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New interesting bryophyte records from the Pollino National Park (southern Italy)

Abstract

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The discovery of some interesting bryophytes at the Pollino National Park is reported in this paper. These are *Calliergon cordifolium* and *Marchantia polymorpha* subsp. *montivagans*, new records for the Southern Italy bryoflora, for which the Pollino massif represents the southernmost limit of their Italian distribution. Moreover, the occurrence of *Marchantia polymorpha* subsp. *polymorpha*, new record from Basilicata region, is reported too.

Key words: *Calliergon cordifolium*, *Marchantia polymorpha* subsp. *montivagans*, bryophytes.

Introduction

The Pollino National Park, with its 1,930 km², is the largest National Park in Italy and it lies at the border between the regions of Basilicata and Calabria. Its core area is formed by two different mountain chains, namely the Pollino massif in the north and the Verbicaro-Orsomarso mountains in the south. From a geological point of view it is composed almost exclusively of a limestone bedrock. The protected area was mainly created to preserve the species *Pinus leucodermis* Antoine, which, having the Italian range restricted to this area, is the symbol of the park. In addition to this species, however, the Pollino National Park exhibits several other very particular floristic features, due to a geographical location which allows different kind of biogeographical links to be established. The biogeographical relation with the southern Balkan district is certainly the most evident and it is testified by the occurrence of a great number of amphiadriatic species (*Pinus leucodermis*, *Festuca bosniaca* Kumm. & Sendtn., *Carex kitaibeliana* Degen ex Beck, *Edrajanthus graminifolius* A. DC., *Sesleria autumnalis* (Scop.) F.W. Schultz, *Gentianella crispata* (Vis.) Holub, *Cytisus spinescens* C. Presl, etc.) which often play a prevalent role in the vegetational pattern. At the same time the Pollino massif is the southernmost limit for various boreal or arctic-alpine species such as *Orthilia secunda* (L.) House, *Pyrola minor* L., *Chrysosplenium dubium* Gay ex Ser., *Saxifraga aizoides* L., *Carex pallescens* L.,

Carex vesicaria L., *Senecio alpinus* (L.) Scop., etc.), which covered southwards the Italian Peninsula during the ice ages and which remained isolated as relics in the postglacial period.

During a field work carried out in July, 2008 in a humid site located in the northern slope of the Pollino National Park some interesting bryophytes, new for the bryoflora of Southern Italy, were found. From a botanical point of view, this site was already known for its peculiar environment since some new records for the vascular flora of Basilicata were found there (Bernardo & al. 2000; Conti & Di Pietro 2004).

As regards literature data, no specific study on the bryoflora of Pollino is known at present, but only sporadic reports in old papers with more general topic on the Italian bryoflora (Brizi 1890; Bottini 1894; Zodda 1913). Likewise little is known on the bryoflora of the Basilicata region that, only consisting of 190 *taxa*, almost entirely reported in old reports, is the least known bryoflora in Italy (Aleffi & al. 2008). As a consequence this paper is to be considered just a first approach for further bryological investigations.

Study area

Surveying site refers to an area located on the northern slope of the Pollino massif at the boundary between the municipalities of Viggianello and Terranova di Pollino, in the Basilicata region (Fig. 1). The site consists in a rounded flooded area of ca 500 m² at an altitude of 1,480 m which form a characteristic clearing in the *Fagus sylvatica* L. and *Abies alba* Mill. mixed wood. From a litho-stratigraphical viewpoint the flooded area is due to the presence of several small sources which take origin from an outcrop of Flyschoid material composed of phyllites, quartzites and low metamorphic carbonates which take contact with the Lucano-Campanian unit limestone bedrocks (Bonardi & al. 1988). As far as bioclimate is concerned, the site is included in the inferior supratemperate thermotype and in the humid/hyperhumid umbrotype (Blasi 2006). In the central part of the site a specimen of *Salix apennina* A. K. Skvorstov grows, probably taking advantage from a small tract of not flooded ground. The flooded area is characterized by a *Calthion palustris* community, which is composed of an external fringe dominated by species such as *Carex remota* L., *C. vesicaria* L., *Caltha palustris* L., *Senecio alpinus* (L.) Scop. *Dactylorhiza maculata* (L.) Soó subsp. *saccifera* (Brongn.) Diklic and an inner part with *Carex distans* L., *C. pallescens* L., *C. ovalis* Gooden., *Juncus articulatus* L., *J. thomasi* Ten., *J. inflexus* L., *Hypericum tetrapterum* Fr., *Cardamine silana* Marhold & Perný, *Galium debile* Desv. *Plantago major* L. subsp. *pleiosperma* Pilg., *Potentilla reptans* L., *Glyceria notata* Chevall. and others, showing a scattered distribution upon a continuous carpet of bryophytes.

