

## First record of piebaldism in the Munoa worm lizard (*Amphisbaena munoai*)

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The pigmentation of reptiles is determined by the different types of chromatophore embedded within the skin. Chromatic anomalies are not uncommon and result from the inactivity or the absence of one or more chromatophores types (Prüst, 1984; Bechtel, 1991). The terminology for such anomalies tends to be confused. The anomaly most frequently reported in the literature is hypopigmentation since this is the easiest to detected (Kazilas et al., 2018; Kornilios, 2014; Lucati & López-Baucells, 2017; Zalapa et al., 2016). One form of hypopigmentation is albinism which refers to the complete absence of pigment in the skin or eyes (Prüst, 1984; Bechtel, 1991). When the absence of pigment isn't total, the term 'partial albinism' is used, nevertheless this condition can be better classified as leucism or piebaldism (Prüst, 1984; Bechtel, 1991; Lucati & López-Baucells, 2017). Leucism refers to absence of any skin pigment, except in the eyes; while piebald specimens have coloured eyes and lack pigments only on some parts of the body, frequently resulting in spotted colour patterns (Prüst, 1984; Bechtel, 1991; Grouw, 2006, 2013; Abreu et al., 2013; Fertl & Rosel, 2009).

In this report we present the first record of piebaldism in *Amphisbaena munoai* Klappenbach 1960 (Amphisbaenidae). This is a small and slender worm-lizard distributed in areas of the Uruguayan savannah ecoregion that comprises subtropical open areas of southern South America, in the Brazilian state of Rio Grande do Sul and eastern Uruguay (Dinerstein et al., 2017). The species reaches 151 mm snout-vent length (102 mm to 151 mm in adults) and normally has a light brown colour that is intense dorsally, extends laterally and then fades in the center of the ventral region (Perez & Borges-Martins, 2019).

During a field survey on 27th October 2015, in the municipality of Bagé (Rio Grande do Sul, Brazil) we encountered two specimens of *A. munoai* under a fallen tree trunk in an open field (-54.0189 longitude, -31.3195 latitude: WGS84). These have been deposited as voucher specimens in the collection of the Departamento de Zoologia, Universidade Federal do Rio Grande do Sul (UFRGS). One of the specimens (UFRGS 7417) was piebald (Fig. 1) while the other (UFRGS 7418) had quite normal coloration. The piebald amphisbaenian was a juvenile and had a snout vent length of 97 mm and a tail length of 12 mm. The eyes had coloration typical for this species but the body had non-pigmented areas giving a typical piebald pattern (Fig. 1).



**Figure 1.** Piebald specimen of *Amphisbaena munoai* (UFRGS 7417) from Bagé municipality, Rio Grande do Sul, Brazil

There are three earlier records of pigment deficiency in amphisbaenians. A case of piebaldism was recorded as partial albinism in *Amphisbaena trachura* (Chalkidis & Di-Bernardo, 2004), and cases of piebaldism have been reported in *Blanus strauchi* (Kazilas et al., 2018) and *Blanus cinereus* (Malkmus, 1997). Reptiles with chromatic anomalies are normally rare in nature, mostly because there are associated with defective vision, an inability to thermoregulate, or they are easily predated (Krecksak, 2008; Hupfeld & Hoffmann, 2006; Kornilios, 2014). However, as amphisbaenians are fossorial species these problems may not affect their ability to survive (Kornilios, 2014; Kazilas et al., 2018) and so may increase the frequency with which this abnormality is observed in nature.

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