

Records of *Lamellaria* snails in Singapore

Subjects: *Lamellaria* species (Mollusca: Gastropoda: Velutinidae).

Subjects identified by: Contributors.

Locations, dates and time: Singapore Strait –

- 1) Cyrene Reefs; 19 August 2012; around 0700 hrs.
- 2) Sentosa, Tanjong Rimau; 7 November 2013; around 1830-2100 hrs.
- 3) Pulau Satumu (Raffles Lighthouse); 23 September 2014; around 1100 hrs.
- 4) Seringat Kias; 31 October 2015; around 1900-2200 hrs.

Habitat: Marine. Coral rubble on reef flat exposed during low tide at Cyrene Reefs. Rocky/sandy intertidal area (0.5-0.7 m tide) at Tanjong Rimau, Sentosa. Coral reef bed (6-9 m depth) off Pulau Satumu. Intertidal seagrass bed (0.2-0.4 m tide) at Seringat Kias.

Observers: Toh Chay Hoon & Rene Ong.

Observations: Several finds of *Lamellaria* snails in the Singapore Strait (see above mentioned localities) are herein reported. These snails are typically found in association with colonial ascidians. The first two individuals (Fig. 1 & 2) were found around 5 m apart under rocks amongst rubble on the reef flat at Cyrene Reefs. The next one (Fig. 3) was found at Tanjong Rimau, Sentosa, around a year later. Since then, numerous individuals have been encountered on the Autonomous Reef Monitoring Structure (ARMS) at Pulau Satumu (Fig. 4 & 5), among unidentified brown colonial ascidians (Fig. 7). More recently, a yellowish-green individual (Fig. 6) was discovered on a blade of seagrass at Seringat Kias. It was in an area with many green colonial ascidians (probably *Lissoclinum bistratum*) growing on the seagrasses. All the *Lamellaria* snails observed were approximately 10 mm in length.

Remarks: *Lamellaria* snails are predators that prefer to feed, or feed exclusively, on ascidians (Millar, 1971; Fretter & Graham, 1981). Little is known about the ecology and biology of the tropical species. Most members of this family Velutinidae bear a thin and fragile internal shell that is somewhat reminiscent of some moon snails (family Naticidae). *Lamellaria* snails are cryptic animals that are very well camouflaged amongst the ascidians that they are found with. On most occasions, the snails would not have been noticed if they had not moved.

This contribution confirms the presence of *Lamellaria* snails in Singapore waters. This also appears to be the first published record of *Lamellaria* snails in Singapore as they have not been reported in previous malacological lists (e.g., Way & Purchon, 1981; Tan & Woo, 2010). It should, however, be noted that the taxonomic identifications of the velutinids herein featured are at best provisional as no specimens have been examined in detail. Thus the generic assignment, and even the number of species figured, remain unresolved. Based on the animals' external appearance, at least two or three species seem to be present in Singapore. Nevertheless, it is unclear if the morphological differences, especially colouration and colour patterns, could be due to abiotic factors, or are adaptations to the different associated ascidian prey species.

References:

- Fretter, V. & A. Graham, 1981. The prosobranch molluscs of Britain and Denmark. Part 6 – Cerithiacea, Strombacea, Hipponicacea, Calyptraeacea, Lamellariacea, Cypraeacea, Naticacea, Tonnacea, Heteropoda. *Journal of Molluscan Studies*. Supplement 9: 285-360.
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- 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, Singapore. 78 pp.
- Way, K. & R. D. Purchon, 1981. The marine shelled Mollusca of West Malaysia and Singapore. Part 2, Polyplacophora and Gastropoda. *Journal of Molluscan Studies*. 47: 313-321.



