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Predation of the threadsnake *Epictia borapeliotes* (Vanzolini, 1996) by a Guira Cuckoo (*Guira guira*) in Rio Grande do Norte, northeastern Brazil

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Predator-prey relationships are ecological phenomena between species that exert top-down regulation on the population structure of prey, controlling abundance and the structure of trophic levels (Woottoon, 1994; Miller and Travis, 1996). These types of interactions are considered one of the primary forces shaping community structure (Pianka, 1973; Skelly, 1997; Vitt et al., 1999).

While snakes are often predators of adult birds, nestlings, and eggs (Travaglia-Cardoso et al., 2016; Groen et al., 2020), they can also serve as prey for birds (Zocche et al., 2018; Medrano-Vizcaíno, 2019). However, research on predation in natural environments is difficult to conduct, as predation events are rarely observed (Shepard, 2007), but records of snakes as prey for birds have gradually increased over time. In the Neotropics, most of these records are intermittent and scattered across natural history studies (de Souza et al., 2022).

The threadsnake *Epictia borapeliotes* is distributed in the Caatinga and Atlantic Forest of northeastern Brazil, occurring in the states of Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, and Piauí (Guedes et al., 2014; Araújo et al., 2020; França et al., 2020). This species exhibits broad ecological tolerance, which allows it to inhabit both hot, semi-arid areas and humid coastal zones (Vanzolini, 1996; Guedes et al., 2014). It can be found at various elevations, with records ranging from 0–938 m (Freitas et al., 2012; Guedes et al., 2014), and it is well-adapted to anthropogenic environments (Sampaio et al., 2018). It is a small-sized fossorial snake, with an average snout–vent length of 111 mm (range 70–186 mm; França et al., 2020; Vanzolini, 1996).

The Guira Cuckoo (*Guira guira*) has a wide range in South America, from the mouth of the Amazon towards the south, reaching central Argentina (Payne and Kirwan, 2020). This species is commonly found in anthropogenic and open areas, such as rural environments, vacant lots, and urban parks (Ridgely et al., 2015). It is a social species that forms flocks and, during the day, birds forage together in groups of up to 20 individuals (Marino, 1981; Payne and Kirwan, 2020). It is a diurnal predator that primarily feeds on arthropods and small vertebrates (Schubart et al., 1965; Beltzer, 1995; Payne and Kirwan, 2020), including snakes, which have been documented as part of its diet (Soave et al., 2008; Abegg et al., 2015; de Souza et al., 2022). We here document an instance of *E. borapeliotes* as prey of *G. guira*.

The encounter was recorded on 5 February 2025 at 14:25 h on a pedestrian walkway on the central campus of the Federal University of Rio Grande do Norte (5.8416°S, 35.2008°W). The area is characterized by ornamental vegetation, and a mix of medium to large-sized trees, with leaf litter accumulated on the ground, creating a microhabitat favourable for wildlife, even in an urban setting.

At the mentioned time and date, after brief rainfall, intense bird activity was noted in the area, likely stimulated by the increased availability of prey on the ground surface. A group of seven *G. guira* was actively foraging, moving between tree branches, lower trunks, and the leaf-covered ground, a common behaviour for the species. The group tolerated the proximity of observers easily, displaying low levels of restlessness and occasional curiosity.

During this group activity, one individual on the ground detected, captured, and lifted a tiny, thin, black snake in its beak (Fig. 1), which we later identified as *E. borapeliotes*. The snake was quickly consumed without competition or sharing with other group members. After ingestion, the individual rejoined the flock, which continued foraging on the ground, though no additional captures were observed during the remaining observation period.

