

Rosa Lo Giudice

***Acaulon fontiquerianum* Casas & Sérgio (*Pottiaceae*,
Bryophytina), new to the bryoflora of Italy**

Abstract

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Acaulon fontiquerianum Casas & Sérgio, recently described from Spain, is recorded for the first time from Italy in a locality of the Caltanissetta province.

Besides the description of the morphological features of *Acaulon fontiquerianum*, the spores of specimens collected in Sicily are illustrated using SEM. Finally ecological and chorological remarks of the species are provided.

During researches on the terricolous bryophytic vegetation in central-southern Sicily, a small moss quite developed and with sporophyte was found in January 1994. Many of the features lead to genus *Acaulon*, but the specimens collected were unlike any other Italian species. Analyzing more attentively every morphological and anatomical feature, using SEM too, it has been found that the specimens discovered correspond to *Acaulon fontiquerianum* Casas & Sérgio, bryophyte still unknown for Italy. The genus *Acaulon*, widespread mainly in the Mediterranean region, is represented in Europe by six species, some of which have been recently described from Iberian Peninsula: *Acaulon casasianum* Brugués & Crum (1984), *Acaulon dertosense* Casas & al. (1986), *Acaulon fontiquerianum* Casas & Sérgio (1990). We point out that this research is included in a wider and more detailed work on the genus *Acaulon* in Italy (Lo Giudice unpublished data).

Morphology (Fig. 1)

Minute scattered or gregarious plants, up to 2,5 (3) mm high, light reddish-green. Leaves few, the upper larger, to 1,8 mm, concave, broadly oval (Fig. 1B) with margin plane, entire. Nerve excurrent in apiculus (200-350 μ m), smooth; in section round, dorsal stereid band cells thick, ventral surface 4-5 hyaline cells enlarged, swollen. Upper laminal cells subquadrate, smooth; basal cells rectangular. Capsule immersed, subglobose, cleistocarpous; calyptra small, conic. Spores (18 μ m-25 μ m) orange, papillose. In "scanning" the spores (Fig. 1 C, D) show thick baculate surface with dentate "bacule" and one or two globular refracting corpuscles constituted by laminar excrescence of lobate border.