Results

In this paper the occurrence of the following bryophytes is reported: *Calliargon cordifolium* (Hedw.) Kindb., *Marchantia polymorpha* subsp. *montivagans* Bischl. & Boisselier, both new records from Southern Italy, and moreover *M. polymorpha* L. subsp. *polymorpha*, new record from Basilicata region. The specimens are kept at the *Herbarium* of the Department of Botany of Catania (CAT). The nomenclature follows Hill & al. (2006) for the mosses and Ros & al. (2007) for the liverworts. The ecological features are mostly taken from Dierssen (2001).

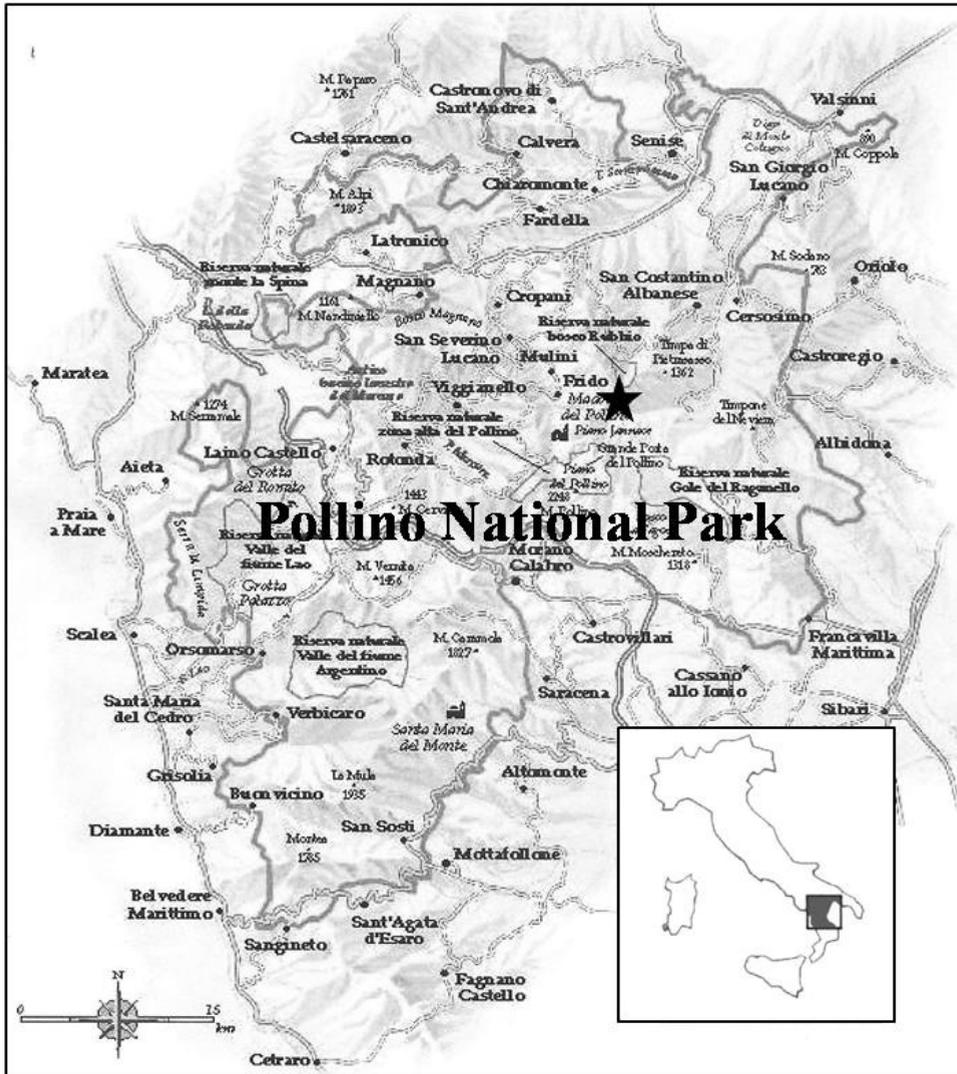


Fig. 1. Location of the surveying area in the Pollino National Park.

