

STIFF-LEGGED BEHAVIOR IN THE RIVERO'S TOAD, *RHINELLA HUMBOLDTI* (GALLARDO, 1965) (AMPHIBIA, ANURA, BUFONIDAE)

COMPORTAMIENTO DE PATAS RÍGIDAS EN EL SAPO DE RIVERO, *RHINELLA HUMBOLDTI* (GALLARDO, 1965) (AMPHIBIA, ANURA, BUFONIDAE)

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Resumen.— Los sapos del género *Rhinella* son consumidos por una amplia variedad de depredadores tanto vertebrados como invertebrados. En esta nota reporto un comportamiento defensivo concerniente en la extensión rígida de las patas traseras en la especie *Rhinella humboldti*. Sugiero que dicho comportamiento puede estar orientado a facilitar el camuflaje y limitar la capacidad de ingestión de depredadores con bocas pequeñas, como algunas serpientes juveniles.

Palabras claves.— Anuros, Colombia, comportamiento defensivo, relación depredador-presa.

Abstract.— Toads of the genus *Rhinella* are consumed by a wide variety of vertebrate and invertebrate predators across the Neotropics. In this note, I report a stiff-legged behavior in the species *Rhinella humboldti* and suggest that such behavior may be aimed at facilitating camouflage and limiting the ability to be ingested by predators with small mouths, such as some juvenile snakes.

Key words.— Anurans, Colombia, defensive behavior, prey-predator relationship.

Forest-floor anuran dwelling species display a wide array of defensive behaviors to avoid predation, from immobility and thanatosis to active escape (Duellman & Trueb, 1994; Toledo et al., 2011). Toads of the genera *Rhinella* are terrestrial, mainly nocturnal and widely distributed across the Neotropics (Duellman & Trueb, 1994; Pereyra et al., 2021). They are preyed by a several different groups, including invertebrates (Toledo 2005), other amphibians (Guimarães et al., 2004), alligators (Gorzula, 1978), snakes (Guedes et al., 2018), birds (Carvalho, 1941), and mammals (Cintra, 1988). Different defensive tactics has been described for *Rhinella* spp. including corporal displays and to expel a chemical defenses from parotoid venom glands (Toledo et al., 2011). *Rhinella humboldti* (Gallardo, 1965) is a medium-sized toad (30–70 mm snouth vent length, SVL) inhabiting dry-forest and grasslands of Northern South America in Colombia, Venezuela, Guyana, Surinam and Trinidad and Tobago Island below 1000 m a.s.l. (Torres-Suarez & Vargas-Salinas, 2014).

While I carried out a herpetological inventory at the Cumaco Village, Ponedera Municipality, Department of Atlántico, Colombia (10.678501°N, -74.838162°W; WGS84; 48 m a.s.l.) on 08 March 2021, I encountered 13 adult individuals of *R. humboldti* (SVL= 29.00 – 61.3 mm) from 18:00 to 19:00 h. All toads were registered moving or resting on the forest floor inside a gallery forest with a deep leaf-litter (20 – 30 cm). While handled individuals to take measurements and photographs, two of them displayed stiff-legged behavior (Sazima, 1978). Individuals flattened its body and stretched out right leg and twisted arms (Fig. 1A). They remained in this position for over 45 sec and then stay immobile on the soil (Fig. 1B).

This stiff-legged behavior of *R. humboldti* is different to those displayed by other neotropical bufonids such as the genus *Dendrophryniscus* (Bertolucci et al., 2007), *Osornophryne* (Escobar-Lasso and González-Durán, 2012), or even the closely related *R. granulosa* (Mângia & Santana, 2013). While both legs

