *Trematodon ambiguus* is proposed as a threatened species in the Iberian bryoflora, classifying it under “Vulnerable” (V) according to criterion D2 in the IUCN categories (Hallingbäck, 1998).

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