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***Seligeria pusilla* (Seligeriaceae) and *Barbula trifaria* var. *desertorum* (Pottiaceae) new mosses to Sicily**

Abstract

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Seligeria pusilla (Hedw.) Bruch & al. and *Barbula trifaria* var. *desertorum* (Froehl.) Agnew new for the Sicilian bryoflora. Their chorological and ecological features and phytosociological notes are reported.

Introduction

In the course of studying bryophyte communities of central Sicily some interesting taxa from the phytogeographical and ecological viewpoint were collected: *Seligeria pusilla* (Hedw.) Bruch & al. and *Barbula trifaria* var. *desertorum* (Froehl.) Agnew.

The specimens gathered are kept in the Herbarium of the Department of Botany of Catania University (CAT).

Seligeria pusilla (Hedw.) Bruch & al.

Sicily: Contrada Baronessa, near the town of Enna, UTM: VB 3598, 620 m, on marley-calcareous rocks, 12.04.2002. (Fig. 1).

Although most species of genus *Seligeria* are known to occur in continental Italy (*S. acutifolia* Lindb., *S. calcarea* (Hedw.) Bruch & al., *S. campylopoda* Kindb. ex Macoun & Kindb., *S. diversifolia* Lindb., *S. donniana* (Sm.) Müll. Hal., *S. pusilla* (Hedw.) Bruch & al., *S. recurvata* (Hedw.) Bruch & al., *S. recurvata* var. *pumila* (Lindb.) C. Hartm., *S. trifaria* (Brid.) Lindb., *S. trifaria* var. *longifolia* (Lindb. ex Broth.) Ochyra & Gos; Cortini Pedrotti 2001a), no one had been reported from Sicily. In 2002 in the framework of investigations on the saxicolous bryophyte communities of central Sicily a species of *Seligeria*, *Seligeria pusilla*, was discovered 4 km far from the town of Enna. This sciophilous, mesophilous, basiphilous moss grows on basic rocks within an artificial wood of coniferous dominated by *Pinus pinea* L. and *Pinus halepensis* Mill., living together with spontaneous flora including *Cistus creticus* L., *Fumana thymifolia* (L.) Spach ex Webb,

Micromeria graeca (L.) Benth. ex Rchb., *Asparagus acutifolius* L., *Crataegus monogyna* Jacq., *Osyris alba* L., *Rosa canina* L., *Rosa sempervirens* L. and *Rubia peregrina* L. The area is characterized by meso-Mediterranean superior subhumide bioclimate (Rivas-Martinez 1997). The annual mean rainfall and the annual mean temperature of Enna (950 m), the closest station to Contrada Baronessa, are 894.6 mm and 13.4°C respectively.

Seligeria pusilla is close to *Seligeria calcarea*, but it can be easily distinguished from the latter by linear, acute, leaves, thinner nerve above, apex ending with a long cell. Moreover, *Seligeria pusilla* may be confused with *Seligeria acutifolia*, but differing in scarcely distinct perichaetial leaves, seta 2,5-3mm long, emergent capsules.

This moss, referred to the Northern element (Frey & Kürschner 1988; El-Oqlah & al. 1988), is known to be distributed in Europe, Asia and North America (Düll 1985). In Italy it was reported from many regions: Piedmont, Lombardy, Trentino-Alto Adige, Veneto, Friuli Venezia Giulia, Emilia Romagna, Tuscany, Marche, Umbria, Latium, Abruzzo, Campania and Calabria (Cortini Pedrotti 2001b).

Seligeria pusilla is a characteristic species of the *Seligerietum pusillae* Demaret 1944, pioneer association known in central Europe (Hübschmann 1986). Synhierarchically the *Seligerietum pusillae* belongs to the *Seligerion calcareae* Marstaller 1986, alliance of the *Ctenidietalia mollusci* Hådač & Šmarda in Klika & Hådač 1944 and *Ctenidietea mollusci* Grgic 1980 (Bardat & Hauguel 2002). Two phytosociological relevés are reported in Table 1.

***Barbula trifaria* var. *desertorum* (Froehl.) Agnew**

Sicily: near the town of Assoro (Enna), UTM: VB 4684, 730 m, on calcarenite rocks with accumulated soil, in xeric sites, 20.05.1999.

