

Rediscovery of *Volvulella volvulaeformis* (G. Seguenza, 1879) in the Italian Pliocene (Gastropoda Rhizoridae)

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ABSTRACT A fossil gastropod for the Italian Pliocene is here reported. Following bibliographical research, it is assigned to a taxon previously described and never cited: *Cylichna volvulaeformis* G. Seguenza, 1880, which, according to its morphological characteristics, is assigned to the genus *Volvulella* Newton, 1891 (Gastropoda Rhizoridae).

KEY WORDS Gastropoda; Rhizoridae; Pliocene.

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INTRODUCTION

Malacological research carried in the Italian Pliocene led to the discovery of some specimens of a Rhizoridae Dell, 1952, previously described as *Volvulella* sp. in Brunetti & Cresti, 2019. The subsequent examination of numerous literature led to the determination of the specimens examined as *Cylichna volvulaeformis* G. Seguenza, 1880, described by the author for the Pliocene of Calabria, which is now assigned to the genus *Volvulella* Newton, 1891.

MATERIAL AND METHODS

The examined material was collected manually in the ground, on the surface. The following abbreviations are used in the text: H = total height of the shell; CCM = Cresti Massimo collection (Florence, Italy). For suprageneric and generic attributions, the WoRMS was followed (<http://www.marine-species.org/>).

