



Laevicaulis alte (Férussac, 1822)

FAMILY VERONICELLIDAE (= VAGINULIDAE)

Current Risk Status in Fiji:
Medium - High

Body Type:
Slug, no shell

Size:
Adults up to 4 cm in length



USP Introduced Land
Snails of the Fiji
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Manaaki Whenua
Landcare Research



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Description & Distribution

Description

No shell is present. Mantle covering entire dorsum and overlapping the head; a pair of eye-bearing tentacles protrude anteriorly from under the mantle when the animal is active. The mantle is leathery and its surface has a slightly granulated appearance. The mantle is dark brown to blackish, with a pale line running more-or-less the entire length of the dorsum. *Laevicaulis alte* is well camouflaged and it is commonly referred to as the "Tropical Leatherleaf". An inferior pair of tentacles on the head are bilobed and inconspicuous. The ventral side is broad, with a broad hyponotum on either side of a narrow (~ 5 mm wide) foot. The respiratory orifice and anus are ventral, at the body posterior.

Distribution

An African origin is likely. Wide-



Source and location of photographs:
G. Brodie (Viti Levu)

spread in northern Australia (Stanisic 1998) and also reported from Hawaii, New Caledonia, Vanuatu and possibly Samoa and American Samoa by Cowie (2000). Widely distributed in the Fiji Islands (Barker *et al.* 2005).

Habitat & Biology

Habitat

Terrestrial, found in leaf litter and under rotting wood. Lowland to high elevation forests, plantations and moist tall grasslands (Barker *et al.* 2005).

Biology

Individuals of *Laevicaulis alte* are protandric hermaphrodites, that is they change sex from male to female during their lifetime. Detailed anatomical investigations have been made by Bishop (1977) & Thomé (1989). This slug hatches

from eggs and can reportedly grow from 0.5 cm to ~ 4 cm in length in 7 months. The species has several adaptations for living in dry conditions, for example a leathery dorsum (surface) and a narrow foot to reduce evaporation. Populations of the slug have been documented to reach maximum density during rainy seasons reaching up to 20 slugs/m². It appears that good summer rainfall and increased relative humidity provide a favourable environment for growth and abundance of the pest.

Special points of interest:

- *Laevicaulis alte* is considered a medium to high risk introduced land snail species in Fiji because it is a documented crop pest and a known vector for human parasites.
- *Laevicaulis alte* is not considered an invasive species in Fiji as it is generally found only in disturbed areas.
- *Laevicaulis alte* changes sex from male to female during its life cycle.

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Behaviour

Juvenile specimens usually search for food at night, and stay buried in the soil during the day time. Larger specimens can be active during

cooler times of the day but prefer night time activity. This is why the species is sometimes referred to as a “night crawler”.

Threats & Similar Species

Threats

Laevicaulis alte is a recorded agricultural pest in Australia and is also medically significant as a vector for vertebrate nematode worm infections (Stanisic 1998). Like most veronicellids it is also considered to have likely environmental impacts (Cowie 2000). It will eat tomatoes, spinach and cucumbers and has been reported by African farmers to be harmful to chickens if ingested. This slug is a known intermediate host for the rat lungworm, which has caused death in dogs and humans.

Similar Species

The paler *Sarsinula plebeia* (Caribbean Leatherleaf) is very similar but has a narrower body shape. The taxonomy of the veronicellid slugs is notoriously difficult (Cowie 2000) and confirmation of species often requires confirmation by molecular methods. Another similar species the semi-slug *Parmarion martensi* often has a similar thin pale stripe to the mid-posterior of the mantle, but its body is not broad and *P. martensi* also has an obvious visceral hump and a small plate-like shell on its back.

Further Reading

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