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On the occurrence of some interesting mosses on Linosa (Pelagian archipelago, Sicily)

Abstract

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The discovery on Linosa of some rare mosses is reported. They are *Tortella flavovirens* var. *papillosissima* Sergio & Casas, new record for the Italian moss flora, *Entosthodon hungaricus* (Boros) Loeske and *Bryum gemmilucens*, both found for the second time in Italy.

Introduction

In the frame of research carried out on the bryophyte flora and vegetation of the islets surrounding Sicily, several interesting species were found, showing the phytogeographical interest of these territories (Privitera & Puglisi 1989, 1998, 2002; Buck & Privitera 1999; Brullo & al. 2001; Dia & al. 2003; Privitera & al. 2004; ecc.).

Particularly, in the last years the attention was focused on Linosa (Pelagian archipelago), a volcanic islet placed in the Sicily Channel extending 5.4 Km^2. From the geological point of view it is composed of Quaternary vulcanite that are among the basaltic to hawaiitic composition. The climate is of the thermomediterranean type with a very marked summer aridity; the mean annual precipitations are 370 mm, with a lowest value recorded in Sicily as well as in the whole Italian territory. According to Rivas Martinez et al. (1991), on the basis of the precipitation value the ombrotype is lower dry verging to the upper semiarid.

In this paper some peculiar mosses collected in this islet are reported. They are *Tortella flavovirens* var. *papillosissima* Sérgio & Casas, *Entosthodon hungaricus* (Boros) Loeske and *Bryum gemmilucens* R. Wilczek & Demaret.

Tortella flavovirens var. ***papillosissima*** Sergio & Casas

Italy: Sicily, Linosa, Mt. Nero, 60 m a.s.l., 12°51'08" E, 35°51'43" N, 15/04/1992, *Brullo* (CAT), on soil at the base of volcanic rocks, together with *Fissidens viridulus* (SW.) Wahlenb., *Bryum bicolor* Dicks., *Trichostomum brachydontium* Bruch; Timpone, 50 m a.s.l., 12°51'20" E, 35°51'35" N, 08/04/03, *Prezzavento & Bonaffini* (CAT), in concavities and fissures of dry and more or less exposed rocks with accumulated soil, together with

Tortula revolvens (Schimp.) G. Roth, *T. muralis* Hedw., *Bryum dunense* A. J. E. Sm. & Whitehouse, *B. caespiticium* Hedw., *B. bicolor* Dicks., *Didymodon acutus* (Brid.) K. Saito.

Generally this moss grows on base of peridotite, calcareous or acidic rocks, on sandy or stony substrata, in rocky fissures and on calcareous rocks (Sérgio & Casas de Puig 1981; Casas & al. 2003; Puche 2004; Cano & al. 2004), showing a terricolous and terri-saxicolous character.

At Linosa it was collected on soil and in rocky fissures in mostly dry, and shady habitats. Here the phanerogamic association *Euphorbio terracinae-Hyparrhenietum hirtae* Brullo & Siracusa 1996, a perennial grassland referred to the phytosociological class *Lygeo-Stipetea* Rivas Martinez 1978 (Brullo & Siracusa 1996) occurs. In both localities this taxon was found many times, always sterile, growing in green, dense tufts 3-4 mm high, normally associated to other little acrocarpous mosses of the families *Pottiaceae* and *Bryaceae*.

The specimens from Linosa well agree with the description and illustration of the type by Sérgio & Casas de Puig (1981); in fact, they are distinguished from the var. *flavovirens* for the upper and mid-leaf cells with papillae 6-8 μm high, not rounded at the tip, more evident in the pericostal cells.

Tortella flavovirens var. *papillosissima*, described by Sérgio & Casas de Puig (1981) from Estepona (Malaga), is known at present from other localities of Spain (Alicante, Murcia, Valencia), from Balearic Islands (Casas & al. 2003; Cano & al. 2004; Puche, 2004), and now from Linosa, showing a Mediterranean distribution area. This record is new to the Italian moss flora (Fig. 1).

Entosthodon hungaricus (Boros) Loeske

Italy: Sicily, Linosa, near the entrance of the Grotta delle Palombe, 50 m a.s.l., 12°51'43" E, 35°51'16"N, 15/04/1992, *Brullo* (CAT), on dry and not exposed soil together with *Trichostomum brachydontium* Bruch, *Tortella flavovirens* (Bruch) Broth., *Didymodon sicculus* Cano, Ros, Garcia-Zamora & Guerra.

Syn: *Funaria hungarica* Boros, *Physcomitrium maroccanum* Meylan, *Entosthodon maroccanus* (Meylan) Hébrard & Lo Giudice

At Linosa *Entosthodon hungaricus* is rare; in fact, it was collected on soil only in one locality, where it grows in scattered tufts together with few other mosses of the family *Pottiaceae*. Some specimens were found with sporophytes and mitrate calyptrae. The surrounding phanerogamic vegetation is referred to *Lathyro sphaerici-Oryzopsietum miliaceae* Brullo & Siracusa, 1996, a steppic perennial grassland of the *Lygeo-Stipetea* class (Brullo & Siracusa, 1996).

