Phyllopezus lutzae (Loveridge, 1941) (Squamata, Phyllodactylidae): new records from the Brazilian state of Paraíba

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Abstract

Phyllopezus lutzae (Loveridge, 1941) is a bromelicolicous lizard species that inhabits the Atlantic Forest in northeastern Brazil. In this work we report the first records of this species for Paraíba state, Brazil. The records extend the distribution of the species 47 km north, helping to fill a gap in its distribution in northeastern Brazil.

Key words
Atlantic Forest, gecko, lizards, Northeastern Brazil.
Gekkonidae; it was later placed in the Phyllodactylidae by Gamble et al. (2008) and only recently reclassified to the genus *Phyllopezus* by Gamble et al. (2012). In their molecular phylogenetic analysis, Gamble et al. (2012) recovered *B. lutzae* as a sister taxon of *Phyllopezus maranjonensis* (Koch, Venegas & Böhme, 2006). This, coupled with the morphological and karyotypic similarities between the 2 genera, as pointed by Russell and Bauer (1988) and Pellegrino et al. (1997), resulted in the placement of *B. lutzae* in the genus *Phyllopezus* to maintain its monophyly.

*Phyllopezus lutzae* is a mostly bromelicolous species (Loveridge 1941, Vanzolini 1972), but was found by Oliveira et al. (2016) among palm leaf sheaths and dry branches on the ground in an area without bromeliads. It is a nocturnal species that feeds on arthropods (Reis 2017). Its known distribution is within the Brazilian Atlantic Forest, ranging from southern Bahia to northern Pernambuco states (Vanzolini 1972, Carvalho et al. 2005, Ávila et al. 2010, Reis 2017). We present the first records of *Phyllopezus lutzae* from the Brazilian state of Paraíba (Fig. 1).

**Methods**

The new records of *P. lutzae* were made during a fauna rescue program conducted during a vegetal suppression activity preceding a sand mining operation in 2 Brazilian Atlantic Forest fragments in rural areas of the municipalities of Pedras de Fogo and Caaporã in Paraíba, Brazil. The sand mining operation required the removal of approximately 16.5 ha of vegetation from a forest fragment in the Municipality of Pedras de Fogo and another approximately 16 ha area of forest in the municipality of Caaporã (corresponding to ca 39.5% and 23% of the total area of each forest fragment respectively).

The specimens collected were found already deceased in an area of the fauna rescue program, and were subsequently fixed in 10% formalin and preserved in 70% alcohol. Voucher specimens have been deposited in the Herpetological Collection of the Universidade Federal da Paraíba (CHUFPB). Morphometric measurements were made with a digital caliper (precision 0.01 mm). The collections were authorized by the Paraíba State Environment Agency (Superintendência de Administração do Meio Ambiente, permit no. 013/2018). In addition to the specimens described above, 3 other specimens of *P. lutzae* were found in the Municipality of Pedras de Fogo during the wildlife rescue operation. Those specimens were found alive and were subsequently relocated to a protected forest fragment in a rural area of the municipality of Caaporã, near the area of vegetation suppression (07°25ʹ23ʺ S, 034°57ʹ30ʺ W, Fig. 2).

Together with the new records, we provide a literature review of the recorded occurrences of *P. lutzae* (Table 1). The distribution map based on those records was generated using Q-GIS v. 2.18.17 software (Fig. 1).
Results

Phyllopezus lutzae (Loveridge 1941)

New records. Brazil: Paraíba: Municipality of Pedras de Fogo (07° 24’ 53.2” S, 034° 57’ 56.3” W), collected by P. Moura, W. Santos, and R. Costa on 2 May 2018, 01:57 pm (3 adult male specimens, CHUFPB 19517, 19518, 19520). Brazil: Paraíba: Municipality of Caaporã (07° 25’ 00.0” S, 034° 57’ 51.6” W), collected by P. Albuquerque and B. Pontes on 6 July 2018, 09:41 am (1 adult male specimen, CHUFPB 24979).

Identification. The specimens were identified following Loveridge (1941), Vanzolini (1968), and Gamble et al. (2012), based on the absence of dorsal tubercles, the coloration of the dorsum (described by Loveridge (1941) as varying from mouse gray to livid liver), digits with undivided lamellae, prominent claws, and a rudimentary pollex (Fig. 3).

