

FROG EGGS ON THE MENU: RINGED GLASSTAIL SNAKE, *PLIOCERCUS EURYZONUS* (SQUAMATA: DIPSADIDAE) PREYING ON AN EGG MASS OF GLIDING LEAF FROG, *AGALYCHNIS SPURRELLI* (ANURA: PHYLLOMEDUSIDAE) IN COSTA RICA

HUEVOS DE RANA EN EL MENÚ: COLA DE VIDRIO ANILLADA, *PLIOCERCUS EURYZONUS* (SQUAMATA: DIPSADIDAE) DEPREDANDO UNA MASA DE HUEVOS DE RANA PLANEADORA, *AGALYCHNIS SPURRELLI* (ANURA: PHYLLOMEDUSIDAE) EN COSTA RICA

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Received: 2024-10-16. Accepted: : 2025-03-24. Published: 2025-06-09.

Editor: Anyelet Valencia-Aguilar, Colombia.

Resumen.— Reportamos la primera observación de la serpiente Cola de Vidrio Anillada (*Pliocercus euryzonus*) alimentándose de huevos de la Rana Planeadora (*Agalychnis spurrelli*). Esta nota se suma al creciente conocimiento sobre la dieta de serpientes crípticas y muestra otro registro de oofagia en serpientes. También añade a los depredadores conocidos de *Agalychnis spurrelli* y la importancia de su ecología reproductiva como agregación de presas para otras especies.

Palabras clave.— Comportamiento alimenticio, depredación, estructuras humanas, oofagia, serpiente falsa coral.

Abstract.— We report the first observation of the Ringed Glasstail Snake (*Pliocercus euryzonus*) feeding on eggs of the Gliding Leaf Frog (*Agalychnis spurrelli*). This report contributes to the expanding knowledge of the dietary habits of cryptic snake species and provides an additional record of oophagy within snakes. Furthermore, it adds to the list of known predators of *Agalychnis spurrelli*, highlighting the significance of its reproductive ecology, particularly in relation to prey aggregation for other species.

Keywords.— False coral snake, feeding behavior, human structures, oophagy, predation.

The Ringed Glasstail (*Pliocercus euryzonus*) is an uncommon terrestrial dipsadid distributed across Honduras, Nicaragua, Costa Rica, Panama, western Colombia and northwestern Ecuador, occurring at elevations ranging from 0 to 2,750 m a.s.l. (Savage, 2002; Wallach et al., 2014). However, in Costa Rica its presence has only been recorded up to 1,500 m a.s.l. (Leenders, 2019).

Pliocercus euryzonus has been documented preying on various amphibians, including frogs of the genus *Craugastor* (Leenders, 2019; Sosa-Bartuano & Toribio, 2023), *Pristimantis* (Griesbaum et al., 2023), *Smilisca* (Sosa-Bartuano & Toribio, 2023), as well as salamanders (Leenders, 2019), fish (Durango et al., 2022) and eggs of the leaf frog *Agalychnis callidryas* (Vriesendorp & Robertson, 2007; Alvarado et al., 2024).

The Gliding Leaf Frog (*Agalychnis spurrelli*) occurs at elevations below 750 m a.s.l., ranging from Costa Rica to northwestern Ecuador (Savage, 2002; Leenders, 2016). The species is known for its explosive reproductive events using pools, wetlands, slow-moving creeks, or artificial ponds as breeding sites, typically found in primary or secondary forests with abundant large tree remnants (Duellman, 1970; Gray & Gray, 1997). A list of the reported predators of *Agalychnis spurrelli* is provided in Table 1.

Pliocercus euryzonus has been observed climbing a tree where *Agalychnis spurrelli* individuals were calling, no predation attempt was recorded (Griesbaum et al., 2023). In this report, we present the first observation of *Pliocercus euryzonus* preying on an egg mass of *Agalychnis spurrelli*.

Tabla 1. Depredadores históricos y nuevos reportes de las diferentes etapas de vida de *Agalychnis spurrelli*. *Reportado por Ortega-Andrade (2008) como *Morpho* spp. (Formicidae), pero la observación se refiere a una especie de avispa sin describir (Ortega-Andrade, comunicación personal, Sep 23, 2024)..

Table 1. THistorical and newly reported predators of the different life stages of *Agalychnis spurrelli*. *Reported by Ortega-Andrade (2008) as *Morpho* spp. (Formicidae), but the observation is referring to an undescribed wasp species (Ortega-Andrade, personal communication, Sep 23, 2024).

