



Predation on Rivero’s Toad, *Rhinella humboldti* (Gallardo 1965), by a Caribbean Ditchfrog, *Leptodactylus insularum* (Barbour 1906)

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Most anurans are generalist and opportunistic feeders, consuming their prey according to environmental availability (Measey et al. 2015; De Oliveira et al. 2019). The diet of anurans is based mainly on invertebrate prey (Solé and Rödder 2010; Measey et al. 2015); however, small vertebrates, including other anurans (Toledo et al. 2007; Measey et al. 2015; Caicedo-Martínez et al. 2021), have been recorded in the diet. Thus, the presence of frogs and toads in the diet of other anurans has been identified as an opportunistic event, in which—in general terms—a large species preys on a smaller one (Measey et al. 2015).

The Caribbean Ditchfrog (*Leptodactylus insularum*), is a large species distributed from Costa Rica and the lowlands of Panamá to Colombia, Venezuela, and Trinidad and Tobago (De Sá et al. 2014). In Colombia, this species occurs on San Andres Island and in the Caribbean drainage on the Atlantic coast and the Valley of the Magdalena River at elevations from sea level to 1,400 m asl (Frost 2023; Acosta-Galvis 2023). Rivero’s Toad (*Rhinella humboldti*) is a small toad endemic to the Caribbean, Magdalena River Valley, and the eastern region of the Andes in Colombia at elevations from sea level to 1,015 m asl (Frost 2023; Acosta-Galvis 2023). Herein I report the first case of predation on *R. humboldti* by *L. insularum* in the lowlands of the Caribbean Region of Colombia, where the species are syntopic.

During a herpetological survey conducted on 7 July 2022 in an Oil Palm (*Elaeis* sp.) crop in the Municipality of Buenavista, Department of Córdoba, Colombia (8.20824, -75.45927; 48 m asl), an adult *L. insularum* was observed ingesting a *R. humboldti*. The identification of these species were based on the work of the amphibian fauna of the department of Córdoba (Ballesteros-Correa et al. 2019), thus, *L. insularum* can be distinguished from other congeners by color, pattern, size, and the extent of the dorsolateral folds; in the case of *R. humboldti*, this species can be distinguished

by its size and the presence of subnasal and infraorbital crests (Torres-Suárez and Vargas-Salinas, 2014). Predation was initiated by ingestion of the posterior end of the toad, and only the head and forelimbs were visible at the time of the observation (Fig. 1). When I approached more closely to take pictures, the frog completely swallowed the toad and jumped toward a temporary pond among the Oil Palms.

Predation of frogs and toads by other anurans and even conspecifics has been extensively recorded, including frogs of the genus *Leptodactylus* (Toledo et al. 2007; Schalk et al. 2014; Caicedo-Martínez et al. 2021). Measey et al. (2015) suggested that such predation can occur due to various factors, including low habitat heterogeneity, high density of anurans, and differences in body sizes of anuran predators and prey. All three factors appear to have played a role in the observed event. First, the Oil Palm plantation affected the cover of leaf litter and vegetation in the understory, reducing



Figure 1. A Caribbean Ditchfrog (*Leptodactylus insularum*) ingesting a Rivero’s Toad (*Rhinella humboldti*) in Buenavista, Córdoba, Colombia. Photograph by Luis Santiago Caicedo-Martínez.

habitat heterogeneity (Faruk et al. 2013); thus, few microhabitats serve as shelters for avoiding predation (Luskin and Potts 2011; Measey et al. 2015). Second, most of the anurans encountered (as prey or predator) were near temporary ponds foraging in uncovered soil due to the lack of leaf litter; consequently, the high density of frogs and toads in the few suitable microhabitats increases the probability of predation. Third, according to Measey et al. (2015), for generalist and opportunistic anurans, any organism that can fit in their mouths is potential prey, and the size differential between predator and prey in the current case is obvious.

Finally, predation on an anuran by *L. insularum* has been previously documented in Costa Rica (Escalante and Marin-Sánchez 2021), in which a *L. insularum* preyed on a *L. fragilis*. Thus, the present work represents the second report of an anuran in the diet of *L. insularum* and the first report of anurophagy for this species in Colombia.

Acknowledgments

I thank Jorge Mario Herrera-Lopera for comments that improved this note.

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