

# *Opaliopsis atlantis* (Clench & Turner, 1952) (Gastropoda: Epitoniidae) found on an actinarian in the Mediterranean Sea

Constantine Mifsud

5, Triq ir-Rghajja, Rabat  
RBT 2486, Malta,  
kejdon@orbit.net.mt

## Summary

A live specimen of *Opaliopsis atlantis* was found attached to an actinarian (sea-anemone) in deep Maltese waters.

## Riassunto

Si segnala il ritrovamento dell'epitoniide *Opaliopsis atlantis* sull'anemone di mare *Actinauge richardi* (Marion, 1882). Come noto per altre specie della famiglia Epitoniidae, si suppone che anche *O. atlantis* sia un parassita di actiniani. È la prima segnalazione di parassitismo per questo epitoniide di acque profonde.

## Key Words

Epitoniidae, *Opaliopsis atlantis*, parasitism, Mediterranean.

## Introduction

*Opaliopsis atlantis* (Clench & Turner, 1952) is mainly known as a deep-water Amphi-Atlantic species and little is known on its biology although most of the studied species from the family are known to be parasites of Cnidaria Anthozoa, particularly of the orders Zoantharia and Actinaria (corals and sea anemones) (Bouchet & Warén, 1986; Neville, 1998; Shigeo & Kensuke, 2002; Gittenberger & Gittenberger, 2005; Gittenberger, 2006; Kokshoorn et al., 2007; Hoeksema & Gittenberger, 2008). To the few earlier records of *O. atlantis* from the Mediterranean Sea a new one (from Malta) is added here, with information on what was its host in this precise case. Previous records in the Mediterranean were from Malta (Mifsud 1993, 1994), the central Tyrrhenian Sea (Smriglio & Mariottini, 1999), Reggio Calabria and Dalmatia (Forum Natura Mediterraneo, 2008). These all were isolate fresh looking shells, exceptionally still containing dried soft parts.

A short history and a short list of references for the relationships between epitoniids (wentletraps) and their cnidarian hosts are treated by Kokshoorn et al. (2007). The epitoniid species were always found either on the host cnidarian itself (feeding on various parts of the animal) or in its very near vicinity. When on the host, they are not permanently attached by the proboscis and it is quite easy for them to fall off during standard sampling methods.

## Material and methods

In August 2008, a live specimen of *O. atlantis* was brought up among the by catch taken by a fishing boat from the West of Malta (35°57.934'N, 14°10.706'E, depth ca 550 m). The epitoniid was attached to the column

(near base) of an actinarian which itself was sitting on a chunk of fossil coral. A second actinarian of the same species and on the same coral substrate had no epitoniid attached. Such fossil coral chunks are occasionally brought up from deep muddy slopes and are known by elder Maltese fishermen as "il-Hagar" (corresponding mainly to the "white coral" banks of *Lophelia pertusa* and *Madrepora oculata*). These fossil corals which provide micro-habitats and substratum for a diversified epifauna, easily get entangled on fishing lines with baited large hooks.

The recovered coral was immediately placed in a bucket of sea water in order to try to keep any attached fauna alive. However, the high seawater surface temperature that day (> 20°C) made the epitoniid animal retreat into its shell whilst emitting a purple liquid through the aperture. The actinarians (the host specimen and the other one) had also contracted. Notwithstanding later water changes the animals did not recover. In the Mediterranean, at the above cited depth, the water temperature ranges from about 12.5° to 14.5°C (Cartes et al., 2004).

## Discussion

The observed *Opaliopsis atlantis* animal was dirty white or very light greyish and the operculum thin, flimsy and brownish, with an external deep concavity and a central nucleus. A juvenile fresh empty shell of the same species, consisting of the protoconch and two teleconch whorls (1.5 mm in height), was found after the coral chunk had been washed and the resulting deposit examined under magnification.

