

***Conocephalum salebrosum* Szweykowski, Buczkowska et Odrzykoski (Conocephalaceae, Marchantiophyta), new to Italy**

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Abstract – A new liverwort species, *Conocephalum salebrosum* Szweykowski, Buczkowska et Odrzykoski, has been identified for the Bryophyte flora of Italy. The species was gathered in the Marmore Waterfalls, Umbria Region, Italy.

***Conocephalum salebrosum* / Marchantiopsida / Liverwort / ecology / Italy**

INTRODUCTION

The Marmore Waterfall (Umbria Region, Italy) is a man-made waterfall created by the Ancient Romans in order to let stagnant waters flow down the Velino River into the Nera River Valley through the Marmore cliff (Fig. 1). With its total height of 165 m (541 feet), it is one of the tallest man-made waterfalls in Italy and worldwide. It is a Site of Community Importance (SCI) IT5220017 and a Special Area of Conservation (SAC) of the Natura 2000 EU-wide network due to the presence of the 72.20* “Petrifying springs with tufa formation (*Cratoneurion*)” Annex I priority habitat (<http://vnr.unipg.it/habitat/>). It is included in the “Parco Fluviale del Nera” Regional Park.

During a bryological survey, the species *Conocephalum salebrosum* Szweykowski, Buczkowska et Odrzykoski has been identified. The finding is the first record for Italy with reference to the Check-list of the Hornworts, Liverworts and Mosses of Italy (Aleffi *et al.*, 2008).

Conocephalum salebrosum is a recently described species related to the widespread *Conocephalum conicum* (L.) Dumort. Initially, the two species were considered as siblings, distinguishable only on a genetic basis (Odrzykoski 1987, 1995; Odrzykoski & Szweykowski 1991). A detailed morphological



Fig. 1. Italian locality of *Conocephalum salebrosum* Szweykowski, Buczkowska et Odrzykoski.

study coupled with allozyme and DNA analyses, however, revealed that they are not only genetically distinct but also morphologically distinguishable (Szweykowski *et al.*, 2005).

The geographical range of *Conocephalum conicum* is probably restricted to Europe, whereas *C. salebrosum* has a wider holarctic distribution. Both occur in moist, shaded and usually calcareous habitats. When growing together they exhibit only slight differences in microhabitat preferences and *C. salebrosum* appears to be more tolerant to xeric habitats than *C. conicum* (Odrzykoski, 1987, 1995).

THE NEW RECORD

The Italian record of *Conocephalum salebrosum* is characterized as follow: Marmore Waterfall on moist calcareous soil, 42° 33' 10.43" N, 12° 42' 53.84" E, 243 m a.s.l., 24.09.2013, *legit et deteterminavit* S. Poponessi (Fig. 2).

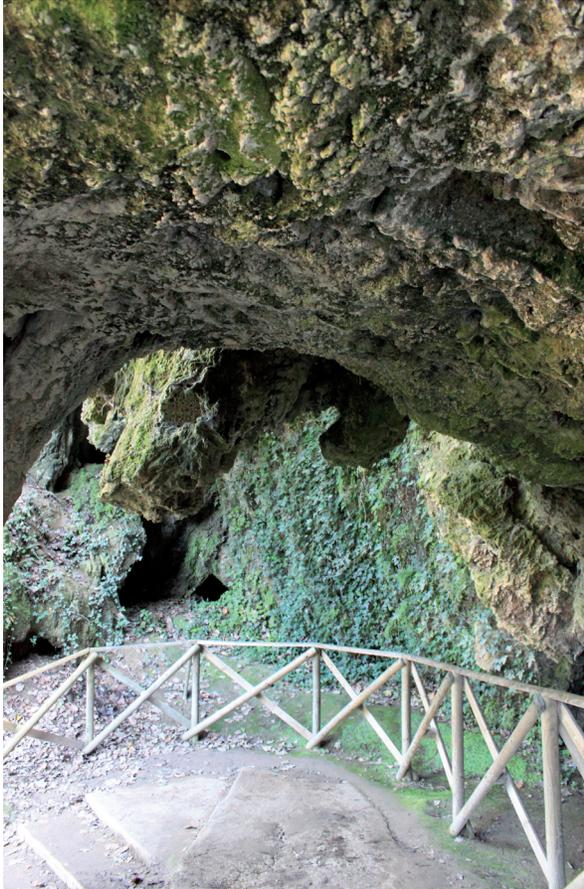


Fig. 2. Habitat from Marmore Waterfall (Umbria Region, Italy).

Specimens are kept in the Herbarium PERU of the University of Perugia (www.anarchive.it).

A sterile thallus has been analysed for the determination and its characteristics appeared as follows: thallus smaller than *C. conicum*, (2-)3-5(-9) cm long and 5-12 mm wide, usually only 4-5 (up to 6 in exceptionally large thalli) rows of air chambers between the costa and thallus margin. Thallus hyaline border usually narrow, composed of 1-2 rows of elongate cells. Epidermis at border between particular air chambers distinctly furrowed; dorsal surface of thallus in plane view and in cross-section clearly uneven. Highest cells of air chamber walls in cross-section inserted between epidermal cells. Junction in such places lowered, the remaining epidermis appearing elevated. Apical cells of air chamber walls easily seen in plane view as rows of smaller cells forming rhomboidal pattern situated in rather deep furrows. Outer epidermal cell walls distinctly inflated, giving epidermis “verrucose” appearance. Epidermal surface disperses light that falls on thallus surface and gives dull effect. Apical cells of assimilators under stomata usually pyriform, thallus margin seen in cross-section usually inflexed or rarely plane (Szweykowski *et al.*, 2005).

Specimens of *Conocephalum conicum* collected at Marmore Waterfall show dissimilar characters compared to *C. salebrosum*: shining and smooth thallus surface, with the limits of the air chamber walls lying almost at the same level as the rest of the epidermis, relatively flat outer cell walls, 6-7 rows of air chambers between the costa and thallus margin, and hyaline thallus margin of 3-4 rows of cells.

On the basis of the diagnostic differences between the two species, a review of other Italian specimens from herbaria would be appropriate in order to define the actual consistency of both species in the Italian territory.

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