Emarginula bonfittoi spec. nov. (Gastropoda, Prosobranchia, Fissurellidae),
a new bathyal species from the Mediterranean Sea

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Based on shell characters, Emarginula bonfittoi spec. nov. is described from the Mediterranean Sea. The new species was discovered in material collected on a the deep-sea coral bank located off-shore Latio (Central Tyrrhenian Sea). In the Mediterranean Sea, Emarginula multistriata Jeffreys, 1882, is the most similar congeneric bathyal species. The new species can be recognized by its shell outline and sculpture.

Key words: Gastropoda, Emarginulidae, Emarginula, taxonomy, Tyrrhenian Sea, deep-sea coral biocoenosis.

INTRODUCTION

In the Mediterranean Sea the genus Emarginula Lamarck, 1801, is represented by thirteen taxa (Piani, 1984; Sabelli et al., 1990; Van Aartsen & Carozza, 1996). Three of these can be considered deep-sea species: Emarginula christiaensi Piani, 1984, E. multistriata Jeffreys, 1882, and E. tuberculosa Libassi, 1859. Emarginula tenera Locard, 1892, which generally does not occur at bathyal depths, being mainly a deep-shelf species, has been recorded once from the Tuscan Archipelago (off Gorgona Island, Northern Tyrrhenian Sea) at a depth of 400-600 m by Bogi & Giusti (1994). During our study on bathyal molluscan species collected along the Central Tyrrhenian Sea, off the Latio coast (Smriglio et al., 1987; Smriglio & Mariottini, 2000), we came across a group of shells of the Emarginulinae J.E. Gray, 1834, which we could not identify with any other Mediterranean member of this subfamily. After a comparison with the deep-sea Emarginula species mentioned above, we concluded that these shells represent a species new to science, which seems to belong to the deep-sea coral biocoenosis. That species is described below as Emarginula bonfittoi spec. nov. Furthermore, we confirmed the presence of Emarginula tenera in the bathyal faunal assemblages of the Tyrrhenian Sea.

Abbreviations. – For collections: CS-MP, Carlo Smriglio and Paolo Mariottini colln, Roma, Italy; MZB, Laboratorio di Malacologia, Museo di Zoologia dell’Università di Bologna, Italy; USNM, United States National Museum of Natural History, Washington, USA. For shell characters: H, height; L, length; W, width.
Figs 1-10. *Emarginula bonfittoi* spec. nov.; central Tyrrhenian Sea, 41°51' N 11°28' E, at 400-650 m depth. 1-3, holotype (MZB15002); 1, apical view; 2, lateral view; 3, ventral view. 4-5, paratype A; 4, apical view; 5, lateral view. 6, paratype B; lateral view. 7, paratype C; lateral view. 8, paratype D; lateral view. 9, paratype E; lateral view. 10, paratype F; lateral view. Holotype and paratypes (CS-PM). Scale bar 1 mm.
Family Fissurellidae Fleming, 1822
Subfamily Emarginulinae J.E. Gray, 1834
Genus Emarginula Lamarck, 1801

Emarginula bonfittoi spec. nov. (figs 1-10)

Material. – Holotype (MZB15002), 16 paratypes (CS-PM): Central Tyrrenian Sea (41° 51' N 11° 28' E), at 400-650 m depth, dredged on sea bottoms hosting biocoenosis CB e VB (sensu Pérès & Pocard, 1964).

