

Scientific note

A new snail eating snail: predation of *Euglandina striata* on an individual of the genus *Corona*

(Mollusca, Spiraxidae and Orthalicidae)

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Spiraxids of the subfamily Euglandiniinae H. B. Baker, 1941 include a considerable richness of recent species, many of which are reported to have limited geographic distribution (Thompson 2009, 2011, Correa-Sandoval et al. 2017). Euglandinins of the genus *Euglandina* Crosse & Fischer, 1870 are native land snails of the Americas and probably restricted to areas with considerable moisture (Goodrich & Schalie 1937). *Euglandina* stands out for the number of species (Correa-Sandoval & Castro 2002, Barrientos 2003, MolluscaBase 2021) with carnivorous/malacophagus eating habits that actively prey on other land snails (Fuente et al. 1998, Auffenberg & Stange 2001, Clifford et al. 2003, Holland et al. 2012). Despite knowledge on 55 species of *Euglandina*, very little is known regarding the diet of the vast majority of the congeners.

The present study documents a snail of the genus *Corona* Albers, 1850 serving as prey for an individual of the species *Euglandina striata* (O. F. Müller, 1774) based on ‘ex situ’ observations.

The land snails studied were collected from the zoobotanical park on the campus of the Federal University of Acre (UFAC) in the city of Rio Branco, state of Acre, Brazil. The region has a humid tropical climate, with a dry season occurring from June to August and rainy season from October to April (Lobão et al. 2012). The campus has small, medium-sized

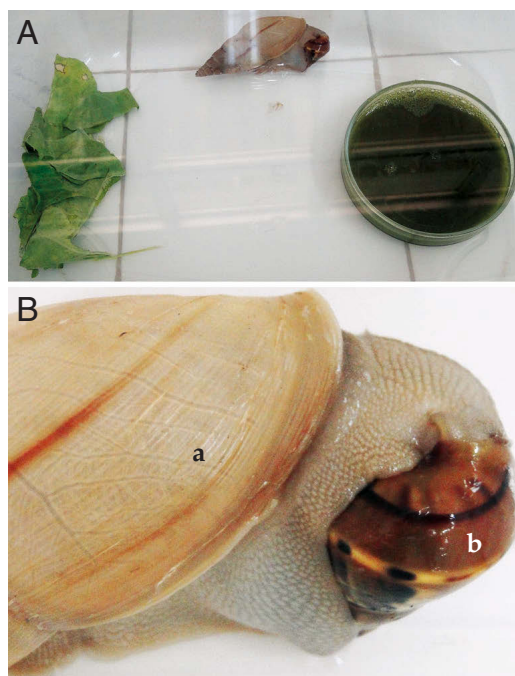


Fig. 1. *Euglandina striata* (a) preying on *Corona* sp. (b): A. Overview of predator (*E. striata*) and prey (*Corona* sp.); B. Detailed view of *E. striata* holding *Corona* sp. firmly with foot. Note part of predator's cephalic mass inside prey shell.

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weirs as well as flooded areas during the Amazonian winter. The zoobotanical park is the largest green area, with 100 to 114 hectares composed of secondary vegetation in different stages of regeneration/succession (Lobão et al. 2012, Silva et al. 2017) within the urban perimeter, serving as an integrating unit for animal and plant species.

The individuals were collected manually through active searches of the litter on February 28th, 2017 at 8:20 am with the authorization of the Biodiversity Information and Authorization System (SISBIO 75127-1). Immediately after collection, the specimens were placed into a plastic container and transported to the UFAC Malacology Laboratory. The land snails were identified based on shell morphology according to Simone (2006).

In the lab, both individuals (still completely retracted within their shells) were transferred to a wet plastic box at 10:40 am with the purpose of stimulating protrusion to enable photographing their crawling activity. The individuals were positioned about 30 cm from each other and started protruding and crawling inside the box after about 20 minutes of acclimatization. For about 30 minutes, the first author observed the predator snail *Euglandina striata* (shell length: 7.1 cm) crawl towards the prey individual of *Corona* sp. (shell length: 2.6 cm). The prey clearly tried to escape the predator by moving sideways, but with no success. *Euglandina striata* first touched the individual of *Corona* sp. using its cephalic tentacles and then moved the cephalopodal mass towards the prey to capture it. Next, *E. striata* captured *Corona* sp. firmly with the most anterior part of the foot, moved the cephalic mass and buccal mass into the shell aperture and began to feed on the prey (Fig. 1). During the disharmonious interspecific ecological interaction, *Corona* sp. performed the retraction movement. The individual of *E. striata* is preserved in 70% ethanol in the Malacological Collection of the University of São Paulo (MZSP 137623), São Paulo, southeastern Brazil. The shell of *Corona* sp. is deposited in the Malacological Collection of the Federal University of Acre (IA 739), Rio Branco, Acre, northern Brazil.

Members of the genus *Euglandina* are voracious land snails with records of predation on a number of other snails (Fuente et al. 1998, Auffenberg & Stange 2001, Sugiura et al. 2011, Holland et al. 2012) even causing the extinction of native species (Auffenberg & Stange 2001). The main *Euglandina* species studied due to their malacophagous feeding habits include *E. cumingi* (Beck, 1827), *E. rosea* (Férussac, 1821) and *E. vanuxemensis* (Lea, 1834) (Fuente et al. 1998, Auffenberg & Stange 2001, Clifford et al. 2003, Hausdorf & Solvery 2021). Information on

the malacophagous eating habits of these species is sparse, fragmented and based on 'in situ' or 'ex situ' observations. There is no previous information on the predatory activity of *E. striata* on snails of the genus *Corona*.

Euglandina cumingi exhibited feeding behavior similar to that found for *E. striata*. According to Fuente et al. (1998), *E. cumingi* seized and manipulated individuals of *Bulimulus corneus* (G. B. Sowerby I, 1833) and *Praticolella griseola* (Pfeiffer, 1841) with the foot until positioning the aperture of the prey's shell in front of its cephalic mass. Next, *E. cumingi* inserted the buccal mass into the shell and began feeding. Likewise, Sugiura et al. (2011) observed *E. rosea* consume the soft parts of *Bradybaena similis* (Rang, 1831) retracted into its shell. *Euglandina striata* did not swallow *Corona* sp. whole. However, there are 'ex situ' observations that species of *Euglandina*, especially *E. rosea*, prefer and may consume entire (shell + soft parts) smaller snails (Fuente et al. 1998, Clifford et al. 2003, Sugiura et al. 2011). This study reaffirms that members of *Euglandina* are voracious predators of other snails based on the study of the predatory activity of *Euglandina striata* on an orthaliid of the genus *Corona*.

Acknowledgements. M. S. Lima thanks "Coordenação de Aperfeiçoamento de Pessoal de Nível Superior" (CAPES: Proc. nº 88887.495695/2020-00) for the M.Sc. scholarship granted and the anonymous reviewers for their contributions to revising the manuscript.

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Zeitschrift/Journal: [Spixiana, Zeitschrift für Zoologie](#)

Jahr/Year: 2022

Band/Volume: [045](#)

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