While we had been studying the bryophyte saxicolous vegetation in the territory of

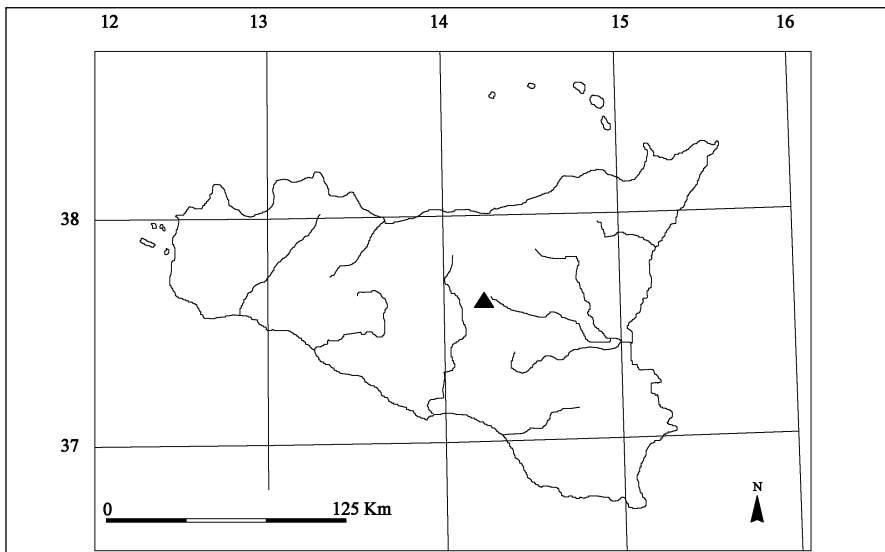


Fig. 1. Distribution of *Seligeria pusilla* (Hedw.) Bruch & al. in Sicily.

Tab. 1. *Seligerietum pusillae* Demaret 1944.

Relevés number	1	2
Surface (dm ²)	0,5	1
Slope (%)	45	50
Exposure	NW	N
Cover (%)	45	20
Species number	7	5
Characteristic species of association		
<i>Seligeria pusilla</i> (Hedw.) Bruch & al.	2	1
Characteristic species of alliance, order and class (<i>Seligerion calcareae</i> , <i>Ctenidietalia mollusci</i> , <i>Ctenidietea mollusci</i>)		
<i>Fissidens gracilifolius</i> Brugg.-Nann. & Nyh.	1	+
<i>Tortula muralis</i> var. <i>aestiva</i> Brid. ex Hedw.	+	+
<i>Gymnostomum calcareum</i> Nees & Hornsch.	1	.
Other species		
<i>Bryum capillare</i> Hedw.	1	+
<i>Porella platyphylla</i> (L.) Pfeiff.	+	+
<i>Homalothecium sericeum</i> (Hedw.) Schimp.	+	.
Relevés origin. Rel. 1,2 Contrada Baronessa (Enna)		

Enna, we observed some specimens of a moss apparently similar to *Barbula trifaria* auct. non (Hedw.) Mitt.; but after a careful check, it turned out to be: *Barbula trifaria* var. *desertorum* (Froehl.) Agnew.

Barbula trifaria var. *desertorum*, differs from its closest relative *Barbula trifaria* mainly in following characters: thicker nerve, thickened, bistratose leaf apex and shortly acuminate leaves. Moreover it seems closely related to *Barbula rigidula* (Hedw.) Milde, but it differs in rounded, incrassate, more or less homogeneous cells, thickened, unistratose margin and gemmae lacking.

Different authors have discussed the taxonomical status of *Barbula trifaria* var. *desertorum*. Froehlich (1959) described this taxon as *Barbula rigidula* var. *desertorum*. Afterwards Agnew & Vodráček (1975), Frey & Kürschner (1991) and Kürschner (2000) considered it as *Barbula trifaria* var. *desertorum*. According to Jiménez (2003) *Barbula trifaria* var. *desertorum* is a xerophytic form of the complex of *Didymodon rigidulus* (Hedw.) (\equiv *Barbula rigidula*). Recently Heyn and Herrnstadt (2004) include *Barbula trifaria*, *Barbula rigidula* var. *desertorum* Froehl. and *Barbula trifaria* var. *desertorum* “sub *Barbula imbricata* Herrnst. & Heyn”.

Because of its distinctive morphological characters, we reckon *Barbula trifaria* var. *desertorum* is a different taxon in agreement with Frey & Kürschner (1991) and Kürschner (2000).

Barbula trifaria var. *desertorum* is a terri-saxicolous, xerophilous moss observed in the

area investigated on rocks with accumulated soil, in clearing among scattered grasses and shrubs (*Ampelodesmos mauritanicus* (Poir.) Durand & Schinz, *Astragalus monspessulanus* L. subsp. *monspessulanus*, *Avenula cincinnata* (Ten.) Holub., *Dianthus siculus* Presl, *Gypsophila arrostii* Guss., *Thymus spinulosus* Ten., *Kundmannia sicula* (L.) DC.). Climatic data of the nearest weather station (Leonforte, 606 m), show an annual average rainfall of 658.7 mm and an annual average temperature of 15.1°C, corresponding to a bioclimate of the termo-Mediterranean inferior subhumid type (Rivas-Martinez 1997).

