SLNHS

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Natural History Snippets

Brief reports by members based on their observations of nature

Snails and Slugs in my garden

Have you ever had your cherished foliage plants attacked during the night, leaving them a sorry sight in the morning? (Fig. 1) This article looks at some of the possible culprits. Possible culprits, because not all the snails and slugs that you might find, were you to mount a nocturnal vigil, would be capable of all the damage that is seen in your garden.

A prime suspect would be the common and well known *Lissachatina fulica*, the Giant African land snail, a native of East Africa, now occurring widely throughout the tropics (Fig. 2). But it is unlike this snail to eat patches in the middle of the leaf. The culprit was, I think, a juvenile slug (Fig. 3). Hiding by day in the undergrowth, beneath the leaf litter, these shell-less relatives of snails are difficult to locate. But the commonest snail species in my garden in 2024 (*Macrochlamys indica*) was the one that I found happily chewing away at the delicate petals of a

flower (Figs. 4, 5) and the tender shoots of a *Dendrobium aphyllum* (syn. *D. pierardii*). So, how many species can one hope to find in a Colombo garden?

Over the years, I have been able to observe 8 species of snails inhabiting my garden at Cotta Road, and since 1992 at Barnes Place. In addition, there has been one slug and one semi-slug. Identification of the species was initially by Ranjini Ratnapala of the Colombo Museum, and subsequently with reference to published books and guides, using identifiers on the web-based iNaturalist site, and nomenclatural updates based on MolluscaBase accessed through WoRMS—World Register of Marine Species that returns searches for non-marine species as well. Images and notes on the species are on subsequent pages.

Sri Lanka Land-snail Diversity [1]

About 250 species of land snails have been scientifically described from Sri Lanka, but studies indicate that the total number may be in the region of 300. More than 50 species and at least 3 genera have been described over the last decade. More than 80% of the described species are endemic i.e. found only in this country, including all of the newly described species. In addition to the endemic species, there are also those whose range extends to neighbouring countries (native spp.) and exotic species that have been introduced by man.

The majority of native and endemic species are found in the natural forests of the wet zone, whereas most exotic species are found in cultivated habitats and home gardens.

The two major informal taxonomic groups of Land Snails

Pulmonates

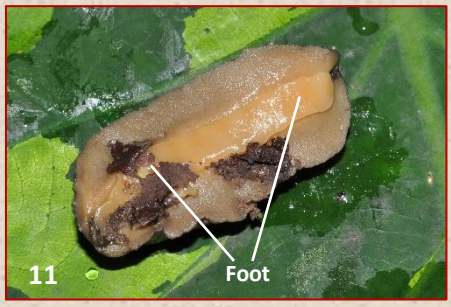
Air-breathers, possessing a lung instead of gills. Usually two pairs of tentacles (Fig. 6), the longer upper pair with eyes at the bulbous tip. The shorter lower pair are tactile and sensory. Ground dwelling or arboreal. The animal glides along on a long muscular 'foot' that is below (Fig.7). The body is totally retractable within the shell.

Prosobranchs

Gill-breathers, descended from marine ancestors. A single pair of tentacles with pointed tips and eyes at the base (Fig. 8). All operculate: they possess a flat plate (the operculum) carried on the upper surface of the foot that closes the opening when the snail retracts within the shell (Fig. 9). Mostly ground dwelling, three genera in Sri Lanka are arboreal.

Slugs: These are soft bodied terrestrial Pulmonate molluscs that lack shells. The head bears a pair of contractile tentacles with eyes at the end (Fig. 10). They secrete mucous, on which they glide using a muscular 'foot' (Fig. 11).

Semi-slugs: Snails with greatly reduced shells into which they cannot retract, or where the shell is buried in the tissue. The animal looks like a slug.



Note: The terms 'pulmonata' and 'prosobranchia' are no longer used in the classification of molluscs [2].

ANNOTATED GALLERY

Lissachatina fulica (Synonym: *Achatina fulica*)

Achatinidae: Achatininae

The Giant African Snail. A destructive pest that breeds in rubbish piles. A common exotic species.

Glessula ceylanica
Achatinidae: Glessulinae

Twenty-two species of the genus *Glessula* are reported from Sri Lanka with 18 endemics, including *G. ceylanica*. All are terrestrial except for the endemic *G. capillacea* that is arboreal.

Glessula ceylanica


Glessula capillacea

Shell thin, translucent, stubby, ovate. Outer surface glossy, smooth, faintly marked by growth lines. Colour: dark brown fading to light brown after collection. Interior whitish.

14.62 x 7.95 to 13.00 x 7.15 mm (height x width).
Terrestrial, gliding about on the soil and leaf litter of flower beds. Colombo, Borella garden. 25.5.1980.

A number of other possible species were also collected from the same Borella garden, but as identification is difficult these are not illustrated here. The *G. capillacea* (16.98 x 7.14 mm ht x w) was found on 1.11.2009 on the shore of the Lunama lagoon. *G. collettae* is also of similar shape. The shell I found had presumably been washed down from an inland site.

Subulina octona
Achatinidae: Subulininae - Awl snails
Shells small, colourless, elongated cones with tall, regularly tapering spires, apex obtuse. 8.1 x 2.4 - 4.9 x 1.9 mm (ht x w), 7 to 5 whorls.
Habitat: Terrestrial. On damp soil of potted plants, on soft stems of Begonias, in orchid pots amongst humus around roots. No plant damage observed.

