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First record of two species of *Trichostomopsis* (*Pottiaceae*) for Sicily

Abstract

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Trichostomopsis aaronis, previously known in Europe only from Spain, and *T. australasiae*, previously known in Europe from Spain, Belgium, and Greece, have recently been collected for the first time in Sicily. The genus *Trichostomopsis* is new for the Italian bryoflora.

Ecological research on the biodeteriorating agents found on monuments in the city of Palermo (Dia & Not 1991) and synecological investigation of the communities on trampled soils in Palermo's historical gardens (Aiello & al. 1993) gave the opportunity to observe two species of *Trichostomopsis* Card. (*Pottiaceae*) in these anthropogenic city habitats. Both species are new for Sicily and for the whole Italian territory. They are *T. aaronis* (Lorentz) Agnew & C. C. Towns. and *T. australasiae* (Hook. & Grev.) Robins. Their general distribution and ecology, and the characteristics of their Sicilian habitats, are briefly reported below. Specimens are kept in the Herbarium Mediterraneum (PAL).

The genus *Trichostomopsis*, treated by some authors as *Didymodon* Hedw. sect. *Asteriscium* (C. Müll.) Zander is represented in Europe by only four species: *T. aaronis*, *T. australasiae*, *T. umbrosa* (C. Müll.) Robins and *T. trivialis* (C. Müll.) Robins. It can be recognized by the presence of canaliculate "leaflets" that are bistratified along the margins in the distal part, where, moreover, the cells are in general papillate. There were no references concerning the genus for Italy (Cortini Pedrotti 1992).

Trichostomopsis aaronis is a species known from Egypt, Israel, Jordan, Iran, Iraq (Guerra & Ros 1987), Turkmenistan (Abramov & al. 1987), Turkey, Lebanon, Uzbekistan (Düll 1992), and, according to Townsend (1987), also Afghanistan. In Europe it has been noted only in Spain by Guerra e Ros (1987) who placed it among the Irano-Turanian taxa with a disjunct Ibero-Oriental distribution. Its occurrence in Sicily, in the centre of the Mediterranean, reinforces its Mediterranean subcontinental distribution stated by Düll (1992). According to the data so far known, the distribution of this species in Europe is represented in Fig. 1.

In Spain, *T. aaronis* grows commonly in association with *Tortula brevissima* Schiffn., *T. revolvens* (Schimp.) G. Roth. var. *obtusata* Reimers, *Crossidium crassinerve* (De Not.) Jur. and *Bryum radiculosum* Brid. in arid areas with mean annual rainfall of 200 - 300 mm, on marly calcareous or marly gypsum substrata; it does not show nitrophilous tendencies (Guerra & Ros 1987). In Jordan, it has been collected on calcareous, sandy and stony soil and on granite, in desert or semidesert areas (Townsend 1966, Frey & Kürschner 1983). In Uzbekistan, it colonizes stony, humid soils in the Fergana district together with

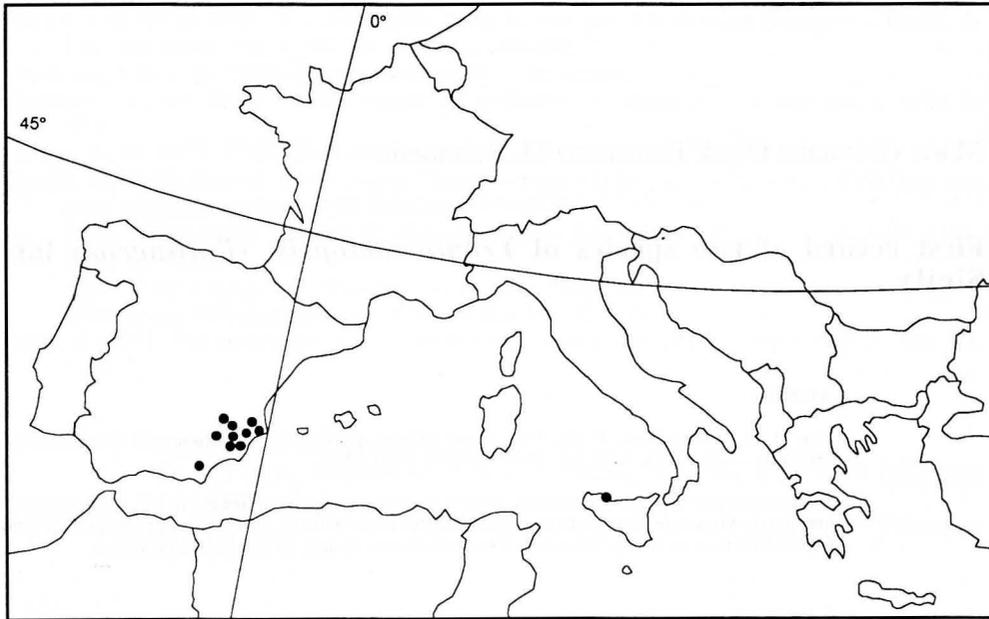


Fig. 1. Distribution of *Trichostomopsis aaronis* in Europe.

