NOTES

Calliostoma conulum (Linnaeus, 1758) (Gastropoda: Calliostomatidae) in Galicia, northwest Spain

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KEYWORDS. *Calliostoma conulum*, distribution area, Galicia, northwest Spain

ABSTRACT. The Galician (NW Spain) population of *Calliostoma conulum* (Linnaeus, 1758) is analyzed, and it is confirmed that the species is rather common in this area. The geographical distribution of the species is figured. Some differences with the Mediterranean populations are shown and the radula is figured for the first time.

INTRODUCTION

Calliostoma conulum (Linnaeus, 1758) is mainly known from the Mediterranean sea. It has been frequently confused or synonymized with other species. The specific name is *conulum* instead *conulus*, because *stoma* is neuter in Greek.

SYSTEMATICS

The following names are considered as synonyms in Sabelli et al. (1990):

Trochus lucidum Risso, 1826
Trochus violaceum Risso, 1826
Trochus dubium Philippi, 1844
Ziziphinus candidum Brusina, 1864.
Trochus conulus var. *albidum* (Dautzenberg, 1883) (non Gmelin, 1791).
Trochus conulus var. *subangulatum* Bucquoy, Dautzenberg & Dollfus, 1885
Trochus conulus var. *violaceum* Bucquoy, Dautzenberg & Dollfus, 1885
Ziziphinus conulus var. *basale, sanguineum, striatum* (Monterosato, 1889)
Ziziphinus dubius var. *cinnamomeum, dilatatum, elevatum, incavatum, liratum, medium, oliaceum* (Monterosato, 1889)
Ziziphinus conulus var. *acutum, aurantium, dilatatum* (Monterosato, 1889)
Ziziphinus violaceus monochroa (Monterosato, 1889)
Calliostoma conulus var. *roseum* Pallary, 1911
Calliostoma tumidulum Coen, 1933

Distribution. In the Mediterranean, *C. conulum* is reported by Monterosato (1888), Locard (1882), Parenzan (1970), Nicolay & Angioy (1985), Sabelli, Giannuzzi-Savelli & Bedulli (1990), and represented in Giannuzzi-Savelli, Pusateri, Palmeri & Ebreo (1994). After Ghisotti & Melone (1971), the species is absent in the Black Sea, but it was recorded on the coast of north Africa (Pallary, 1900, 1912) and in the Alboran Sea (Salas & Luque, 1986). Pasteur-Humbert (1962) mentions the following distribution: Mediterranean Sea (Spain, France, Italy, Sicily, Corsica, Algeria, Tunis, Adriatic Sea, Egean Sea), Atlantic (Portugal, Madeira, Canary and Azores), and in Morocco up to Casablanca. In the Iberian Peninsula, *C. conulum* is mentioned in several localities of the Mediterranean coast by Hidalgo (1917) who also cited it in Portugal, although later Nobre (1940) did not repeat this record. There is no mention of this species from other continental countries of the European Atlantic apart from Delongueville & Scaillet (2000, 2001) who recently found it in Brittany, France. On the contrary, the records for Canary, Azores and Madeira are numerous: Nordsieck (1968), Ghisotti & Melone (1971), Pope & Goto (1993), Macedo, Macedo & Borges (1999), and Cachia, Mifsud & Sammut (1991). Fretter & Graham (1977) use this taxon as a synonym of *C. zyziphinum.*

Remarks. In Galicia, *C. conulum* was recorded for the first time by Rolán (1983), but with some doubts due the scarce material collected in fishing-ships; Otero-Schmitt (1991) confirms its presence by collecting an alive specimen. It does not appear in other reference lists for the Galician malacological fauna. For this reason, it could be suspected that *C. conulum* is an uncommon species or that the isolated specimens come from larval dispersion and are not reproductive

populations. Nevertheless, samplings systematically made in the rest of the fish-trap for crustaceous present in most Galician ports, have given more than 250 specimens of this species from numerous places, during the all year. This number is significative if we consider that the species does not go into the fish-traps actively but accidentally. As a consequence, the presence of this species on the Galician coasts is more frequent than initially supposed by the scarce previous records.