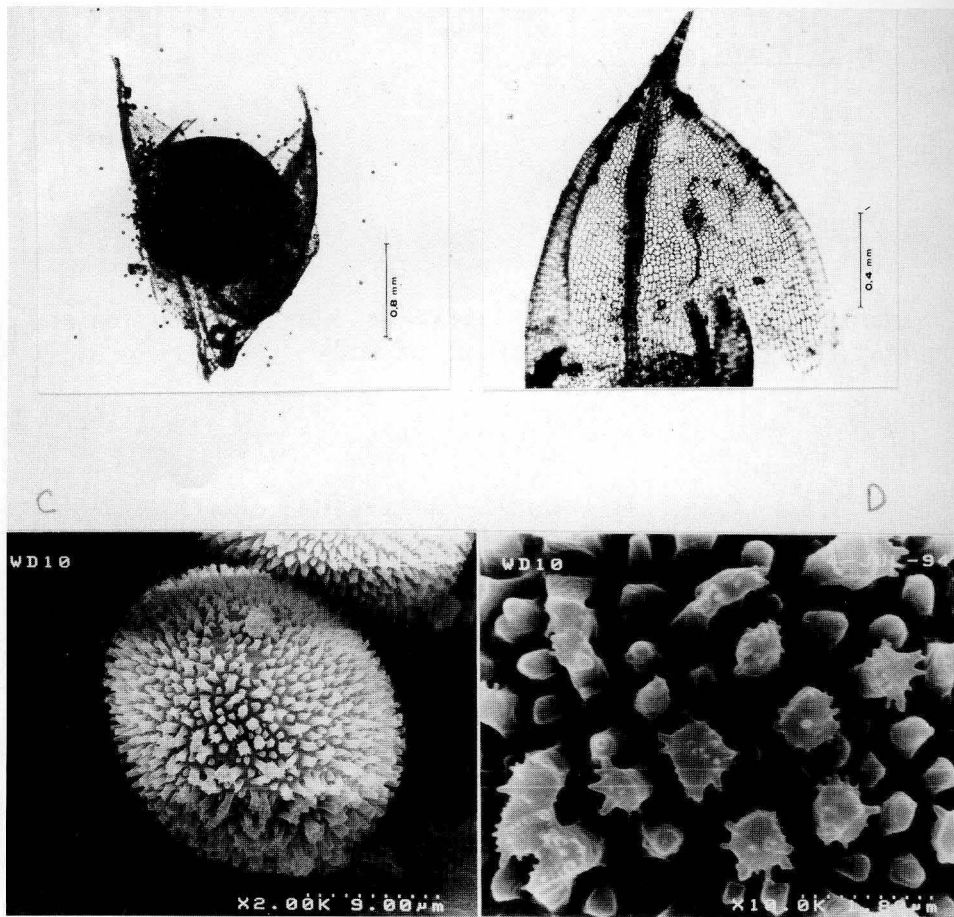


Fig. 1. *Acaulon fontiquerianum* Casas & Sérgio. A-B Micrographs with optic microscope. A: general habit with immersed capsule. B: upper leaves broadly oval. C-D Scanning electron micrographs of spores of *A. fontiquerianum* (specimens collected in Sicily "Condrada Arcia" Niscemi). C: spore surface with globular corpuscle. D: particular of dentate "bacule" of the sexine.

Ecological remarks

Acaulon fontiquerianum is a terricolous moss colonizing habitats subjected to frequent alternations of humidity and drought such as pasturelands, depressions with *Crassula tillaea* Lester G., barren soil of roadsides, vineyards, etc. (Sérgio & al. 1993). It has been collected in different substrates (Sérgio & al. l.c.): in Spain at Cabo de Gata (locus classicus) *A. fontiquerianum* has been discovered in sandy soil from the alteration of volcanic rocks; in Portugal (Cabo Espichel) the species occurs on calcareous soil in roadsides; in France it has been found on siliceous pudding-stone (Bouches - du Rhône: Crau) and on phyllade and grés (Mollo Trocado & La Clouachière). Finally in Corsica (Bocca di Curali) it grows on granite.

In Sicily *A. fontiquerianum* has been collected in "condrada Arcia", 240 m a.s.l., near Niscemi on sandstone colonized by *Pistacia lentiscus* L., *Cistus salvifolius* L., *Cistus*

creticus L., *Cistus monspeliensis* L. and other shrubs such as *Teucrium fruticans* L., *Calycotome villosa* (Poir.) Link., besides *Asphodelus microcarpus* Viv.

