

REMARKS ON *Apostolepis goiasensis* (SERPENTES, XENODONTINAE), WITH PRESENTATION OF THE HOLOTYPE**Thales De Lema¹****ABSTRACT**

The holotype of *Apostolepis goiasensis* is discussed and presented.

CONSIDERAÇÕES SOBRE *Apostolepis goiasensis* (SERPENTES, XENODONTINAE), COM DESCRIÇÃO DO HOLÓTIPO**RESUMO**

O holotipo de *Apostolepis goiasensis* é discutido e apresentado.

Apostolepis goiasensis Prado 1943 is a small species from the Cerrado of Brazil, considered rare, whose holotype (IBSP.9192) was lost during a fire at the Instituto Butantan. Currently, five specimens have been collected: MCP.9192 from Uberlândia, Minas Gerais (Lema, 2003); IBSP.67852 from Ribas do Rio Pardo, Mato Grosso do Sul (Abes & Ferrarezzi, 2003); CHUNB.30656 (ex-IBSP.55144), from Luziânia, Goiás; (5) FURG.1344 from Três Lagoas, Minas Gerais (Fig. 5); and CHUNB.30659 (ex-IBSP.55139), without origin. Loebmann & Lema (2012), presented notes on the distribution of the species, however, one of the specimens cited (AMNH.87942), does not belong to this species, and was incorrectly deposited with this name. This specimen was formerly determined by Harvey (1999) as *Apostolepis nigroterminata* Boulenger 1896 and subsequently redetermined as *A. goiasensis*. The examination of the specimen through photographs reveals that it is in fact the Bolivian species, *Apostolepis phillipsae* Harvey 1999, known only from the holotype. This finding indicates the occurrence of the species in Brazil, providing more data towards knowledge of the species (Entiauspe Neto & Lema, *subm.*). The remaining specimens deposited as *A. goiasensis* were reviewed, confirming Loemann & Lema (2012) as well as reports in the literature. The final results of this analysis are presented herein.

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The holotype of *A. goiasensis* was stored in the laboratory of the Department of Parasitology of the IBSP and was collected by Ernesto Garbe, a traveling naturalist from the Museu Paulista. Alcides Prado transferred the holotype to IBSP on 20/01/1942 (Figs. 1-3), describing it as a new species (Prado, 1943). Amaral (1944) criticized Prado (1943), stating that it was of young individual of *Apostolepis flavotorquata* (Duméril, Bibron & Duméril 1854). His statement was based on his belief that snakes of this genus with a striped pattern, tend to lose the marks as they grow, thus justifying the presence of the white collar, which would develop in the adult. He concluded by including *A. flavotorquata* in the IIA group of Boulenger (1896), which is formed by the species *A. flavotorquata*, *A. nigrolineata* (Peters 1869) and *A. pyimi* Boulenger 1903. But his claim included characters that are common to most species of Elapomorphini and are, therefore, irrelevant. Finally, attesting his extensive experience observing many specimens of the tribe in many collections, he pontificated that, (a) the species of *Apostolepis* vary throughout their development, especially in the head shape, color and folidosis; (B) the supralabial contact with the parietal has no value; (C) the temporal may or may not be present in the same species; (D) the relative size of the eye has no value, because it varies throughout development; (E) the pattern of the striated dorsal color varies throughout development, and the marks can disappear; (D) various penta-striated species become tri-striated, by the fading or even disappearance of the paravertebral marks; finally, (f) that the variation is frequent and larger in underground species of snakes.

The afore mentioned group (Boulenger, 1896) is fictitious because *A. pyimi* is *A. nigrolineata* (Lema, 1997), *A. flavotorquata* belongs to a specific group, different from the *nigrolineata* group (Ferrarezzi, 1993a) and does not have marks in its initial phase, being more compatible with *A. multicineta* Harvey 1999, a species from Bolivia allocated to a specific group (Ferrarezzi, 1993). It is likely that Amaral invalidated *A. goiasensis*, due to the dearth of data in the original description, which lacks important data. We agree in part to the affirmations of Amaral (1944) about the variation in Elapomorphini. The presence of striated newborns and even young, which become evenly immaculate in adults, has only been observed in primitive level Elapomorphini, such as *Elapomorphus wuchereri* Günther 1861 (e.g.). The occurrence of the temporal in *Apostolepis* is only the posterior one and, indeed, in some species it may or may not be present, varying in the same individual. Therefore, the prefrontal contact with the second supralabial, isolating the nasal from the precocular, characters commonly used in the diagnosis of the species, is valid according to the species. The paravertebral striations are generally less densely pigmented than the others, disappearing in adults of several species (Lema & Renner, 1998). The rostral portion seen from the dorsal view in *A. flavotorquata* is not 1,2/3 (166%), according to Amaral (1944), but 2/3 (66%) (Boulenger, 1896; Lema & Renner, 2005). Prado (1943) stated that *A. flavotorquata* has five infralabials contacting the anterior mentals, which is an anomaly (Lema & Renner, 2005), for few species of the genus have a reduced number of infralabials (e.g. *Apostolepis vittata* (Cope 1887)). The contact of three infralabials with anterior mentals was seen only in one species group (*vittata*) and considered a synapomorphy (Lema, *in lit.*). Prado (1943) counted five supralabials in the holotype of *A. goiasensis* and most of the specimens feature six (Lema, 2003; Loebmann & Lema, 2012). The occurrence of five supralabials is frequent in the *vittata* group. Although the figure of the holotype of Prado (1943) does not show any diagnostic characters, it is presented herein (Figs. 1-3). Ferrarezzi (1993) stated that the presence of five supralabials may be due to the

