

## Description of a new *Trophon* (Gastropoda: Muricidae) from Antarctica

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**ABSTRACT.** *Trophon araios* n. sp. is described from the Weddell Sea. It is compared with *T. coulmanensis* Smith, 1907, described from the Ross Sea and with *T. veronicae* Pastorino, 1999, known from several localities from southern Chile to South Georgia.

### INTRODUCTION

The Antarctic species of *Trophon* were listed, illustrated and commented by a few authors in the second half of the 20<sup>th</sup> century, in particular Powell (1951, 1957, 1958). Powell (1960) also listed a total of 26 species in his study of the Antarctic and Subantarctic Mollusca. He was followed by Cernohorsky (1977) who illustrated a few of them, mainly consisting of type material housed in the Natural History Museum, London. Cantera & Arnaud (1985) in a more general paper devoted to the prosobranch Mollusca from Kerguelen and Crozet listed a few species with new localities, but without any illustration. Hain (1990) illustrated and commented three species while, in the same year, Dell (1990) published a most interesting book, more particularly devoted to the fauna of the Ross Sea from where he commented and illustrated 11 species. Numanami (1996) commented and illustrated four species and described one new subspecies. More recently, Pastorino (2002a) described two new trophonines from the Antarctic and illustrated a few species. He also studied the systematic and phylogeny of the *Trophon* species from Patagonia and Antarctica (Pastorino, 2002b) where he listed some 33 species as *Trophon* s.s. of which three were included in the genus with reservations.

While our knowledge on Antarctic shallow water species is rather good, the deep sea floor is poorly investigated. A high amount of undescribed and rare species has been collected during the three Polarstern ANDEEP expeditions (2002 and 2005). Some of them have been described (e.g. Engl 2004, Harasewych & Kantor 2004, Engl 2006, Schrödl et al. 2006, Schwabe 2006, Engl 2007), most of them will be presented in

the Atlas of Antarctic Mollusks (in prep. by the second author) and described later. The bathymetric range of these ANDEEP expeditions was from 1000 to over 5000m. So *Melanella guenterii* Engl, 2004 (an eyeless eulimid) has been described from a depth of 5194 m (Drake Passage).

A new *Trophon* will be described here. It has been collected by the Polarstern ANDEEP III Exp. (21.01. – 06.04.2005). This expedition undertook not only deep water research in the Weddell and Scotia Seas but also linked between the DIVA expeditions (Angola Basin) and former ANDEEP expeditions (Weddell Sea and Drake Passage), by first macro- and meiofauna investigation in the Cape Basin.

### Abbreviations

ANDEEP: ANtartic benthic DEEP-sea biodiversity.  
ZSM: Bavarian State collection for Zoology, Munich, Germany.  
P: Primary spiral cord  
P1: Shoulder cord  
P2-P6: Primary spiral cords of the teleoconch whorl

### SYSTEMATICS

Family MURICIDAE Rafinesque, 1815  
Genus *Trophon* Montfort, 1810  
Type species by original designation: *Murex magellanicus* Gmelin, 1791 (= *Buccinum geversianum* Pallas, 1774); Recent, Magellanic region.

*Trophon araios* n. sp.  
Figs 1-2, 3-7

**Type material.** Holotype ZSM Mol-20050867, N.W Weddell Sea, Powell Basin, 63°35.66' S, 50°42.86' W

– 63°34.65' S, 50°41.68' W, stn PS67/121-7, live collected in 2116-2118 m; 2 paratypes ZSM Mol-20050786, Weddell Sea, 70°39.37' S, 14°43.51' W – 70°40.48' S, 14°43.77' W, stn PS67.080-6, 2970-3095 m (2 fragments and 1 live collected specimen); 1 paratype ZSM Mol-20050996, E Weddell Sea, 69°24.15' S, 5°18.40' W – 69°24.63' S, 5°19.70' W, stn PS67.057-2, live collected in 1812-1822 m (juvenile).

**Type locality.** Antarctica, N.W Weddell Sea, Powell Basin, 63°35.66' S, 50°42.86' W – 63°34.65' S, 50°41.68' W, 2016-2118 m.

**Distribution.** Antarctica, Weddell Sea, alive in 1812-2970 m.

**Description of the holotype.** Shell thin, 39.86 high x 17.94 mm width, height/width ratio 2.22, lanceolate, broad, weakly spinose, lightly built, shoulder weakly sloping, lightly convex. Spire high with 5+ broad, convex, strongly shouldered teleoconch whorls, suture impressed. Protoconch and first teleoconch whorl eroded.