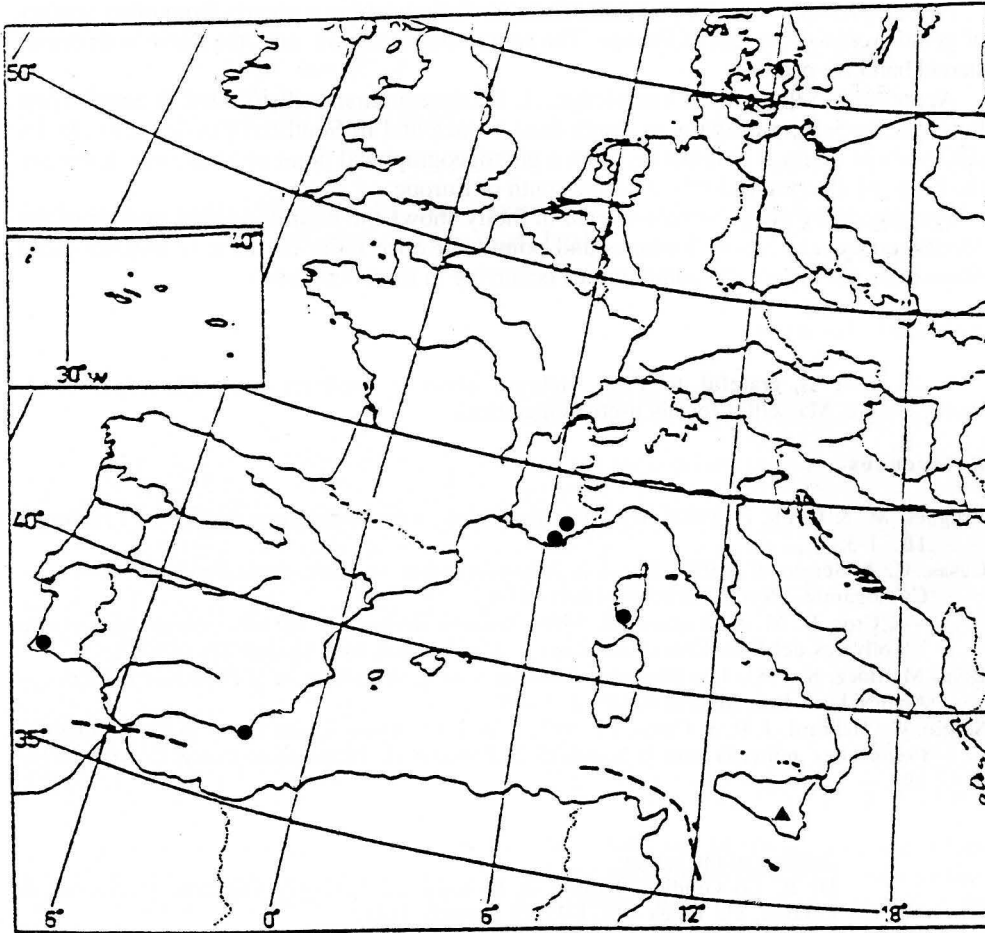


Fig. 2. Distribution of *Acaulon fontiquerianum* Casas & Sérgio in Europe, according to the grid U.T.M. of Atlas of "Flora Europea" simplified; ● data from literature, ▲ new sicilian station.

As for the species of Bryophytes occurring together with *A. fontiquerianum*, *Fossombronia caespitiformis* De Not. ex Rabenh., *Oxymitra paleacea* Bisch. ex Lindb., *Riccia nigrella* D.C., *Corsinia coriandrina* (Spreng.) Lindb. *Didymodon acutus* (Brid.) K. Saito, *Pottia starckeana* (Hedw.) Muell. Hal., *Pseudocrossidium hornschurchianum* (Schultz) R.H. Zander are recorded.

The area where this species has been found is one of the driest of Sicily. The meteorological station in Caltagirone (513 m a.s.l.), the closest station to "condrada Arcia" has as annual precipitation 540 mm and the mean temperature for the year is 16.1°C. According to the Rivas Martinez's scheme (1981), the territory of Caltagirone is included in the bioclimatic thermomediterranean belt with dry climate.

Conclusion

A. fontiquerianum shows particular features distinguishing it clearly from other species of genus *Acaulon* present in Europe. The spore ornamentation and the nerve with dorsal stereid band are peculiar.

According to the present knowledge, *A. fontiquerianum* is distributed in South-West Portugal, in Southern Spain, in South-East France and in Southern Corsica (Fig. 2). Its discovery in Sicily is noteworthy from a phytogeographical point of view since it widens the range of the species to the extreme south of Europe.

The discovery of *A. fontiquerianum* in Sicily shows the high biological interest of the Mediterranean dry sunny biotopes and points out once more the need to explore more intensively the bryophytic communities occurring in these habitats.

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Address of the author:

Dr R. Lo Giudice, Istituto di Biologia ed Ecologia Vegetale, Università di Catania, via Etna 440, I-95128 Catania, Italy.