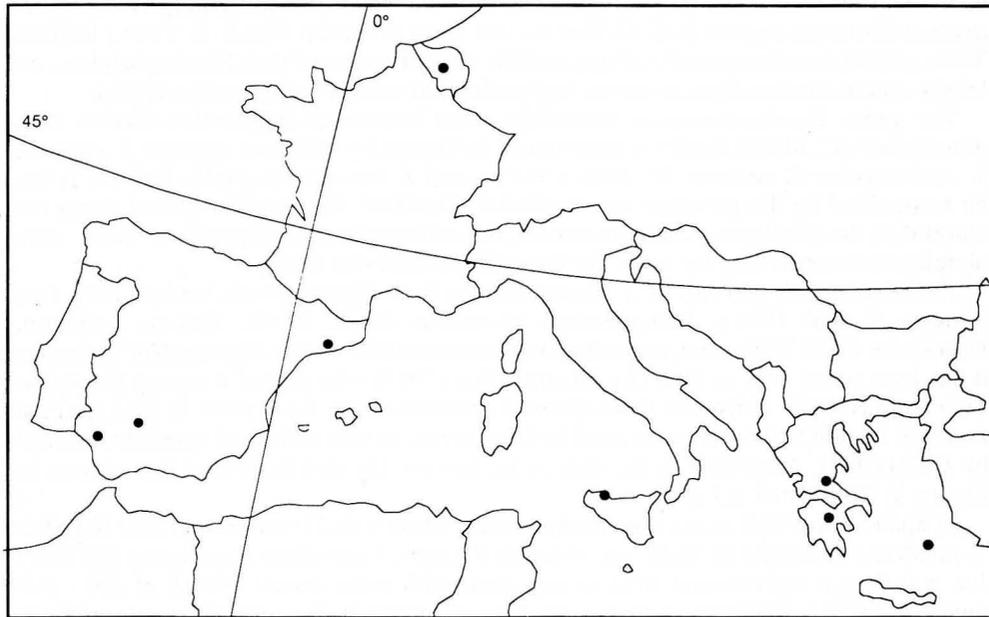


Fig. 2. Distribution of *Trichostomopsis australasiae* in Europe.

Grimmia anodon Bruch & Schimp., *Tortula handelii* Frohl, *T. mucronifolia* Schwägr. and *T. thianschanica* Broth.; stony soils in the Samarkand district together with *Tortula muralis* Hedw., *T. caninervis* (Mitt.) Broth. and *Didymodon vinealis* (Brid.) R. H. Zander. In Lebanon, it grows next to the ruins of the big temple in Baalbek, together with the same species as in Samarkand, plus *T. inermis* (Brid.) Mont. (Townsend 1987).

In Palermo, Sicily, it has been found on trampled sandy or stony calcareous soil, in the sunniest areas of the Villa Giulia garden. Just as in Uzbekistan (Townsend 1987), some small stems of *T. aaronis* were found mixed with other mosses, viz.: *Barbula convoluta* Hedw., *Bryum caespiticium* Hedw., *Crossidium crassinerve*, *Didymodon vinealis*, and *Tortula* sp.

The peculiar habitat, where it has been collected in Palermo, has in general been little investigated, which leads us to believe that the species may well exist in other localities with a similar habitat, in Sicily and other parts of the Mediterranean basin.

Trichostomopsis australasiae is a species similar to *T. umbrosa*, and has been treated by Guerra & Ros (1987) as a variety of it. It differs by the "leaflet" shape (elliptic instead of lanceolate with an acutish apex), by the length of the basal marginal cell (usually shorter) and by the complete absence of a hyalodermis.

Düll (1984-1985) considers *T. australasiae* as euoceanic and subtropical, being distributed in North America, Central America, north-west of South America, South Africa, on the Canary Islands, in Australia and New Zealand; it is also doubtfully present in the southern part of South America and in SE Asia. Recently other records have been published by Düll (1992) for North Africa (Tunisia) and Europe (Spain, Belgium, and Greece). According to the data so far known, the distribution of this species in Europe is represented in Fig. 2.

The species lives in xeric habitats (Magill 1981); in the Canary Islands it has been collected on lava detritus along the edges of the roads (Long & al., 1981); in Greece, it has been frequently found on soil in urban environments and on the foundation of the Parthenon (Sollmann, 1984; Blockeel, 1991)); in Belgium it has been collected on red carbon scorias together with *Didymodon tophaceus* (Brid.) Lisa, *Barbula unguiculata* Hedw. and *Dicranella varia* (Hedw.) Schimp. (De Zuttere & al., 1987); Guerra & Ros (1987) report it in Spain as a nitrophilous species, growing on soil and house walls in urban environments.

In Sicily, it has been noted in ecological conditions similar to those of the Greek and Spanish localities. It has been collected in the city of Palermo, in June 1991, on pillars of S. Domenico cloister together with *Tortula muralis* Hedw., *Bryum caespiticium*, *Tortella nitida* (Lindb.) Broth., *Funaria pulchella* H. Philib. and *Cephaloziella baumgartneri* Schiffn.; as well as on the walls of a delapidated Church in the Albergheria quarter, where it lives with *Barbula convoluta*, *Bryum caespiticium* and *B. torquescens* Bruch & Schimp. Moreover, it has been found in April 1993, on soil, in the alleys of the garden of Villa Malfitano, in the insunniest and most trampled parts. Here, the species forms small colonies mixed with *Didymodon vinealis*, *Pseudocrossidium hornschuchianum* (K. F. Schultz) R. H. Zander, *Barbula unguiculata*, *Aloina rigida* (Hedw.) Limpr., and *Bryum caespiticium*.

As the species has been noted only in recent years in some European cities, a further investigation of city environments might likely show that it is actively spreading in Europe and the Mediterranean.

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