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Biodiversity Record: Rediscovery of the ramshorn snail, *Gyraulus rotula*, in Singapore

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Subjects: Kneecap ramshorn snail, *Gyraulus rotula* (Mollusca: Gastropoda: Planorbidae).

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

Location, date and time: Singapore Island, Toa Payoh Lorong 5, grass field in front of residential Block 31; 26 January 2023, around 2300 hrs.

Habitat: Urban. Open grass field in a residential area (Fig. 1), in water-filled depressions in the earth about the size of a human foot (Fig. 2).

Observers: Lau Wing Lup and Chan Sow-Yan.

Observation: More than 50 examples were found grazing on submerged decaying leaves alongside several live red-rimmed melania (*Melanoides tuberculata*) with eroded spires. The largest specimen of *Gyraulus* was about 2.5 mm in shell diameter. The shells of live snails were coated with a thin yellowish periostracum and covered with brownish or blackish deposits (Figs. 3 & 4).

The shell after cleaning is whitish, translucent, glossy and thin. Its micro-sculpture consists of indistinct, obsolete spiral striations, coarse growth lines and impressed sutures (Figs. 5–7). The peristome is thin and fragile in juveniles (Fig. 6), mature specimens tend to have rather thick and slightly flaring peristomes (Fig. 7). The aperture is a broad crescent shaped. The snail flesh is greyish pink. The head appears truncated with a pair of tentacles, each tentacle blunt-tipped with a delicate line of black pigmentation, and a black eye spot at the base (Figs. 3 & 4). The sole, slender and thin when fully extended, has a lighter pigmentation compared to the rest of the body.

Remarks: *Gyraulus rotula* is widespread in India, Sri Lanka, Myanmar and Thailand, but is regarded as rare by Benson (1850), Rao (1929) and Brandt (1974). Its perceived rarity could be due to these tiny snails aestivating underground or among damp debris, and emerging only in the night during the wet season. In Singapore, it was first recorded at Kim Keat Road by Ghosh (1929), but not mentioned again until the present observation.

Gyraulus rotula is probably the smallest ramshorn snail in Singapore. It is distinguished from its congener *Gyraulus convexiusculus* in having fewer whorls and smaller size. Another locally occurring ramshorn snail, *Helicorbis cantori*, is easily differentiated from *Gyraulus rotula* by having a flange-like body whorl with spiral striations that appear frilly or pitted under tangential lighting (see Chan & Lau, 2021).

Literature cited:

Benson WH (1850) Characters of nine new or imperfectly described species of *Planorbis* inhabiting India and China. The Annals and Magazine of Natural History, Series 2, 5: 348–352.

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Ghosh E (1929) IV. Papers on Malayan aquatic biology. vi. Notes on some freshwater molluscs. Journal of the Federated Malay States Museums, 14: 388–396.

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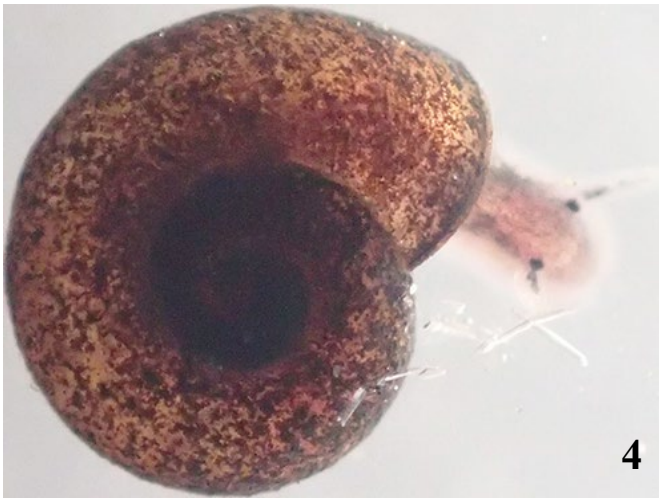
Fig. 1. Grass field where *Gyraulus rotula* was found. Fig. 2. Pool of stagnant water with dead leaves on which *Gyraulus rotula* were grazing. (Photographs by: Lau Wing Lup).



Figs. 3 & 4. Ex-situ dorsal views of two live gazing snails. (Photographs by: Lau Wing Lup).

Fig. 5. Dorsal view of a *Gyraulus rotula* shell, around 2 mm in diameter. Note coarse growth lines and obsolete and indistinct spiral striations. Fig. 6. Aperture view of cleaned juvenile shell. Fig. 7. Aperture view of cleaned adult shell with thick and slightly flaring shell lip. (Photographs by: Lau Wing Lup).