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# New records and geographic distribution map of *Typhlops amoipira* Rodrigues and Juncá, 2002 (Typhlopidae) in the Brazilian Rainforest

Polyanne Souto de Brito<sup>1\*</sup> and Eliza Maria Xavier Freire<sup>2</sup>

1 Universidade Federal de Alagoas, Museu de História Natural, Setor de Zoologia. CEP 57051-090. Maceió, AL, Brazil.

2 Universidade Federal do Rio Grande do Norte, Centro de Biociências, Departamento de Botânica, Ecologia e Zoologia. Campus Universitário Lagoa Nova. CEP 59072-900. Natal-RN, Brazil.

\* Corresponding author. E-mail: [poly.s.brito@gmail.com](mailto:poly.s.brito@gmail.com)

**ABSTRACT:** This study presents the first records of *Typhlops amoipira* to the Brazilian Atlantic Forest biome and expands its geographic distribution up to 1033 km northward of the type locality. The record for Piaçabuçu, state of Alagoas, can be justified by contact with the dunes of the São Francisco River. However, although dunes and *restinga* are present in other locations such as Nísia Floresta and Atlantic Forest areas in the municipalities of Coruripe and São José da Laje, Alagoas, they do not come into contact with dunes along the São Francisco River.

According to Rodrigues and Juncá (2002), the genus *Typhlops* is still little known, with no guided studies on the phylogenetic relationships between its constituent species. In accordance with the last revision of this genus for South America, conducted by Dixon and Hendricks (1979), four species were identified in Brazil: *Typhlops reticulatus* (Linnaeus, 1758); *T. minuisquamus* Dixon and Hendricks, 1979; *T. brongersmianus* Vanzolini, 1972; and *T. paucisquamus* Dixon and Hendricks, 1979. Two species were later described for the region of dunes on the banks of the São Francisco River at Bahia state: *T. yonenagae* Rodrigues, 1991 and *T. amoipira* Rodrigues and Juncá, 2002.

*Typhlops amoipira* is identified primarily by its small size (73-205mm), light brown body, incomplete nasal suture, 18 rows of scales around the middle of the body and 212-242 dorsal scales between the rostral shield and the tip of the tail. The species was described from six specimens collected in the dunes of the São Francisco River at Ibiraba (10°48' S, 42°50' W), municipality of Barra, state of Bahia (Rodrigues and Juncá 2002). Recently, through the collection of eight specimens, Fernandes *et al.* (2010) extended its geographic distribution to Fazenda Santa Maria da Vereda (15°24'26" S, 44°50'18" W, elevation: 553 m), municipality of Bonito de Minas, state of Minas Gerais, 500 km South of the type locality, but still in the left margin of the São Francisco River. According to these authors, this region is a transitional area between Cerrado and Caatinga biomes. In contrast to the dry area of the type locality, the eight specimens were found in a site with sandy soil and riparian forests, confirming the occurrence of *T. amoipira* in locations beyond the Caatinga biome.

During analysis of the Typhlopids maintained in the herpetological collections of the federal universities of Alagoas (MUFAL) and Rio Grande do Norte (CHBEZ-UFRN), *T. amoipira* specimens for both states were identified. This significantly widens the geographic distribution of the species, as detailed in the following section. Of the seven

*T. amoipira* examined, three are from dune and *restinga* (sandy habitats with herbaceous and shrubby vegetation) regions at the margins of the São Francisco River mouth, in Piaçabuçu, state of Alagoas, 739 km East of the type locality (10°29'32" S, 36°23'00" W) (Figure 1). The animals are cream-colored beige or light brown and the snout exhibited a broad beige ring circling the rostral and nasal shields, as well as half of the pre-oculars (Figures 2A and 2B). This description is consistent with the holotype, as well as the physiognomy of the type locality: dune areas on the banks of the São Francisco River (Rodrigues and Juncá 2002). However, this new locality forms part of the Atlantic Forest Biome rather than of the Caatinga area originally described.

