NATURE IN SINGAPORE **15**: e2022089
Date of Publication: 31 August 2022
DOI: 10.26107/NIS-2022-0089

Biodiversity Record: New record of the black-scar oyster, *Magallana bilineata*, in Singapore

Chan Sow-Yan* & **Lau** Wing Lup

Email: chansowyan@gmail.com (*corresponding author), suiseki1984@yahoo.com.sg

Recommended citation. Chan S-Y & Lau WL (2022) Biodiversity Record: New record of the black-scar oyster, *Magallana bilineata*, in Singapore. Nature in Singapore, 15: e2022089. DOI: 10.26107/NIS-2022-0089

Subject: Black-scar oyster, *Magallana bilineata* **(**Mollusca: Bivalvia: Ostreidae).

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

Location, date and time: Johor Strait, Changi Beach; 18 June 2022; around 0920 hrs.

Habitat: Estuarine shore. On muddy sand at intertidal zone during low tide.

Observer: Lau Wing Lup.

Observation: One freshly dead example of approximately 65 mm shell length, was found attached to a loose piece of granite rock. The external surfaces of both valves were partially covered in barnacles and algae. There were no other oysters on the same rock. There was a tear-drop shaped, smooth, non-nacreous and shiny blister pearl of about 2 mm diameter on the purplish-black adductor muscle scar on the right valve. The external surfaces of the valves were ventricose, greyish and higher than long. There were purplish-black blemishes on the lower (left) valve. The peripheries of both valves were concentrically ridged. The shell was roundish in shape with the left valve thicker, more convex and larger than the flattish upper (right) valve. A moderately small umbonal cavity under the left valve hinge appeared relatively short, straight and parallel to the anterior-posterior axis. The left valve had a thicker umbone. The interior surfaces of both valves were whitish with patches of blackish purple and golden yellow. The adductor muscle scar of both valves were reniform shaped and dark purplish black. Chomata is absent on both valves.

Remarks: Despite its wide distribution in the Indo-West Pacific (Poutiers, 1998), this appears to be the first record of *Magallana bilineata* in Singapore (see Chuang, 1973; Lam & Morton, 2009; Tan & Woo, 2010). This oyster can reach 15 cm in shell length, and inhabits intertidal and subtidal areas down to 20 m (Huber, 2010), attached singly to hard objects or growing in large clusters on soft bottoms in coastal seas and estuaries (Poutiers, 1998). Although a vital commercial species in the Philippines (Poutiers, 1998), *Magallana bilineata* has been identified as an invasive species in northern Queensland, Australia (Willan et al., 2021). A roundish natural pearl of 4.15 mm diameter was found in a 15 cm specimen (Aslam et al., 2019). *Magallana bilineata* appears similar and is genetically close to its congener *Magallana gigas,* but can be distinguished from the latter by its blackish or purplish adductor muscle scar and lacking dichotomous ribs radiating from the umbo (Batista et al., 2008; see Lam & Morton, 2009).

Literature cited:

Aslam S, Chan MWH, Siddiqui G, Kazmi SJH, Shabbir N & Ozawa T (2019) A near-round natural pearl discovered in the edible oyster *Magallana bilineata*. Gems and Gemology, 55: 439–440.

Batista FM, Ben-Hamadou R, Fonseca VG, Taris N, Ruano F, Reis-Henriques MA & Boudry P (2008) Comparative study of shell shape and muscle scar pigmentation in the closely related cupped oysters *Crassostrea angulata*, *C. gigas* and their reciprocal hybrids. Aquatic Living Resources, 21: 31–38.

Chuang SH (1973) Sea shells. In: Chuang SH (ed.), Animal Life and Nature in Singapore. Singapore University Press, Singapore, pp. 175–201.

Huber M (2010) Compendium of Bivalves. ConchBooks, Hackenheim, 901pp.

Lam K & Morton B (2009) Oysters (Bivalvia: Ostreidae and Gryphaeidae) recorded from Malaysia and Singapore. Raffles Bulletin of Zoology, 57: 481–494.

Poutiers J-M (1998) Bivalves (Acephala, Lamellibranchia, Pelecypoda). Ostreidae. In: Carpenter KE & Niem VH (eds.) FAO Species Identification Guide for Fishery Purposes. The Living Marine Resources of the Western Central Pacific. Volume 1. Seaweeds, Corals, Bivalves and Gastropods. FAO, Rome, pp. 224–233.

Tan SK & Woo HPM (2010) A Preliminary Checklist of the Molluscs of Singapore. Raffles Museum of Biodiversity Research, National University of Singapore. 78 pp. Uploaded 2 June 2010. https://lkcnhm.nus.edu.sg/wp-content/uploads/sites/10/app/uploads/2017/04/preliminary_checklist_molluscs_singapore.pdf (Accessed 29 August 2022)

Willan RC, Nenadic N, Ramage A & McDougall C (2021) Detection and identification of the large, exotic, crassostreine oyster *Magallana bilineata* (Röding, 1798) in northern Queensland, Australia. Molluscan Research, 41: 64–74.

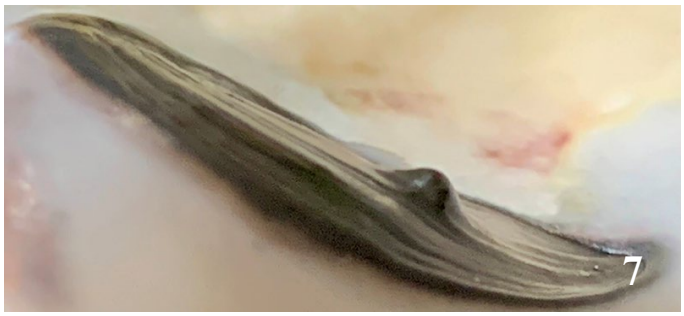

Fig. 1. Habitat where *Magallana bilineata* was found. Fig. 2. Dorsal view of *Magallana bilineata* attached to a granite rock. Fig. 3 & Fig. 4. Lateral views of oyster. Note the lower valve appears thicker, more convex and larger than the flattish right upper valve. Fig. 5. Interior surface of upper (right) valve. Note kidney-shaped purplish-black adductor muscle scar. Fig. 6. Interior surface of lower (left) valve interior. Fig. 7. Dorso-lateral view of blister pearl on the adductor muscle scar of the upper valve. (Photographs by: Lau Wing Lup)