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Biodiversity Record: New record of the quick gloss snail, *Zonitoides arboreus*, in Singapore

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Subjects: Quick gloss snail, *Zonitoides arboreus* (Mollusca: Gastropoda: Gastrodontidae).

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

Locations, dates and times: Two locations on Singapore Island —
1) 450, Hougang Avenue 10; 6 June 2025; around 1630 hrs.
2) Bras Basah Complex at Bain Street; 21 June 2025, 1350 hrs.

Habitat: Urban. In pots of ornamental plants along the common corridor of a high-rise residential building at Hougang Avenue 10, and on a plant rack outside a convenience store in Bras Basah Complex.

Observer: Lau Wing Lup.

Observations: 1) Five live individuals of about 4 mm shell diameter were aestivating in the pot of a *Begonia* 'burning bush' plant (Fig. 1). Five dead shells of about 5 mm shell width were found on soil in an adjacent plastic pot with a Celebes pepper (*Piper ornatum*) plant (Fig. 2). The largest dead shell was about 5.5 mm in diameter. No other specimens were found in other plant pots placed alongside each other. The two pots of plants were purchased by the second author about five months before the snails were discovered in them.

Fig. 1. Three of five live *Zonitoides arboreus* roosting in flowerpot. Fig. 2. Three of five dead *Zonitoides arboreus* shells on soil in adjacent pot (Photographs by: Lau Wing Lup).

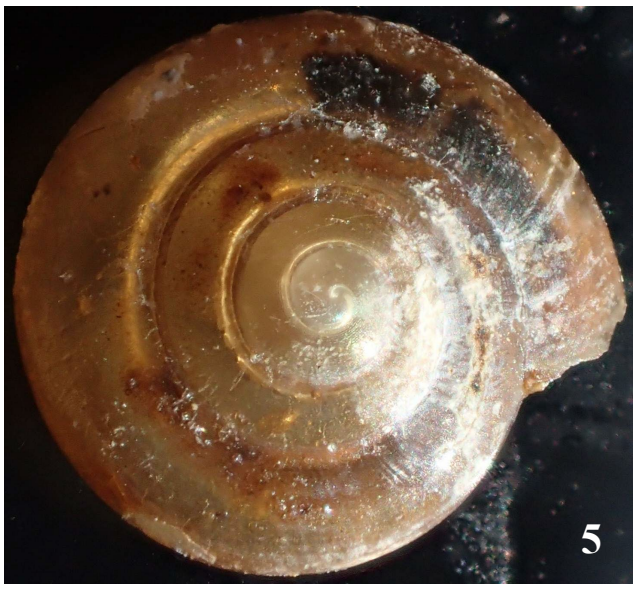
2) Two live snails of about 4 mm shell diameter were roosting partially buried in damp soil in a plastic pot of sawtooth coriander (*Eryngium foetidum*) on a plant rack.

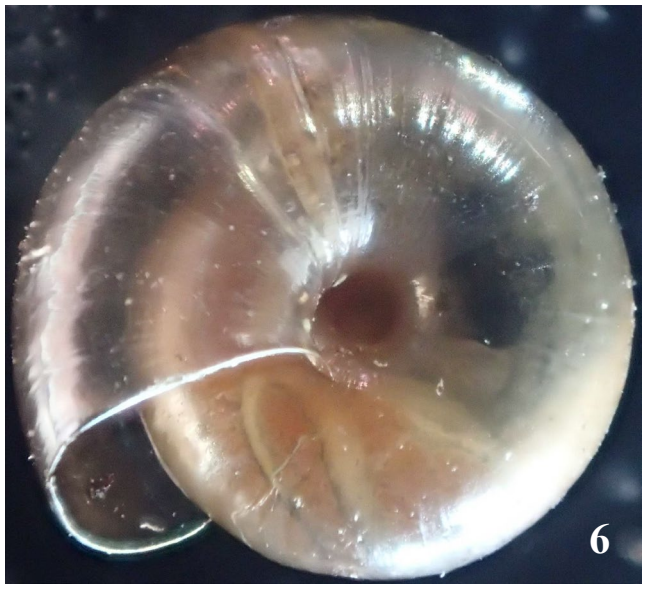
The shell of *Zonitoides arboreus* (Figs. 5–8) is dextral, thin, translucent, golden brown and low conical to lenticular in outline. The shell periphery is evenly rounded. The shell surface is glossy. The protoconch is devoid of sculpture. The periphery, where the teleoconch begins, has densely and unevenly placed, radial riblets of varying strength. At the umbilical area, these riblets are cut across by finer, narrower and regularly placed spiral threads circumventing the wide and open umbilicus. These spiral striations are not visible on live snails and can only be seen on empty shells under 40x magnification with the aid of an eye loupe. The aperture is broadly crescent-shaped. The peristome is not thickened. The upper tentacles are longer and bulbous with a pair of black eye spots at the ends. The foot is of a lighter grey colour than the upper body, with a dark grey disjointed line on the midsection (Figs. 3 & 4).

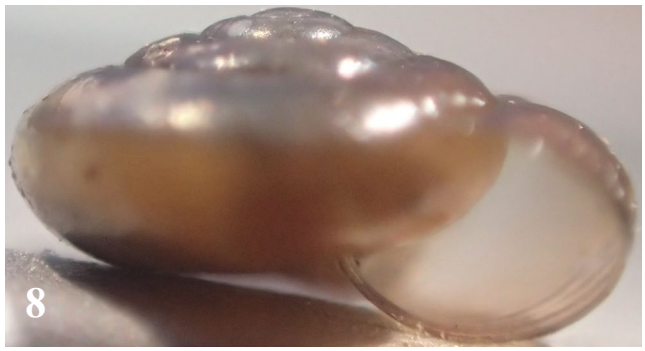
Figs. 3 & 4. Dorsal views of *Zonitoides arboreus* snails emerging from shells (Photographs by: Lau Wing Lup).

Remarks: *Zonitoides arboreus* is apparently native to North and Central America and the Caribbean (Vermeulen & Liew, 2022). It has been introduced to numerous greenhouses in Europe (Capinha et al., 2014), as well as South America, Africa, Asia and Oceania (Fernandes et al, 2024). In Southeast Asia, *Zonitoides arboreus* was introduced to Sabah, where it has been found in disturbed primary forest near human habitation, damp roadsides with high grass and shrubs and on sandstone/shale bedrock (Vermeulen & Liew, 2022).

The examples of *Zonitoides arboreus* featured herein represents the first record of the species, as well as of the family Gastrodontidae, in Singapore (see Tan & Woo, 2010; Tan et al., 2012). They appear to have been imported into Singapore with ornamental plants. It is not known if this species will adapt to Singapore's climate and become established eventually. However, it is worth noting that the snails in the first observation appear to be resilient to the high winds and dry environment of a high-rise building corridor, as they have survived there for about five months.







Various aspects of the shell of *Zonitoides arboreus* snails, of around 4–5 cm diameter. Fig. 5. Dorsal view. Fig. 6. Umbilical view. Fig. 7. Ventral view. Fig. 8. Aperture view (Photographs by: Lau Wing Lup).

The general form of *Zonitoides arboreus* shell resembles those of *Microcystina consobrina* (family Ariophantidae) (see Chan & Lau, 2023), *Macrochlamys kelantanensis* (family Ariophantidae) (see Chan & Lau, 2021a) and *Paralaoma angusta* (family Punctidae) (see Chan & Lau, 2021b); all of which can be found in Singapore. However, *Zonitoides arboreus* can be distinguished from the afore-mentioned terrestrial micro mollusks by its open and relatively wide umbilicus.

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