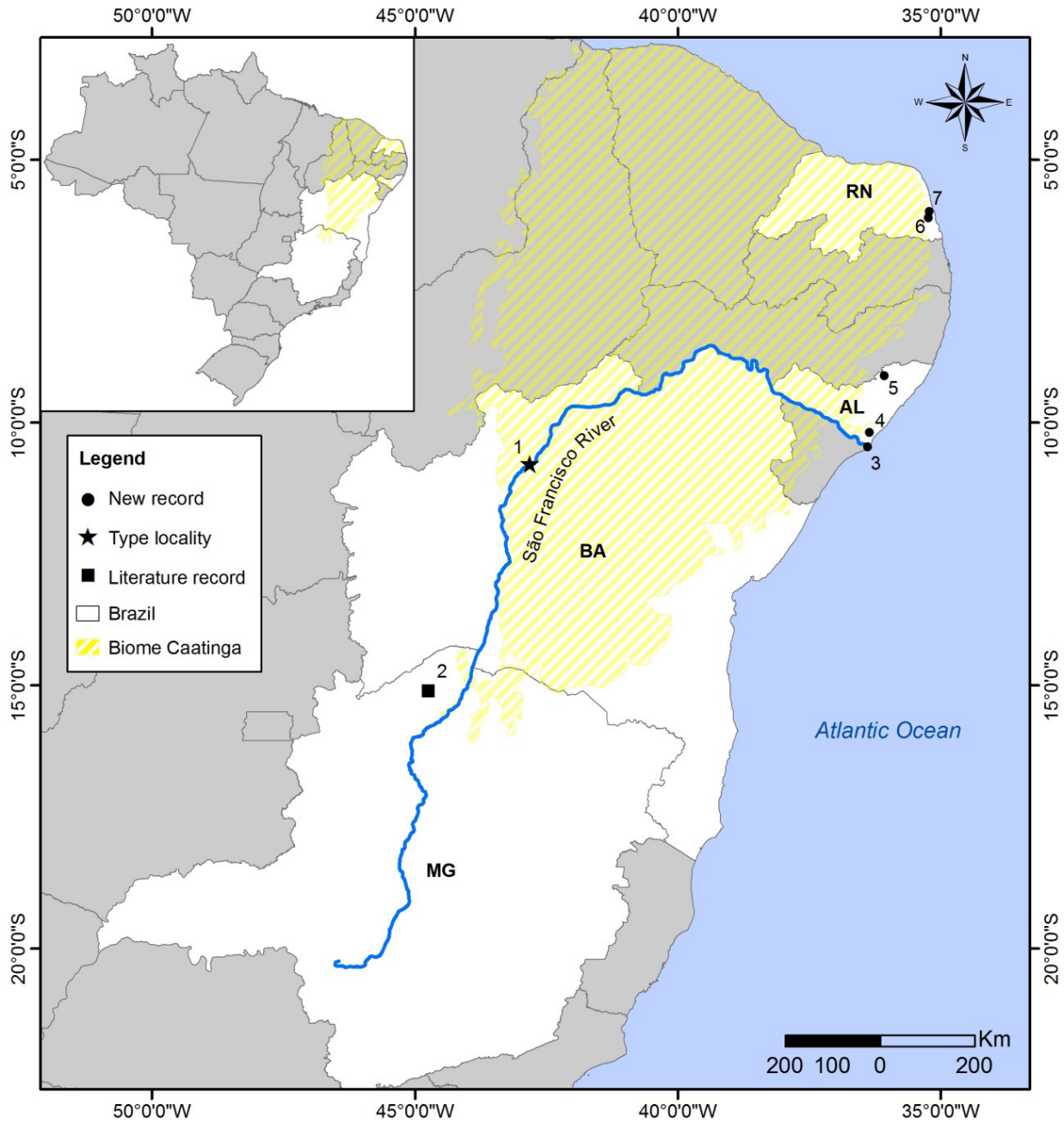
Two additional individuals were recorded from Atlantic Forest areas of the state of Alagoas: the first animal was found in Sítio Pau Brasil (Pau Brazil farmstead), municipality of Coruripe (10°17'07" S, 36°21'07" W), 770 km East of the type locality and 39 km from the municipality of Piaçabuçu; the second was collected in Mata da Cachoeira in the municipality of São José da Laje (09°06'06" S, 36°03'29" W), 811 km East of the type locality. These areas are significantly different from those where the other three individuals were found. Nevertheless, it is important to reinforce that the 211 to 218 dorsal scales and the number of scales around the body (18) clearly characterizes them as *T. amoipira* (Table 1).