The colour of the Galician shells is relatively constant (Figs. 4-10), although almost albinist specimens and shells with a darker coloration have been collected. In comparison with the Mediterranean shells (Figs. 1-3), the Galician ones have characteristic spiral lines at the base, but lesser articulated and of a violaceous colour (Fig. 12-13).

Conclusions. *Calliostoma conulum* is a relativelly abundant species in Galicia (NW Spain). It was not usually collected because it lives in a place which is not dredged: rocky bottom, deeper that 20 m.
The range of distribution is represented on the Fig. 14. Galicia is the septentrional limit of a continuous distribution area known for this species. The mention of *C. conulum* in Brittany, France, may represent a relicted population, which have the characters of the Mediterranean species and not of the Galician shells. The species could have been introduced from the Mediterranean sea by human. The Galician shells have some peculiarities which allow to differentiate them from the Mediterranean populations.
The radula (Figs. 14-15) is similar to other species of the genus (Finet et al., 1992).

ACKNOWLEDGEMENTS

Our thanks to Jesús Méndez of the CACTI of the University of Vigo for the SEM photos of the radula, to Jesús Troncoso for the optical photos made in the Department of Ecology of the University of Vigo.

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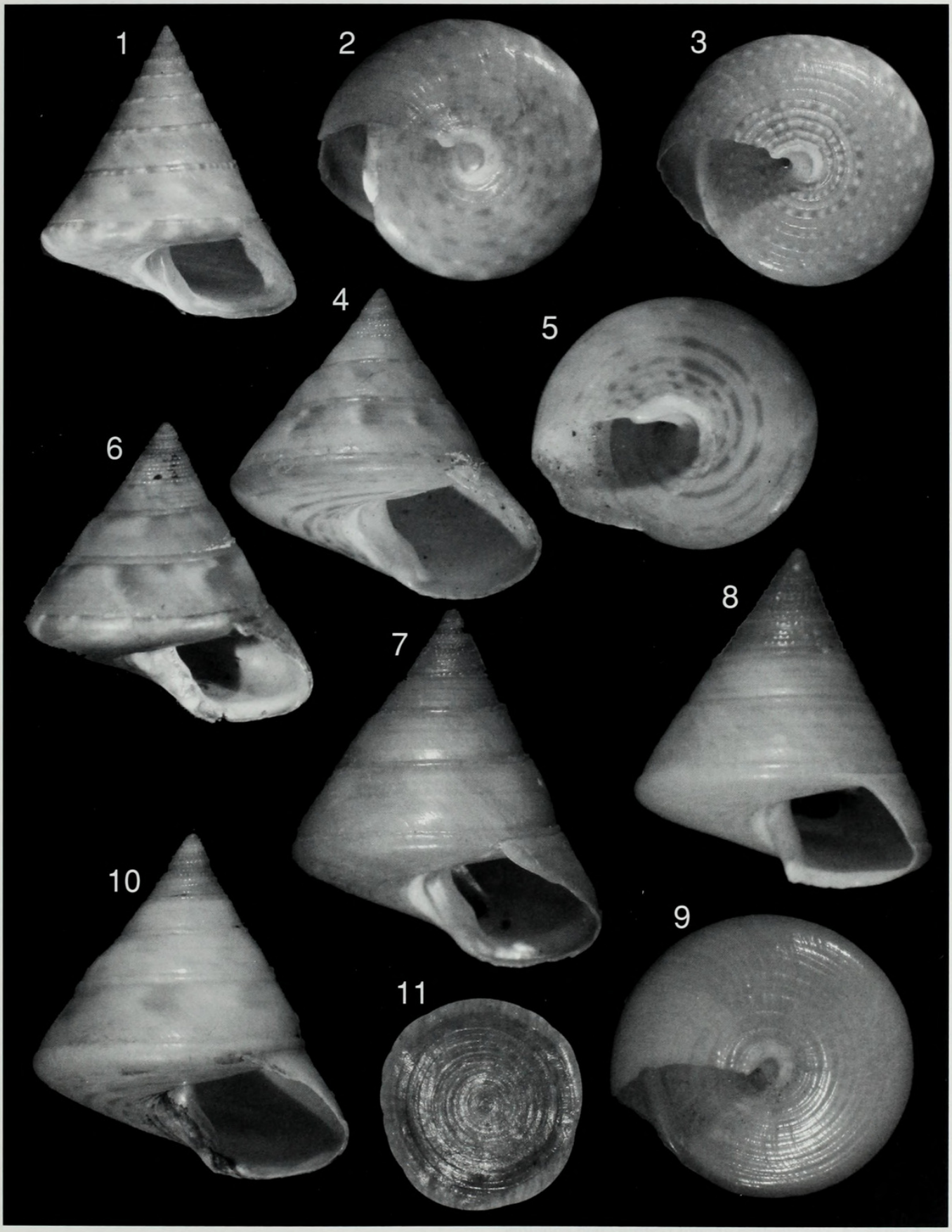
Figures 1-11. *Calliostoma conulum* (Linnaeus, 1758)

