A note on the reproduction of *Amphisbaena anaemariae* Vanzolini, 1997 (Squamata: Amphisbaenidae)

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Amphisbaenians – commonly known as worm lizards – represent a diverse and enigmatic group of squamates that exhibit a unique morphology and a typical burrowing lifestyle (Vitt & Caldwell, 2014). The species belonging to this group exhibit a wide geographic distribution throughout the Middle East, Africa, Florida (USA), parts of Mexico, Caribbean, and South America (Uetz et al., 2023), although their secretive habits – as in other fossorial and secretive squamates – diminish the probability of encounter in the field and opportunities for observation in nature (How & Shine, 1999; Andrade et al. 2006; Vitt & Caldwell, 2014).

Approximately 201 amphisbaenian species are currently recognized, grouped in six families: Bipedidae, Blanidae, Cadeidae, Rhineuridae, Trogonophidae, and Amphisbaenidae (Uetz et al., 2023). Amphisbaenidae represents the most diverse and widely distributed family, comprising 183 species in 12 genera that occur in Central, South America, and Africa (Uetz et al., 2023).

The genus *Amphisbaena* Linnaeus, 1758 currently comprises 102 species (as in Uetz et al., 2023), representing the most diverse genus in the family. In Brazil, 80 species are known to occur (considering *Leposternon* a synonym of *Amphisbaena* (Graboski et al., 2022), inhabiting a diversity of biomes and ecoregions (Guedes et al., 2023). *Amphisbaena anaemariae* Vanzolini, 1997 is a small worm lizard from central Brazil that essentially inhabits the Cerrado ecoregion but is also known to occur in the ecotone between Cerrado

and Mato Grosso tropical dry forests, as well as ecotones of Cerrado and Atlantic Forests in Alto Paraná (Vanzolini, 1977; Ribeiro et al., 2019; Souza & Costa, 2022).

Reproductive biology studies on amphisbaenians from tropical regions are incipient when compared to those of other regions, and recent advances have been made based on collection specimens (Andrade et al., 2006; Pizzato et al., 2007). The reproductive biology of *A. anaemariae* is unknown, with no available data regarding the number of eggs/ova for the taxon.

Herein I report the presence of three elongated eggs on the right oviduct of an adult individual of *Amphisbaena anaemariae* (LACV 4397) collected in December 2021, at Fazenda Isoton, Planaltina, Distrito Federal, Brazil. The specimen has a snout-vent length (SVL) of 170 mm and midbody diameter of 7.47 mm. The eggs were arranged in a row, as in most amphisbaenians (Santos, 2013), and measured 17.4–20.8 mm in length (Figure 1). The anteriormost portion of each egg coincides with the following regions of the specimen's body SVL: (1) 90mm, (2) 144mm (3) 140mm. Examination under a stereoscopic microscope did not find evidence of the presence of embryos inside the eggs.

Literature data reveal that the total number of eggs in the genus *Amphisbaena* might range from one to nine, excluding data for vitellogenic follicles (see Tab. 1), with a maximum of four eggs in each oviduct (Andrade et al., 2006; Santos, 2013). The reduced total number of eggs in *A. anaemariae* (three) might be related to its reduced size in comparison to other amphisbaenians, since previous studies (see Santos, 2013) have found a significant relation between the total number of eggs in *A. infraorbitale* and *A. munoai* and SVL. However, Martín et al. (2011) hypothesized that a reduced number of eggs might be related to parental care in *Trogonophis wiegmanni* Kaup, 1830, a relatively large species of the Trogonophidae. Gallardo (1967) found possible evidence for parental care in *A. darwinii* (identified as *A. d. heterozonata*) with a reduced number of eggs (2–3), although *A. darwinii* may produce two to eight eggs (Table 1) and reduction in number of eggs may be due to unknown factors such as food availability. Since there is no detailed data on the natural history and reproductive behavior of *A. anaemariae*, future studies are still needed to address this matter, and to increase the sample number for the species.

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Table 1. Minimum and maximum number of eggs observed in *Amphisbaena* species.

Species	Total number of eggs	Source
Amphisbaena alba	5–8	Colli & Zamboni, 1999; Barros-Filho & Nascimento, 2003; Santos 2013
Amphisbaena anaemariae	3	Present study
Amphisbaena caeca	3	Schmidt, 1920
Amphisbaena darwinii	2–8	Berg, 1898; Mangione & Monteiro, 2001, Andrade, 2006
Amphisbaena dubia	1–3	Santos, 2013
Amphisbaena heathi	1–6	Oliveira et al., 2019
Amphisbaena infraorbitale	2–6	Andrade et al. 2006; Jared et al. 1997; Santos, 2013
Amphisbaena innocens	4	Schwartz & Henderson, 1991
Amphisbaena kingii	1–4	Vega, 2001; Santos, 2013
Amphisbaena mertensii	6–8	Pramuk and Allamilo, 2003; Santos, 2013
Amphisbaena microcephala	1–4	Santos, 2009; Santos, 2013
Amphisbaena nana (identified as *A. munoai*)	1–3	Balestrin & Cappellari, 2011; Santos, 2013
Amphisbaena roberti	1–6	Andrade et al. 2006; Santos, 2013
Amphisbaena trachura	9	Santos, 2013
Amphisbaena vermicularis	4	Barros-Filho et al. 1996



Figure 1. Female of *Amphisbaena anaemariae* (LACV 4397) in ventral view showing three eggs arranged in a row. Small photo on upper left shows the eggs after removal from the internal cavity. Scale 5mm.