***Calliergon cordifolium* (Hedw.) Kindb.**

[Synonyms: *Hypnum cordifolium* Hedw., *Amblystegium cordifolium* (Hedw.) De Not., *Acrocladium cordifolium* (Hedw.) P.W. Richards & E.C. Wallace]

Italy, Basilicata, Piana di S. Francesco, Pollino massif (northern slope), 1480 m, UTM XE 02.23, 13/07/2008, Di Pietro, (CAT).

It is a terricolous, highly hygrophytic moss growing in wet depressions in marshes, flushes, swamp woodland, bog forests by lakes, streams, ditches and pools, often sub-

merged. The species behaves as highly acidophytic to subneutrophytic, tolerating also a wider pH range. In the surveyed area it was found partially submerged mixed with *Marchantia polymorpha* subsp. *montivagans*; here the species occurs in soft, loose, yellowish green shoots ascending up to 8-9 cm long, with very sparsely and irregularly branched stems with branches very short and cuspidate at the tips. *Calliergon cordifolium* is a boreal species mostly occurring in western Europe. In Italy it was reported only from some northern regions, Piedmont, Lombardy, Trentino-Alto Adige, Veneto (old report) and Emilia-Romagna, and from Tuscany (Aleffi & al. 2008). On the contrary no record exists from southern and insular Italy. This new report for Basilicata region marks the new southernmost limit of the Italian distribution.

***Marchantia polymorpha* subsp. *montivagans* Bischl. & Boisselier**

[Synonyms: *Marchantia alpestris* (Nees) Burgeff, *Marchantia polymorpha* L. var. *alpestris* (Nees) Nees, *Marchantia polymorpha* var. *mamillata* I. Hag. ex Schiffn.]

Locality: ibidem, 13/07/2008, *Di Pietro*, (CAT).

Marchantia polymorpha subsp. *montivagans* is a preferably terricolous, moderately acidophytic to subneutrophytic, highly hygrophytic liverwort, occurring in wet sites like springs, flushes and fens, sometimes by streams and along brooks, often in subalpine or montane habitats. At Piana di S. Francesco it grows in dense prostrate mats. The thalli are dull, green-brown, to ca. 10 cm long, with thick and rigid texture and crenulate margins. The dorsal surface lacks a black midrib and it is covered by conspicuous air pores (55-60 μm wide). The specimens were found with abundant archaegoniophore stalks 3-4 cm high with typical female finger-like receptacles. As regards chorology, it is a northern oceanic-dealpine taxon quite widespread in Europe. In Italy, *Marchantia polymorpha* subsp. *montivagans* was known for few northern regions only (Val d'Aosta, Piedmont, Trentino-Alto Adige, Friuli-Venezia Giulia and Lombardy). Recently the species was found also in Abruzzo region at Laga Mountains (Privitera & al. 2006). This report is new for the bryoflora of the Basilicata region, as well as of southern Italy and marks the southernmost limit of its Italian distribution.

Marchantia polymorpha* L. subsp. *polymorpha

[Synonyms: *Marchantia aquatica* (Nees) Burgeff, *M. vittata* Raddi, *Marchantia polymorpha* var. *aquatica* (Nees) Gottsche & al.]

Locality: ibidem, 13/07/2008, *Di Pietro*, (CAT).

This *taxon* differs from the previous one for the occurrence of a conspicuous, continuous dark median line on the dorsal side, entire margins and smaller air pores (35-40 μm wide). As regards the ecological features, it is a subneutrophytic, hydrophytic liverwort, adapted to tolerate long periods of inundation. In contrast to *Marchantia polymorpha* L. subsp. *ruderalis* Bischl. & Boisselier, it typically grows in natural habitats. In the study area it was found closely mixed to *Calliergonella cuspidata* (Hedw.) Loeske, for which this paper confirms the presence in the Basilicata region, an old report only being available in literature.

Marchantia polymorpha subsp. *polymorpha* is widespread throughout Europe and Italy although . However, up to now the *taxon* was not reported for Basilicata region. This new report fills the gap for the southern part of the peninsula.

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