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New records for the Sicilian bryophyte flora

Abstract

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Riccia cavernosa Hoffm. emend. Raddi and *Tortula pagorum* (Milde) De Not. are recorded for the first time from Sicily; the presence in Sicily of *Riccia bicarinata* Lindb. is confirmed, and a new locality for these species is given. Brief notes on the chorology and ecology of the three species are provided.

Recent syntheses of the Sicilian bryophyte flora and of the known distribution of its species show that some of the mountain and insular areas of Sicily are reasonably well known (Raimondo, Dia & Cortini Pedrotti 1988).

Bryological studies of the last twenty years have yielded a noteworthy increase in bryophyte taxa known from Sicily, partly due to local floristic investigations carried and partly thanks to an extensive research project encompassing the whole Sicily and supported by Ministero dell'Università e della Ricerca Scientifica e Tecnologica. Many such data were quoted in previous contributions (Dia & al. 1979, Dia & Raimondo 1980, Raimondo & Dia 1981, Raimondo & al. 1983, Dia & Raimondo 1987, Dia 1991a, 1991b).

This paper deals with two unpublished records for the Sicilian bryophyte flora: *Riccia cavernosa* Hoffm. emend. Raddi (*Ricciaceae*, Hepaticae) and *Tortula pagorum* (Milde) De Not. (*Pottiaceae*, Musci). The presence of another species, *Riccia bicarinata* Lindb., previously recorded doubtfully for south-eastern Sicily by Privitera & Lo Giudice (1988), is confirmed. Notes on the general distribution and ecology of these bryophytes and on their occurrence in Sicily (Fig. 1) are also provided.

Voucher specimens are kept in the herbarium of the Botanical Garden of Palermo (PAL).

Riccia bicarinata Lindb.

A Mediterranean-suboceanic species (Düll 1983) growing both on sandy and clayey; not or scarcely humiferous soils, with a pH ranging from 4.5 to 7.5. It is also recorded on calcareous, siliceous-calcareous, granitic or basaltic rocks, from sea-level to 100 m, in *Quercus ilex*, *Q. suber*, *Q. calliprinos* and *Pinus* woods, *Poterium* or *Tamarix* communities, in maquis with *Cistus*, *Lavanda*, *Myrtus*, wild olive-trees and laurel on rocks with ferns on the edge of the ponds, on sandy river-banks subject to flooding, on unsealed roads and in subdesertic steppes (Jovet-Ast 1986).

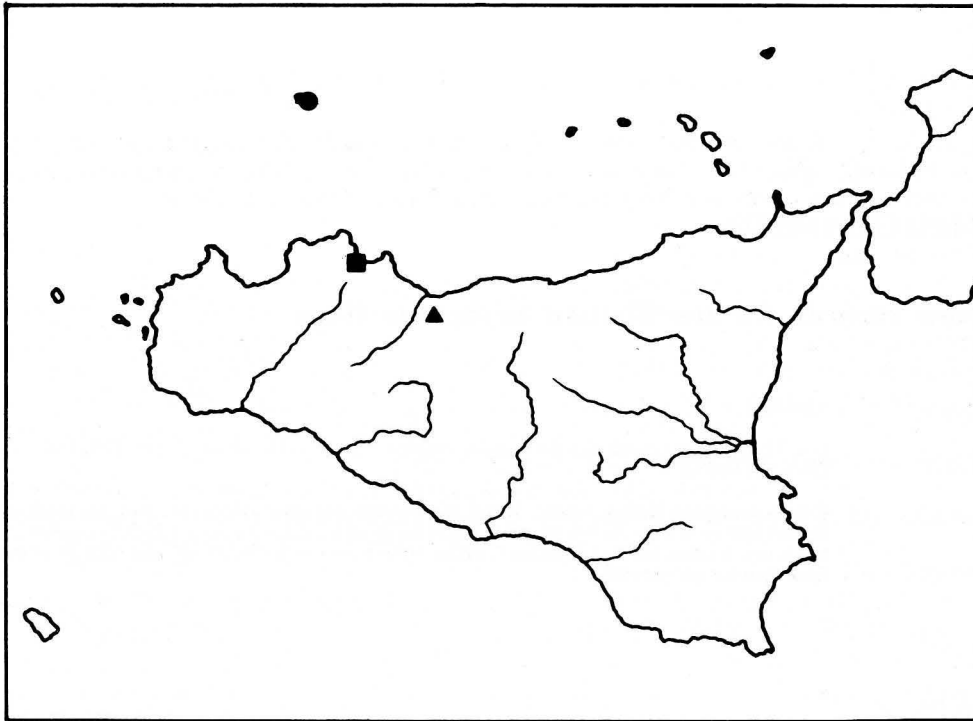


Fig. 1. Map of the new Sicilian localities: *Riccia cavernosa* (●), *Tortula pagorum* (■), *Riccia bicarinata* (▲).

