New record and geographic distribution of *Dipsas indica* Laurenti, 1768 in the state of Ceará, northeastern Brazil

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DOI: 10.5281/zenodo.13308172

Dipsas indica is a small dipsadid that reaches approximately 1000 mm in length, has aglyphous dentition, and nocturnal habits (Harvey & Embert, 2008; Harvey et al., 2009; Arteaga et al., 2018). Like its congeners, it is specialized for feeding on gastropods, which they remove from their shells with their sharp teeth (Ray et al., 2012). *Dipsas indica* is a fully arboreal species (Harrington et al., 2018), found in primary and secondary humid forests and even in disturbed areas (Harvey & Embert, 2008; Nogueira et al., 2019). It is distributed throughout South America, in Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. In Brazil, it exhibits a disjunct distribution pattern, in Amazonia and the Atlantic Forest (Nogueira et al., 2019). Here we document the first record of *Dipsas indica* in a forest remnant in the state of Ceará, northeastern Brazil.

On February 15, 2022, an adult male of *Dipsas indica* (snout-vent-length: 413 mm, tail length: 167 mm, weight: 8.5 g, Fig. 1) was found by residents of the municipality of Guaramiranga (4°14′35.3″ S, 38°56′16.4″ W, 801 m a.s.l.), Ceará, Brazil. The specimen was collected under permit Sisbio #42737. A tissue sample was obtained from the liver, and the specimen was subsequently fixed in 10% formalin, and stored in 70% alcohol. The specimen and tissue sample are deposited in the Herpetological Collection of the Museu de História Natural do Ceará Prof. Dias da Rocha, under the number MHNCE-R482.

The municipality of Guaramiranga is part of the Baturité Mountains, referred to as a "Brejo de altitude" (highland wetland), an ecological island within the semi-arid Caatinga (Bétard et al., 2008; Moro et al., 2015). Due to its proximity to the coast and elevation, the region features a mountain microclimate with mild temperatures, high rainfall, high humidity, and dense humid forest above 400 m (Bétard et al., 2008; Moro et al., 2015; Silveira et al., 2020). Due to these characteristics, the region serves as a refuge for a rich relictual diversity, sheltering elements of the Amazon Rainforest and the Atlantic Rainforest, as well as a significant number of endemic species and with disjunct distribution (Borges-Nojosa, 2007; Moro et al., 2015; Borges-Nojosa et al., 2019).

This distribution pattern is not unique to this species. The Baturité Mountains are home to other snakes with a similar disjunct distribution, such as *Bothrops bilineatus* (Wied, 1821), *Lachesis rhombeata* (Wied-Neuwied, 1824) and *Sibon nebulatus* (Linnaeus, 1758) (Nascimento & Lima-Verde, 1989; Borges-Nojosa, 2007; Roberto & Loebmann, 2016; Nogueira et al., 2019; Cavalcante et al., 2022, Hamdan et al. 2024). All these snakes are found in fragmented populations across Amazonia, Atlantic Forest, and the relictual forests of the Baturité Mountains.

This record of *D. indica* in the region is another example of a species with an unexpected occurrence in a location that has been widely explored in the past (Borges-Nojosa, 2007; Roberto & Loebmann, 2016). A similar case occurred with the recent record of *B. bilineatus*, found under similar circumstances (Cavalcante et al., 2022), corroborating the importance of the Baturité mountains as a regional hotspot.

Compared to its known distribution (Fig. 2), our record of *D. indica* is 868.79 km in a straight line east of its easternmost reported location in Amazonia, in the municipality of Viseu, state of Pará, Brazil (01°12′07.2″ S, 46°08′34.8″ W) and 990.09 km in a straight line north of the northernmost record in the Atlantic Forest, in the municipality of Laje, state of Bahia, Brazil (13°10′55.2″ S, 39°25′30.0″ W). Nogueira et al. (2019) stated that the species lives at low elevations, without further information. Our record was from 801 m above sea level, which represents a significant increase to the elevation range of the species.

The reptile list of the state of Ceará currently comprises 117 species (SEMA, 2022; Barreto-Lima et al., 2023), and the only occurrence of the genus *Dipsas* was of a *Dipsas mikanii* Schlegel, 1837 in the south (Ribeiro et al., 2012; Nogueira et al., 2019). New records in the state, such as *Dipsas indica* (this

study), *Bothrops bilineatus* (Wied-Neuwied, 1821) (Cavalcante et al., 2022), and *Caiman latirostris* (Daudin, 1802) (Barreto-Lima et al., 2023) indicate the need for further studies and targeted conservation efforts focused on herpetofauna, which are crucial for the preservation of natural ecosystems, ensuring the long-term persistence of the entire ecosystems and their species.

ACKNOWLEDGEMENTS

We are grateful to Mr. Zé Carneiro and L.C. Nascimento Silva for their contribution to this study; to Paulo Passos (MNRJ) for laboratory support. RGC thanks Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (process number #08339530/2023).