Allopeas mariae
Achatinidae: Subulininae

Shell small, colourless. Elongated cone with tall, regularly tapering spire, apex obtuse.
Colour white, 9.65 - 3.1 - 4.9 - 1.9 mm, 7 to 6 whorls.
Habitat: Terrestrial. On damp soil of potted plants, on soft stems of Begonias, in orchid pots amongst humus around roots. No plant damage observed.

Ariophanta exilis (Synonym *Cryptozona bistrialis*)
Ariophantidae: Ariophantinae

Shell sub-discoid, low elevated spire. Glossy, a thin buff periostracum over an off-white shell.
Colour: Pale or darker buff, the underside paler. Variable equatorial spiral lines: a fine maroon line above a thicker one separated by a narrow white band; others with a single line below a white band, a white band only, or no markings.
A fairly common snail on vegetation in Colombo gardens.
20.5 x 29.05 to 17.7 x 27.65 mm

Collected during the daytime on garden vegetation in 1978, this shell shows the markings that gave its common name of two-striped cryptozona—*C. bistrialis* (above). This has now been synonymised with *Ariophanta exilis*, seen alive at left.

Mariaella dussumieri
Ariophantidae: Ariophantinae

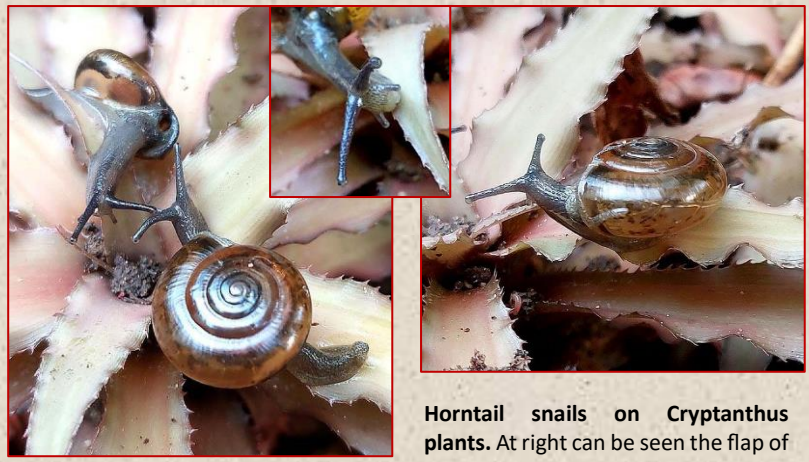
A semi-slug where the shell is reduced to a fingernail-like calcareous plate buried in the dorsal part of the mantle. In an animal 68 mm long fully extended during locomotion the shell measured 9.5 x 5.5 mm. There is a respiratory opening on the right side of the mantle leading into the "lung" cavity, as this species, though in outward appearance looking like a slug, is in fact a pulmonate.

A not uncommon animal found on garden plants. Grows to about 70 mm long. The photographed specimen was a juvenile about half the adult size. A voracious eater of garden plants.

Tanychlamys indica (synonym *Macrochlamys indica*)
Ariophantidae: Macrochlamydinae. Horntail snail

This snail has taken over my Barnes Place garden, having replaced other snail species, apart from a few, a very few, *Aulopoma* species. They are found in abundance, including in hanging orchid pots with no soil, and potted plants on a raised trough.

The type locality of the species is Dum Dum, near Calcutta. It has been introduced along with planting material and possibly agricultural produce to many parts of the world and was detected in Florida in 2020. [3] It is an invasive pest species and is considered a minor pest in some parts of India. The biology of the snail has been studied in India where it was found that high relative humidity (85-100%) is necessary for the survival and proliferation of the snail. It aestivates in low humidity. The shell diameter can range from 10 to 21 mm depending on the age, a single individual being able to live up to 4 years. Recently collected individuals measured 9.4 x 16.7; 6.8 x 14.6; 7.85 x 14.65; 7.75 x 13.45 mm (ht x w).



Horntail snails on Cryptanthus plants. At right can be seen the flap of flesh on the outside of the shell that is a characteristic of this species.

Nomenclature
This snail is listed as *Macrochlamys indica* Godwin-Austen, 1883 in most current literature. [4] But the most recent taxonomic revision lists the name as *Tanychlamys indica* (Godwin-Austen, 1883). - [MolluscaBase eds. (2024)]

Aulopoma itierii
Cyclophoridae: Cyclophorinae

The genus Aulopoma in the Prosobranch family Cyclophoridae is endemic to Sri Lanka. Four species are currently accepted [5]:
A. grande (Pfeiffer, 1855;
A. helicinum (Chemnitz, 1786);
A. itierii (Guérin, 1847);
A. sphaeroideum Dohm, 1857.

A. itierii var. *hofmeisteri* Troschel, 1847, listed by Naggs & Raheem (2000) [4] is considered a synonym [5].

The shells collected from a Colombo garden, and figured here, have been assigned to the species *Aulopoma itierii* based on the colouring: dark honey coloured with darker streaks on the upper parts of the whorls and a dark spiral line below.

This is an operculate snail, but unlike in other species, where the operculum fits inside the shell, in this it is entirely external, like a lid. Shells collected from Barnes place in 1992 on leaf litter measured 6.7 x 13.4 mm (ht x w). The images show the animal retracted with the operculum in place, and the animal emerging from the shell.

Selected References
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