

Biodiversity Record: *Pinctada chemnitzii*, an overlooked pearl oyster in Singapore

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Subjects: Pearl oyster, *Pinctada chemnitzii* (Mollusca: Bivalvia: Ostreida: Margaritidae).

Subjects identified by: Tan Siong Kiat.

Location, date and time: Three localities in the Singapore Strait —

- 1) Sentosa Island, Siloso Beach; 19 October 2020; afternoon.
- 2) Tanah Merah shore near Tanah Merah Ferry Terminal; 18 May 1999.
- 3) Tanah Merah shore east of Tanah Merah Ferry Terminal; 1 November 2016.

Habitat: Marine. At Sentosa, specimen found bysally attached amongst fouling organisms under floating bridge. Habitat details not noted for the specimens from Tanah Merah.

Observers: Specimens collected by I. Iesa, Lee B. Y., M. D. Safaruan and Tan H. H. (19 October 2020); L. Nguang (18 May 1999); I. Iesa, Tan H. H. and Tan S. K. (1 November 2016).

Observations: Several pearl oysters were collected during a marine biodiversity survey at Sentosa Island. One of the specimens was deposited in the Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum at the National University of Singapore, and subsequently determined to be a *Pinctada chemnitzii*. This specimen measures 56.3 mm in shell width. The shell is thin, of light brown colouration, and has prominent fragile growth processes with white squiggly lines (Fig. 1).



Fig. 1. *Pinctada chemnitzii* from Siloso Beach, Sentosa, showing the exterior of left valve (left) and the interior of the right shell valve (right); scale bar = 10 mm. (Photograph by: Tan Siong Kiat).

Specimens in the ZRC were examined for species determination and comparisons. Two specimens from the Tanah Merah shore (ZRC.MOL.10794 from May 1999 and ZRC.MOL.9470 from November 2016) are figured to illustrate some variations of the local shell forms for comparison (Fig 2).

