

Biodiversity Record: First Singapore record of the pyram snail, *Turbonilla kuraenohamana*

Chan Sow-Yan^{1*} & Lau Wing Lup²

¹VBox 888313, Singapore 919191; Email: chansowyan@gmail.com (* corresponding author)

²Hougang Avenue 10, Singapore 530450; Email: suiseki1984@yahoo.com.sg

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Subject: Kuraenohamana pyram snail, *Turbonilla kuraenohamana* (Mollusca: Gastropoda: Pyramidellidae).

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

Location, date and time: Singapore Island, Johor Strait, Changi Beach Park; 27 July 2021; 0720 hrs.

Habitat: Estuarine shore. Among a bed of mussels exposed during morning low tide.

Observer: Lau Wing Lup.

Observation: One example of 4.8 mm shell height was found within the articulate valves of a freshly dead Philippine horse mussel (*Modiolus philippinarum*) (Fig. 1).

This specimen has a smooth and chalky white protoconch that is heterostrophic (coiling in an opposing direction with reference to the helicocone axis), at an approximately 90-degree angle to the teleoconch axis. The shell is slim and conical, with pale reddish-brown spiral bands on the later whorls. The protoconch has about 2.5 whorls, the teleoconch about 11 convex whorls with axial costae. The shell suture is impressed. The umbilicus is closed. The shell's outer lip is thin and fragile. Its inner lip has no callus, and its columella is moderately thick with no columellar folds. The parietal wall has no denticles, and the aperture shape is subquadrate. The observer was unable to observe the snail flesh in detail as the animal had retracted into the shell. The retracted flesh seemed to be whitish (see Fig. 2).



Fig. 1. *Turbonilla kuraenohamana* on the inner surface of the shell of a dead Philippine horse mussel, in situ at Changi Beach Park, Singapore. (Photograph by: Lau Wing Lup).



Fig. 2. Aperture view of *Turbonilla kuraenohamana*. Entire shell (left) with two pale reddish-brown spiral bands on the later whorls, and the whitish snail flesh. Close-up of the whitish protoconch (right), devoid of ribs and heterostrophic (coiling in an opposing direction), at an approximately 90-degree angle to the teleoconch axis. (Photographs by: Lau Wing Lup).

Remarks: *Turbonilla kuraenohamana* is herein documented as a new record for Singapore (see Tan & Chou, 2000; Tan & Woo, 2010; Sanpanich & Tan, 2016; Chan & Lau, 2021). This species could have been overlooked due to its small size, or possibly misidentified as a wentletrap snail of the family Epitoniidae if its diagnostic protoconch was missing. As with most members of the family Pyramidellidae, it is believed to be an ectoparasite on the mussel (see Dinapoli et al., 2011). The featured specimen has been deposited (as ZRC.MOL23004) in the Lee Kong Chian Natural History Museum at the National University of Singapore.

Turbonilla kuraenohamana was described from Kuraenohama Beach in the Yamaguchi Prefecture of Japan by Hori & Fukuda (1999), and is regarded as a threatened species on Japanese tidal flats (Yoshimatsu & Fukao, 2018). The featured example appears to match the illustrations of the species by Hori & Fukuda (1999: figs. 18–21), Okutani (2000) and Kishi et al. (2015). It is interesting to note that this may be the first record of *Turbonilla kuraenohamana* outside Japan, which suggests that the species has a much wider distribution, or perhaps a recent human-assisted extralimital spread.

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