L. Gueli, M. G. Dia & R. Lo Giudice

New or interesting records for the Sicilian moss flora

Abstract


Trichostomopsis umbrosa (Müll. Hal.) Robins is new to Sicily and Italy, Ditrichum clyndricum (Hedw.) Grout and Tortula israelis Bizot & F. Bilewsky, that are rare in Italy, are recorded for the second time from Sicily. Notes on their corology and ecology are provided.

In the frame research on bryophyte flora and vegetation of urban areas of Agrigento, Militello in Val di Catania and Catania (southern and eastern Sicily) very interesting taxa from the phytogeographical point of view have been found: Trichostomopsis umbrosa, Ditrichum clyndricum and Tortula israelis. Their distribution and ecology as well as the characters of the Sicilian specimens are reported below.

Specimens are kept in the Herbarium of the Botanical Department of the University of Catania (CAT) and in the Herbarium Mediterraneum (PAL).

Trichostomopsis umbrosa (Müll. Hal.) Robins


According to Zander (1981, 1993) and Sharp & al. (1994), the genus Trichostomopsis Card. is poorly distinguishable from Didymodon Hedw., therefore they include Trichostomopsis within the section Asteriscium (Müll. Hal.) Zander of the genus Didymodon. Whereas other authors (Düll 1992, Frey & al. 1995), prefer to treat these two genera distinctly.


At present, the genus Trichostomopsis Card. is represented in Europe by T. aaronis (Lor.) Agnew & Townsend, T. trivialis (Müll. Hal.) Robins., T. australasiae (Hook. & Grev.) Robins. and T. umbrosa (Müll. Hal.) Robins.

Trichostomopsis umbrosa is a thermophilous, photo-sciaphilous, nitrophilous moss mostly growing on basic substrate. A favourite habitat is mortar at the base of walls backed by earth (Hill & al. 1992).

Previously unknown in Italy, it has been collected for the first time in Sicily from Catania (UTM: WB 1516) and Agrigento (UTM: UB 8310).

The up-to-date distribution of *Trichostomopsis umbrosa* in Europe is represented in Fig. 1. In accordance with Casas (1970) this taxon was probably introduced to Europe with American phanerogamic species such as *Conyza canadensis* L. (Cronq.), *Aster squamatus* (Sprengel) Hieron., *Amaranthus* sp. pl., etc.

Fig. 1. *Trichostomopsis umbrosa* (Müll. Hal.) Robins. 1: Habit × 12; 2: Leaves × 31; 3: Upper marginal cells × 100; 4: Leaf apex × 100; 5: Basal cells × 100; 6: Leaf section × 280; 7: Gemmae × 100.

As regards to the climate of the collecting sites, we refer to the data (1926-76) of the localities of Catania (65 m, P = 720 mm, T =18°C) and Agrigento (313 m, P = 510 mm, T = 18°C). Following the terminology of Rivas-Martínez (1982), these localities belong to the bioclimatic thermomediterranean belt, with subhumid (Catania) or dry (Agrigento) ombroclimate.

**Description of Sicilian specimens (Fig. 2)**

Dioecious. Plants bright green, seldom branched, about 8-12 mm high. Stem hyaloderm often present. Leaves 2.5-3 mm long, long-lanceolate, apex narrowly acute, margin plane,

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**Fig. 2.** Distribution of *Trichostomopsis umbrosa* (Müll. Hal.) Robins. in Europe. The new Sicilian localities are marked by circles.
somewhat crenulate, often sinuose, bistratose in upper and middle part. Upper lamina cells quadrate to rectangular with occasionally weakly developed or absent papillae. Basal marginal cells narrowly rectangular in 4-6 rows bordering the inflated inner basal cells. Costa subpercurrent, adaxial superficial cells usually rectangular, transverse section of costa elliptical. Propagula up to 120 μ. Inner perichaetial leaves with more obtuse apex. Sporophyte absent.

_Ditrichum cylindricum_ (Hedw.) Grout

(syn.: _Ditrichum tenuifolium_ Lindb. _Trichodon cylindricus_ (Hedw.) Schimp.)

_D. cylindricum_ is a terricolous or rarely saxicolous species that grows in patches or scattered plants on damp soil in fields, margins of woods and roadsides (Smith 1980).

