



Predation Record of Tropical House Gecko (*Hemidactylus mabouia*) (Reptilia: Squamata: Gekkonidae) by Guira Cuckoo (*Guira guira*) (Aves: Cuculiformes: Cuculidae) in the Region of Arraial do Cabo, East Coast of Rio de Janeiro State, Brazil

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Abstract

The tropical house gecko is an exotic and invasive lizard that has a wide distribution in the New World. Throughout its area of occurrence, the species is predated by several native predators, such as spiders, lizards, snakes, birds, and mammals. The guira cuckoo is a widely distributed bird in South America, usually found in man-impacted regions. The species feeds mainly on arthropods, small vertebrates, and reptiles, such as lizards. This note presents a documented record of predation of a tropical house gecko by a guira cuckoo in the region of Arraial do Cabo, east coast of Rio de Janeiro State, on December 22, 2017. This is one of the few documented records of predation of *Hemidactylus mabouia* by *Guira guira* in southeastern Brazil.

Subject Areas

Animal Behavior, Biodiversity, Zoology

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Keywords

Predation, Tropical House Gecko, Guira Cuckoo

Predation events are not easily observed in natural environments, and when seen, are often difficult to precisely identify the involved species. The precise identification of natural predators may contribute to the knowledge, a wide variety of strategies used by prey, such as defensive behavior, microhabitat use and activity patterns [1]. Concerning to exotic and invasive species, this kind of information can be especially useful, for understanding population dynamics and its effective control [2].

The tropical house gecko (*Hemidactylus mabouia*) belongs to the Class Reptilia, Order Squamata, and to the Family Gekkonidae. It is an exotic and invasive species widely distributed in the New World, occurring from North America [3] and Central America [4] to South America [5]. The tropical house gecko presents nocturnal habits and is commonly found in anthropogenic environments [6]. Due to its wide distribution, *H. mabouia* is able to interact with a wide variety of species, and has been reported as prey to several native predators, such as spiders [7], lizards [8], snakes [9] [10], birds [11] [12] [13], and mammals [14].

The guira cuckoo (*Guira guira*) belongs to the Class Aves, Order Cuculiformes, and to the Family Cuculidae. The species presents a wide geographical distribution in South America, being commonly found in anthropogenic and open areas [15] [16]. It is a diurnal predator that feeds mainly on arthropods [16] [17] [18] and small vertebrates [16] [18], such as the anurans, which are their most frequent prey [19] [20] [21] [22] [23]. Although some studies have recorded some lizards as prey of guira cuckoo [20] [24] [25], such as the tropical house gecko [12], the accurate identification of the lizards species consumed by this bird in scientific publications is still scarce [20].

This note reports the predation of the tropical house gecko (*Hemidactylus mabouia*) (Reptilia: Squamata: Gekkonidae) by the guira cuckoo (*Guira guira*) (Aves: Cuculiformes: Cuculidae) in the region of Arraial do Cabo (22°58'40"S, 42°01'58"W), located on the east coast of Rio de Janeiro State, southeastern Brazil.

On December 22, 2017, a predatory event involving a tropical house gecko and a guira cuckoo was observed (**Figure 1**) in a forest fragment at Pontal do Atalaia Hill, in Arraial do Cabo-RJ. The first sighting occurred on a rock near the fishermen's guardhouse, which faces the Grande Beach, and shortly thereafter, the bird flew to a nearby tree, where it remained for about thirteen minutes, handling and biting the prey with the beak, before flying again and not being sighted, which made it impossible for us to know if it had swallowed the prey. During the predatory event, it was observed that the lizard did not move, indicating that it was already dead.



Figure 1. Predation of tropical house gecko (*Hemidactylus mabouia*) by guira cuckoo (*Guira guira*) in Pontal do Atalaia Hill, region of Arraial do Cabo, east coast of Rio de Janeiro State, on December 22, 2017. Source: David Steinwender.

After the event we recorded the characteristics of the prey by analyzing the photographs taken, and compared it with photos and information contained in scientific papers [6] [12] [25] [26] [27] and book [28]. The comparisons allowed us to identify the prey as the species *Hemidactylus mabouia* (Reptilia: Squamata: Gekkonidae), popularly known as tropical house gecko.

Hemidactylus mabouia is a nocturnal species that can be found commonly in anthropic or perianthropic environments (species that tolerate human presence but live in forests). In Brazil, it lives in different ecosystems, such as the Atlantic Forest, Amazon Forest, Cerrado, Caatinga, and Sandbanks, being also found in some islands of the Brazilian Coast. The tropical house gecko was considered only a species restricted to anthropic environments, but evidence indicates the possibility that this species is penetrating wild environments [5]. By having nocturnal habits, *H. mabouia* is commonly predated by owl species [29] [30] and bats [14]. The species is also predated by diurnal birds along its area of occurrence, such as smooth-billed ani (*Crotophaga ani*) [11] and the roadside hawk (*Rupornis magnirostris*) [31].

There are few documented records of predation of tropical house gecko by guira cuckoo in the scientific literature. In Brazil, we find only a published documented record for the northeast to date [12] and five records of *G. guira* individuals feeding on lizards in the Wikiaves photographic database [32], which also allowed us to identify the prey as the species *H. mabouia*. The information contained in this study suggests that the predatory event involving tropical house gecko and guira cuckoo is likely to occur wherever the two species live in sympatry along its areas of occurrence on the Brazilian coast and amplifies the

knowledge about the behavior of the tropical house gecko and the guira cuckoo, especially in relation to the predation of *Hemidactylus mabouia* by *Guira guira* in southeastern Brazil.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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