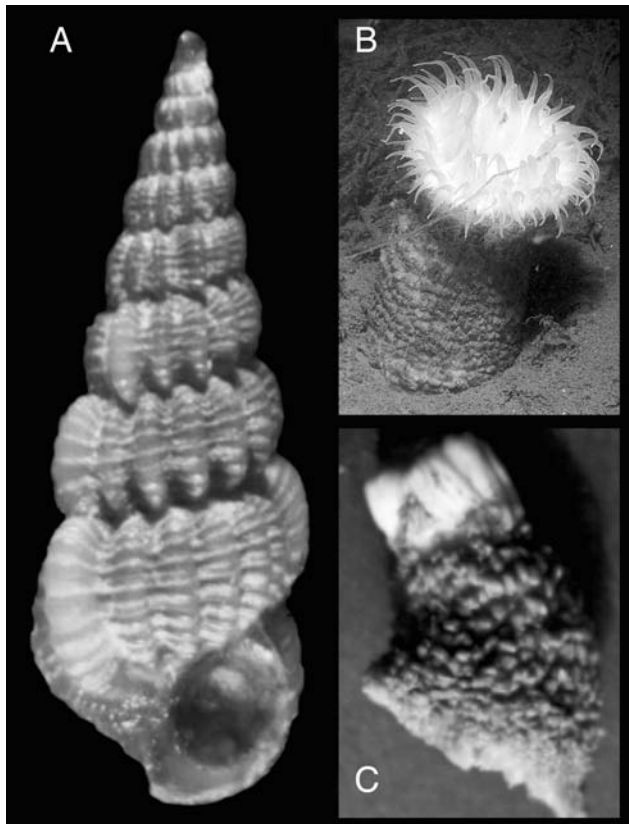
The actinarian host was identified as *Actinauge richardi* (Marion, 1882), family Hormathiidae. It is typically free living on muddy or sandy bottoms where the base then contains a ball of sediment, anchoring it to the seabed.

Occasionally, as in the present case, it is found attached to solid substrates, but it also attaches itself to mollusc shells. Its geographic range extends in the NE Atlantic from Norway South to the Mediterranean and Senegal, in a depth range of 60-2000 m (Pérès, 1964; Picton & Morrow 2007; N. Sanamyan, pers comm.).

It was only by chance that the few instances of parasitism have been recorded for the Mediterranean. The few records available are for *Gyroscalea lamellosa* (Lamarck, 1822), *Epitonium commune* (Lamarck, 1819) and *E. pulchellum* (Bivona, 1832) on *Anemonia sulcata* (Pennant, 1777) (Ghisotti, 1972; Albanesi et al., 1979), *Cirsotrema cochlea* (Brocchi, 1814) also on *Anemonia sulcata* (Oliverio, 1985), *Epidendrium dendrophylliae* (Bouchet & Warén, 1986) on the coral *Dendrophyllia ramea* (Linnaeus, 1758) (Gubbioli & Nofroni, 1985; Bogi & Giannini, 1990). Most of these records are for shallow water species, discovered by direct observation through Scuba diving or snorkeling.

## Conclusions

This chance finding of a live specimen of *Opaliopsis atlantis* duly confirms its presence in the deep waters of the Mediterranean. The species may be rare and up to now was overlooked there due to the difficulty to sample deep habitats. That situation is similar to that of



**Fig 1. A.** *Opaliopsis atlantis*, shell with animal and operculum, 7.2 mm in height. **B.** *Actinauge richardi*, a live specimen (after Picton & Morton, 2007; Picton courtesy). **C.** *Actinauge richardi*, the preserved specimen hosting *O. atlantis*.

**Fig 1. A.** *Opaliopsis atlantis*, conchiglia completa di parti molli ed opercolo, altezza 7,2 mm. **B.** *Actinauge richardi*, un esemplare vivente (da Picton & Morton, 2007; per gentile concessione di Picton). **C.** *Actinauge richardi*, l'esemplare conservato al quale era associato *O. atlantis*.

various other small deep-water species having been discovered in recent years in the deep Mediterranean. Epitoniids are commonly known as parasites of anthozoans, including actinarians. The finding of a live specimen of *O. atlantis* attached to an actinarian is not a total surprise but this is the first discovery of a Mediterranean host species of this epitoniid.

## Acknowledgements

The author would like to thank E. Cauchi owner of the fishing boat "Arabella I" for the study material; N. Sanamyan (Kamchatka Branch of the Pacific Institute of Geography, Russia) for the identification of the actinarian; and B. Picton (Department of Zoology, National Museums Northern Ireland) for permission to use his photo of live *Actinauge richardi*. Thanks are also due to H. Zibrowius for reviewing the manuscript and other valuable advices.

