

Biodiversity Record: New record of the chiton, *Acanthochitona ostreaphila*, in Singapore

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Subject: Oyster-loving glass-hair chiton, *Acanthochitona ostreaphila* (Mollusca: Polyplacophora: Acanthochitonidae).

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

Location, date and time: Singapore Island, Pasir Ris Park, mouth of Sungei Tampines; 18 September 2021; around 1519 hrs.

Habitat: Mangrove flanked by urban parkland. On muddy sand substrate.

Observers: Lau Wing Lup & Chan Sow-Yan.

Observation: A live example of about 5 mm shell length was found on the underside of a broken and disarticulated bivalve shell (Fig. 1). The chiton plates are greyish brown to yellowish brown with patches of dull green. Some parts of the jugum (middle ridge of the chiton plates) bear irregular patches of rose pink. The generally whitish jugum is wedge-shaped and consists of fused pustules which are not as prominent and convex as those of the tegmentum. There are six low and wide intermediate valves, somewhat rectangular in shape and subcarinate (Figs. 3 & 5). The posterior valve margin between the chiton plates is widely V-shaped (Fig. 4). The head valve is semicircular; the tail valve is oval with a low central mucro. Pustules on the tegmentum are arranged in a quincunx fashion, with the pustule top slightly convex at the tegmentum area. The girdle is light brown with dark olive bands and beset with small spicules (Fig. 2).



Fig. 1. Dorsal view of subject in-situ on underside of a broken and disarticulated bivalve (Photograph by: Lau Wing Lup).

Remarks: The genus *Acanthochitona* consists of 80 species of medium to small sized chitons worldwide. This genus is characterised by a reduced tegmental area, fusion of the lateral and pleural areas of the shell plates, which are usually adorned with raised granules on the dorsal side, and the presence of aragonitic bristles on the dorsal girdle (perinotum), the thick and tough tissue that surrounds the chiton plates (Schmidt-Petersen et al., 2015).

Although the scientific name implies that this chiton species attaches to oyster shells; specimens have been found on other substrates (such as stone, sand) and other bivalve shells (such as *Isognomon* sp.). The type locality of *Acanthochitona ostreaphila* is Cat Ba Island in northern Vietnam (Sirenko & Saito, 2017). It is also found in southern Vietnam from the intertidal zone to three metres depth. There is a form of this chiton that is pink along the entire jugal area of the shell plates. *Acanthochitona ostreaphila* inhabits mangroves and matured specimens can reach a body length of 12 mm (Sirenko & Saito, 2017). The discovery of this lone specimen in Singapore extends the range of *Acanthochitona ostreaphila* southwards.

Acanthochitona ostreaphila and its family Acanthochitonidae are herein documented as new records for Singapore. It is the fourth chiton known to date (see Chuang, 1973; Tan & Chou, 2000; Davison et al., 2008; Tan & Woo, 2010), and can be distinguished from other chitons in the country by the raised granules on its tegmentum (personal observations).

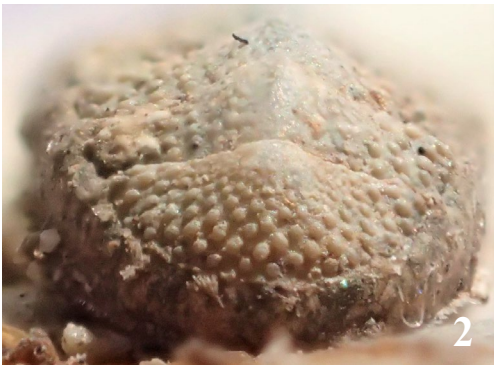


Fig. 2. Dorso-frontal view of chiton. Note the semicircular head valve (foreground), pustules on the tegmentum arranged in a quincunx fashion, and dark olive bands on the girdle. Fig. 3. Dorso-lateral view of chiton. Note the generally whitish jugum is wedge-shaped and consists of fused pustules which are not as prominent and convex as those of the tegmentum (foreground), and tail valve with a low central mucro (Photographs by: Lau Wing Lup).



Fig. 4. Dorso-posterior view of the tail valve (foreground). Note oval shape with a low central mucro, and that some parts of the jugum (middle ridge of the chiton plates) are pink. Fig. 5. Dorsal view of chiton. Space between black bars is 1 mm (Photographs by: Lau Wing Lup).

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