R. bicarinata is distributed in Mediterranean Europe and Portugal as well as in Turkey, North Africa and in the Canary Islands (Düll 1983). In Italy it is recorded only in Tuscany, on Capraia island (Sommier 1898) and in Sardinia (Bischler & Jovet-Ast 1971-1972).

Riccia bicarenata was previously doubtfully recorded for south-eastern Sicily by Privitera & Lo Giudice (1988). The material examined is inadequate, consisting of small fragments of thallus, and their determination cannot be confirmed. Consequently their supposed new locality remains uncertain. The presence of the species in Sicily is nevertheless confirmed thanks to its discovery, in the spring of 1992, on the Madonie mountains, at about 600 m, on brown soil at the edge of a vehicle track inside *Quercus pubescens* woods near "Bosco di Favara".

This discovery fills a gap in the wide distribution of the species in the Mediterranean Basin.

Riccia cavernosa Hoffm. emend. Raddi

A cosmopolitan species which, in the Mediterranean region, grows either on sandy or clayey, not or scarcely humiferous soils, with a pH generally around 6.8-7.8, but sometimes also clearly acid, inside *Quercus ilex*, *Q. suber* and *Pinus halepensis* woods, in *Oleo-Lentiscetum* formations, in damp grasslands, in moist pits with *Gramineae* below tamarisks, on the soil of steep ledges on the edges of water-courses, in little more or less wet hollows, and in grassland (Jovet-Ast 1964-1965).

Riccia cavernosa, often mistaken for the related species *R. crystallina*, is widely distributed in Europe, North Asia, North Africa and South Africa, Australia, North America, Central America and in the southern part of South America (Düll 1983).

In southern Europe, it is recorded by Düll (1983) for France and Spain, but according to Jovet-Ast (1986) it is widespread in the whole Mediterranean Basin. Recently, the species

was found in two localities in Lombardia and Trentino Alto Adige (Cortini Pedrotti & Aleffi 1990).

In Sicily, *Riccia cavernosa* was collected on a lava wall with seeping carbonate-rich water, in July 1985, in the inhabited centre of Ustica, where it grows together with *Bryum* cf. *creberrimum* Taylor and *Hymenostylium recurvirostrum* (Hedwig) Dixon.

Tortula pagorum (Milde) De Not.

A subcosmopolitan species in Europe deemed by Düll (1984-1985) to be submediterranean-suboceanic; it is recorded from Spain, the Balearic Islands, Corsica, Portugal, France, Switzerland, Germany, Italy, Yugoslavia, Greece and Crete. Besides, the species is known from central and southern Africa, the Azores and Macaronesia, north-east Asia, central Asia, northern and central America and Australia (Düll 1984-1985). As regards Italy, it is known in northern and central parts of the peninsula and was recently found in Sardinia (Cortini Pedrotti in litt.).

Tortula pagorum is a corticolous and sometimes saxicolous moss which, according to Podpěra (1954), prevalently grows on chestnut trunks and on micaceous cliffs; in South Africa and eastern North America it is generally widespread in habitats disturbed by man (Magill 1981, Crum & Anderson 1981).

In Sicily, it was found in the spring of 1991 in the Botanical Garden of Palermo on the bark of *Villaresia citrifolia* Borzi (*Ilacinaeae*), a tropical species of uncertain origin, together with *Scorpiurum circinatum* (Bridel) Fleischer & Loeske, *Fissidens* sp. and *Zygodon rupestris* Schimper ex Loret; and in the following autumn on a trunk of *Chamaerops humilis* L. together with *Tortula laevipila* (Bridel) Schwaegr. and *Orthotrichum diaphanum* Bridel.

This report extends the range of the species in the Mediterranean Basin, where it remains nevertheless unknown in the southern and eastern parts.

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