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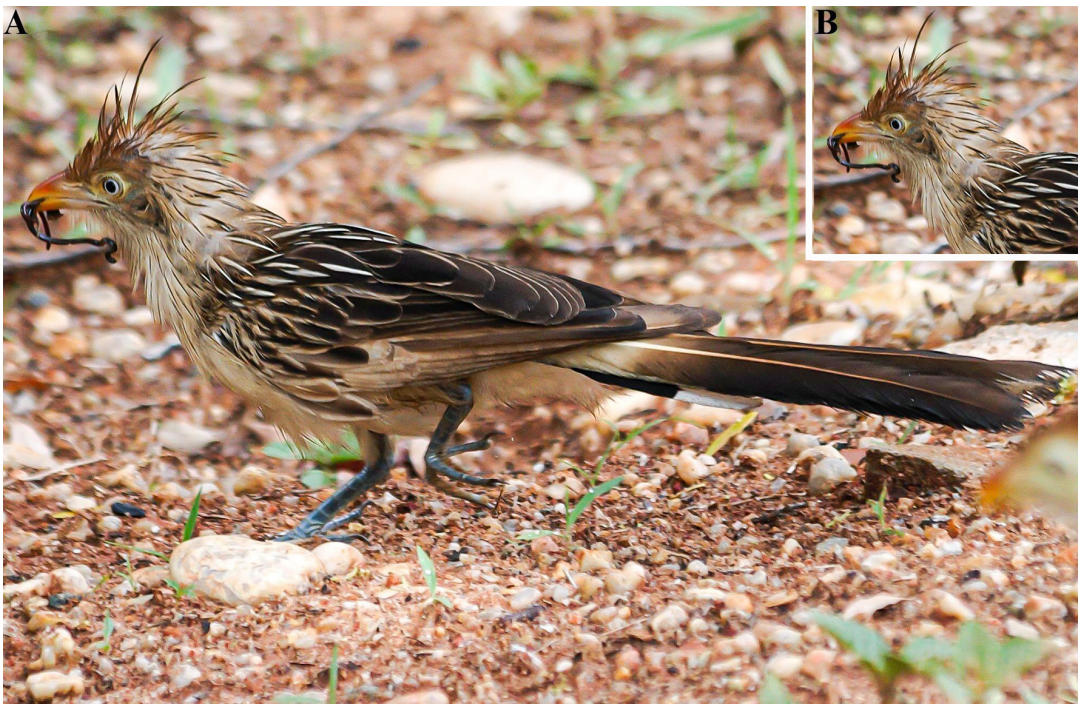

Figure 1. (A) Guira Cuckoo (*Guira guira*) holding a threadsnake (*Epictia borapeliotes*) in its beak. Documented at the Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil. (B) Close-up of the snake in the cuckoo's beak. Photos by Alice C.B. de Souza.

Finally, the group left the area, flying away from the recording site. No other snake species present in the area resembles *E. borapeliotes* (Sales et al., 2009), thus making identification possible even without collecting the animal.

Predation of *E. borapeliotes* by *G. guira* represents a poorly documented ecological interaction, particularly given the snake's cryptic habits. *Epictia borapeliotes* is a fossorial species, active both day and night (França et al., 2020), which may increase its vulnerability to predators with similar habits. Although a burrowing species, these snakes are often observed moving near the soil surface, potentially facilitating encounters with visually oriented predators. Moreover, its high abundance on the campus of the Federal University of Rio Grande do Norte (Sales et al., 2009) may contribute to the increased frequency of these predation events.

Guira guira is diurnal and primarily forages in open areas such as grasslands, pastures, and human-altered environments (Ridgely et al., 2015). It is an opportunistic and generalist feeder, consuming a variety of prey, including insects, small vertebrates, and occasionally snakes (Payne and Kirwan, 2020). This bird lives in social groups and often hunts in flocks, a behaviour that may enhance its efficiency in detecting prey, including those partially concealed in the soil, such as fossorial snakes moving near the surface (Marino, 1981; Payne and Kirwan, 2020). Their gregarious behaviour, combined with a varied diet, makes *G. guira* a potential predator of elusive species like *E. borapeliotes*.

To date, there are no documented records in the scientific literature of *E. borapeliotes* being preyed upon by *G. guira*. However, there is a record on a citizen science platform of *Epictia munoai* (Orejas-Miranda, 1961) preyed on by *G. guira* in Uruguaiana Municipality, Rio Grande do Sul.

The following species have been documented as predators of *E. borapeliotes*: the Argentine Black and White Tegu (*Salvator merianae*), the Crab-eating Fox (*Cerdocyon thous*), and the Northeastern Pepperfrog (*Leptodactylus vastus*) (Rego and Kolodiuk, 2017; Souza and Bocchiglieri, 2018; Assunção Rodrigues et al., 2023). To date, *G. guira* is the only bird species recorded as a predator of *E. borapeliotes*.

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