

Some new information on *Calliotropis otto* (Philippi, 1844) (Vetigastropoda: Seguenzioidea: Calliotropidae)

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ABSTRACT. Some specimens of the deep water species *Calliotropis otto* (Philippi, 1844) collected in Hatton Bank were studied. The shell, operculum, radula and soft parts are illustrated. The synonymy of this species with other taxa from the Atlantic is discussed.

RESUMEN. Se estudian algunos ejemplares de la especie de aguas profundas *Calliotropis otto* (Philippi, 1844) recolectadas en el Banco Hatton. Se muestra concha, opérculo, rádula y partes blandas. Se discute la sinonimia de esta especie con otros taxones del Atlántico.

INTRODUCTION

Calliotropis otto (Philippi, 1844) is a species from the Atlantic deep water, but there is a record of Martens & Thiele (1904) referring this species (and presenting the radula) from the Indian Ocean.

Hickman & McLean (1990) gave information on the soft parts, operculum and radula on the basis of the study of the American populations.

Vilvens & Swinnen (2008: figs. 29-33) made a revision of the genus *Calliotropis* from central eastern Atlantic, showing the original figures of *Calliotropis otto* (Philippi, 1844) from the original description and from Martens & Thiele (1904) as well as a shell from Iceland. Colman & Tyler (1988) gave information on the reproduction of this species.

Some specimens of *Calliotropis otto* (Philippi, 1844) were collected by rock dredge by the Spanish Oceanographic Institute Ecovul/Arpa 2007 Survey on board R/V Vizconde de Eza on Hatton Bank area (NE Atlantic) at 59°17'N, 17°33'W in 962 meters.

Some additional information on the morphology of this species is given in the present work.

SYSTEMATICS

Remarks

The genus *Calliotropis* Seguenza, 1803 has been placed in several subfamilies as Margaritinae, Angariinae, Monodontinae, Calliostomatinae and Solariellinae. According to Hickman & McLean (1990) it should be placed in Eucyclinae Koken, 1897, in the tribe Calliotropini Hickman & McLean, 1990. Following Bouchet & Rocroi (2005) and Vilvens (2007) this genus should be placed in the family Chilodontidae Wenz, 1938, in the subfamily Calliotropinae Hickman & McLean, 1990. Williams et al (2008), based on DNA sequences placed Calliotropidae Hickman & McLean 1990 in Seguenzioidea Verrill, 1884.

Genus *Calliotropis* Seguenza, 1903

Type species by original designation: *Trochus otto* Philippi, 1844, Pliocene, Pleistocene, Italy.

***Calliotropis otto* (Philippi, 1844)**

Figs 1-13

Trochus otto Philippi, 1844: 227, pl. 28, fig. 9.

Description. *Shell* (Figs 1-4): Vilvens & Swinnen (2008) commented in the remarks the most important differential characters with other species.

Soft parts (Figs 6-10): Foot elongate, sole very rough. The cephalic lappets are relatively small and simple. The cephalic tentacles are large and elongate with an irregular ciliate surface. The cephalic membranes are of medium size and with a continuous border. Buccal margin with lateral extensions, mouth small. The neck lobes are of medium size and very digitate. The tip of the snout are amply expanded laterally. The epipodial tentacles are numerous: Two in medium position and three other ones of different size located near of the operculum insertion. Between the tentacles and at the base of some of them sensorial organes tuberculiformis, remind small tentacles. Propodium with lateral extensions. Eyes black, pedunculate.

Operculum (Fig. 5): yellowish, transparent, with short growing edge.

Radula (Figs 11-13): The rachidian tooth has a plate from which a sharp-pointed curved part appears on the upper area. The rachidian tooth (Fig. 12R) is slightly smaller; then the lateral teeth (Fig. 12L) are three, also curved on their upper part, where some small cusps can be seen near the sharp-pointed part; they are not so large as those shown by Hickman & McLean (1990: fig 47). The marginal teeth (Fig. 12M) are numerous and similar, narrow, elongate and curved at their upper part. The existence of lateromarginal plate is confirmed but difficult to be seen.

Remarks. Figures of this species has been published by Philippi (1844) and by Vilvens & Swinnen (2008) where the figures of Martens & Thiele (1904) are also shown.

Discussion. A problem not yet resolved is the synonymy of this species:

Warén (1991) mentioned with doubts that *Margarita regalis* Verrill & Smith, 1880 could be the same species. He also presented *Solariella infundibulum* Odhner, 1912 as a synonym.