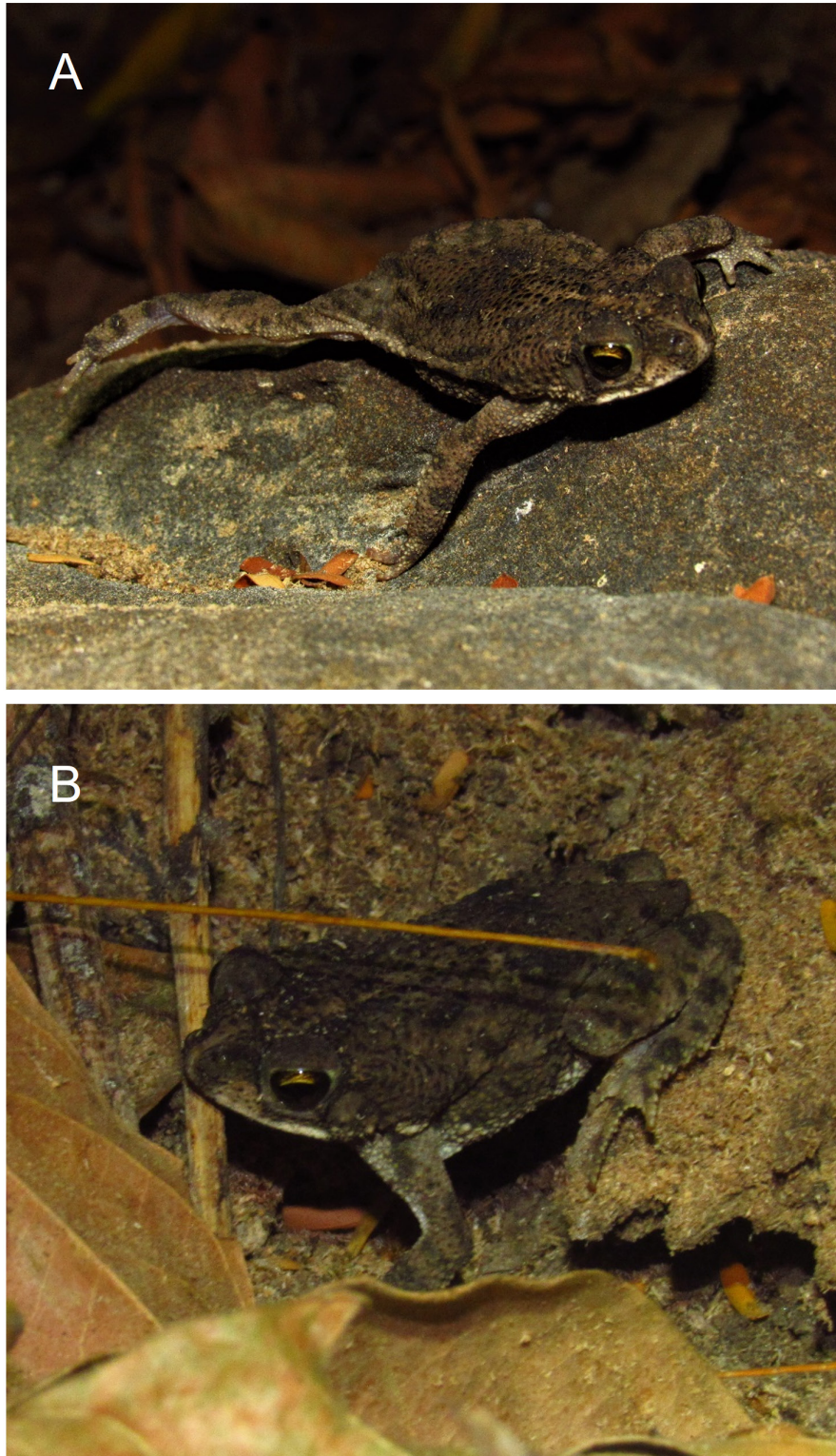


Figura 1. Individuo de *Rhinella humboldti* del Municipio de Ponedera, Departamento del Atlántico, Colombia, con comportamiento de patas rígidas (A), y en posición de reposo en el suelo (B).

Figure 1. Individual of *Rhinella humboldti* from Municipality of Ponedera, Department of Atlántico, Colombia, displaying stiff-legged behavior (A), and in resting position on the ground (B).

are rigidly extended in the aforementioned species, stretched out right leg and twisted arms are displayed by *R. humboldti*. Sazima (1978) associated this stiff-legged behavior, added to the cryptic appearance, to a camouflage strategy during a possible predation event, where individuals exhibiting this display resemble a detached leaf confusing predator. Also, stretching the limbs would increase the cross-sectional area for a potential predator, making ingestion difficult especially for a predator with a limited head-size, as some species and juveniles of forest-floor snakes (Marques de Abreu, 2021).

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