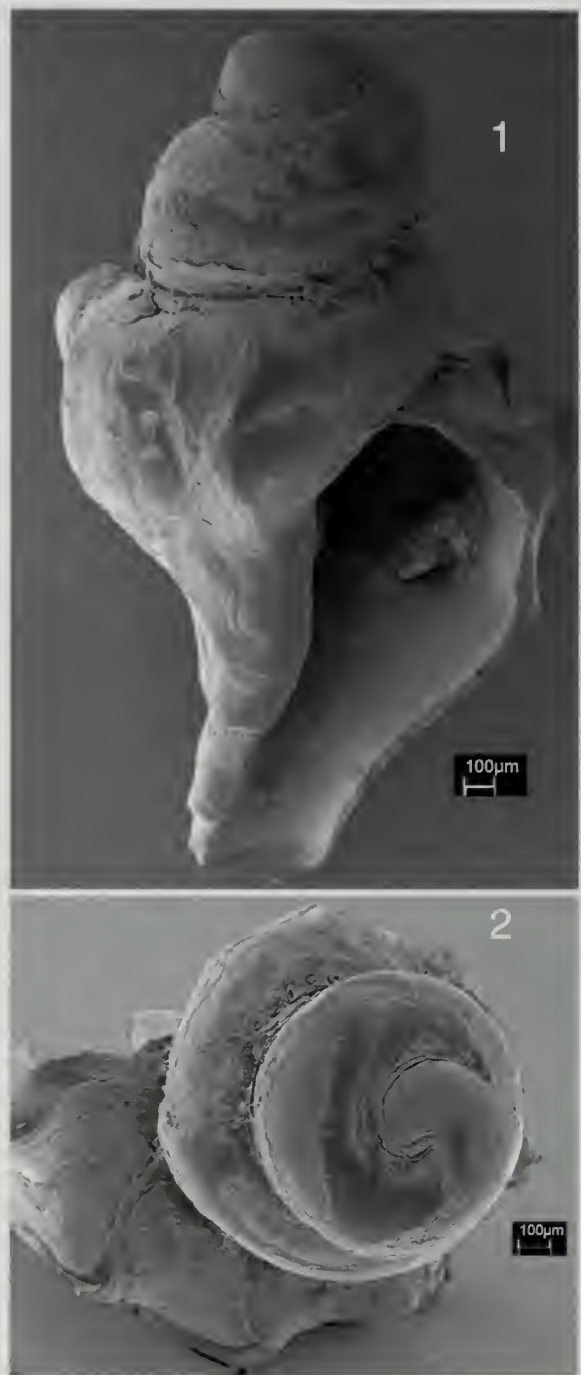
Axial sculpture consisting of low, narrow lamellae, more strongly developed at shoulder, forming short, open spines. Antepenultimate whorl with 10 lamellae, penultimate and last with 9; lamellae of other whorls eroded. Spiral sculpture low or obsolete, last whorl with quite indistinguishable, broad P1-P6. Shoulder smooth except axial lamellae.

Aperture large, moderately broad, ovate; columellar lip broad, smooth, entirely adherent, anal notch shallow, broad; outer lip smooth, thin, smooth within. Siphonal canal long, straight, broadly open, smooth. Dirty-white. Shell covered by remaining parts of thin, axially striate, white, intritacalx.

Operculum light brown, ovate with apical nucleus. Radula not examined.

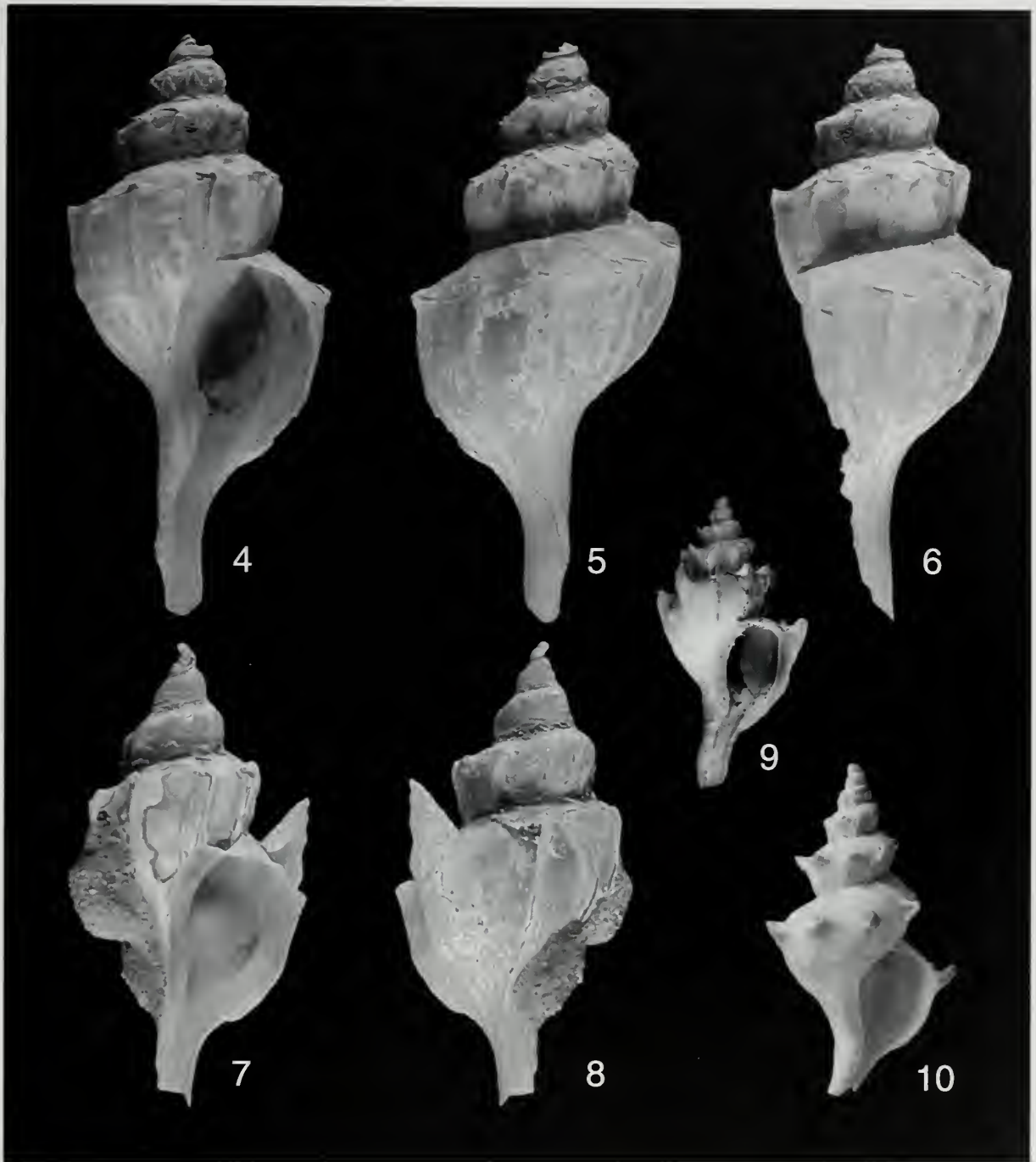
**Remarks.** Four specimens have been dredged of which 3 live specimens and one shell consisting of 2 fragments. One specimen (paratype ZSM Mol-20050996) only consists of the protoconch and first teleoconch whorl (Figs 1-2). The Protoconch is broad with 2.15 whorls and measures 1 x 0.6 mm. The other paratype (Figs 6-7) is subadult with strongly eroded first whorls.