This moss, belonging to the xerothermic Pangaean element (Frey & Kürschner 1988; El-Oqlah & al. 1988) is known from Arabic Peninsula, Iraq, Saudi Arabia, Jordan, Yemen (Frey & Kürschner 1991, 1992; Frey & al. 1990; Kürschner 2000) and Israel (Brullo & al. 1991). In Italy it has been reported from Aspromonte (Privitera & Puglisi 1999). Its occurrence in Sicily is to be considered of noteworthy phytogeographical interest, being the second record for Italy and for Europe (Fig. 2).

From a phytosociological point of view *Barbula trifaria* var. *desertorum* may be referred to the *Aloino-Crossidion crassinervis* Ros & Guerra 1987, alliance of the *Tortulo brevissimae-Aloinetalia bifrontis* Ros & Guerra 1987 of the class *Barbuletea unguiculatae* Mohan 1978. In the territory of Assoro it appears in rocky hollows with soil accumulated within *Grimmietum capillatae* Lo Giudice & Cristaudo 2002, a saxicolous community of *Grimmieteia anodontis* Had. et Vondr. in Jez et Vondr. 1962. Three relevés are reported in the Table 2.

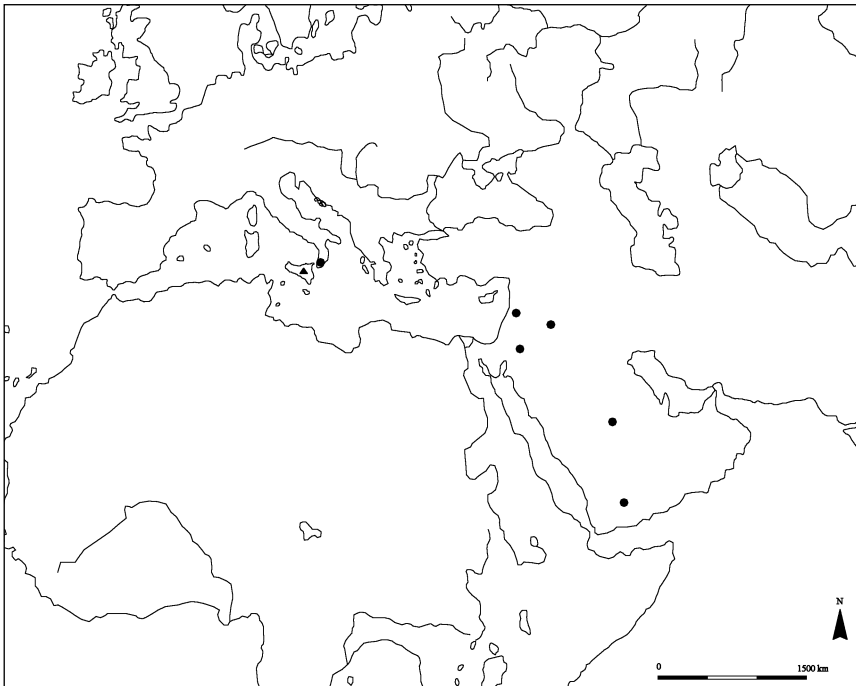


Fig. 2. Distribution of *Barbula trifaria* var. *desertorum* (Froehl.) Agnew. The Sicilian locality is marked by a triangle and the previously known stations by a round.

Tab. 2. *Grimmietum capillatae* Lo Giudice & Cristaudo 2002.

Relevés number	1	2	3
Surface (dm ²)	10	12	12
Slope (%)	70	70	70
Exposure	SW	S	S
Cover (%)	60	50	20
Species number	8	8	6
Characteristic species of association			
<i>Grimmia capillata</i> De Not.	3	1	1
Characteristic species of alliance, order and class (<i>Grimmion tergestinae</i> , <i>Grimmietalia anodontis</i> , <i>Grimmieteae anodontis</i>)			
<i>Grimmia pulvinata</i> (Hedw.) Sm.	+	2	.
<i>Syntrichia calcicola</i> J. J. Amann	.	+	1
<i>Grimmia orbicularis</i> Bruch ex Wilson	+	+	.
Other species			
<i>Crossidium squamiferum</i> (Viv.) Jur.	+	2	+
<i>Barbula trifaria</i> var. <i>desertorum</i> (Froehl.) Agnew	+	+	+
<i>Tortula atrovirens</i> (Sm.) Lindb.	1	.	1
<i>Bryum argenteum</i> Hedw.	+	+	.
<i>Barbula trifaria</i> auct. non (Hedw.) Mitt.	.	+	+
<i>Bryum bicolor</i> Dicks.	+	.	.
Relèves origin. Rel. 1, 2, 3 near the town of Assoro (Enna)			

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