Partial albinism in *Sibynomorphus ventrimaculatus* (Boulenger, 1885) (Serpentes: Dipsadidae) in Rio Grande do Sul state, Brazil

Arthur Diesel Abegg¹*, Conrado Mario da Rosa¹, Camila Pivetta Cavalheiro¹, Flora Roncolatto Ortiz² and Leandro Malta Borges¹

Albinism is a condition caused by homozygous recessive alleles, which prevent an individual from producing melanin, the pigment responsible for the dark colors (e.g., black and brown) in animals (Griffiths et al., 1998; Alberts et al., 2004). Although it is a rare phenomenon in wild tetrapods, this chromatic anomaly has a frequency of 1 in 20,000 individuals across all vertebrate classes (Bérnils et al., 1990; Alberts et al., 2004; Oliveira, 2009; Santos and Silva, 2010; Nogueira and Alves, 2011; Veena et al., 2011; Noronha et al., 2013). Partial albinism is characterized by the absence of melanin in certain body regions, with the skin presenting a white color with pigmented zones, or producing lighter shades of the common colors (Cademartori and Pacheco, 1999).

On 17 February 2014 at around 1000 hrs one adult male specimen of *Sibynomorphus ventrimaculatus* (Fig. 1B) was found under construction debris in an urban zone of the city of Santa Maria (29°42′26.2″ S, 53°51′52.3″ W), Rio Grande do Sul, Brazil. The specimen was photographed, captured, euthanized by intercoelomic injection with sodium pentobarbital, and deposited in the herpetological collection of the Instituto Butantan “Alphonse Richard Hoge” (IBSP), and accessioned as IBSP 85.286. Measurements included a snout-vent length of 360 mm, tail length of 94 mm, and weight of 14 g. A liver sample was collected for molecular analysis.

The geographic distribution of *S. ventrimaculatus* encompasses the Brazilian states of Rio Grande do Sul, the eastern region of Paraná, southern São Paulo, Mato Grosso do Sul, and the northeast of Argentina (Franco, 1994; Giraudo and Scrocchi, 2002). The species has a terrestrial habit and is nocturnal (Laporta-Ferreira et al., 1986; Franco, 1994), with a diet consisting of slugs and snails (Oliveira, 2001; Lema, 2002). It is oviparous, with clutches comprising 4–5 eggs (Leitão-de-Araújo, 1978; Pontes and Di-Bernardo, 1988). Its defensive behavior consists of expelling cloacal contents, hiding its head under the body, erratic movement, and head triangulation (Abegg and Entiauspe, 2012). According to Franco (1994), chromatic differences, especially in the dark patches of the dorsal pattern, exist in populations of this species across Brazil. However, on the ventral all patterns exhibit numerous randomly distributed dark patches with irregular edges (Fig. 1A).

The typical dark dorsolateral patches are present in the partially albinistic specimen, but in lighter shades as compared to normally colored specimens; some even have a pink shade. In contrast, the dark patches in the ventral region of this individual almost disappear, with the remaining few distanced from each other and of a much lighter shade and smaller size as compared to the normal color pattern. There is a significant reduction in number and a difference in the shade of the head pattern, as also seen in the ventral pattern. The iris coloration is also different. Whereas normal specimens have a brownish color and clear pupils, the anomalous specimen presents a uniformly black iris, which makes it impossible to distinguish the pupils from the sclera.

The discovery of this very unusual specimen of *S. ventrimaculatus* corroborates the idea expressed by Sazima and Di-Bernardo (1991) that snakes that are nocturnal, cryptic, or in any way protected from visually oriented predators tend to have a greater chance

---

¹ Universidade Federal de Santa Maria, Avenida Roraima, 1.000, Camobi, CEP 97105-900, Santa Maria, RS, Brazil.
² Instituto Butantan, Avenida Vital Brasil, 1.500, Butantã, CEP 05503-900 São Paulo, SP, Brazil.
* Corresponding author. E-mail: arthur_abegg@hotmail.com
of survival in the wild compared to individuals with unusual behaviors or features. If this were not the case, albinistic individuals might be encountered with greater frequency.

Acknowledgements. We are very grateful to Elocir Cavalheiro for discovering and collecting the specimen. We thank Paulo Sérgio Bernarde for a prior review of the manuscript, Omar Machado Entiauspe Neto for helping with the translation and the Instituto Butantan for receiving and accessioning the collected specimen in its scientific collection.

References


Figure 1. (A) Adult specimen of Sibynomorphus ventrimaculatus showing normal coloration. (B) S. ventrimaculatus specimen with partial albinism (IBSP 85.286). The insets show the detail of the ventral coloration. Photos by Leandro Malta Borges.