**Discussion.** *T. araios* n. sp. resembles *T. coulmanensis* Smith, 1907 (Fig. 8), described off Coulman Island in the Ross Sea (Fig. 10) but differs in having a larger, broader, and much more thinner shell with a broader, more sloping shoulder, a broader aperture, a comparatively longer siphonal canal, broad spiral cords evident on the last whorl, and in having a different protoconch consisting of more numerous whorls. Dell (1990: 201) illustrated also the holotype



Figs 1-2. *Trophon araios* n. sp. E Weddell Sea, 69°24.15' S, 5°18.40' W – 69°24.63' S, 5°19.70' W, 1812-1822 m. Paratype ZSM Mol-20050996, 3.00 x 1.7 mm.

of *T. coulmanensis* and 3 other specimens that he identified as conspecific (his figs 357-359), however somewhat looking as *T. poirieria* Powell, 1951 (Fig. 9). He therefore suggests that *T. poirieria* should be probably considered as a synonym of *T. coulmanensis*.



**Figures 3-9**

**3-7.** *Trophon araios* n. sp. **3-5.** N.W Weddell Sea, Powell Basin, 63°35.66' S, 50°42.86' W – 63°34.65' S, 50°41.68' W, stn PS67/121-7, 2116-2118 m, holotype ZSM Mol-20050867, 39.86 x 17.94 mm; **6-7.** Weddell Sea, 70°39.37' S, 14°43.51' W – 70°40.48' S, 14°43.77' W, stn PS67/080-6, 2970-3095 m, paratype ZSM Mol-20050786, 25.3 x 12.6 mm.

**8.** *T. coulmanensis* Smith, 1907. Ross Sea, Coulman Id, 183 m, holotype BMNH 1905.9.25.52, 13.00 x 7.00 mm.

**9.** *T. poirieria* Powell, 1951. Bismarck Strait, Palmer Archipelago, 93-130 m, holotype BMNH 1961548, 15.00 x 8.3 mm.

His figure 357 is indeed closely related to the holotype of *T. poirieria* and could be that species, however, his figure 358 is another, yet unidentified species, while his fig. 359 is *T. coulmanensis*. We are of the opinion that *T. poirieria* is a different, valid species.

*T. araios* n. sp. could also be compared with *T. veronicae* Pastorino, 1999, described from southern Chile, the Strait of Magellan and off South Georgia

Islands, in 298-1272 m (Pastorino, 1999: 169), but *T. araios* differs in having a broader, much thinner shell with a lower spire, a broader shoulder and aperture, lower, thinner, axial lamellae, and in having a larger, smooth, twice as broad protoconch with fewer whorls.

**Etymology.** *araios* (Greek): thin, weak, slight (from the very thin and weak shell).



**Fig. 10.** Distribution map  
**A.** Type locality of *T. araios* n. sp.  
**B.** Type locality of *T. coulmanensis*

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*poirieria*. We are also grateful to Klaus Groh (Hackenheim, Germany) for his kind collaboration to John Wolff (Lancaster, Pennsylvania, USA) for checking the English text and to Sophie Valtat (Paris, France) and Claude Vilvens (Oupeye, Belgium) for additional comments.

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