About the identification of the species we have studied, if we follow the key given by Vilvens & Swinnen (2008) we could have doubts between *Calliotropis otto* and *C. mogadorensis* (see Locard, 1898). Some characters, as the existence of a spiral cord into the umbilicus which has been mentioned for this last species is not sure and seems to be a variable character, as well as the first row of nodules in the subsutural area, variable in our own material. The

most definitive decision was based in the origin of the material, very far from Morocco and close to the references from North Europa. It is possible that *Calliotropis mogadorensis* (Locard, 1898) could be another synonym of *C. otto*.

Hickman & McLean (1990: 84, figs D-E) figured the soft parts of *Calliotropis* species, showing the existence of a short number of epipodial tentacles at each side: Four in *Calliotropis carlotta* (Dall, 1902) and three in *C. regalis* (Verrill & Smith, 1880). Both are very different from the species here studied in the number and position of the epipodial tentacles. In spite of that, the position of the soft parts was examined in retracted animals, we can see in our material up to eight epipodial tentacles at each side. This seems to mean that this character is very variable into the genus. Another question is that *C. regalis* was also considered a synonym of the species here studied.

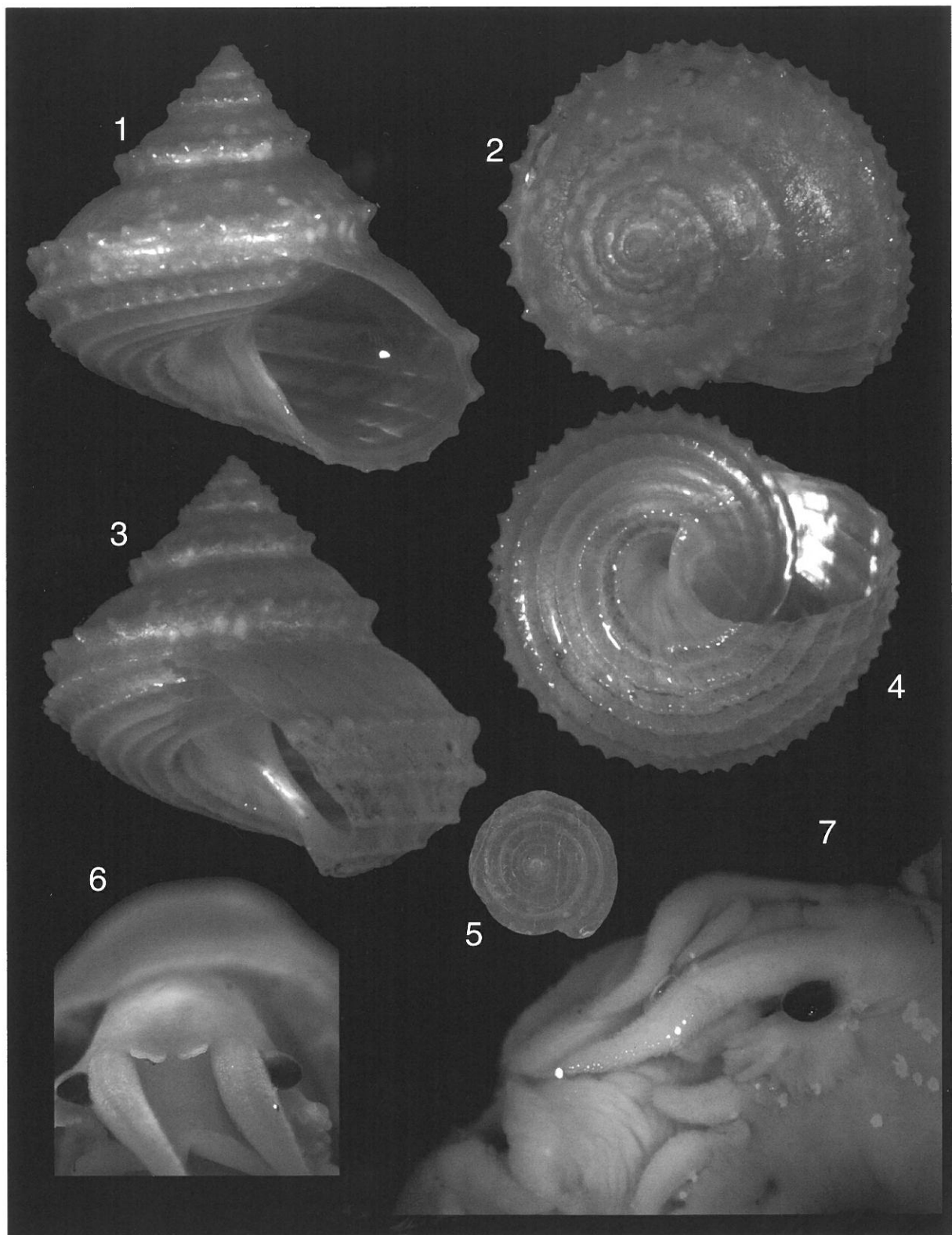
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Figures 1-7. *Calliotropis otto* (Philippi, 1844). 1-4. shell, 14.4 height x 16.5 mm diameter, Hatton Bank, 59°17N/17°33W; 5. operculum; 6-7. soft parts.

