Nota

Cuad. herpetol. 38 (1): 47-49 (*2024*)

Predation events involving herpetofauna in the Caatinga region, Brazil

Darlison Chagas-de-Souza[1], Ivan Alves dos Santos-Jr.[2], Gustavo Henrique dos Anjos Rodrigues[2], Lucas José Clemente Figueira[2], Bruna Thaís da Cruz Santos[3], Rafael Ávila Grisostenes[3], Tássio Alves Coêlho[1]

[1] Laboratório de Estudos Morfofisiológicos e Parasitários, Departamento de Ciências Biológicas e da Saúde, Rod. Juscelino Kubitschek, s/n, Jardim Marco Zero, Macapá, Amapá 68903-419, Brazil.

[2] Instituto de Ciências e Tecnologia das Águas - ICTA, Universidade Federal do Oeste do Pará, Rua Vera Paz S/N Salé, Santarém, Pará, 68040-255, Brazil.

[3] Biodinâmica Engenharia e Meio Ambiente, Rua México, 00003, Centro, Rio de Janeiro, Rio de Janeiro 20031-144, Brazil.

Recibida: 12 Junio 2023
Revisada: 26 Febrero 2024
Aceptada: 29 Abril 2024
Editor Asociada: M. Vaira

doi: 10.31017/CdH.2024.(2023-018)

ABSTRACT

We document for the first time three predation events notoriously hard to come by in the Caatinga biome in Brazil: *Philodryas nattereri* by preying on a specimen of *Leptodactylus* sp.; the predation of *Tropidurus hispidus* by the spider *Iridopelma katiae*; and the predation of *Gymnodactylus geckoides* by *T. hispidus*. Although these are basic records, the descriptions of the predation events contribute to the knowledge of the diet of different species of herpetofauna in a Brazilian biome that is threatened by accelerated deforestation.

Key Words: Snakes; Amphibians; Predators invertebrates; Caatinga biome.

Although predation events of herpetofauna are usually difficult to observe (Duellman and Trueb, 1986), actually is possible to record a wide variety of events using portable devices with high-quality cameras, and as a result, predation events have been increasingly documented. Therefore, describing predation events recorded by this media became valuable not only to identify the composition of a particular species' diet but also to determine potential predators of amphibian and lizard species. This kind of reports could help to interpret the significance of the herpetofauna as a food source and as potential predators of other vertebrates, establishing them as relevant links in trophic webs (Toledo, 2005; Pombal Jr., 2007).

At 1701 h, on February 05, 2019, we observed and photographed *Philodryas nattereri* Steindachner, 1870 (specimen not collected) by preying on a specimen of *Leptodactylus* sp. (Fig. 1A). The observation took place in an area of the municipality of Barreiras, state of Bahia, northeastern Brazil (12°15'2.75"S, 45°4'32.64"W; WGS 84, 529 a.s.l). The log lasted for about two minutes and we can not verify if the snake completely swallowed the dead frog. *Philodryas nattereri* is primarily a terrestrial snake with diurnal habits, but it can also be found perched in trees and shrubs (Mesquita *et al.*, 2011). In the Caatinga biome, it is one of the most common and abundant species of the local snake assemblages, both in natural and disturbed environments (Mesquita *et al.*, 2013; Guedes *et al.*, 2014a). This snake has a generalist diet, feeding on amphibians, lizards, birds, mammals, and, occasionally, other snakes (Vitt and Vangilder, 1983; França *et al.*, 2008; Mesquita *et al.*, 2011; Coelho-Lima *et al.*, 2019; Sales *et al.*, 2020).

At 1432 h, on April 08, 2019, we recorded and photographed a specimen of the spider *Iridopelma katiae* Bertani, 2012 (Theraphosidae) with a dead *Tropidurus hispidus* (Spix, 1825) (Fig. 1B), lizard