Two other *T. amoipira* were collected in two dune and *restinga* areas of Búzios and Pirangi do Sul beaches in Nísia Floresta, Rio Grande do Norte state (06°05'27" S, 35°12'32" W). The animals were located 1,033 km Northeast of the type locality of the species, although within an environment consistent with that of specimens recorded for the state of Alagoas: dunes and *restinga* of the Atlantic Forest Biome. The animals are similar both in pholidosis and color pattern: light brown body and beige head, with a light brown spot on the posterior end of the preocular and nasal scales (Figures 2C and 2D).

Considerable morphological similarity was observed between animals found at the dunes of Rio Grande do Norte and Alagoas and the type series, though these individuals exhibit lighter coloring than those recorded in the Atlantic Forest biome (Figure 2). This similarity may indicate

species adaptation to sand formations, since coastal dunes are typically lightly colored, mobile, and devoid of plant cover or with sparse herbaceous vegetation (Freire 1996).

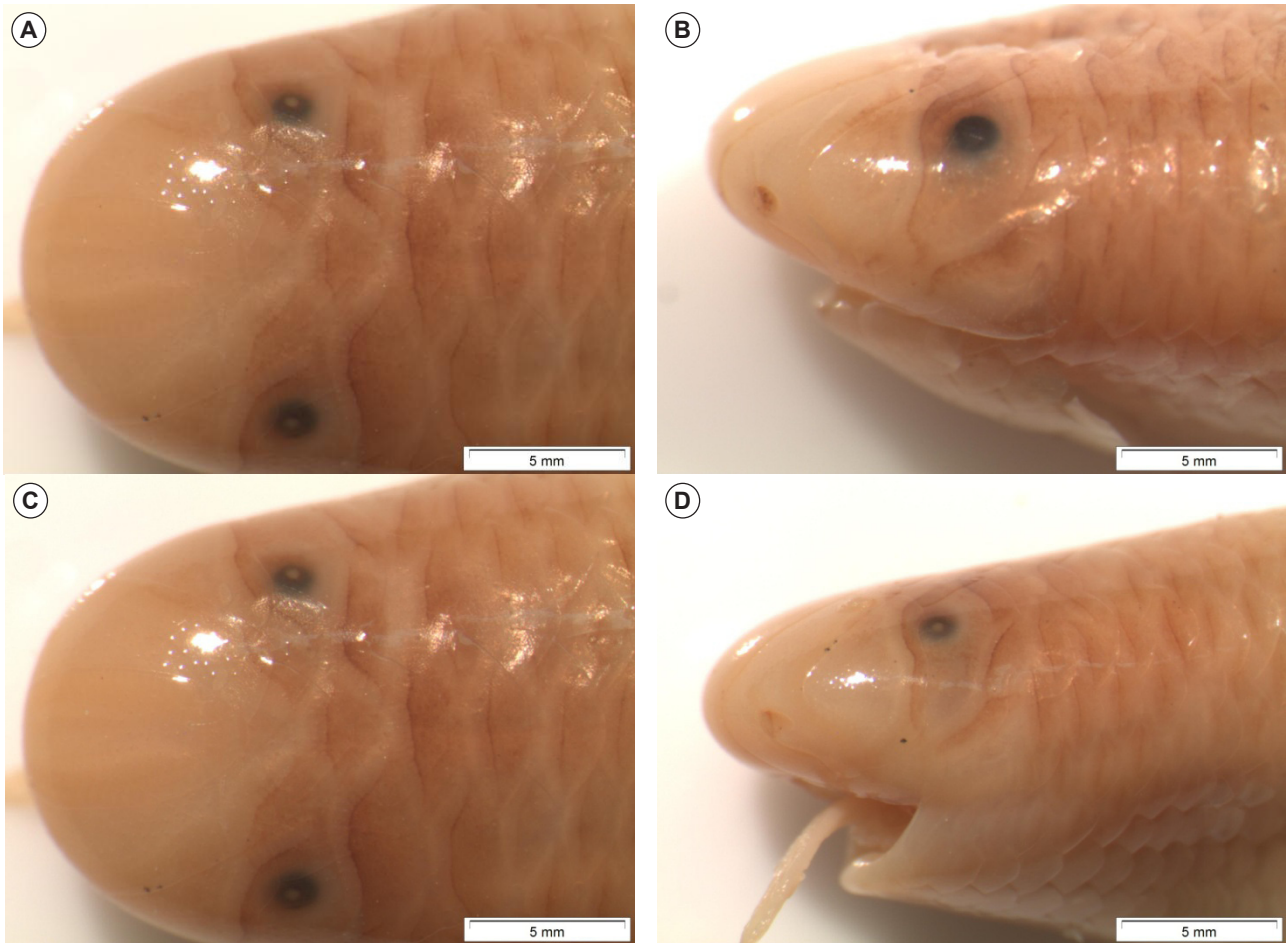
Dunes and *restinga* are not morphoclimatic domains (Ab'Saber 1970); however they do exhibit the floristic



