

Biodiversity Record: The graceful awlsnail, *Allopeas gracile*

Chan Sow-Yan* & Lau Wing Lup

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

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Subjects: Graceful awlsnail, *Allopeas gracile* (Mollusca: Gastropoda: Achatinidae).

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

Location, date and time: Singapore Island, Hougang Avenue 10; 7 July 2023; around 1200 hrs.

Habitat: Urban. At the ground level of a shopping mall, within concrete planter boxes, at the base of *Bougainvillea* shrubs.

Observer: Lau Wing Lup.

Observations: Many live examples and empty shells of various growth stages were observed. Some were grazing on dead flower bracts of *Bougainvillea*, while others were aestivating in the shade. They were living sympatrically with miniature awlsnails (*Subulina octona*) and dwarf awlsnails (*Opeas hannense*). Ants were present, but they did not seem to harass the awlsnails.



Fig. 1. Aperture view of four *Allopeas gracile* shells (shell heights from left to right: 7.5, 9.5, 9.5, 12 mm). Note slight differences in shape, opaqueness, and level of erosion. An egg case can be seen within the aperture of the right-most shell. The columella of all examples are reflected and not truncated at the base. (Photographs by: Lau Wing Lup).



Fig. 2. Abapertural view of *Allopeas gracile* shells (c 11.5 mm) showing shell sculpture of distinct arcuate vertical striae. Fig. 3. *Allopeas gracile* shells (c 7.5 mm) showing difference in translucency and glossiness. (Photographs by: Lau Wing Lup).

The shells of *Allopeas gracile* range from pale yellowish-white to colourless. Slight differences are observed in shell height, shape (bulky to slender), level of glossiness, microstructure, umbilicus (closed to rimate) and opaqueness (Figs. 1–3). The protoconch is consistently dome-shaped and devoid of striations within the first whorl, and the outer lip is not thickened or reflected in all specimens examined. The largest individual has a shell height of about 12 mm. A live adult of about 10 mm shell height was noted to have whitish spiral bands on the later whorls of its shell possibly due to injury (Fig. 4).

The soft bodies are relatively consistent. The head-foot is yellowish (Fig. 5) with four retractile tentacles, bulging, and rounded at the tips, the longer pair with eyes. The foot appears elongated and tapers posteriorly. Under strong lighting, its internal organs are reddish brown and can be seen through its translucent shell on some specimens (Figs. 4, 5).

Remarks: Although *Allopeas gracile* is pantropical in distribution (Vermeulen & Whitten, 1998; Foon et al., 2017), its original range is unknown (Vermeulen & Whitten, 1998). While Auffenberg & Stange (1988) suggested a South American origin, the species was described from a specimen found under a flower pot in Mirzapur in Uttar Pradesh, India (Hutton, 1834 as *Bulimus gracilis*). According to MolluscaBase (2023), a total of 31 names are listed as synonyms of *Allopeas gracile*.

Allopeas gracile has been found in primary forest, as well as in disturbed environments in agricultural land and gardens, on limestone and volcanic soil, from sea level to 2,958 m altitude (Bentham-Jutting, 1952; Vermeulen & Whitten, 1998; Foon & Marzuki, 2020; Marzuki et al., 2021). It is believed to have been accidentally introduced to Singapore on imported ornamental plants (Lim et al., 2018). Despite not being a new record for the species in Singapore (see Tan et al., 2012), it may be the first time live snails and shell variations of *Allopeas gracile* from the country are illustrated in detail.

Literature cited:

- Auffenberg K & Stange LA (1988) The Subulinidae of Florida. Entomology Circular, 305: 1–4.
- Bentham-Jutting WSS van (1952) Critical revision of the Javanese pulmonate land-snails of the families Ellobiidae to Limacidae, with an appendix on Helicarionidae. III. Systematic studies on the non-marine mollusca of the Indo-Australian Archipelago. Treubia, 21: 291–435.
- Foon JK, Clements GR & Liew T-S (2017) Diversity and biogeography of land snails (Mollusca, Gastropoda) in the limestone hills of Perak, Peninsula Malaysia. ZooKeys, 682: 1–94.
- Foon JK & Marzuki ME (2020) The snail species of Batu Caves limestone hill. In: Conference - Batu Caves Scientific Expedition Symposium, 26th September 2020, Selayang, Selangor, Malaysia.
- Hutton T (1834) On the land shells of India. Part 1 - Land shells & Part 2 – On the freshwater univalves. The Journal of the Asiatic Society of Bengal, 3: 81–93.

- Lim WH, Li TJ & Cai Y (2018) Diversity of terrestrial snails and slugs in Nee Soon freshwater swamp forest, Singapore. *Gardens' Bulletin Singapore*, 70 (Supplement 1): 109–121.
- Marzuki MEB, Liew T-S & Mohd-Azlan J (2021) Land snails and slugs of Bau limestone hills, Sarawak (Malaysia, Borneo), with the descriptions of 13 new species. *ZooKeys*, 1035: 1–113.
- MolluscaBase (2023) *Allopeas gracile* (T. Hutton, 1834). <https://www.molluscabase.org/aphia.php?p=taxdetails&id=875198> (Accessed 27 July 2023)
- Tan SK, Chan SY & Clements GR (2012) *A Guide to Snails and other Non-marine Molluscs of Singapore*. Singapore Science Centre, 176 pp.
- Vermeulen JJ & Whitten AJ (1998) *Fauna Malesiana Guide to the Land Snails of Bali*. Backhuys Publishers, Leiden, 164 pp.



Fig. 4. Dorso-lateral (left) and apertural (right) views of an individual of about 10 mm shell height with unusual whitish spiral bands on the later whorls of its shell. Fig. 5. Dorsal view of an *Allopeas gracile* with head exposed. Note colour difference of the soft parts within the shell. (Photographs by: Lau Wing Lup).