## References

- ALBANESI O., BERNARDELLI B., COSENZA M., CRETTELLA M., FACENTE A., FASULO G., FERRO R., GUARINO C., IZZILLO F., PERNA E. & PIROZZI N., 1979. Molluscs from the Gulf of Naples. Part 1 family Epitoniidae. *La Conchiglia*, **11**, 128-129: 3-8.
- BOUCHET P. & WARÉN A., 1986. Revision of the NE Atlantic bathyal and abyssal Aclididae, Eulimidae, Epitoniidae (Mollusca: Gastropoda). *Bollettino Malacologico*, **Suppl. 2**: 297-576.
- BOGI C. & GIANNINI F., 1990. Notes on a few molluscs found in the Mediterranean. *La Conchiglia*, **22**, 256:48-51.
- CARTES, J.E., MAYNOU F., SARDÀ F., COMPANY J.B., LLORIS D. & TUDELA S., 2004. The Mediterranean deep-sea ecosystems: an overview of their diversity, structure, functioning and anthropogenic impacts. In: *The Mediterranean deep-sea ecosystems: an overview of their diversity, structure, functioning and anthropogenic impacts, with a proposal for conservation*. Part 1. IUCN, Málaga and WWF, Rome: 9-38.
- FORUM NATURA MEDITERRANEO, 2008. [www.naturamediterraneo.com/forum/post.asp?method=TopicQuote&TOPIC\\_ID=29860&FORUM\\_ID=52](http://www.naturamediterraneo.com/forum/post.asp?method=TopicQuote&TOPIC_ID=29860&FORUM_ID=52).
- GHISOTTI F., 1972. *Epitonium (Gyroscalea) lamellosum*. *Schede Malacologiche del Mediterraneo*, **39**: 1-8.
- GITTENBERGER A., 2006. *The evolutionary history of parasitic gastropods and their coral hosts in the Indo-Pacific*. Doctoral Thesis, Leiden University.
- GITTENBERGER A. & GITTENBERGER E., 2005. A hitherto unnoticed adaptive radiation: epitoniid species (Gastropoda: Epitoniidae) associated with corals (Scleractinia). *Contributions to Zoology*, **74** (1/2) 125-203.
- GUBBIOLI F. & NOFRONI I., 1985. Malacological notes from the Alboran sea (West Mediterranean). Contribution No. 1. *La Conchiglia*, **17**, 200-201: 20-21.
- HOEKSEMA B.W. & GITTENBERGER A., 2008. Records of some marine parasitic molluscs from Nha Trang, Vietnam. *Basteria*, **72** (4-6): 129-133.
- KOKSHOORN B., GOUD J., GITTENBERGER E. & GITTENBERGER A., 2007. Epitoniid parasites (Gastropoda, Caenogastropoda, Epitoniidae) and their host sea anemones (Cnidaria, Actinaria, Cerantharia) in the Spermonde archipelago, Sulawesi, Indonesia. *Basteria*, **71** (1-3): 33-56.

- MIFSUD C., 1993. Recent Mediterranean findings, *Opaliopsis atlantis* (Clench & Turner, 1952). *La Conchiglia*, **25**, **268**: 61-62.
- MIFSUD C., 1994. More records for the presence of *Opaliopsis atlantis* (Clench & Turner, 1952) in the Mediterranean Sea. *La Conchiglia*, **26**, **273**: 61.
- NEVILLE B., 1998. The "A,B,C,s" of wentletraps, *Opaliopsis atlantis* (Clench & Turner, 1952). *Epinet*, **7** (1): 2.
- OLIVERIO M., 1985. Brief notes on the ecology of *Cirsotrema pumiceum* (Brocchi, 1814). *La Conchiglia*, **18**, **204-205**: 3.
- PÉRÈS J.M. 1964. Contribution à l'étude des peuplements benthiques du golfe ibéro-marocain. *Annales de l'Institut océanographique, Paris*, **41** [Résultats Scientifiques des Campagnes de la "Calypso"], **6**: 3-30.
- PICTON B.E. & MORROW C.C., 2007. [In] Encyclopedia of Marine Life of Britain and Ireland. URL: [www.habitas.org.uk/marinelife/species.asp?item=D12820](http://www.habitas.org.uk/marinelife/species.asp?item=D12820).
- SHIGEO H. & KENSUKE Y., 2002. On the association between *Cirsotrema varicosa* (Lamarck, 1822) and the sea anemone *Radianthus crispus* (Ehrenberg, 1834). *La Conchiglia*, **34**, **303**: 13-14, 59.
- SMRIGLIO C. & MARIOTTINI P., 1999. Molluschi del mar Tirreno centrale. Contributo XII. Segnalazione di due rari Epitoniidae batiali per le coste Laziali. *Bollettino Malacologico*, **34** (9-12): 137-140.

