

Biodiversity Record: Pacific jewel box, *Chama pacifica*, at Changi

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Recommended citation. Chan S-Y & Lau WL (2022) Biodiversity Record: Pacific jewel box, *Chama pacifica*, at Changi. Nature in Singapore, 15: e2022085. DOI: 10.26107/NIS-2022-0085

Subjects: Pacific jewel-box, *Chama pacifica* (Mollusca: Bivalvia: Chamidae).

Subjects identified by: Chan Sow-Yan, Lau Wing Lup and Tan Siong Kiat.

Location, date and time: Johor Strait, Changi Beach, between carpark 6 and 7; various dates from 3 August 2019 to 26 December 2019, and 15 November 2020; 0650–0730 hrs, 1630–1800 hrs.



Fig. 1. Three *Chama pacifica* individuals attached to a venerid clam shell. One example is on the upper right, one on the lower left, and the third on the lower right. (Photograph by: Lau Wing Lup)

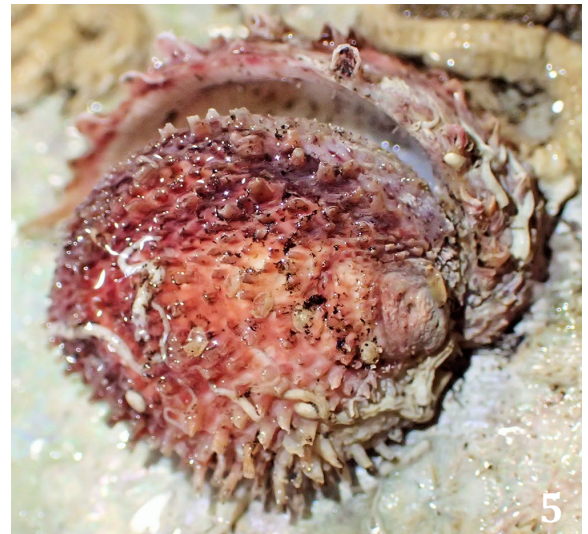


Fig. 2. Specimen attached to the apex of a pearl conch (*Laevistrombus turturella*). Fig. 3. Specimen attached to a valve of a Philippine horse mussel (*Modiolus philippinarum*). Fig. 4. Specimen attached to a broken piece of ceramic. Fig. 5. Specimen attached to a valve of a windowpane oyster (*Placuna* sp.). (Photographs by: Lau Wing Lup)

Habitat: Estuarine shore. At the intertidal zone during low tides.

Observer: Lau Wing Lup.

Observations: About a dozen living and dead examples ranging from 1 to 4 cm in shell length were found during low tide. They were attached singly to the shells of other gastropod and bivalve species, as well as on rocks and other man-made materials such as broken pieces of ceramic. The shells have an irregular sub-oval to sub-circular outline, with the sculpture of the outer surfaces consisting of fine short spines and plate-like projections arranged in concentric series. Live specimens tend to be overlooked or mistaken as part of a rock, due to biofouling on their shells. Freshly dead shells detached and washed ashore or still attached to the host, may be purple, pink or yellow, or sometimes a combination of all three colours. However, the spines of most specimens are uniformly white.

Remarks: *Chama pacifica*, also known previously as *Chama reflexa* and *Chama multisquamosa*, is a sessile bivalve that has been recorded attaching to rocks and coral boulders in the intertidal zone (Chuang 1973; Tan & Yeo, 2010) as well as on the pen shell, *Pinna atropurpurea* (Tan & Low, 2014). Five other species of *Chama* are also recorded in Singapore (see Tan & Woo, 2010). *Chama pacifica* was described from the Tuamotu Islands in the Pacific Ocean. The type specimens were found attached to winged oysters (*Pteria*), at a depth of 5.4 to 12.6 m. Specimens have been found down to 40 m, growing abundantly in port areas, and they appear to have low tolerance to salinity changes (Otero et al., 2013). However, the examples featured here are all from an estuarine environment with high fluctuations in salinity.

This morphologically variable clam has a cosmopolitan distribution, but is believed to be native to the Indo-West Pacific (Huber, 2010). It is known to be an invasive alien in the Mediterranean Sea (Galil, 2008). The flesh of *Chama pacifica* is edible, but has the ability to accumulate heavy metals, and might be suitable for environmental biomonitoring (Türkmen et al., 2005). Able to grow up to about 10 cm in length, the shell's spiny outer surface provides strongholds for a diverse community of epibiontic flora and fauna (Fishelson, 2000). Specimens found intertidally in Singapore tend to be much smaller.

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