

Haminoea cyanomarginata Heller & Thompson, 1983 (Gastropoda: Haminoeidae), a new invader for the Maltese Islands

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ABSTRACT. Living specimens of the lessepsian opisthobranch mollusc *Haminoea cyanomarginata* Heller & Thompson, 1983 were found in Maltese waters at the centre of the Mediterranean Sea. This record extends the range of distribution of the species into the Mediterranean.

MATERIAL AND METHODS

Several live specimens with a shell size ranging from 2 to 4mm (with mollusc 4-8mm) of *Haminoea cyanomarginata* Heller & Thompson, 1983 (Fig. 1) were found, on several separate occasions during October and November (2006). The specimens were found in weeds and algae brought up in fishermen's tackle from around meadows of *Posidonia oceanica* (Linnaeus) Delile, from off Id-Delli (2 specimens), off Gnejna Bay (15 specimens) and off Fomm ir-Rih Bay (4 specimens), limits of Mgarr, Malta, in depths of 20-50 m. This includes a stretch of coastline of about five kms.

The material consisted of fresh dead leaves of *P. oceanica* and some other dead algae, which at this time (autumn) are carried by the storms and currents from the actual meadows of the plant, either to the beaches or to deeper water, depending on the direction of the flow of the currents.

In each case, the material was rinsed in fresh water and then passed through a sieve with 0.5 mm mesh. The residue was then immediately replaced in a container with sea water and later examined under the microscope. Other live molluscs which were also present, besides the specimens of *H. cyanomarginata*, consisted of *Rissoa violacea* Desmarest, 1814 and *Rissoa membranacea* (J. Adams, 1800) with a few juvenile specimens of *Ocinebrina aciculata* (Lamarck, 1822). There were also a few specimens of *Bittium latreillii* (Payraudeau, 1826) *B. reticulatum* (Da Costa, 1778), two specimens each of *Petalifera petalifera* (Rang, 1828) and *Ocinebrina hybrida* (Aradas & Benoit, 1876) and one specimen of *Typhinellus labiatus* (Cristofori & Jan, 1832).

DISCUSSION AND CONCLUSION

The species was described by Heller & Thompson (1993) from the Sudanese Red Sea. It is easily distinguished from the other Mediterranean congeners by its mantle bordered with purple or dark blue and scattered vivid-yellow blotches all over. The soft parts as seen through the transparent shell are bluish and

have yellow-orange blotches of various sizes. The eyes are black and surrounded with a dark-purple patch, forming a sort of mask.

This Indo-Pacific species is one of the recent lessepsian immigrants entering into the Mediterranean Sea through the Suez Canal. Although its Mediterranean distribution has not been published extensively in the literature (Zenetos *et al.* 2004), it had been recorded earlier by Koehler (2003) and later by Saltik (2005) from Turkey, by Mifsud (2005) (Fig. 2) and by Yokes (2005) from Greece. The species is also listed in CLEMAM.

It seems that *Haminoea cyanomarginata* has found ideal conditions of life in the Mediterranean, because it is spreading rather rapidly. The species may have arrived locally through ships ballast water, because the location, being on the westerly side of the Island, is sheltered from strong easterly winds and is therefore an active ship bunkering site during such weather conditions.

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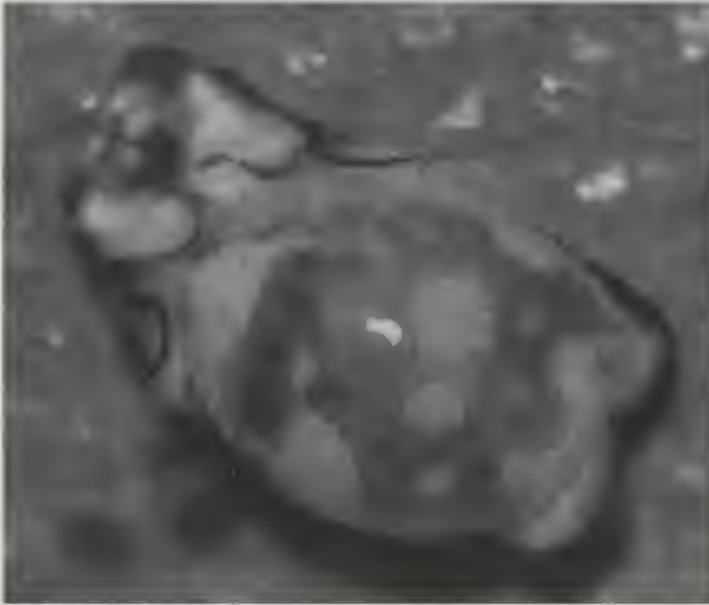
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Figures 1 - 2. *Haminoea cyanomarginata* Heller & Thompson, 1983
 1. Off Id-Delli, Malta
 2. Greece (photo P. Ovalis)