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A mysterious, living, 'giant' Gymnosomata species near the Maltese Islands (Gastropoda, Opisthobranchia)

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Mysterious giant specimens of Gymnosomata are recorded from near the Maltese Islands in the central Mediterranean Sea.

Key words: Gastropoda, Opisthobranchia, Gymnosomata, Clionidae, Mediterranean Sea, Malta.

INTRODUCTION

In the Mediterranean Sea, species of Mollusca of the gastropod order Gymnosomata De Blainville, 1824, are rarely reported upon. Most records are from old expeditions (Tesch, 1950; Pruvot-Fol, 1954; Van der Spoel, 1976). The order includes seventeen species from the Mediterranean, distributed over four families (Sabelli et al., 1990, 1992). These molluscs do not possess a shell and their size rarely exceeds twenty mm. They use small wing-like appendages for swimming and have a rather bentho-pelagic life cycle. They are usually caught at depths well above the sea bed in specially controlled trawl nets.

DISCUSSION

Fishing trawlers are few in the Maltese Islands and the fishing season for these craft usually extends all the year round. Trawling is executed in areas outside a three mile limit from land, established by law, which in most cases is strictly enforced. An otter type of trawl is employed and the catches, besides the fish, include various classes of molluscs, such as cephalopods.

A recent examination of the discarded contents from a trawler's net revealed a small number of juvenile specimens of cephalopod species, entangled in a large mass of the algae *Udotea petiolata* (Turra) Borgesen. Also present were some calcareous algae (maerl) and a few sponges. The trawler was working at night, off the eastern coast of Malta at a depth of 60-80 m.

The majority of the molluscs found in this material belonged to *Loligo vulgaris* (L., 1758). All specimens were small, not exceeding 10 cm; some of them had been torn to parts. All the cephalopods found were isolated and preserved in alcohol for study purposes. Among this lot were also one female specimen of *Sepiola aurantiaca* Jatta, 1896, and two other strange specimens, which were isolated because they looked like cephalopods, but definitely did not belong to this order.

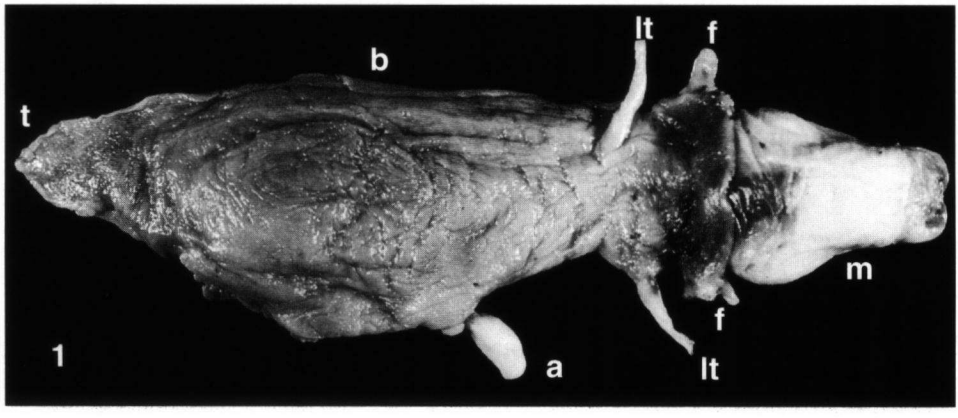


Fig. 1. The mysterious, gymnosomatous gastropod from off Malta, measuring 9 cm when still fresh. Abbreviations: a, sexual appendage; b, body; f, anterior frilled fringe of the body; m, buccal mass; lt, lateral 'tentacles'; t, tail.