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Editor: *Henrique C. Costa*

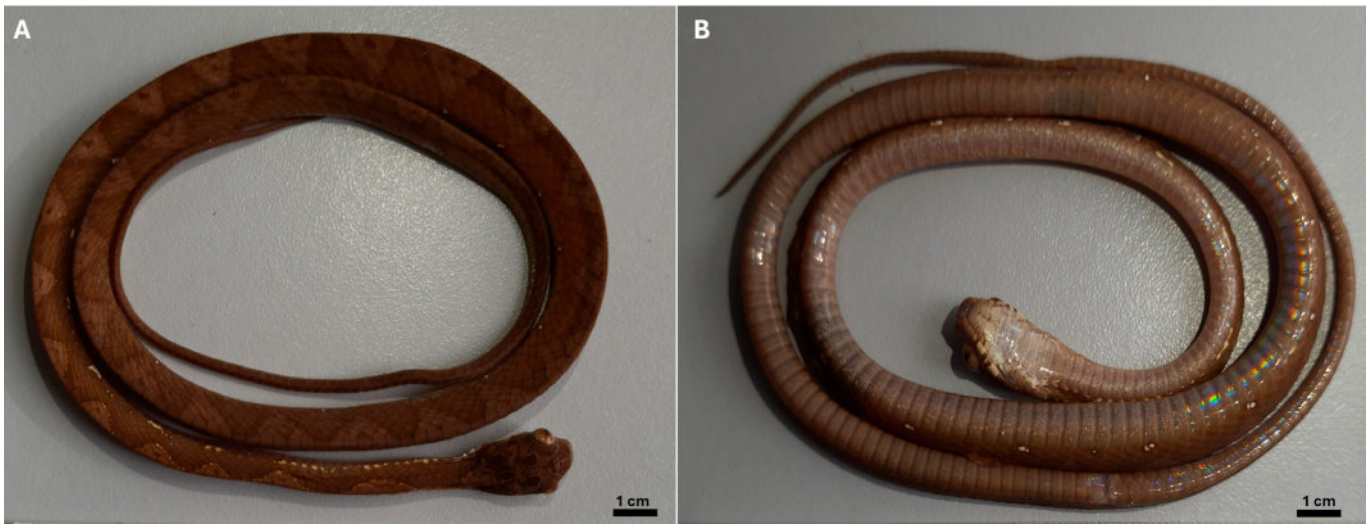


Figura 1. Adult male *Dipsas indica* (MHNCE-R482), from Guaramiranga, Ceará, Brazil.

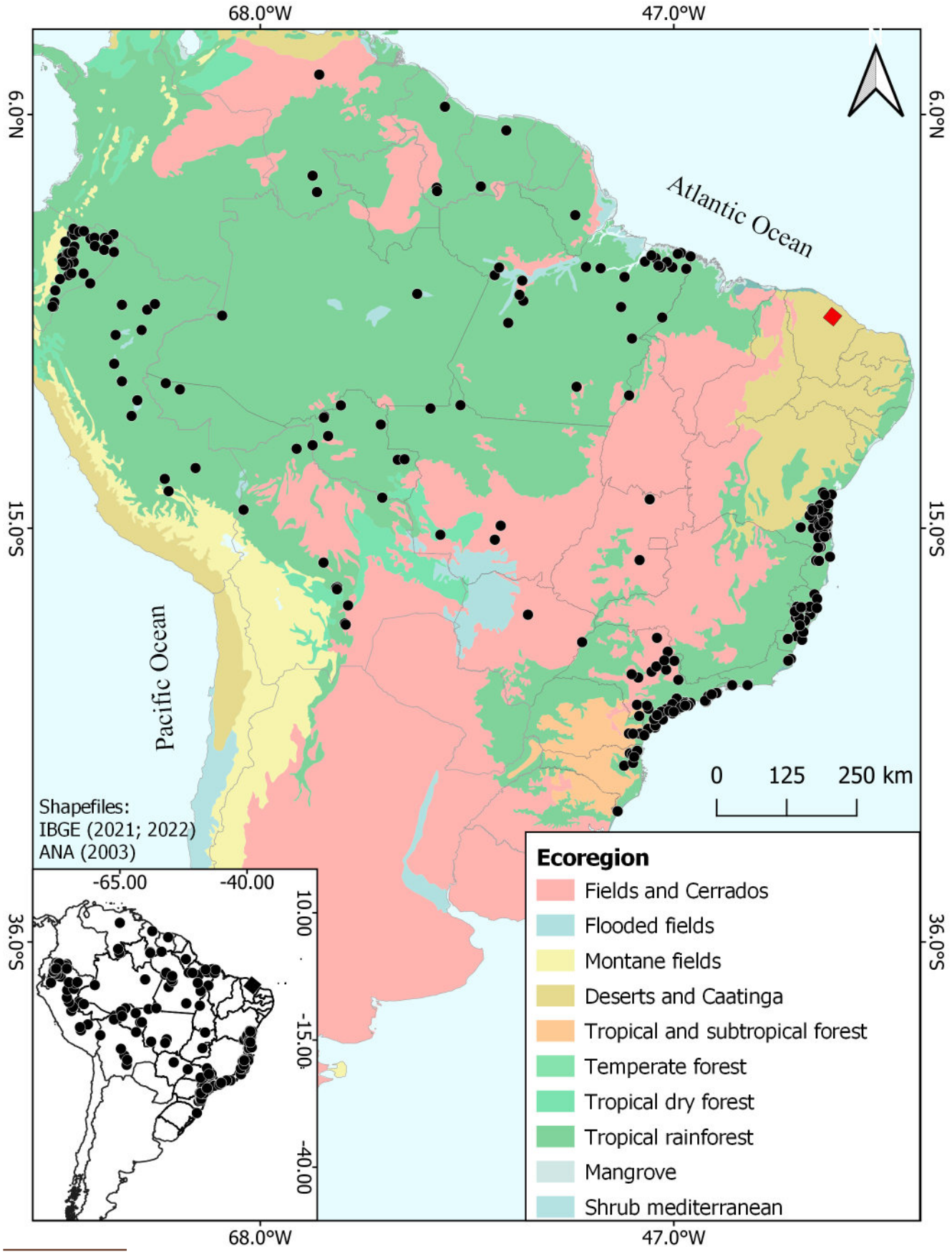


Figura 2. Distribution map of *D. indica*, data from Nogueira et al. (2019). Red rectangle represents the new record from Guaramiranga, Ceará, Brazil. Data from Nogueira et al. 2019.