

New Singapore record of the limpet, *Amathina oyamai mortoni*

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Subjects: Morton's amathina limpet, *Amathina oyamai mortoni* (Mollusca: Gastropoda: Amathinidae).

Subjects identified by: Chan Sow-Yan.

Location, date and time: Johor Strait, Changi Beach Park; 8 June 2019 at around 1000 hrs & 22 June 2019 at 0948 hrs.

Habitat: Estuarine shore. Attached to the shells of live window-pane oysters.

Observer: Lau Wing Lup.

Observation: Specimens of *Amathina oyamai mortoni* were found adhered to the edges of the shells of live saddle oysters (*Placuna ephippium*) that were exposed during morning low tide (Fig. 1-4). Immobile when found, the limpets did not move far from their original positions. However, individuals dislodged from the host shell were observed to crawl freely about.

Remarks: The Amathinidae consists of seven genera of cryptic gastropods whose biology is poorly understood. One of the members, *Amathina oyamai mortoni* was first described from Hong Kong by Ponder (1987) who found it on a giant oyster (*Crassostrea gigas*) purchased at the market. The shell is small (up to around 8 mm), thin and slightly translucent (Fig. 8 & 9), with 10-15 conspicuous to weak spiral ribs on the dorsal surface and a clear periostracum (Fig. 5 & 6). The aperture is large and the peristome is thin (Fig. 7 & 9). The live animal has a light yellowish foot (Fig. 7). The nominate subspecies, *Amathina oyamai oyamai*, is a shell fossil from Pleistocene Japan (Ponder, 1987), which in comparison, has a thicker shell and more spiral cords, and is about 1.5 times larger than the largest known *Amathina oyamai mortoni*.

Amathina oyamai mortoni seems to be ectoparasitic at least on the giant oyster and the saddle oyster (Fig. 1-4). It lives among barnacles and other encrustating organisms on the surface of the host's shell, and although capable of in-situ locomotion, is probably sedentary for much of its life (Morton & Morton, 1983). This species is assumed to feed on the body fluids of its host (Ponder, 1987). Morton and Morton (1983) hypothesise that *Amathina oyamai mortoni* is a 'sedentary gleaner of food particles travelling across the oyster's mantle edge'. This may explain the limpets' occurrence at the shell margins of its hosts (see Fig. 1-4).

Amathina oyamai mortoni is here presented as a new record for Singapore, and the third species in the family to be found there (see Tan & Woo, 2010; Tan & Low, 2014; Tan & Low, 2017).

References:

- Morton, B. & J. E. Morton, 1983. *The Sea Shore Ecology of Hong Kong*. Hong Kong University Press. 350 pp.
- Ponder, W. F., 1987. The anatomy and relationships of the pyramidellacean limpet, *Amathina tricarinata* (Mollusca: Gastropoda). *Asian Marine Biology*. 4: 1-34.
- Tan S. K. & M. E. Y. Low, 2014. Singapore Mollusca: 4. The family Amathinidae (Gastropoda: Heterobranchia: Pyramidelloidea). *Nature in Singapore*. 7: 9-13.
- Tan S. K. & M. E. Y. Low, 2017. Two species of pyramidelloid snails new to Singapore. *Singapore Biodiversity Records*. 2017: 109-110.
- Tan S. K. & H. P. M. Woo, 2010. *A Preliminary Checklist of the Molluscs of Singapore*. Raffles Museum of Biodiversity Research, National University of Singapore. 78 pp.



Fig. 1: Live saddle oyster ex situ, with *Amathina oyamai mortoni* (in red circle) and other marine encrusting organisms.



Fig. 2: Three live individuals of *Amathina oyamai mortoni* (within red circle) are attached at the edge of a live *Placuna ephippium*.

Photographs by Lau Wing Lup



Fig. 3. Single individual of a *Amathina oyamai mortoni* (within red circle) on the edge of the shell of a live *Placuna ehippium*.



