A case of iris heterochromia in Lancehead *Bothrops erythromelas*, from northeastern Brazil (Serpentes: Viperidae)

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Heterochromia is an ocular condition characterized by a difference in the coloration of the iris within the same individual, which can be hyperchromic or hypochromic. This condition may be of two main types: complete heterochromia (*heterocromia iridis,* in plural), where each eye has its iris with a specific coloration, and partial heterochromia (*heterocromia iridum*, in singular), where only a portion of the iris has a distinct color (Partington, 1964; Silva *et al*., 2021). This variation results from the uneven distribution of pigments during embryonic development (Gladstone, 1969; Silva et al., 2021). In most cases, this condition is benign, sporadic, and occurs without any other detectable abnormality (Silva et al., 2021). Though well-documented for humans, cats, dogs, horses, and buffaloes (Misk et al., 1998; Newkirk et al., 2010; Chomdej et al., 2018; Da Silva et al., 2021), it is an uncommon disorder in snakes, with only a few reports in the literature (Mathielo et al., 2021; Suárez et al., 2021). Here we report the first case of *heterochromia iridis* in *Bothrops erythromelas*, which holds significant importance due to the rarity of such occurrences and the limited documentation of this condition in snakes. We also emphasize the importance of reporting unusual occurrences in wildlife as they are found.

Bothrops erythromelas is a terrestrial and nocturnal snake, responsible for

many snakebites in northeastern Brazil, occurring in dry and humid habitats within the Caatinga ecoregion. It is a small viper, mean SVL 55 cm, with a generalist diet, feeding on frogs, lizards, mammals, and centipedes (Campbell & Lamar, 2004; Barros et al., 2014). It is the most common venomous snake in the Caatinga, with marginal records in the Atlantic Forest and Cerrado in Brazil (Nogueira et al., 2019). An adult *B. erythromelas* (SVL > 1m) was captured by an anonymous collector in the state of Bahia, Brazil (no further information available) on 1 February 2007, and was delivered to Instituto Butantan (not cataloged, and lost in a fire that destroyed the herpetological collection in 2010). This specimen presented two different eye colors, the right eye normal light gray (Fig. 1a), while the left eye was blood-red (Fig. 1b).

Heterochromia in snakes is apparently rare, as there are few records in the literature (Mathielo et al., 2021). Two recent records mentioned the occurrence of *heterocromia iridis* in Pseudoboini: *Oxyrhopus trigeminus* in southeastern Brazil (Mathielo et al. 2021), and *Clelia scytalina* in Costa Rica (Suárez et al. 2021). This report is the first record of heterochromia in *Bothrops erythromelas* in northeastern Brazil. Heterochromia may be congenital or acquired due to ocular injuries, traumas, or medical conditions (Tomar et al., 2018). Heterocromia is generally harmless and the specimen mentioned here, and the ones presented in Mathielo et al. (2021), and Suárez et al. (2021) seem to have reached adulthood, which indicates that these conditions have not affected its survivorship. Even if this condition affected the vision, in vipers it would have minimal effects, because they use their thermal loreal pits to locate prey and defend themselves (Campbell and Lamar 2004).

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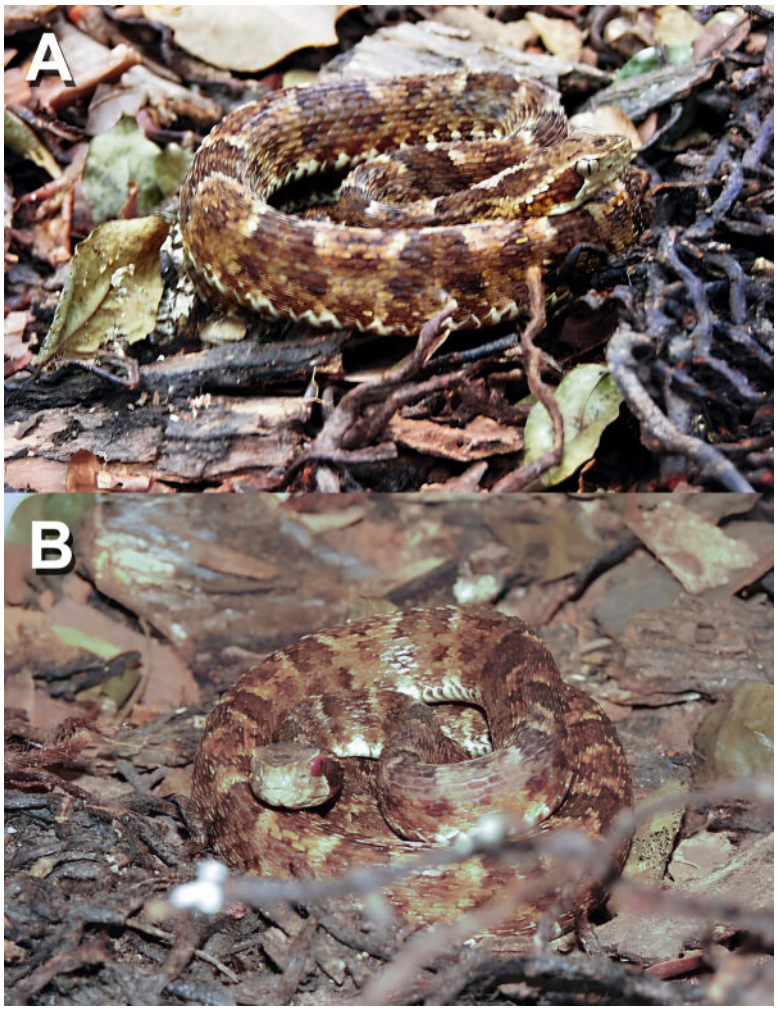

Figura 1. *Bothrops erythromelas*, SVL 100 cm, from Bahia, Brazil, showing different eye colors: (a) right side with gray eye, (b) left side with red eye.