

***Cerithium scabridum* Philippi, 1848 (Gastropoda: Cerithiidae), a new invader to the Maltese Islands**

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KEYWORDS. Mollusca, Caenogastropoda, Cerithiidae, *Cerithium scabridum*, Lessepsian species, distribution, Central Mediterranean, Maltese Islands.

SUMMARY. A colony of the Lessepsian immigrant *Cerithium scabridum* Philippi, 1848 has been found living at the Island of Gozo in the Maltese Archipelago, at the Central Mediterranean. The animal, its local habitat and its possible food source are discussed together with its present distribution in the Mediterranean.

MATERIAL EXAMINED

During ongoing research on the mollusca inhabiting the Maltese waters, a few odd looking cerithids were discovered in weed washings made from the littoral of Qbajjar Bay, Gozo Island in the Maltese Archipelago, in January 2005. Later in-depth studies revealed that the specimens belonged to the Lessepsian species *Cerithium scabridum* Philippi, 1848, an Indo-Pacific immigrant which has established itself very well in the Eastern Mediterranean. The species had never been recorded before in the Maltese Islands. Later, during successive visits to the same site, the authors found hundreds of specimens of sizes, ranging from 10mm to 20mm in the near-shore tide pools, but all were inhabited by the hermit crab *Clibanarius erythropus* Latreille, 1818. Some of the shells had tubes of worms attached, an indication that the species must have been present there for quite some time. However, searches for live specimens at the sub-littoral during a few summer months' visits, mainly through weed-washings, proved to be negative. Moreover, searches in the near-shore tide-pools and the sub-littoral of the much larger area, on the right side of this very small bay, which is a popular diving site, did not reveal even a single crabbed *C. scabridum* shell.

Between late March and early April 2006 during other visits to the same site a number of "living colonies" were finally located. Hundreds of living specimens were surprisingly discovered in the small, inland, seawater reservoirs (Figs 3-4). This was rather unusual and unexpected, because a few of these reservoirs lie at least about fifty metres away from the shore and at a slightly higher level. These reservoirs are utilized by the local people as "heating tanks" or saturation tanks to feed the numerous salt pans which are distributed around them. The species seems to have managed to survive here during past hot summer months and also the rainy winter months. Although these reservoirs are totally cut off from the sea, occasional northerly

storms, or perhaps anthropological intervention only, can replenish their contents.

Description. Shell small for the family, reaching at most 25mm in length and 6mm in width. The protoconch (SEM in Garilli & Caruso 2004) consists of about two whorls. The first embryonic part is transparent, white, smooth and glossy, with an internal brown streak or hue, while the next is covered with micro-granulated spiral striae. The first two post nuclear whorls have two distinct spiral chords which are also surrounded by thin, micro-granulated spiral striae. The other 5 or 6 teleoconch whorls are rounded and slowly expanding. The sculpture consists of three spiral cords, crossed by about 10-12 axial ribs, forming pointed knobs at their intersections. A few axial ribs form weak varices. There are two thick and three or four thin, smooth, spiral chords at the base. Aperture oval, outer lip thin without any varix. Columella smooth. Base colour white to cream with scattered black or brown spots and streaks. Siphonal canal short and open.

The body of the animal (Figs 1-2) is cream coloured and "marbled" with yellow and grey mottles and flammules. The foot is shield-shaped with a pointed posterior end, and is of the same body colour. The tentacles are long, thin and transparent white with alternating patchy bands of grey and yellow. The round black eyes which are surrounded by a circular yellow ring are situated on a short stalk at the lateral sides of the tentacles. The mantle edge has opaque white papillae and the area at the edge of the siphon is yellow. The buccal mass has a short "flanged" extension on its lateral sides. The transparent, paucispiral operculum is oval, horny and of a brown colour.

Cerithium scabridum feeds on algae and it usually inhabits lagoons and tide-pools. The reservoirs in which the specimens were found from here have only patches of the widespread supralittoral Cyanobacteria,

Gloeocapsopsis crepidinum (Thuret) Geitler ex Komarek growing at the bottom and on their sides, and therefore it is assumed that the species is thriving on this food source. In fact a few groups were noticed close together "attached" to these small patches.

CONCLUSION

Since such a large number of living specimens have been discovered, it seems that the species had settled here for quite some time. The distribution of *Cerithium scabridum* seems to be spreading all over the Mediterranean Sea (Enzenross & Enzenross 2001, Garilli & Caruso 2004). Besides Port Said in Egypt, where the first occurrence was recorded, the literature records, include Syria, Lebanon, Israel, Greece, Cyprus, Turkey, Sicily and the Gulf of Gabes, Tunisia. The main reason for this wide distribution may be through marine vessels' ballast tanks. However, this species has a rather long planktotrophic larval phase, which, according to Ayal & Safriel (1982) may last up to six months and this may result in being the principal reason for its wide invasions to the various Mediterranean localities.

ACKNOWLEDGEMENTS

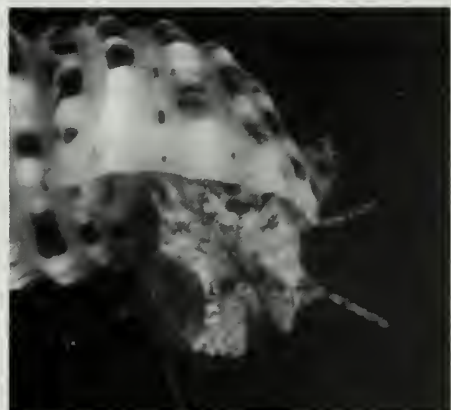
Thanks are due to Dr. E. Lanfranco and Dr. J. Borg from the Biology Department of the University of Malta for the identification of the Cyanobacteria. Thanks are also due to Henk Mienis of the Hebrew University of Jerusalem Israel for providing important literature and an unknown referee for important comments.

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1



2



3



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Figures 1-4

1. *Cerithium scabridum* Philippi, 1848. 25mm x 6mm. 2. Emerging from shell; 3. "feeding" on Cyanobacteria at bottom of reservoir; 4. Gozo Island, Qbajjar Bay: the salt pans are in the foreground.