Clase	Orden	Family	Species	Egg	Tadpole	Metamorph	Adult	Author
Arachnida	Araneae	Ctenidae	<i>Ctenus</i> sp.			X		Ortega-Andrade, 2008
Arachnida	Araneae	Theraphosidae	<i>Xenotesis inmanensis</i>			X		Ortega-Andrade, 2008
Arachnida	Amblypygi	Phryniidae	<i>Paraphrynus laevifrons</i>			X		(Escalante & Acuña, 2021
Insecta	Hymenoptera	Formicidae	<i>Morpho</i> spp. *	X				Ortega-Andrade, 2008
Insecta	Hymenoptera	Formicidae	<i>Iridocoderinae</i> sp.	X				Vargas Salinas et al., 2000
Insecta	Hymenoptera	Formicidae	<i>Paraponera clavata</i>	X				Vargas & Gutiérrez, 2005
Insecta	Hymenoptera	Formicidae	<i>Ectatomma</i> sp.	X				Vargas & Gutiérrez, 2005
Insecta	Diptera	Phoridae	<i>Megaselia randi</i>	X				Brown & Horan, 2012
Insecta	Diptera	Muscidae	<i>Limnophora</i> sp.	X				Ortega-Andrade, 2008
Insecta	Hemiptera	Belostomatidae	<i>Belostoma asiaticum</i>		X			Ortega-Andrade, 2008
Actinopterygii	Characiformes	Characidae	<i>Astyanax</i> sp.		X			Vargas & Gutiérrez, 2005; Vargas Salinas et al., 2000
Reptilia	Anura	Leptodactylidae	<i>Leptodactylus savagei</i>	X				Escalante, 2022
Sauropsida	Crocodylia	Alligatoridae	<i>Caiman crocodilus</i>				X	Güell et al., 2019
Sauropsida	Testudines	Chelydridae	<i>Chelydra acutirostris</i>		X			Ortega-Andrade, 2008
Sauropsida	Testudines	Kinosternidae	<i>Kinosternon leucostomum</i>					Ortega-Andrade, 2008
Reptilia	Squamata	Colubridae	<i>Leptodeira</i> sp.	X		X	X	Gomez-Mestre & Warkentin, 2007, 2007; Güell et al., 2024; Güell & Warkentin, 2023; Ortega-Andrade, 2008; Vargas & Gutiérrez, 2005; Vargas Salinas et al., 2000
Reptilia	Squamata	Dipsadidae	<i>Pliocercus euryzonus</i>	X				Current study
Aves	Pelecaniformes	Ardeidae	<i>Tigrisoma mexicanum</i>				X	Güell et al., 2019
Aves	Passeriformes	Cotingidae	<i>Cephalopterus penduliger</i>				X	Ortega-Andrade, 2008

On 27 June 2024, at 22:32 h, one of the researchers (AMV) encountered an adult *P. euryzonus* feeding on a clutch of *A. spurrelli* eggs. The egg mass was attached to a wooden pole of a small bridge crossing a pond within the butterfly garden at the Rainforest Adventures theme park, located near Braulio Carrillo National Park, in Pococí, Limón, Costa Rica (10° 10' 25" N, 83° 54' 50" W, 542 m a.s.l.). The snake used the posterior portion of its body to suspend itself from the bridge while using its head to forcefully detach the eggs from the pole. Afterward, the snake

swallowed the detached eggs, repeating this process multiple times (Fig. 1).

The same researcher found what is presumably the same snake (based on photographs of the dorsal pattern) the night before (June 26 2024), in exactly the same spot, but as he was approaching the snake, it moved trying to escape, so no predatory behavior was observed. It is possible that the snake had been foraging or feeding on the same clutch across multiple



Figura 1. *Leptodactylus savagei* depredando a *Agalychnis callidryas*, Reserva Biológica Tirimbina, Costa Rica, 22 de octubre, 2024. Foto: Alexander Moya-Valverde.

Figure 1. *Leptodactylus savagei* preying on *Agalychnis callidryas*, Tirimbina Biological Reserve, Costa Rica, October 22, 2024. Photo: Alexander Moya-Valverde.

occasions. On September 22 2024, at 23:06 h, AMV observed another individual of *Pliocercus euryzonus* in a pond outside the butterfly garden. The snake was climbing the base of a palm tree, surrounded by several egg masses and amplexing pairs of *Agalychnis callidryas*. Individuals of *Agalychnis spurrelli* also uses this pond during the explosive reproductive events.

This note contributes to the growing understanding of the diet of cryptic snakes and provides an additional record of oophagy in this group. Previous studies have suggested that *Pliocercus euryzonus* spends considerable time foraging near water (Durango et al., 2022), climbing the vegetation in search of prey (Griesbaum et al., 2023). Our observations add more information about the species' foraging behavior. This note also adds to the known predators of *A. spurrelli* and the importance of its reproductive ecology as prey aggregation for other species.

Acknowledgements.— Special thanks to Rainforest Adventures theme park for giving us access to the property and supporting us during the year-long herpetofauna research yet to be published.

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