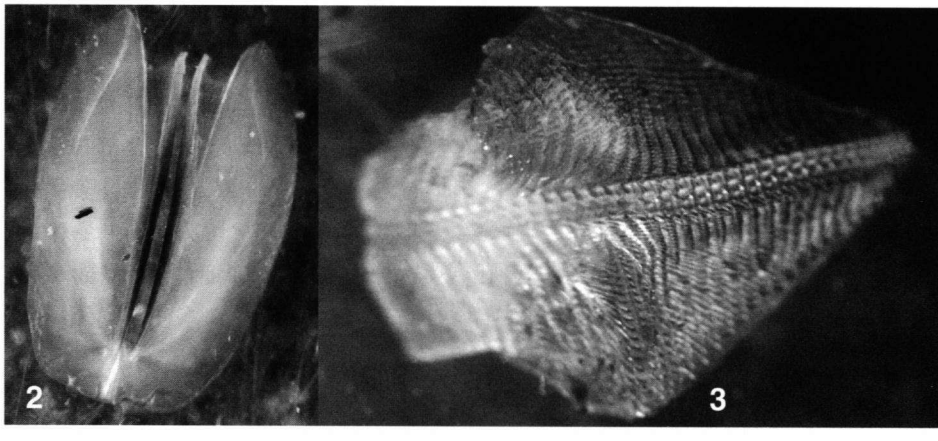
After careful examination, the specimens were found to resemble, morphologically, mollusc species from the order Gymnosomata. The specimens in particular resemble species of the genera *Thalassopterus* Kwietniewsky, 1910, and *Thliptodon* Boas, 1886. One of the specimens had the mantle missing and consisted essentially of the buccal mass and the trailing soft parts, which measured 30 mm in length and 10 mm in width. The buccal mass of this specimen was dissected and a pair of large jaws (fig. 2) and an arrowhead-shaped radula ribbon (fig. 3) were easily extracted. The radula contained small, green mucus lumps and a short piece of stalk, which may have been parts of the alga *Udotea*. However, the mollusc may have chewed this material during its captivity in the trawl net and this therefore does not represent its true diet. This is because gymnosomes are known to be carnivores feeding mostly on pelagic pteropod molluscs, Chaetognatha and small medusae. The jaws have a brown chitinous, serrated cutting edge and the radula consists of a central large, thick, flat, pointed cusp with a similarly shaped large first lateral on each side. The marginals are thin and shaped like bent crochet needles. There are as many as 34 of these marginals on each side, at the greatest width of the radula ribbon. The other specimen (fig. 1) seemed in perfect condition and when still fresh, measured 9 cm in length with a maximum width of 2.5 cm. This specimen and the parts of the damaged small specimen were also preserved in alcohol for future studies and are kept in the collection of the author.

The large specimen, when fresh, had a buccal mass or head measuring 15 mm across. The body or mantle was rather flattened, opaque and of a light grey colour, rounded anteriorly with a small flat triangular tail at the left posterior end. There are what look like two small 'wings' and there are also a few minute, frilled tubercular appendages at the anterior part of the mantle edge. On the right side of the body a large (1 cm), club-shaped, sexual appendage is present, followed by an 'opening'. Posteriorly, and also on the same side, is a much contracted gill stalk with 35 tightly compressed leaves on each side, positioned in a staggered fashion. This large specimen seems complete, with no parts severed or damaged.

Gymnosomes are known to be pelagic and are usually found in trawl hauls from depths well above the bottom. It could be, that by chance the specimens were caught in the trawl during its descent to the bottom or on its way up.

The general morphology of the trawled specimens suggest that they belong to the order Gymnosomata and the shape of the inflated buccal mass suggests that they belong to the family Clionidae Gray, 1840. The buccal apparatus is usually everted in species of this family, because they are trawled from great depths. However, these parts were retained in perfect order in the Maltese specimens.

The larger specimen has an external gill branch present, which seems to be lacking in species of *Thliptodon* Boas, 1886, and Gymnosomata in particular. The radula more particularly resembles that of *Thalassopterus* Kwietniewsky, 1910. Specimens of *Thalassopterus zancleus* Kwietniewsky, 1910, have been trawled near Messina in Sicily, which is only a short distance away from Malta. However, the hundreds of specimens trawled never exceeded a few mm in length and were described as "probably larvae" and therefore possess a different morphology.



Figs 2, 3. Jaws [2] and the complete radula ribbon [3].

CONCLUSION

At this stage it is difficult to classify the above-described Maltese trawled molluscs. More specimens would have to be obtained in order to make a complete study and assessment, and to make sure they are complete and hence determine the correct placement of this species. Only one species of this order had been recorded for the Maltese Islands. This is *Clionopsis krohni* Troschel, 1854, and was recorded by Vayssière (1913: 214).

These comparatively large molluscs have remained undiscovered for a long time, which may be due to their rarity. However, fishermen discard such specimens as rubbish and usually shovel them back into the sea before reaching land. This finding demonstrates in particular the need for more proper investigation and study in this small and nearly totally enclosed part of the Mediterranean sea.

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