Author for correspondence: coelho.tassio@gmail.com

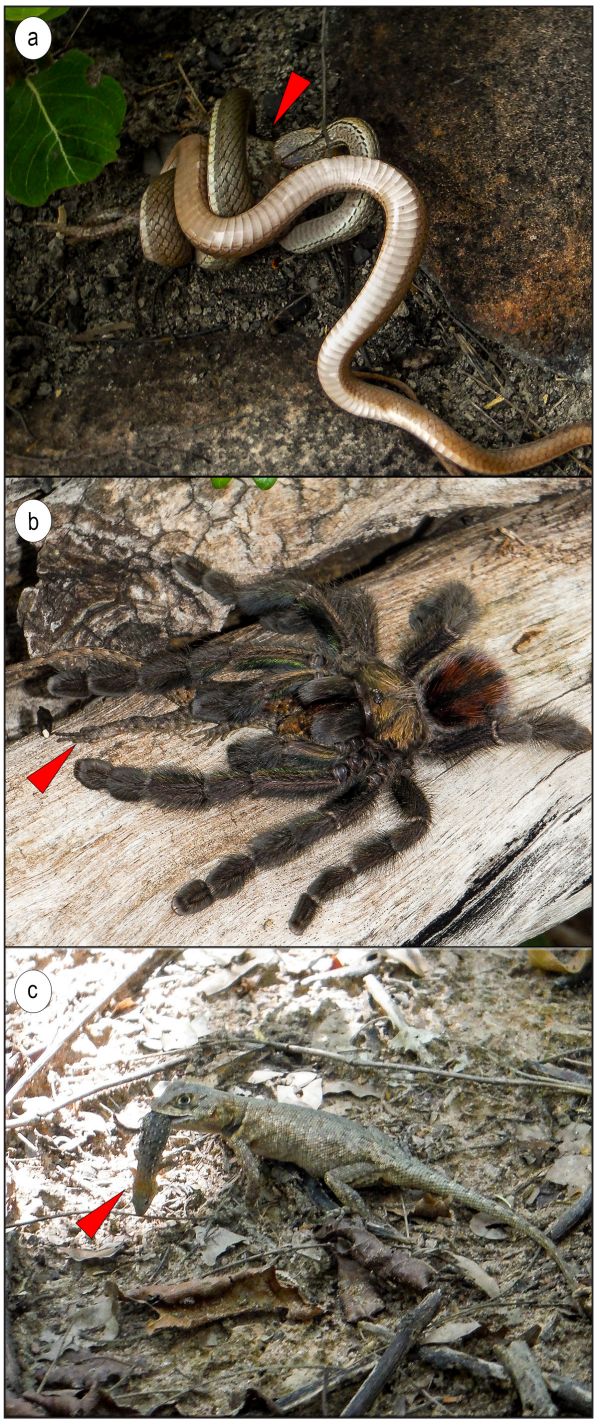

Figure 1. Predation events involving herpetofauna in the Caatinga region, Brazil. (A) *Philodryas nattereri* preying a specimen of *Leptodactylus* sp. in Barreiras, state of Bahia, northeastern Brazil.; (B) *Iridopelma katiae* with a dead *Tropidurus hispidus*, held by the predator's jaw in Riachão das Neves, state of Bahia, northeastern Brazil; (C) Predation on *Gymnodactylus geckoides* by *Tropidurus hispidus* in Riachão das Neves, state of Bahia, northeastern Brazil.

held by the predator's jaw. The observation took place in the seasonal forest area of the municipality of Riachão das Neves, state of Bahia, northeastern Brazil (11°47'40.21"S, 44°48'45.55"W; WGS 84, 470 a.s.l). The observation lasted two minutes and the spider did not feed on our presence. The specimens were not collected. To our knowledge, this is the first report of *T. hispidus* being predated by *I. katiae*.

At 1502 h, on January 23, 2019, we observed and photographed the lizard *T. hispidus* with a *Gymnodactylus geckoides* (Spix, 1825) in the mouth already dead. The observation took place in the seasonal forest area of the municipality of Riachão das Neves, state of Bahia, northeastern Brazil (11°39'24.43"S, 44°44'23.64"W; WGS 84, 457 a.s.l). The record lasted a few seconds and it was not possible to verify whether *T. hispidus* had completely swallowed *G. geckoides* (Fig. 1C). There are few reports about the presence of vertebrates in the diet of species of *Tropidurus*, and the majority of these are other lizard species, with our record supporting what was reported previously by Ribeiro and Freire (2011). To our knowledge, this is the first report of *T. hispidus* preying on a *G. geckoides*.