RESULTS

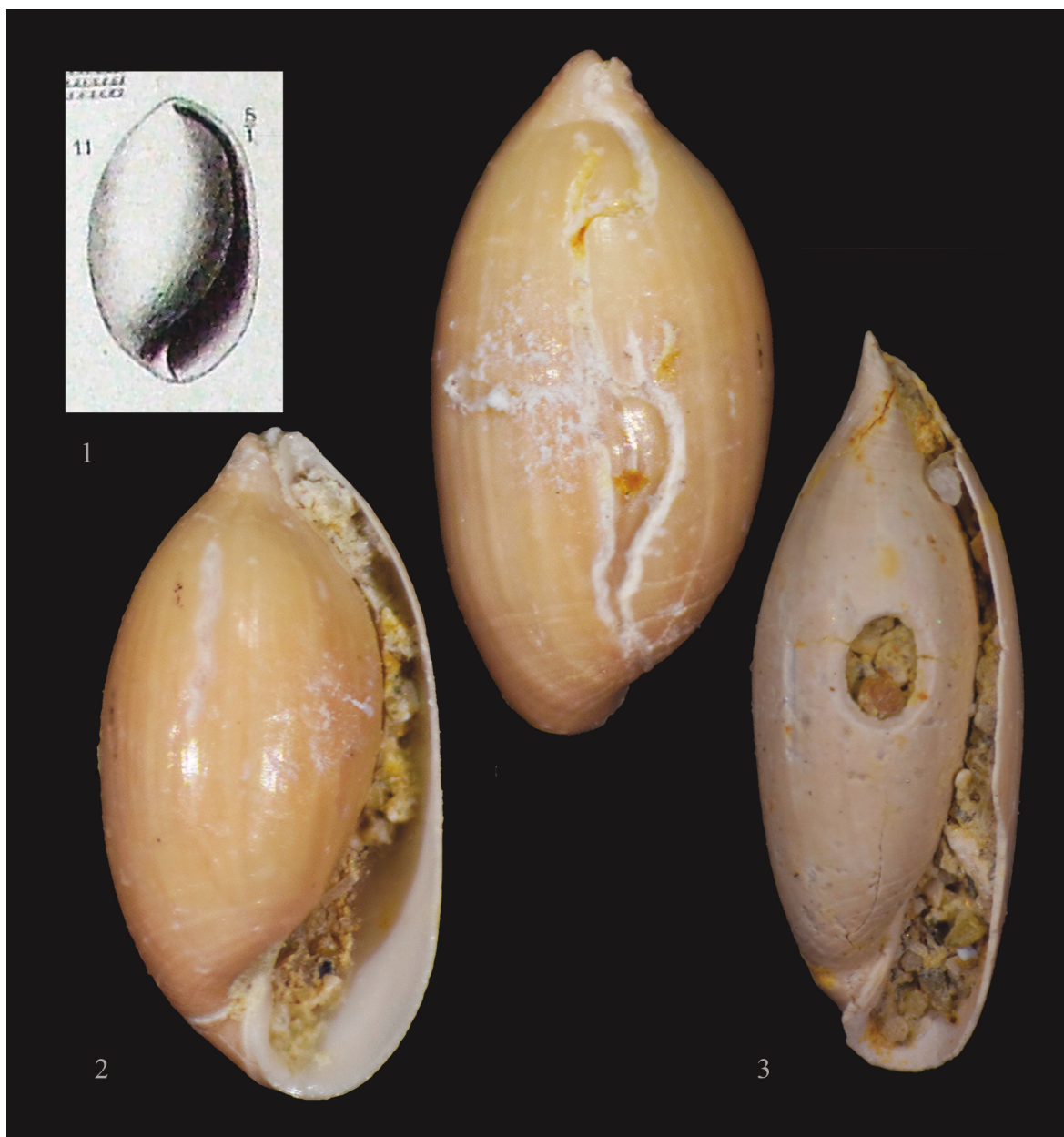
Systematics

Classis GASTROPODA Cuvier, 1795
Ordo CEPHALASPIDEA P. Fischer, 1883
Superfamilia BULLOIDEA Gray, 1827
Familia RHIZORIDAE Dell, 1952
Genus *Volvulella* Newton, 1891
type species: *Bulla acuminata* Bruguiere, 1792

Volvulella volvulaeformis (G. Seguenza, 1879)
(Figs. 1, 2)

Cylichna volvulaeformis G. Seguenza, 1880: p. 252, tav. 16, fig. 11.
Volvulella sp. Brunetti & Cresti, 2019: p. 116, fig. 520.

ORIGINAL DIAGNOSIS. G. Seguenza, 1880: “17. **C. volvulaeformis* n. sp. Tav. XVI. fig. 11. Testa ovata, antice rotundata, postice subacuta: columella subarcuata, fisuram umbilicalem constituens: os strictum, arcuatum, antice elargatum, postice gradatim attenuatum”.



Figures 1, 2. *Volvulella volvulaeformis* (G. Seguenza, 1879). Fig. 1: original figure from Seguenza (1879), H = 5 mm. Fig. 2: Orciano Pisano (Pisa), Piacenzian, H = 3 mm (CCM). Figure 3. *Volvulella acuminata* (Bruguière, 1792) Orciano Pisano (Pisa), Piacenzian, H = 4 mm (CCM).

DESCRIPTION. Shell with maximum dimensions <5 mm. Oval shape, with thin shell, convex sides, pointed apex. The shell is formed entirely from the last whorl. Aperture rear wide, narrows to two thirds of the whorl, with thin, sharp lip. Rounded front end, narrow navel, partially closed. Columellar callus slightly extended, there is a hint of plica inside. Sculpture composed of thin spiral grooves

more evident at the ends, absent in the center of the shell.

REMARKS. I think it is interesting to propose the author's observations on this taxon. This species is very distinctive for its shape, which does not present any parting to the posterior region, and which instead protrudes and is almost acute. It appears to

be carved from the mouth which continues to be narrower and narrower until to the extreme part. This character is found in the genus *Volvula*, and therefore this species is to be considered as a link between it and the *Cylichna* (G. Seguenza, 1879: 253).

This species is easily recognizable for the characteristic oval shape at the base with the pointed apex. The most similar species is *Volvulella acuminata* (Bruguière, 1792) (Fig. 3) which differs from *V. volvulaeformis* (G. Seguenza, 1879) for the shape of the narrowest shell, the thinnest and most pointed apex, the different shape of the lip. The species had recently been iconographed as *Volvulella* sp. by Brunetti & Cresti (2019).

The material examined consists of 6 specimens from the Piacenziano of Orciano Pisano (Pisa). Another specimen, unfortunately destroyed, was found by the writer in the middle Pliocene of the Rio Crevaiese (Piacenza). The specimen shown by G. Seguenza (1879) (Fig. 1) had been found in the locality “Astian” of Gallina (Reggio Calabria) from which most of the species established by G. Seguenza came, unfortunately destroyed due to the Messina earthquake of 1901. The locality “Astian” of Gallina includes a chronostratigraphic interval that varies from late Pliocene to the early Pleistocene (La Perna & d’Abramo 2010). We agree with Bertolaso & Palazzi (2000) whether or not to establish a

neotype against this possibility if not in possession of topotypical material, absent in this case.

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