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UPDATED DISTRIBUTION MAP OF *AMPHISBAENA MITCHELLI* PROCTER, 1923 (SQUAMATA: AMPHISBAENIDAE) WITH A NEW RECORD IN MARANHÃO, BRAZIL

MAPA DE DISTRIBUCIÓN ACTUALIZADO DE *AMPHISBAENA MITCHELLI* PROCTER, 1923 (SQUAMATA: AMPHISBAENIDAE) CON UN NUEVO REGISTRO EN MARANHÃO, BRASIL

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Updates on the geographic range of a species are essential to fill knowledge gaps on biodiversity, reducing the Wallacean shortfall (Hortal et al., 2015). This is particularly important for worm lizards (Amphisbaenia), legless reptiles whose subterranean lifestyle makes sampling difficult, resulting in scarce information on the geographic range of many species and their conservation status (Böhm et al., 2016; Colli et al., 2016). Brazil has 81 of the 202 amphisbaenian species currently recognized (Uetz et al., 2023; Guedes et al., 2023), accounting for over 40% of the worldwide diversity of this group. However, most Brazilian municipalities lack records of worm lizards, creating large gaps in the known geographic range of species due to insufficient and biased sampling (Colli et al., 2016).

Amphisbaena mitchelli Procter, 1923 is a small-sized worm lizard species (up to 162 mm snout-vent length) endemic to northern Brazil (Colli et al., 2016). It is diagnosed by having a round head, 193–220 body annuli, 26–29 caudal annuli with autotomy at the 6th or 7th annulus, two precloacal pores sequentially arranged, dorsal and lateral sulci, 12–14 dorsal and 14–16 ventral segments at a midbody annulus, three supra- and three infralabials (Gans, 1963; Almeida et al., 2016). The species was described from Ilha de Marajó, state of Pará, based on one specimen deposited in the Natural History Museum, London (NHMUK 1946.8.2.31 [former BMNH]) (Procter, 1923; Gans, 1963). After its description, few publications brought to light new distribution records for *A. mitchelli* (e.g., Gans, 1963, 1964; Cunha et al., 1985; Hoogmoed & Avila-Pires, 1991; Mott et al., 2011; Ribeiro et al., 2014; Teixeira Jr. et al., 2014), all in eastern Amazonia.

In this note, we report *A. mitchelli* in the municipality of Imperatriz, state of Maranhão, Brazil (5.5194° S, 47.4611° W; datum WGS84, ca. 132 m a.s.l.), based on one male specimen collected between June and July 2011 (collector and date unknown) and deposited in the Herpetology Collection of Museu de História Natural do Capão da Imbuia, Curitiba, Paraná, Brazil (MHNCI 14186; Fig. 1). The new record is 300 km northeast in a straight line to the nearest record in Floresta Nacional de Carajás, municipality of Parauapebas, state of Pará, Brazil. It fills a gap of 530 km between Carajás and Alto Alegre do Pindaré, Maranhão (Colli et al., 2016). The distribution range of *A. mitchelli* in its last IUCN assessment (Silveira et al., 2021) is outdated. The current known range extends further west, to Vitória do Xingu (MZUSP 67712–67719; Vanzolini, 1991), Alenquer (MPEG 11779; Hoogmoed & Avila-Pires, 1991), and Belterra (LPHA 4942; Ribeiro et al., 2014), in the state of Pará. The new record from Imperatriz is at the southeastern border of the species range predicted by the IUCN (Fig. 2).

The species occurs where the dominant soil is ferralsol (most records), acrisol, and plinthosol (Fig. 2). Ferralsol and acrisol are widespread in Brazil and they are the main soil types in the Amazon basin, being highly leached and nutrient-poor (Gardi et al., 2015). Plinthosols are common in eastern Amazonia and are iron-rich deep weathered soils (Gardi et al., 2015). *Amphisbaena mitchelli* occurs mainly in coarse soils, mostly with a sandy loam texture, but also in fine-grained clay soils (FAO et al., 2012). Although the small size and round head suggest that it is not specialized for digging in clayic soils (Gans, 1968; Navas et al., 2004), a recent study indicates there is no relationship between soil texture and cranial shape in amphisbaenians (Kazi & Hipsley, 2018). It could be that in fine-textured soils the individuals burrow at shallow depths or live in large rotten logs or close to tree roots (Costa, 2020). We highlight that these assumptions on the types and textures of soil where *A. mitchelli* is found are based on large-scale mappings (FAO et al., 2012; Gardi et al., 2015) and inconsistencies may occur at a finer scale.

Figura 1. Espécimen MHNCI 14186 de Imperatriz, Maranhão, Brasil, identificado como *Amphisbaena mitchelli* por tener una cabeza redonda, 217 anillos corporales, 26 anillos caudales con autotomía en el séptimo anillo, dos poros precloacales dispuestos secuencialmente, sulcos dorsales y laterales, 12 segmentos dorsales y 14 segmentos ventrales en un anillo del cuerpo medio, y tres supralabiales y tres infralabiales.

Figure 1. Specimen MHNCI 14186 from Imperatriz, Maranhão, Brazil, identified as *Amphisbaena mitchelli* by having a round head, 217 body annuli, 26 caudal annuli with autotomy at the 7th annulus, two precloacal pores sequentially arranged, dorsal and lateral sulci, 12 dorsal and 14 ventral segments at a midbody annulus, and three supra- and three infralabials.