Description. – Shell white-grey, of medium size for the family, relatively high, bilaterally symmetrical; basal plane flat and basal outline oval (the greatest width in the middle, and anterior and posterior sides equally rounded), margin crenulate. Apex strongly curved, positioned at the posterior end of the shell; anal slit short, measuring only 0.13-0.17 of the total length, lunulæ on the slit-band directed dorsally. The sculpture consists of many regular, prominent, radial ribs; rarely, secondary, weaker ribs are visible between them, and concentric equally spaced ridges. The crossing of ribs and ridges creates a distinct regular and dense network.
Measurements. –

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<th>L (mm)</th>
<th>W (mm)</th>
<th>H (mm)</th>
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<tbody>
<tr>
<td>Holotype (MZB15002)</td>
<td>22.1</td>
<td>15.5</td>
<td>12.4</td>
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<td>16 paratypes (CS-PM):</td>
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<tr>
<td>paratype A,</td>
<td>23.0</td>
<td>16.2</td>
<td>13.0</td>
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<tr>
<td>paratype B,</td>
<td>24.0</td>
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<td>14.5</td>
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<td>paratype C,</td>
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<td>14.3</td>
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<td>paratype D,</td>
<td>16.0</td>
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<tr>
<td>paratype E,</td>
<td>16.8</td>
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<tr>
<td>paratype F,</td>
<td>17.8</td>
<td>12.5</td>
<td>10.9</td>
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Animal. – Unknown.

Etymology. – This species is named in honour of Dr Antonio Bonfitto (Bologna, Italy), biologist, expert malacologist and good friend of the authors.

DISCUSSION

*Emarginula bonfittoi* spec. nov. is clearly distinguishable conchologically from all other Mediterranean species of *Emarginulinae*. It is most similar to *E. multistriata* Jeffreys, 1882 (figs 11-14), a deep-sea species which, however, has a different shell outline, basal plane and sculpture. In particular, the sculpture differs conspicuously between the two species. In *E. multistriata* there is a small number of primary radial ribs, with clearly secondary ribs between them, and prominent, spiny tubercles where they cross with the concentric ridges. There are fewer and much more prominent lunulae on the slit-band.

A syntype of *E. multistriata* (USNM 178894) was figured by Warén (1980: pl. 2 figs 15-16), since Jeffreys’ figure (1882b: pl. 50 fig. 12), published shortly after his original description (1882a: 30), is very poor. A specimen of *E. bonfittoi* spec. nov. has been reported already from the same area in the Mediterranean Sea by Ardovini & Cossignani (1999), but the shell was misidentified as *E. multistriata*.

Our material was collected from muddy-bathyal bottoms (biocoenosis VB, sensu Pérès & Picard, 1964) surrounding deep-sea coral banks (biocoenosis CB, sensu Pérès & Picard, 1964), since in the analysis of the dredged muddy organic sediment we found many fragments of azooxanthellate corals like *Desmophyllum cristagalli* Milne Edwards & Haime, 1848, and *Dendrophyllia cornigera* (Lamarck, 1816).

We cannot exclude the possibility however, that the shells of *Emarginula bonfittoi* spec. nov. are from Pleistocene, Würmian, deposits, as suggested by the molluscan assemblage in the sample, in particular by the presence of *Pseudamussium septemradiatum* (Müller, 1776) (Bonfitto et al., 1994). As a matter of fact, since the beginning of an in-depth systematic screening of the Mediterranean deep-sea fauna, there has been a steady increase of the number of molluscan species to be added to the Quaternary, i.e. late Pleistocene to Recent, fauna of this basin (Bonfitto et al., 1994). In line with this trend, the three bathyal species *Emarginula christiaensi*, *E. multistriata* and *E. tuberculosa*, previously considered fossils in the Mediterranean basin, have recently been recorded live from deep-sea coral biocoenosis (Bogi & Giusti, 1994; Biondi & Di Paco, 1996). Further research on the Mediterranean deep-sea molluscan assemblage is needed to see whether *E. bonfittoi* spec. nov. is one more Recent species to be added to the malaco fauna of the Mediterranean Sea.
Smriglio & Mariottini: *Emarginula bonfittoi* spec. nov

In the dredged material with *Emarginula bonfittoi* spec. nov. we also found several specimens, still with soft parts, of *E. tenera*, which is known from the coralligenous environment of the continental shelf. This species has been reported only once from the Northern Tyrrhenian Sea, off Gorgona Island, at 400-600 m depth (Bogi & Giusti, 1994).

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REFERENCES


