

Biodiversity Record: *Monotygma amoena* snails in Singapore

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Subjects: Amathinid snails, *Monotygma amoena* (Mollusca: Gastropoda: Pyramidelloidea: Amathinidae).

Subjects identified by: Chan Sow-Yan and Lau Wing Lup.

Location, date and time: Singapore Island, Pasir Ris Park –

- a) Sungei Tampines; 6 March 2021; 1230 hrs (Fig. 1).
- b) Sungei Api Api; 17 March 2021; 1700 hrs (Fig. 2).

Habitat: Estuarine. Water channels fringed with mangroves.

Observers: Chan Sow-Yan and Lau Wing Lup.

Observations:

- a) At Sungei Tampines, two live examples were found attached to the outer shell of a dead but articulate bivalve, *Neotrachezium sublaevigatum*, in a crevice in rotten wood, exposed on muddy sand during low tide (Fig. 3).
- b) At Sungei Api Api, a single live specimen was seen beside a live *Neotrachezium sublaevigatum*, which was byssally attached to a crevice in rotten wood in shallow water during mid-tide (Fig. 4).

The whitish shell of *Monotygma amoena* is subpellucid, tall and slender, with broad and prominent spiral cords and coarse axial striations in narrow spiral interspaces (Figs. 5, 7). The shell aperture is oblong in shape, its umbilicus is closed and the columella is curved and oblique (Figs. 5, 8). Mature shell specimens have a tooth at the shell's inner lip. Fresh specimens were noted to have a darker colour tone and appeared yellowish in colour (Figs. 3–5). The snails were noted to exude thick mucus when disturbed. The snails' soft tissue appears yellowish white with some brownish patches (Fig. 6). The three shells featured are around 3 to 5 mm in shell height (Fig. 7).

Remarks: *Monotygma amoena* was described from Bolinao in the Philippines, based on a specimen found at a depth of 10 fathoms (18.3 m) (Adams, 1853). This species is recorded from the coastal areas of the Chonburi province of Thailand (Chaiwathee et al., 2007) and the Khanh Hoa province of Vietnam (Zvonareva & Kantor, 2016). The first Singapore record was based on a single shell found in 2005 on the strandline of a sandy beach in Changi East (Tan & Low, 2017). As the area had undergone reclamation works from the early 1990s to the early 2000s (Bo et al., 2005), it is possible that the specimen originated from outside Singapore. Additionally, the ovate shell of the specimen, as depicted in Tan & Low (2017: fig. 2), does not fully resemble the syntype and possible syntype of *Monotygma amoena* figured in Beu et al. (2004: fig. 25B, as *Leucotina amoena*) and Aartsen & Hori (2006: figs. 1, 2), which suggests that it may have been another species (see also Tan & Low, 2017). Both the syntype and possible syntype have flatter and more narrowly spaced spiral ribs, with less prominent axial ridges in the interspaces compared to the Changi specimen (Tan & Low, 2017: fig. 2). The featured specimens from Pasir Ris have less convex whorls than the Changi specimen and match the appearance of the syntype and possible syntype. The featured observation confirms the occurrence of *Monotygma amoena* in Singapore.

The biology of amathinids remains poorly understood. These animals are ectoparasites. Based on anatomical features, they are assumed to feed on the body fluids of their hosts (Ponder, 1987). As the featured *Monotygma amoena* snails were found in close proximity to *Neotrachezium sublaevigatum*, it may indicate that the bivalve is the preferred host. The authors are unable to ascertain if this species is introduced or native, as it is small, understudied and cryptic in nature. The photographs herein may be the first colour images of the living snails with their suspected hosts in their natural microhabitats.



Fig. 1. Exposed area near the mouth of Sungei Tampines. (Photograph by: Lau Wing Lup).



Fig. 2. Along Sungei Api Api at mid-tide. (Photograph by: Lau Wing Lup).



Fig. 3. One of two live *Monotygmata amoena* snails (circled in red) beside a freshly dead *Neotrapezium sublaevigatum*. (Photograph by: Lau Wing Lup).



Fig. 4. A live *Monotygmata amoena* specimen (circled in red) in situ on a living *Neotrapezium sublaevigatum* within a submerged piece of rotten wood at Sungei Api Api. (Photograph by: Lau Wing Lup).



Fig. 5. Apertural view of a *Monotygmata amoena* with the snail's soft tissue retracted. (Photograph by: Lau Wing Lup).



Fig. 6. Close-up of the aperture of a *Monotygmata amoena* showing the snail's flesh. (Photograph by: Lau Wing Lup).



Fig. 7. Dorsal view of three *Monotygma amoena* shells of 3 mm (left), 4 mm (middle) and 5 mm (right) shell lengths. (Photographs by: Lau Wing Lup).



Fig. 8. Siphonal view of *Monotygma amoena* shells. (Photograph by: Lau Wing Lup).

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