

Biodiversity Record: First Singapore record of the venerid clam, *Lioconcha fastigiata*

Tan Siong Kiat* & Tan Heok Hui

Lee Kong Chian Natural History Museum, National University of Singapore, Singapore 117377;

Email: nhmtsk@nus.edu.sg (*corresponding author)

Recommended citation. Tan SK & Tan HH (2024) Biodiversity Record: First Singapore record of the venerid clam, *Lioconcha fastigiata*. Nature in Singapore, 17: e2024015. DOI: 10.26107/NIS-2024-0015

Subject: Venus clam, *Lioconcha fastigiata* (Mollusca: Bivalvia: Veneridae).

Subject identified by: Tan Siong Kiat.

Location, date and time: Singapore Strait, off western side of Pulau Semakau, 01°12.395'N 103°45.216'E; 9 August 2019; around 1300 hrs.

Habitat: Marine. Coral reef slope, at a depth of around 6.8 m.

Observers: Tan Heok Hui and others.

Observations: An empty shell, 29.5 mm in shell length (SL), apparently very freshly dead with valves still articulate and in immaculate condition (Fig. 1 A, B), was collected during a SCUBA dive survey. It was deposited in the Zoological Reference Collection, of the Lee Kong Chian Natural History Museum, at the National University of Singapore, and catalogued as ZRC.MOL.29406.

Remarks: This find of a *Lioconcha fastigiata*, a species which is distributed from the Andaman Sea to Japan and Australia (Huber, 2010), appears to be the first record for Singapore (e.g., Tan & Woo, 2010, and references therein cited). The scarce mentions in the literature and general lack of material in the ZRC suggest that all members of the genus *Lioconcha* are rare in Singapore. The other known species are *Lioconcha sowerbyi* recently reported by Tan et al. (2019 [herein Fig. 1D, E]), *Lioconcha ornata* listed in Glover et al. (2016), and an old record of *Lioconcha trimaculata* in Lyngé (1909, as *Circe (Lioconcha) trimaculata*).

However, it should be noted that the Singapore records of *Lioconcha ornata* and *Lioconcha trimaculata* do not have accompanying illustrations necessary to confirm species identification or allay doubts of possible taxonomic confusion. *Lioconcha fastigiata* generally differs from *Lioconcha ornata* in having a pattern of heavy black-brown tents and white interior, but close similarities in shell shape and patterns between the two are known (Lamprell & Healy, 2002; Huber, 2010). Herein, a specimen from Thailand in the ZRC (ZRC.MOL.4486) with pale orange interior tentatively identified as *Lioconcha ornata* is shown for comparison (Fig. 1E, F). *Lioconcha sowerbyi* has more pronounced concentric ridges compared to the relatively smooth shelled *Lioconcha fastigiata* and *Lioconcha ornata*, a more evenly convex ventral margin, and a large brown stain is usually present internally (see Fig. 1; see also Lamprell & Healy, 2002). *Lioconcha trimaculata* has a sculpture of raised concentric ridges all over its external surface more distinct than those of *Lioconcha sowerbyi*, and brown blotches at the adductor muscle scars (for comparison see Lamprell & Healy, 2002; Huber, 2010).

Literature cited:

- Glover EA, Williams ST & Taylor JD (2016) Lucinid bivalves of Singapore and their relationships (Bivalvia: Lucinidae). Raffles Bulletin of Zoology, Supplement 34: 539–565.
- Huber M (2010) Compendium of Bivalves. A Full-Color Guide to 3,300 of the World's Marine Bivalves. A Status on Bivalvia after 250 Years of Research. Conchbooks, Hackenheim, 901 pp.
- Lamprell K & Healy JM (2002) A review of the Indo-Pacific *Lioconcha* Mörch (Mollusca: Bivalvia: Veneridae), including a description of four new species from Queensland, New Caledonia and the Philippine Islands. Molluscan Research, 22: 101–147.
- Lyngé H (1909) Marine Lamellibranchiata. In: The Danish Expedition to Siam 1899–1900. IV. Det Kongelige Danske Videnskabernes Selskabs Skrifter, ser. 7 (Naturvidenskabelig og Mathematisk Afdeling), 5: 97–299, pls. 1–5, 1 map.
- Tan SK, Chan SY & Lau WL (2019) Sowerby's venus clam, *Lioconcha sowerbyi*, a new record for Singapore. Singapore Biodiversity Records, 2019: 118–119.