Previously this species was recorded in Italy sub *Physcomitrium maroccanum* Meylan only from one locality, Contrada Canalotto near Mazzarino (C Sicily), where it was collected on calcareous sediment (Hébrard & Lo Giudice 1996). As regards distribution, *Entosthodon hungaricus*, described by Boros from Hungary sub *Funaria hungarica* (Boros 1924), at present is also known from Austria, Kazajstan, Romania, Slovakia, Ukraine, Serbia, Germany, Israel, Spain, Greece, Sicily and Morocco, (Hébrard & Lo Giudice 1996; Cano & al. 1999; Papp 2002). It was in the past considered a typical species of the central European steppes, with an Aral-Caspian distribution; the later records from

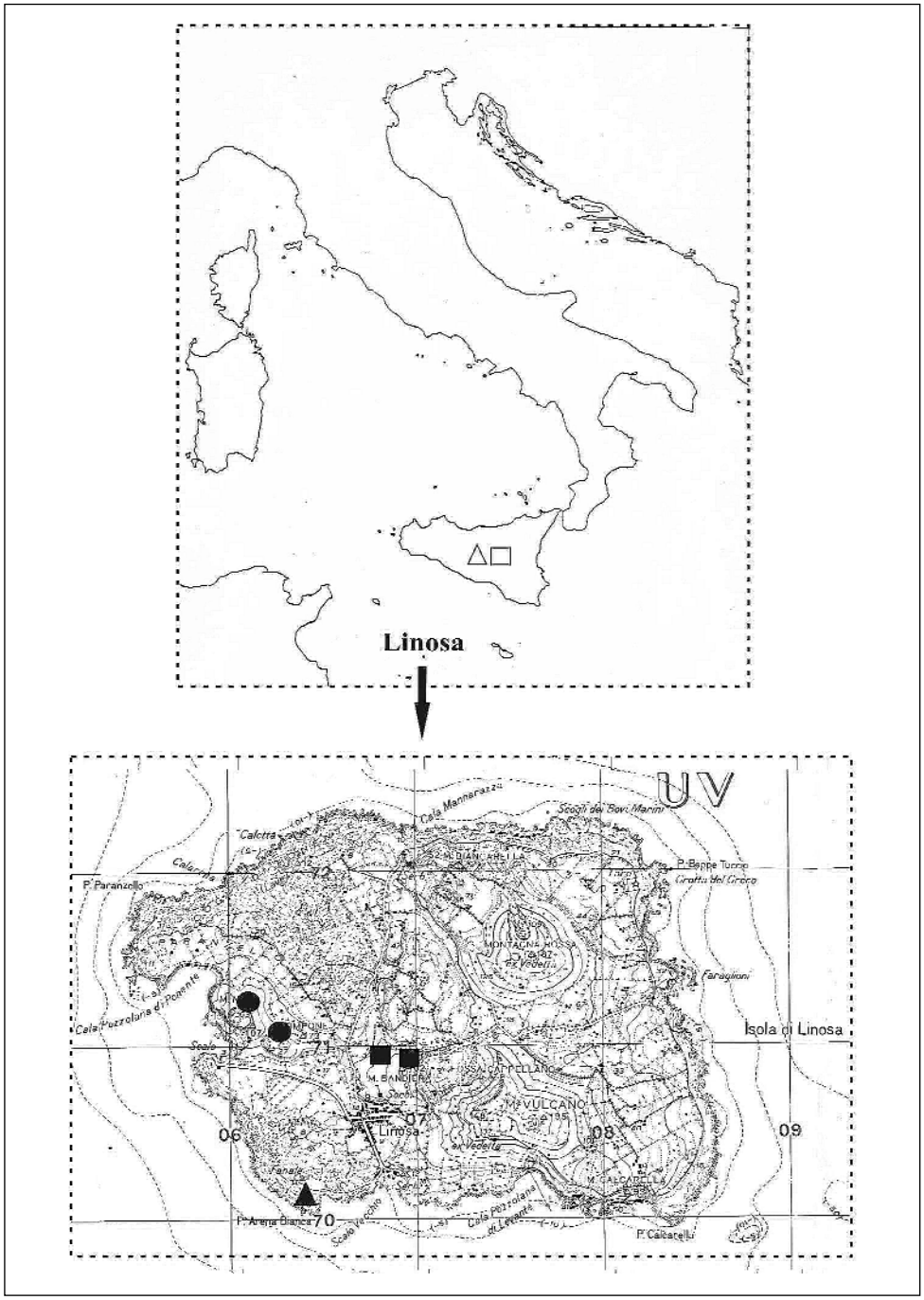

Fig. 1 – Italian distribution of *Tortella flavovirens* var. *papillosissima* (● new report), *Entosthodon hungaricus* (△ old report, ▲ new report), *Bryum gemmilucens* (□ old report, ■ new report).

southern Europe and Morocco extend its range to the Mediterranean area.

The finding of *Entosthodon hungaricus* in the islet of Linosa represents the second report of this species to Sicily as well as to Italy (Fig. 1).

Bryum gemmilucens R. Wilczek & Demaret

Italy: Sicily, Linosa, Mt. Bandiera, 90 m a.s.l., 12°51'45" E, 35°51'30" N, 11/04/2003, *Prezzavento & Bonaffini* (CAT), on volcanic soil together with *Didymodon vinealis* (Brid.) R. H. Zander, *Pseudocrossidium hornschuchianum* (Schultz) R. H. Zander, *Barbula unguiculata* Hedw., *Bryum caespiticium* Hedw.; Punta Arena Bianca, 3 m a.s.l., 12°51'30" E, 35°51'16" N, 11/04/2003, *Prezzavento & Bonaffini* (CAT), on soil accumulated on the basaltic rocks, together with *Didymodon vinealis*, *Weissia controversa* Hedw, *Oxymitra incrassata* (Broth.) Sérgio & Sim Sim.

It is a terricolous species, growing mostly on clayey soil or sandstone. At Linosa it grows in loose tufts together with other terricolous species among which *Didymodon vinealis* prevails. The specimens collected were sterile and with typical axillary bulbils.

Quite widespread in Europe, this species up to now has been reported in Italy only from two localities of Caltanissetta province (Sicily), where it was found on non calcareous sediment (Lo Giudice 1996). The Sicilian localities, including the Linosa's ones, represent the only Italian record (Fig. 1).

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