1-3. Mediterranean, Murcia, Spain. 1-2. 28 x 21.5 mm; 3. 28 x 21 mm; **4-5.** Caion, A Coruña, 19 x 19 mm; **6.** Camariñas, A Coruña, 16 x 15 mm; **7.** Laxe, A Coruña, 19 x 17 mm; **8-9.** Camelle, A Coruña, 22 x 21 mm; **10.** Shell from Barqueiro, Lugo, 23 x 21 mm; **11.** Operculum from a specimen of Camariñas, 6 mm.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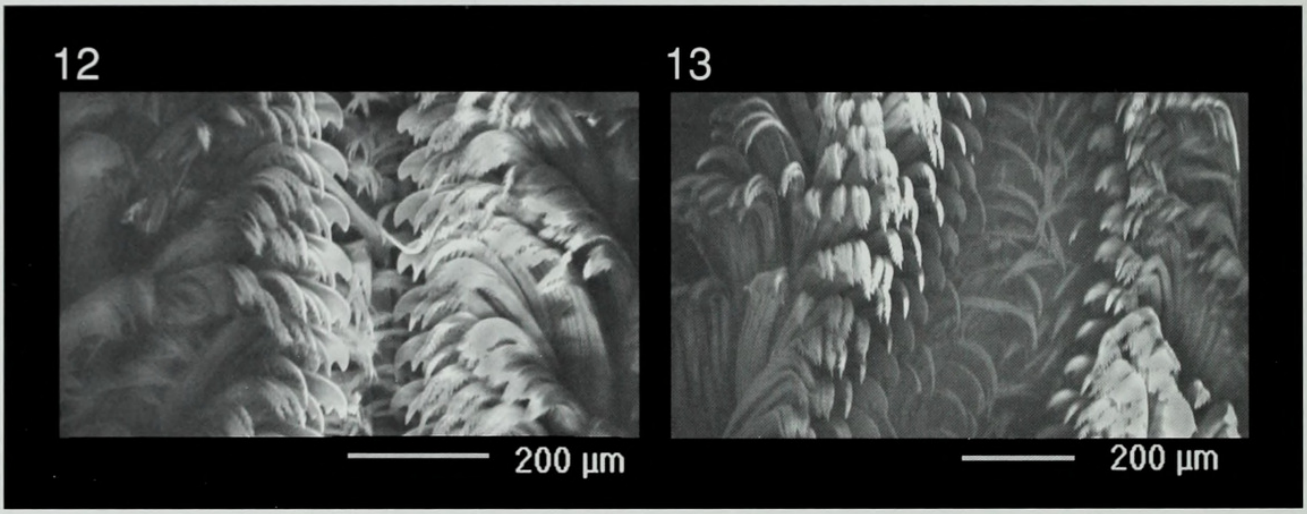

Figures 12-13. Radula of *Calliostoma conulum,* Laxe, A Coruña.

Figure 14. Distribution area of *Calliostoma conulum*.