Fig. 1. *Lamellaria* sp. from Cyrene Reef.
Photograph by Toh Chay Hoon



Fig. 2. Another *Lamellaria* sp. from Cyrene Reef.
Photograph by Toh Chay Hoon



Fig. 3. *Lamellaria* sp. from Tanjong Rimau,
Sentosa. Photograph by Rene Ong



Fig. 4. *Lamellaria* sp. from the ARMS at Pulau Satumu.
Photograph by Rene Ong



Fig. 5. *Lamellaria* sp., more outstretched, from the
ARMS at Pulau Satumu. Photograph by Rene Ong



Fig. 6. *Lamellaria* sp. from seagrass bed at Seringat
Kias. Photograph by Rene Ong

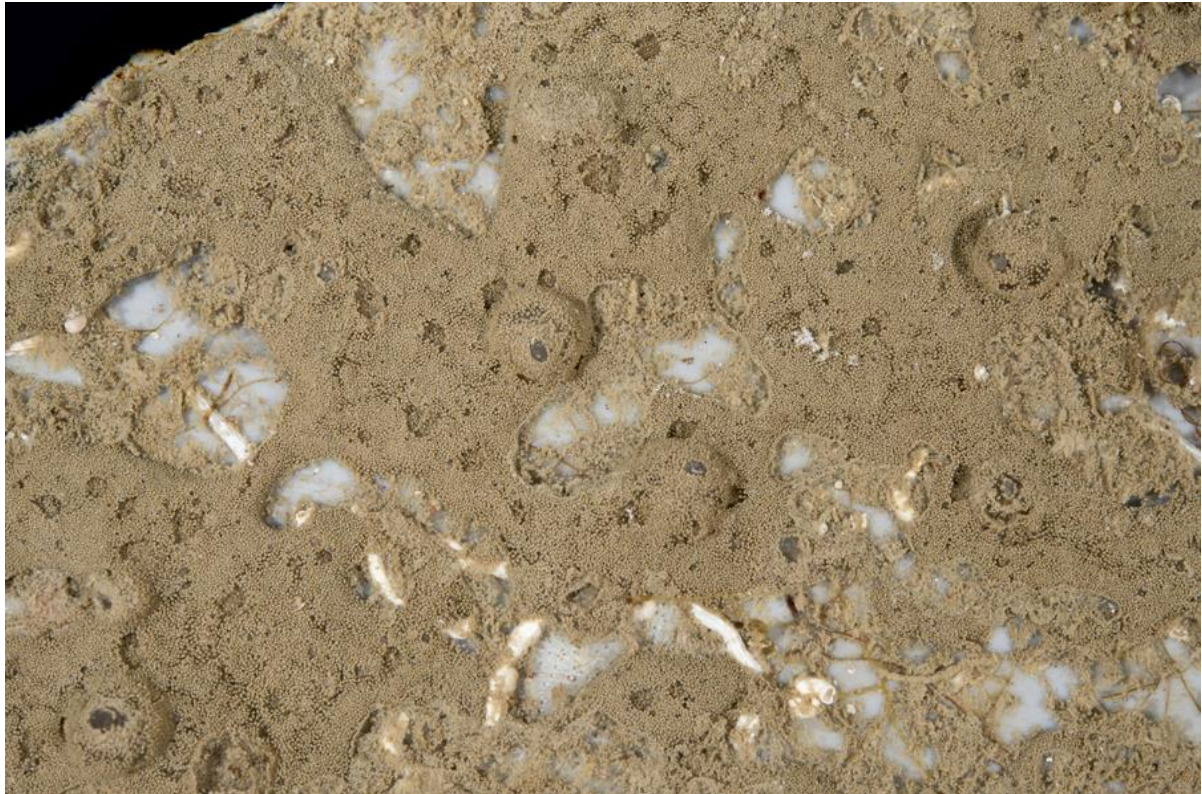


Fig. 7. The unidentified brown colonial ascidians on the Autonomous Reef Monitoring Structure (ARMS) at Pulau Satumu that the *Lamellaria* snails (Figs. 4 & 5) were taken from. Photograph by Rene Ong

Note: This is a contribution of the **Singapore Comprehensive Marine Biodiversity Survey** conducted by the National University of Singapore's Tropical Marine Science Institute and the National Parks Board.

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