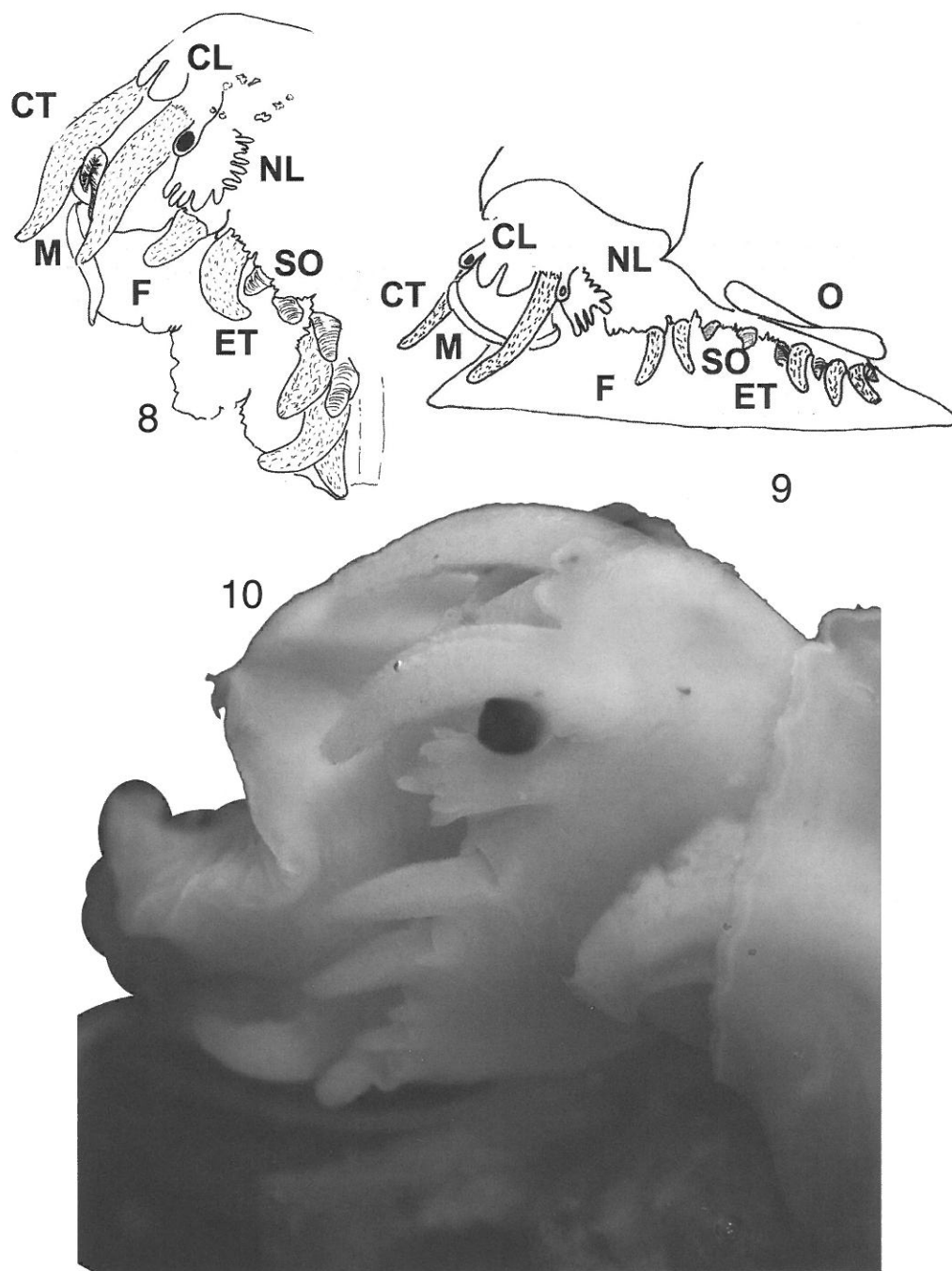


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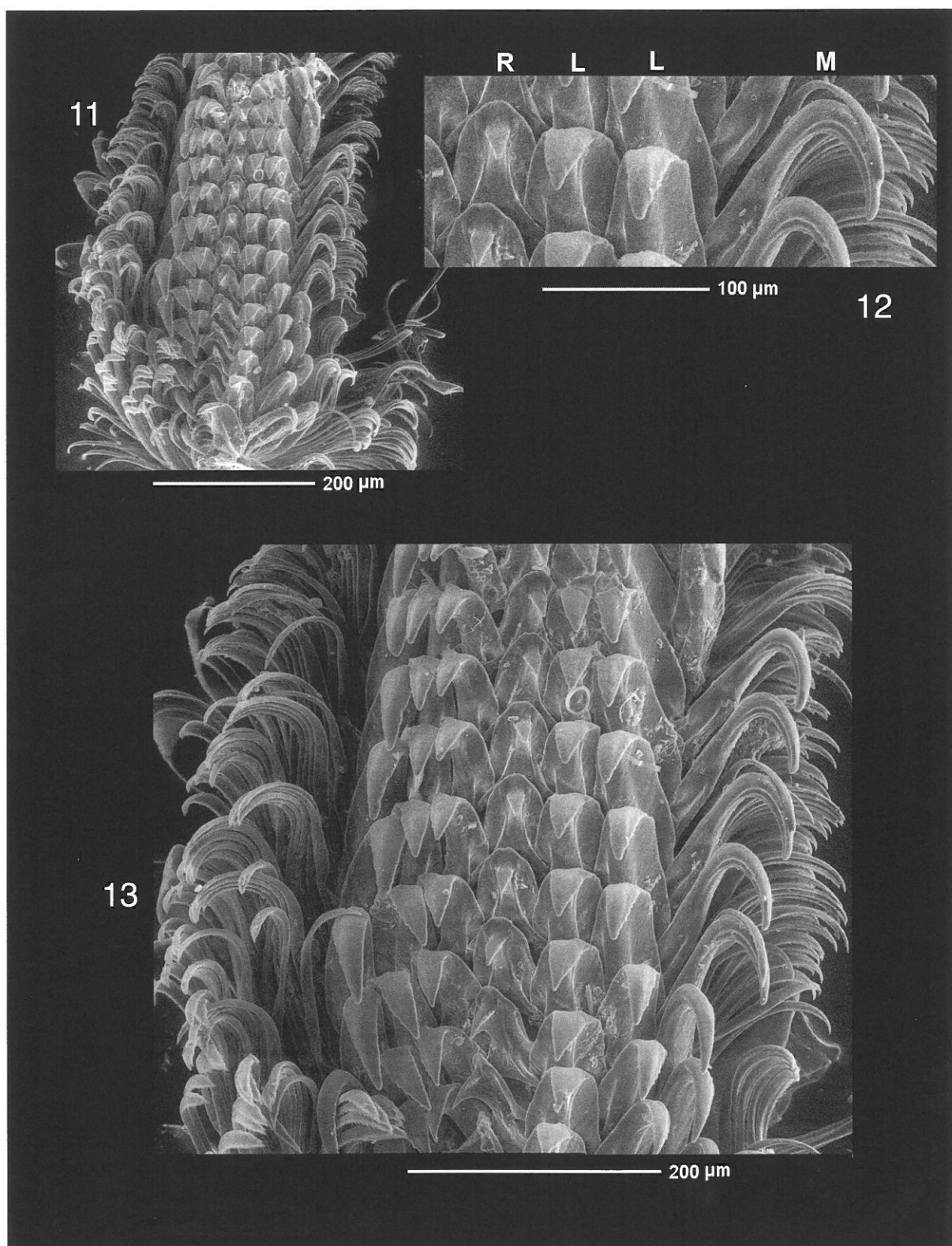
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Figures 8-10

Calliotropis otto (Philippi, 1844). Several positions of the soft parts (preserved in alcohol). CT: cephalic tentacles; F: foot; M: mouth; NL: neck lobes; O: operculum; ET: Epipodial tentacles; SO: sensorial organs.



Figures 11-13

Calliotropis ottoi (Philippi, 1844). Radula. **11.** general view; **12.** details under magnification, showing details of the different teeth: R: rachidian tooth; L: lateral teeth; M: marginal teeth; **13.** general view under magnification.