In addition, the area where the records were made is a well known Brazilian biome, with at least four areas of biodiversity endemism, including herpetofauna species (Camardeli and Napoli, 2012). This biome has a high rate of deforestation for the implementation of agriculture and construction of wind farms, transmission lines, and other civil infrastructure (Dias *et al.*, 2017). The biome harbor more than 100 species of snakes, at least 20% of which are endemic (Guedes *et al.*, 2014b). With regard to amphibians, there are more than 50 species, despite several regions are little explored, and there is a warning of the high prevalence of the fungus *Batrachochytrium dendrobatidis* (Bd) Longcore, Pessier, Nichols, 1999 in local species. There are clear geographical sampling gaps in the biome, and the diversity of herpetofauna in the region is still underestimated. Furthermore, studies of the herpetofauna of the biome are crucial for conservation and biodiversity protection efforts. Our observations show that reporting the diet of lizard and snakes species and their predator/prey interactions with frog, spiders, and lizards are valuable to know how they might be affected by environmental changes that could occur in the biome in a nearly future.

Aknowledgments

We thank the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior for scholarships granted

to TAC and DCS (Process # 88887.598663/2021-00 and # 88887.636892/2021-00, respectively).

Literature cited

Benício, R.A., Carvalho, T., Barbosa, M.D.R., Costa, J.M., Silva, F.C.C. & Fonseca, M.G. 2019. Worrying news for Brazilian Caatinga: Prevalence of *Batrachochytrium dendrobatidis* in Amphibians. *Tropical Conservation Science* 12: 1-6.

Camardelli, M. & Napoli, M.F. 2012. Amphibian conservation in the Caatinga biome and semiarid region of Brazil. *Herpetologica* 68: 31-47.

Coelho-Lima, A.D., Oliveira-Filho, J.M. & Passos, D.C. 2019. *Philodryas nattereri* (Paraguay Green Racer). Diet. *Herpetological Review* 50: 601.

Dias, D.M., Guedes, P.G., Silva, S.S.P. & Sena, L.M.M. 2017. Diversity of nonvolant mammals in a Caatinga area in northeastern Brazil. *Neotropical Biology and Conservation* 12: 200-208.

Duellman, W.E. & Trueb, L. 1986. Biology of amphibians. McGraw Hill, New York.

França, F.G.R., Mesquita, D.O., Nogueira, C.C. & Araújo, A.F.B. 2008. Phylogeny and ecology determine morphological structure in a snake assemblage in the central Brazilian Cerrado. *Copeia* 2008: 23-28.

Guedes, T.B., Nogueira, C. & Marques, O.A.V. 2014a. Diversity, natural history, and geographic distribution of snakes in the Caatinga, Northeastern Brazil. *Zootaxa* 3863: 1-93.

Guedes, T.B., Sawaya, R.J. & Nogueira, C.C. 2014b. Biogeography, vicariance and conservation of snakes of the neglected and endangered Caatinga region, north-eastern Brazil. *Journal of Biogeography* 41: 919-931.

Mesquita, P.C.M.D., Borges-Nojosa, D. M., Passos, D.C. & Bezerra, C.H. 2011. Ecology of *Philodryas nattereri* in the Brazilian semi-arid region. *Herpetological Journal* 21: 193-198.

Mesquita, P.C.M.D., Passos, D.C., Borges-Nojosa, D.M. & Cechin, S.Z. 2013. Ecologia e história natural das serpentes de uma área de Caatinga no nordeste brasileiro. *Papéis Avulsos de Zoologia* 53: 99-113.

Pombal Jr., J.P. 2007. Notas sobre predação em uma taxocenose de anfíbios anuros no sudeste do Brasil. *Revista Brasileira de Zoologia* 24: 841-843.

Ribeiro, L.B. & Freire, E.M.X. 2011. Trophic ecology and foraging behavior of *Tropidurus hispidus* and *Tropidurus semitaeniatus* (Squamata, Tropiduridae) in a caatinga area of northeastern Brazil. *Iheringia, Série Zoologia* 101: 225-232.

Sales, R.F.D., Sousa, J.D., Lisboa, C.M.C.A., Marinho, P.H., Freire, E.M.X. & Kokubum, M.N.C. 2020. New dietary records and geographic variation in the diet composition of the snake *Philodryas nattereri* in Brazil. *Cuadernos de Herpetología* 34: 1-9.

Toledo, L.F. 2005. Predation of juvenile and adult anurans by invertebrates: currente knowledge and perspective. *Herpetological Review* 36: 395-400.

Vitt, L.J. & Vangilder, L.D. 1983. Ecology of a snake community in Northeastern Brazil. *Amphibia-Reptilia* 4: 273-296.