

Biodiversity Record: The double-pointed drill, *Orania bimucronata*, in Singapore

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Subjects: Double-pointed drill, *Orania bimucronata* (Mollusca: Gastropoda: Muricidae).

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

Location, date and time: Singapore Island, Punggol Beach Park; 16 March 2024; around 1012 hrs.

Habitat: Estuarine. Intertidal shore among wave-breaker rocks at low tide.

Observers: Lau Wing Lup and Chan Sow-Yan.

Observation: Three snails of about 18 mm shell height, were each found separately on rocks among encrusting organisms (Figs. 1–3). While wet shells are dark brown and black, dried shells have a black and white chequered pattern. Spiral nodules were noted to be prominent especially on the last whorl. The yellow operculum is thin and corneous (Fig. 4).

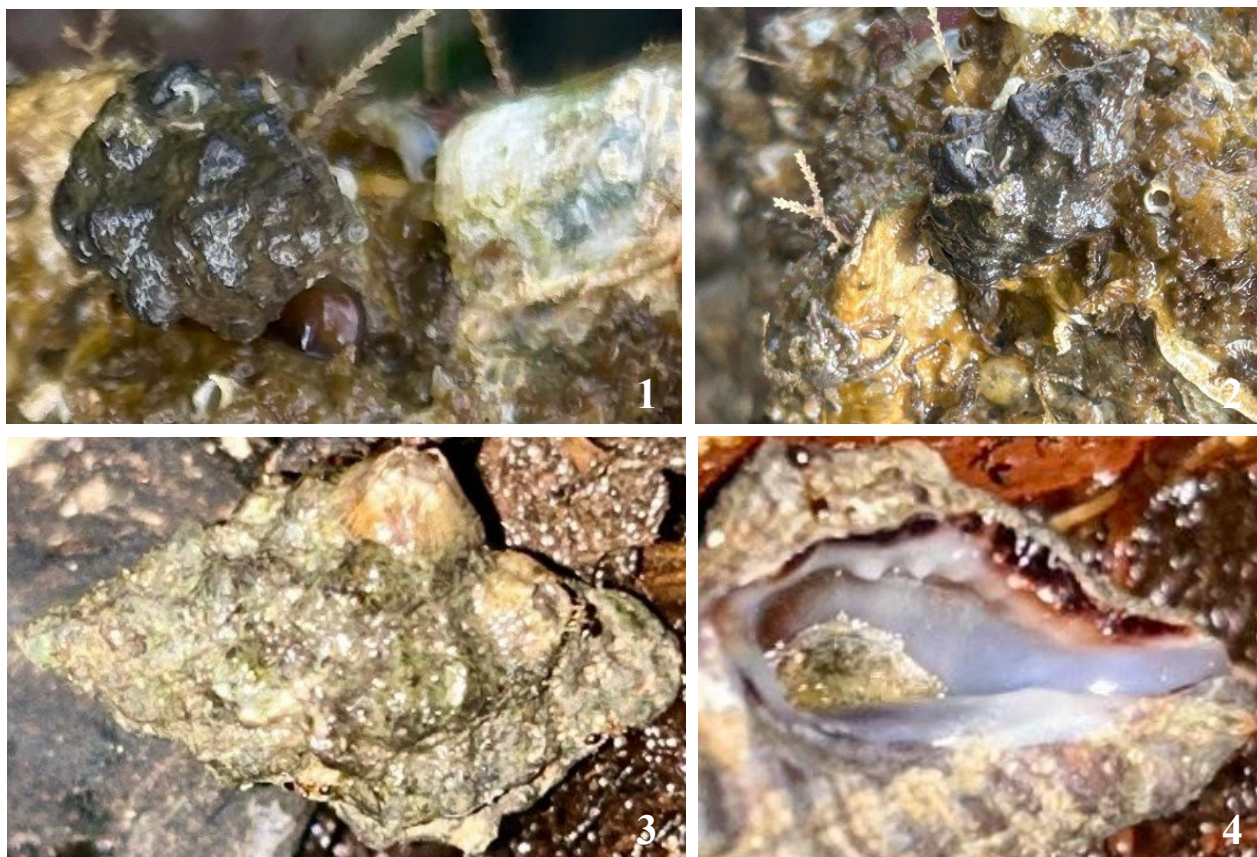


Fig. 1. Apical view of live *Orania bimucronata* in-situ beside an oyster shell. Fig. 2. Dorsal lateral view of the same snail. Fig. 3. Another live *Orania bimucronata* specimen with encrustations on its shell. Fig. 4. View of the shell's aperture showing the yellow operculum (Photographs by: Lau Wing Lup).

Remarks: The variable nature of the shells were not highlighted by previous workers. The two-pointed spiral peripheral cord remains a constant, thereby diagnostic feature, despite differences in shell features from three different habitats which may possibly be attributed to the snail's adaptation to the environment.

Upon further observation of the three Punggol specimens, it was found that they have varying numbers of strong elongate denticles, ranging from four to six within the outer lip (see Fig. 7–8). One of the three specimens is aberrant with an unusually short columellar, a big, deformed and misaligned nodule above its aperture, and a spine formed at the outer lip.