**FIGURE 1.** Known records of *Typhlops amoipira*: 1, type-locality at Ibiraba, state of Bahia; 2, Literature record: Fazenda Santa Maria da Vereda, municipality of Bonito de Minas, state of Minas Gerais; 3 to 5, new records from the state of Alagoas: 3, Dune and Restinga regions of Piaçabuçu; 4, Pau Brasil farmstead, municipality of Coruripe; 5, Mata da Cachoeira, municipality of São José da Laje; 6 and 7, new records from the state of Rio Grande do Norte: 6, Búzios beach, municipality of Nísia Floresta; 7, Pirangi do Sul beach, municipality of Nísia Floresta.

**TABLE 1.** Measurements (mm) of *Typhlops amoipira* collected in the states of Alagoas (municipalities of Piaçabuçu, Coruripe, and São José da Laje) and Rio Grande do Norte (Búzios and Pirangi do Sul beaches, municipality of Nísia Floresta), in accordance with its description by Rodrigues and Juncá (2002). SAB = number of scales around body; DS = number of dorsal scales; SC = number of subcaudal scales; TL = total length; CL = caudal length; HW = head width; ED = eye diameter.

ACRONYM AND NUMBER	SAB	DS	SC	TL (MM)	CL (MM)	HW (MM)	ED (MM)
MUFAL 290	18-18-18	216	9	125.7	3.7	3.2	0.4
MUFAL 291	18-18-18	213	9	74.4	2.1	2.3	0.4
MUFAL 292	18-18-18	211	8	108.9	2.5	3.2	0.4
MUFAL 17	18-18-18	213	10	158	5.8	3.9	0.4
MUFAL 22	18-18-18	215	10	177	4.7	4.2	0.5
MUFAL 6232	18-18-18	211	9	155.5	4.8	4.3	-
CHBEZ 664	18-18-18	218	12	205	8.2	5.3	0.7



**FIGURE 2.** *Typhlops amoipira*: dorsal and lateral views of the head; MUFAL 290, Piaçabuçu, state of Alagoas, 2A and 2B; MUFAL 17, Nísia Floresta, state of Rio Grande do Norte, 2C and 2D.

influence of some of these domains, such as the Atlantic Forest along almost the entire eastern coast, and Caatinga in the northernmost part (Freire 1996). Thus, it is possible that this species also occurs along the coast of Paraíba and Pernambuco states in sympatry with *Typhlops paucisquamus*, recorded by Rodrigues (1991) in João Pessoa municipality, Paraíba, approximately 80 km North of its type locality. The species may not yet have been found at Pernambuco and Paraíba due to the scarcity of investments in inventories for these areas and/or the difficulty of detecting this particular snake, which has fossorial habits.

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**APPENDIX 1.** Material examined.

*Typhlops amoipira*. Alagoas: Pontal do Peba, Piaçabuçu: MUFAL 290-292; Sítio Pau Brasil, Coruripe: MUFAL 6232; Mata da Cachoeira, Usina Serra Grande, São José da Laje: CHBEZ 664. Rio Grande do Norte: Pirangi do Sul beach, Nísia Floresta: MUFAL 17; Búzios beach, Nísia Floresta: MUFAL 22.