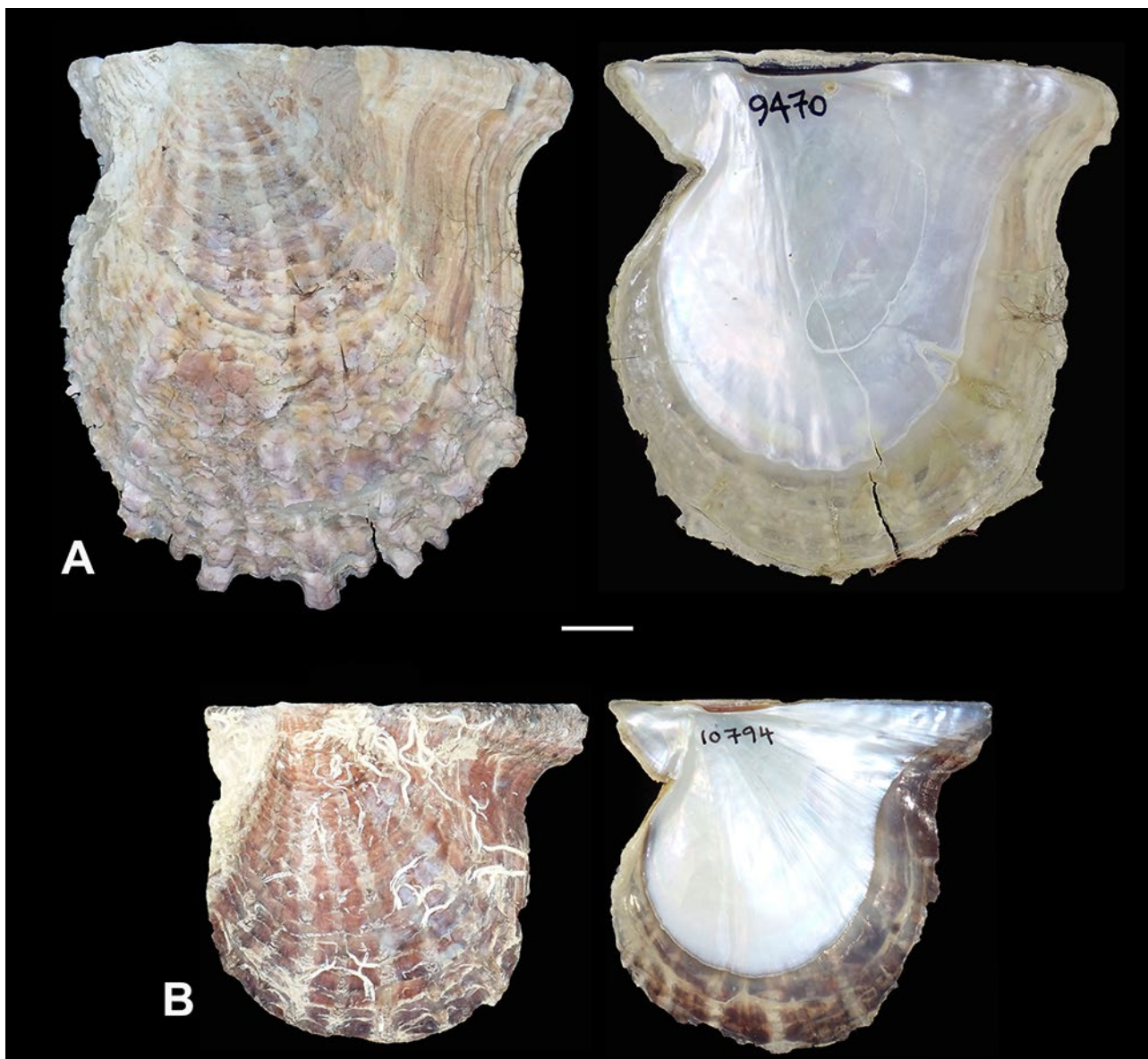


Fig. 2. Variations in the shell form and colour of *Pinctada chemnitzii* in examples collected in the vicinity of Tanah Merah Ferry Terminal; scale bar = 10 mm, exterior of left valve (left) and the interior of the right valve (right). A: Large straw coloured shell (ZRC.MOL.9470), with pink growth processes, or scale-like projections, collected in 2016. B: Reddish brown shell (ZRC.MOL.10794), partly covered with encrusting worm tubes on the exterior of the left valve, with yellowish brown growth processes bearing white squiggly lines, collected in 1999. (Photograph by: Tan Siong Kiat).

Remarks: Species determination of the members of the genus *Pinctada* can be difficult. Their shells can vary quite considerably in shell shape, thickness and colour, even within the same area or population. It is therefore interesting, but perhaps unsurprising, to note that *Pinctada chemnitzii* does not seem to have been previously recorded in the literature. This species appears to have been either overlooked or confused amongst a few of the half a dozen species of *Pinctada* reported from Singapore thus far (see Tan & Woo, 2010, and references therein cited).

The only verifiable Singapore record of this species in the literature is a figure identified as *Pinctada vulgaris* in Lim (1969). One could also note that Lim's (1969) *Pinctada vulgaris* is not conspecific with the species of the same name figured in Chuang (1973: pl. 3, fig. 1), which is considered to be possibly *Pinctada sugillata* (Reeve, 1857) or *Pinctada fucata* (Gould, 1850). The taxon *Pinctada vulgaris*, originally described as *Perlamater vulgaris* by Schumacher (1817), is usually treated as a supposed synonym of *Pinctada fucata* or *Pinctada imbricata* (e.g., Hynd, 1954; Huber, 2010), or a nomen dubium (e.g., MolluscaBase Eds., 2023).

Many Singapore specimens are deposited in the ZRC, which suggest that this species is quite common. Most of these specimens were collected from around the eastern part of Singapore (Changi, Tanah Merah, etc.), with the earliest historical specimens being a couple of specimens collected from Siglap in 1933, catalogued as ZRC.MOL.8985.

Pinctada chemnitzii can be readily distinguished from all other congeneric species thus far recorded from Singapore by its large and often very prominent posterior ear. In addition, the nacreous area of the right valve is typically conspicuously smaller relative to the left valve compared to the others (for details and discussions on related species and shell characteristics, see also Hynd, 1954).

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