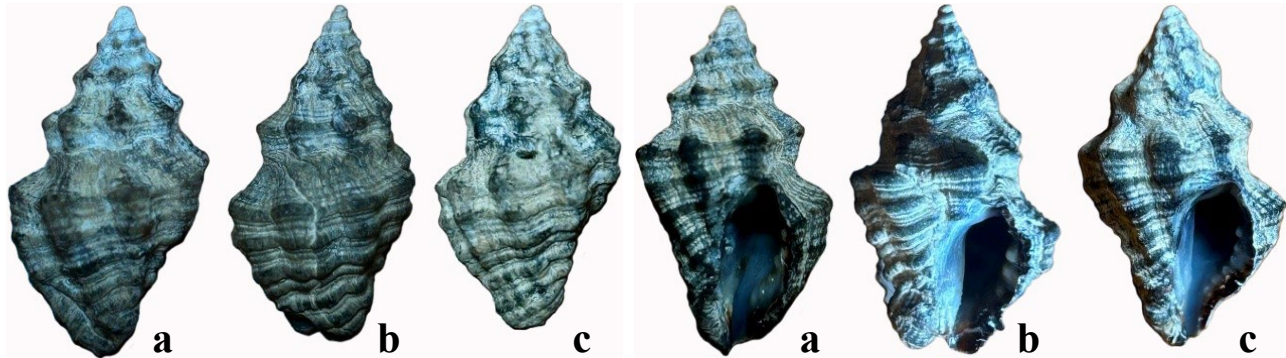


Fig. 6. Cleaned and dried shells of three *Orania bimucronata* from Punggol. Specimen b is deformed. Three shells on the left are in dorsal view. The three on the right are the same specimens in aperture view (Photographed under natural light by: Lau Wing Lup).

The specimens were compared to those found in local mangrove forest and urban monsoon canal (see Chan & Lau, 2019). *Orania bimucronata* specimens from the three different habitats have distinct forms and patterns (see Table 1). These differences are only noticeable when the shells are thoroughly cleaned. Interestingly the chequered black and white pattern was not depicted in the original drawing in Reeve (1846). However, photographs of *Orania bimucronata* shells in Houart (1996) and MolluscaBase (2024) suggest that shells with the pattern are known, albeit none figured are as prominent compared to specimens herein.

Habitat	Mangrove forest	Wave-breaker rocks	Monsoon canal
Shell colour	Brown and yellowish brown.	Brownish when wet, black and white when dry.	Black.
Nodule colour	Yellowish white on nodule.	Entire nodule black with black spiral bands across them.	As black as the entire shell.
Shell shape	Elongate.	Pear-shaped.	Elongate.
Denticles within the shell outer lip	Pronounced.	Pronounced.	Less prominent.
Shell degradation	Hardly observable.	Obvious, with presence of holes, scars and growth lines.	Not observable.

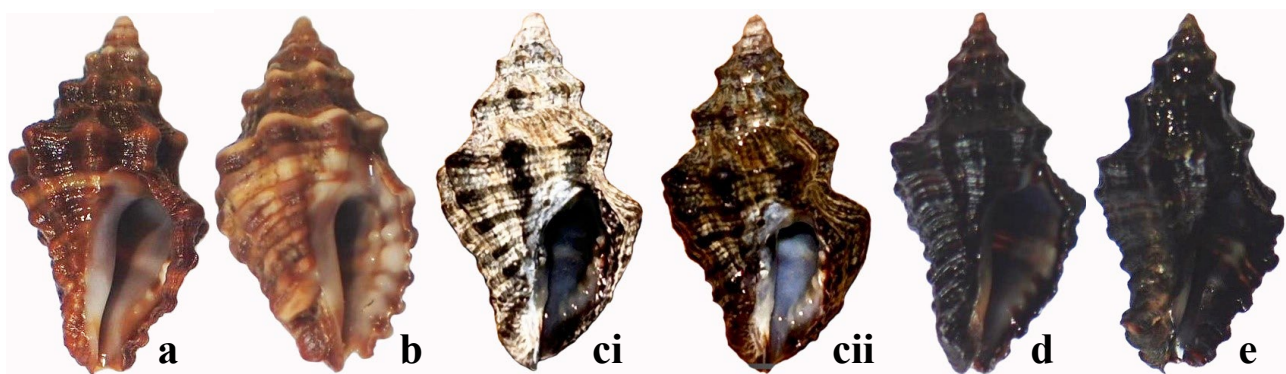


Fig. 5. Aperture view of *Orania bimucronata* shells from different habitat types. a & b are from mangrove. c is from exposed rocky environment. Note the chequered black white pattern becomes obvious when the specimen is dried and photographed with flash (ci). The same pattern becomes less pronounced when the same specimen is wet and also photographed with flash (cii). d & e are from an urban monsoon canal. All specimens are about 18mm in shell height (Photographs by: Chan Sow-Yan, except ci & cii by Lau Wing Lup).

Literature cited:

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