Amphisbaena mitchelli has been recorded inside forests, and even in urban areas (Gans, 1964; Cunha et al., 1985; Ribeiro et al., 2014). Records are mainly at the Tocantins/Pindaré Moist Forests ecoregion (Tropical and Subtropical Moist Broadleaf Forests biome) (*sensu* Dinerstein et al., 2017), one of the most studied areas for reptiles in eastern Amazonia (Prudente et al., 2018). The species western range seems limited by the Tapajós and Trombetas rivers, while its eastern range may be limited by the dryer and more seasonal climate of the Maranhão Babaçu forests ecoregion (Tropical and Subtropical Dry Broadleaf Forests biome) and the Cerrado ecoregion (Tropical and Subtropical Grasslands, Savannas, and Shrublands biome). If this assumption is correct, the new record from Imperatriz would be at the limit of the species range, an ecotonal zone between the Cerrado ecoregion and the Matro Grosso Tropical Dry Forests ecoregion (TSMBF biome) (Dinerstein et al., 2017).

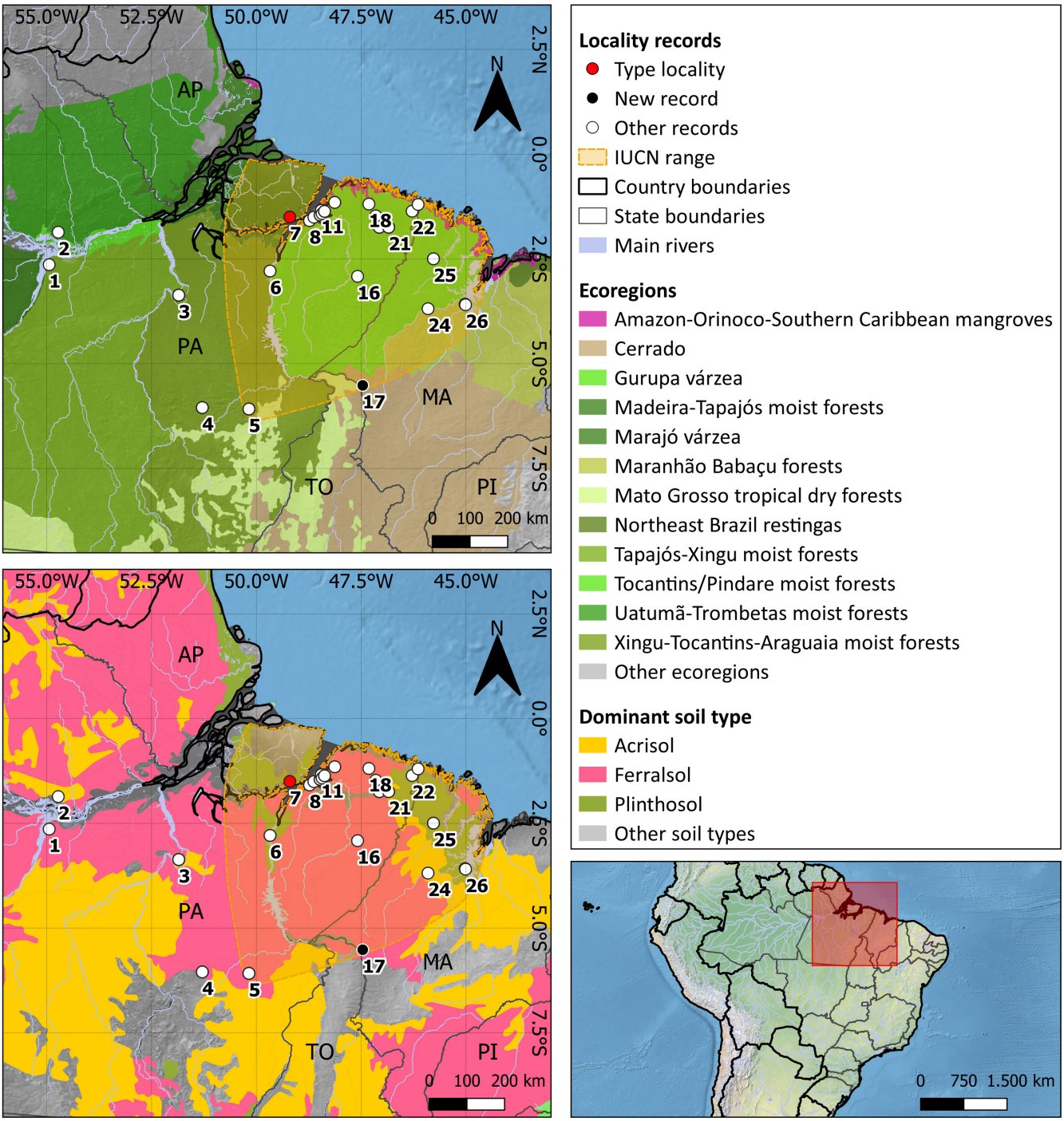

Figura 2. Mapa de distribución actualizado para *Amphisbaena mitchelli*. Localidad tipo en rojo, nuevo registro en negro y otros registros en blanco. Las localidades 9, 10, 12–15, 19, 20, y 23 no están numeradas debido a la corta distancia entre puntos adyacentes. Para obtener más detalles sobre los registros en la literatura, consulte la Tabla S1 disponible en https://doi.org/10.5281/zenodo.8422924 (donde los códigos de las colecciones de historia natural siguen a Sabaj (2020)). AP: Amapá; MA: Maranhão; PA: Pará; PI: Piauí; TO: Tocantins.

Figure 2. Updated distribution map for *Amphisbaena mitchelli*. Type locality in red, new record in black and other records in white. Localities 9, 10, 12–15, 19, 20, and 23 are not numbered because of the short distance between points. For details on records in literature, see Table S1 available at https://doi.org/10.5281/zenodo.8422924 (in which codes for natural history collections follow Sabaj (2020)). AP: Amapá; MA: Maranhão; PA: Pará; PI: Piauí; TO: Tocantins.

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