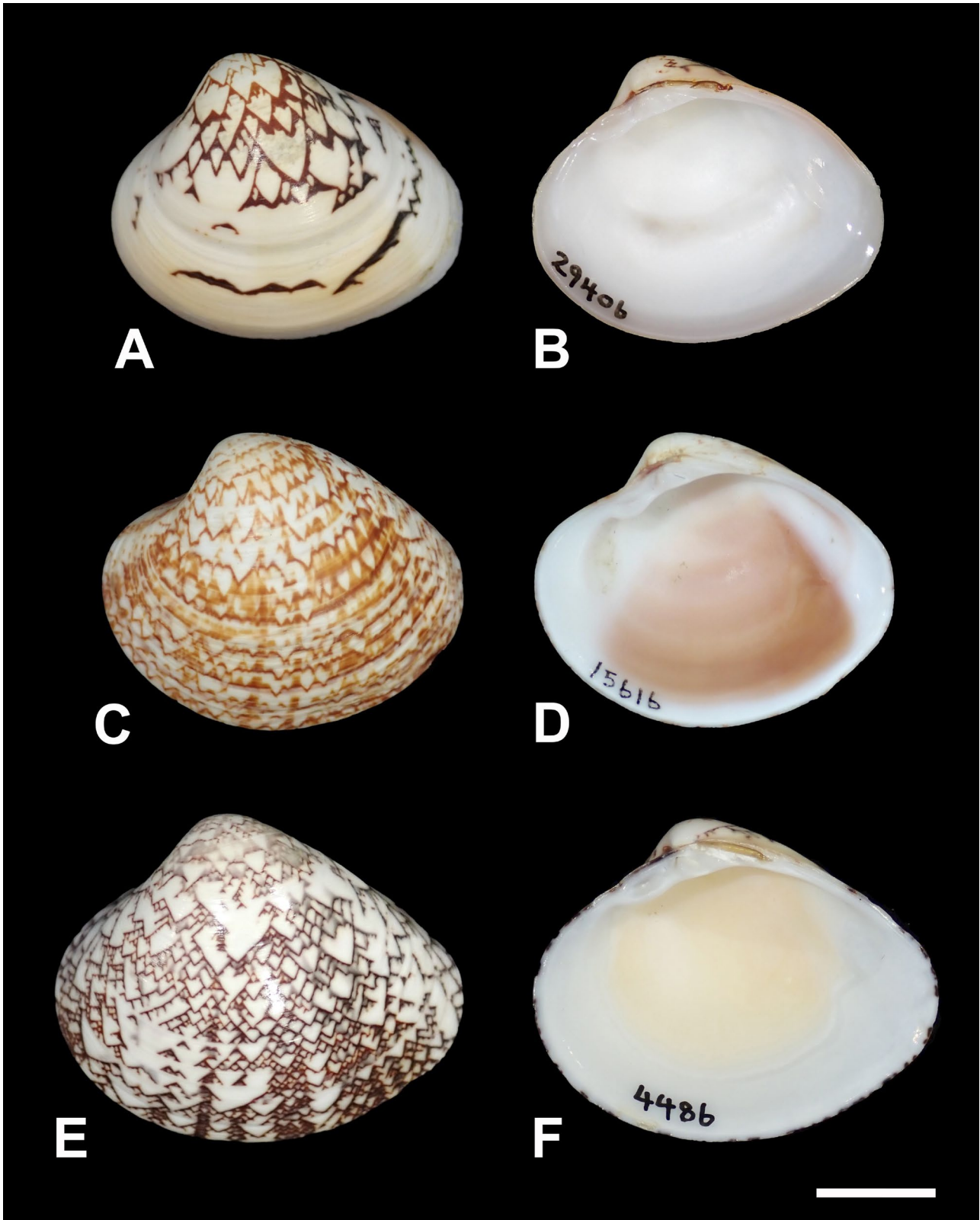


Fig. 1. Exterior of left valve (A, C, E) and interior of right valve (B, D, F) of *Lioconcha fastigiata* (A, B) and *Lioconcha sowerbyi* (C, D) from Singapore, and *Lioconcha ornata* (E, F) from Thailand for comparison. A–B, *Lioconcha fastigiata* (ZRC.MOL.29406), West Pulau Semakau, Singapore; SL 29.5 mm. C–D, *Lioconcha sowerbyi* (ZRC.MOL.15616), Changi Beach Park, Singapore; SL 29.9 mm. E–F, *Lioconcha ornata* (ZRC.MOL.4486), Ko Phai, Pattaya, Thailand; SL 34.2 mm. Scale bar = 10 mm (Photographs by: Tan Siong Kiat).