Fig. 4: *Amathina oyamai mortoni* (in red circle) at the edge of a live *Placuna ehippium* shell.

Photographs by Lau Wing Lup

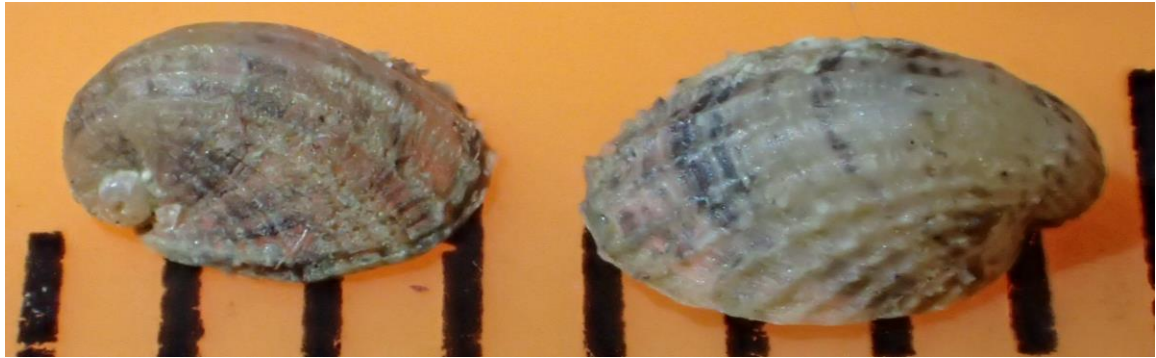


Fig. 5. Lateral-dorsal view of live *Amathina oyamai mortoni* ex situ.



Fig. 6. Dorsal view of live *Amathina oyamai mortoni* ex situ.

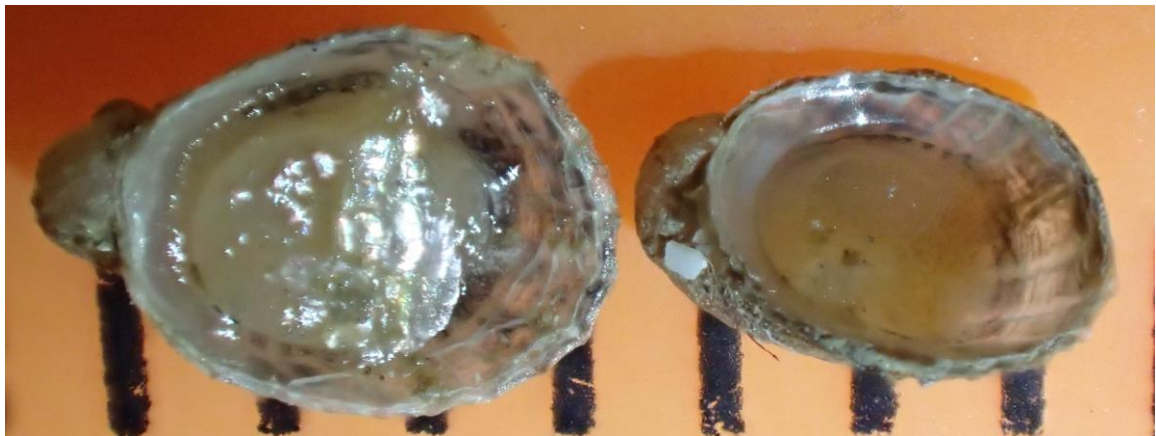


Fig. 7. Apertural view of the underside of live *Amathina oyamai mortoni* showing the light yellow feet.

Photographs by Lau Wing Lup.



Fig 8. Dorsal views of the empty shells of *Amathina oyamai mortoni* . Certain portions appear translucent and their thin periostraca are clearly visible.



Fig. 9. Apertural views of empty *Amathina oyamai mortoni* shells showing their wide limpet-like apertures.

Photographs by Lau Wing Lup