The collected specimens had a mean snout-vent length of 57.46 mm ± 4.55 mm (mean ± standard error; range = 50.76–60.7 mm), tail length of 41.90 mm ± 6.56 mm (range = 34.8–50.4 mm) and body mass of 4.67 g ± 0.80 g (range = 3.5–5.3 g).

Natural history. Three of the specimens of P. lutzae (CHUFPB 19517, 19518, 19520) were found associated with the bromeliad species Aechmea aquilega in the fauna rescue program area in the municipality of Pedras de Fogo. The fourth specimen (CHUFPB 24979) was found on the ground near clumps of bromeliads in the municipality of Caaporã. The 3 specimens that were released in a protected forest fragment were found in similar conditions on 10 July 2018. All of the specimens were inside or near bromeliads that had been felled or cut during the vegetation removal. The forest fragment at Pedras de Fogo covered approximately 42 ha, and the Caaporã fragment 70 ha. After the sand mining operation, 25.5 ha remained of the Pedras de Fogo fragment (of those, 8 ha in a protected area) and 47 ha of the Caaporã fragment (13 ha in a protected area). The forest

Table 1. Records of Phyllopezus lutzae from the Brazilian states of Alagoas, Bahia, Pernambuco and Sergipe based on literature data. CHUFPB = Herpetological Collection of the Universidade Federal da Paraíba (vouchers). *New records.

<table>
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<tr>
<th>Locality</th>
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<th>Longitude (W)</th>
<th>References</th>
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Figure 2. Specimens of Phyllopezus lutzae rescued during a fauna rescue program at municipality of Caaporã in Paraíba state, Brazil. Photographs by Bruna Pontes and Pedro Albuquerque.
remnants of both localities were characterized as tabuleiro formations of moist, seasonal forest. Open savanna vegetation can also be found in this region (Thomas and Barbosa 2008).

Discussion

Although *Phyllopezus lutzae* was found by Oliveira et al. (2016) in an area without bromeliads, this species demonstrates a very strict connection with that plant group (Loveridge 1941, Vanzolini 1972). The Atlantic Forest fragments where the new records of *P. lutzae* were made have large clumps of bromeliads representing at least 9 species (RMTC pers. obs.) and dominated by *Aechmea aquilega* (1 of the species known to be used as habitat by *P. lutzae*; Ávila et al. 2010). This bromeliad species does not occur in other Atlantic Forest fragments in Paraíba apart from those of Pedras de Fogo and Caaporã, and only in the Caatinga domain in the state (e.g. Agra et al. 2004). Thus, these characteristics of the areas favored the presence of this rare lizard species.

These records of *P. lutzae* from Paraíba extend its distribution 47 km north, contributing to the expansion of our knowledge of the herpetofauna of the Brazilian Atlantic Forest, and filling in gaps in the distribution of this species in northeastern Brazil. Rodrigues et al. (2013) recently recorded the tropidurid lizard *Strobilurus torquatus* for Paraíba. These new records of *P. lutzae* therefore represent the second distribution expansion recorded in the current decade for a lizard species in the state. Additionally, descriptions of new herpetofauna species for Paraíba (Pires et al. 2014, Graboski et al. 2015, Franco et al. 2017) demonstrate the need for further surveys in unexplored areas of the Atlantic Forest biome.

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Authors’ Contributions

PRAA, PTSW, WNNS, RMTC and BESP collected the specimens; PRAA, MSRM and BESP made the figures; PRAA and BESP photographed the rescued specimens; BESP made the map; RMTC collected the vegetation data; PRAA, MSRM, FRD and BESP wrote the manuscript; FRD revised the manuscript.

References


**Figure 3.** Specimen of *Phyllopezus lutzae* CHUFPB 19518. **A.** The digits with undivided lamellae. **B.** The rudimentary pollex (indicating the specimen is a male).


Oliveira CN, Muniz SLS, Moura GJB (2016) Reptiles of an urban Atlantic Rainforest fragment in the state of Pernambuco, northeastern Brazil. Herpetology Notes 9: 221–240. https://doi.org/10.11646/zootaxa.3920.3.3