This moss, belonging to the subboreal element, is widely distributed in Europe, having been recorded from Austria, Bulgaria, Denmark, Belgium, Great Britain, ex Czechoslovakia, Finland, France, Ireland, Switzerland, The Netherlands, Spain, Iceland, ex Yugoslavia, Norway, Poland, Romania, the ex USSR, Denmark (Düll 1984-1984); it also occurs in North America, Turkey, the Canary Islands, Faroes, Siberia, Japan and New Zealand (Smith 1978, Düll 1992).


Recent research in urban environments have shown that _D. cylindricum_ also occurs in the town of Enna (central Sicily) (Lo Giudice & al. 1996).

Catania is a new locality for _D. cylindricum_, which has been collected on lava stone with a thin layer soil for the Ursino castle and in the graveyard. It is generally associated with _Tortella inflexa_ (Bruch) Broth., _Didymodon tophaceus_ (Brid.) Lisa, _Gymnostomum calcaratum_ Nees & Hornsch.

This taxon is mainly distinguished by squarrose, flexuose leaves abruptly narrowed into long, linear subula composed mainly of the denticate nerve. The specimens collected in Catania are sterile.

As _Trichostomopsis umbrosa_, _Ditrichum cylindricum_ seems to be linked to anthropogenic urban habitats. Both taxa show the typical characters of the urban bryophytes: small size, short turf, presence of propagula.

_Tortula israelis_ Bizot & F. Bilewsky

(syn.: _Tortula baetica_ (Casas & Oliva) J. Guerra & Ros; _Tortula muralis_ var. _baetica_ Casas & Oliva, _Tortula muralis_ var. _israelis_ (Bizot & F. Bilewsky) Bizot)

This species is a nitrophilous, photophilous moss growing on basic substrate: mortar of old walls, calcareous rocks and stones, rarely on salty soils. It is known from Spain (Casas & Oliva 1982; Guerra & al. 1992; Cano & al. 1996; Fuertes & al. 1998), Israel (Bilewsky & Nachmony 1955), Cyprus (Bilewsky 1965; Koppe 1976) and Turkey (Henderson & Prentice 1969).

In Italy it has recently been collected from Rome and Agrigento (Oliva 1999; Aiello & Dia 2000). It has been found in the historical centre of Miliello in Val di Catania (U.T.M.: VB 8215) on a wall of the Palazzo Majorana mixed with _Tortula muralis_.

Hedw., *Crossidium squamiferum* (Viv.) Jur., *Bryum argenteum* Hedw., *Grimmia pulvinata* (Hedw.) Sm.

As far as the climate is concerned, we refer to data of the nearby weather locality of Mineo (1926-1976). The annual precipitation of 623 mm and the annual mean temperature of 17°C correspond to thermo-mediterranean thermotype and subhumid ombrotype (Rivas-Martínez 1982).

*Tortula israelis* is close to *T. muralis* by which is mainly distinguished by upper laminal cells having very high cylindroconical, single or seldom bifurcate, papillae or mamillae (1-3 per cell). (For further details see Guerra & al. 1992 and Aiello & Dia 2000). Therefore the geographical distribution of *Tortula israelis*, presently confined in a few areas, could be wider; in fact, it is possible that some specimens named *T. muralis* are actually *T. israelis*.

**References**


Lo Giudice, R., Mazimpaka, V. & Lara, F. 1996: Ecological and phytogeographic considerations on
Oliva, R. 1999: Tortula israelis Bizot & Bilewsky (Bryophyta, Musci) novedad para Italia. - Bol.
Rivas-Martínez, S. 1982: Étages bioclimatiques, secteurs chorologiques et séries de végétation de
Robinson in Ireland. – Glasra 1: 15-19.
Zander, R. H. 1981: Didymodon (Pottiaceae) in Mexico and California: taxonomy and nomenclature

Address of the authors:
Prof. Maria Giovanna Dia, Dipartimento di Scienze Botaniche dell’Università, via
Archirafi, 38, I-90123, Palermo, Italy.
Dr. Laura Gueli & Dr. Rosa Lo Giudice, Dipartimento D.A.C.P.A. sez. di Biologia
ed Ecologia vegetale, via Etna, 440, I-95128, Catania, Italy.