fusion of shields, but this is very rare, and normal in most species of the *vittata* group. Prado (1943) cited two preoculars but there is only one on each side, being a synapomorphy of Elapomorphini; if there are two, these will have been divided (anomaly), as seen with the loreal (e.g. holotype of *Apostolepis dimidiata* Jan 1862), by dividing the external side of each prefrontal. As for the citation that no internasals are present (Prado, 1943), it is irrelevant because this is a generic synapomorphy. Fusion of the internasal with the prefrontal may occur, as an anomaly, as in the holotype of *Elapomorphus coronatus* Sauvage 1877, anomalous specimen of *Coronelaps lepidus* (Reinhardt, 1861) (Lema & Hofstadler-Deiques, 1995); the same fusion was found in many specimens of *Elapomorphus quinquelineatus* (Raddi 1820), on one side or both sides of the head (Lema 1992). The absence of internasals is a synapomorphy of *Apostolepis*.

The equalization *A. goiasensis* to *A. flavotorquata* (Amaral, 1944), is inadmissible because both belong to quite different groups (Ferrarezzi, 1993; Lema & Renner, 2005), differentiated in morphology, foldosis, dimensions and coloring. The indication of the presence of striations in *A. flavotorquata* (div. AA) did not receive confirmation from the large sample review of the entire area of occurrence (Lema & Renner, 2005). There may be confusion with a northern form, still unknown (Lema & Hamdann, under study), dorsal background color dark red with five very thin black streaks, more elongated head, nuchal-cervical collars conspicuous and dorsal base color blood red (dark), being bright red in *A. flavotorquata* in which striations were not found, only a vertebral shaded band in a few specimens. Two striated specimens were found deposited in IBSP as *A. flavotorquata*, by Alphonse Richard Hoge, from Ilha Solteira (border between São Paulo and Mato Grosso), with sharp black striations, and a very different morphology from this species, being thinner, and these were redetermined as a new species (Lema, *in litteris*) as predicted by Alphonse R. Hoge (oral comm.).

Relationship .--- The hemipenes of *A. goiasensis* is simple (Fig. 4); the sulcus spermaticus is split in the middle of the organ. *A. goiasensis* is related more to species of the *dimidiata* group (Loebmann & Lema, 2012), as well as the *ambinigra* group, due to its relatively small size, immaculate vent, head shape, for example. It also resembles *A. cerradoensis* Lema 2003, differing from the latter mainly by the absence of nuchal-cervical collars and number of striations. We suggest its provisional allocation in the *ambinigra* group (Lema, *in litt.*).

Neotype .--- We propose the specimen MCP.9192 as the neotype of the species, from Uberlândia, Minas Gerais, Cerrado region of Central Brazil, with a view to eliminate the holotype from the IBSP collection (Luiz Francisco Franco, oral comm.).

The spinal color in life is salmon red (Daniel Loebmann, oral comm.) (Fig. 5).

ACKNOWLEDGEMENTS

We thank Herbert Ferrarezzi (MZUSP) for the photographs of the holotype; Daniel Loebmann (FURG) for photographs of a live specimen; Alexander Bamberg de Araújo, for our stay at UNE, for examining the collection; and Francisco Luis Franco (IBSP), for his attention at this institution. And to Anne Baldisseri by review of article.

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Figures 1-3 - Holotype of *Apostolepis goiasensis* (IBSP.10160). Note the pair of cervical clear spots after the pileus (Herbert Ferrarezzi).



Figure 4 - Left hemipenes of *Apostolepis goiasensis* (MCP.9192), Uberlandia, Minas Gerais (Lema, 2003).



Figure 5 - Live specimen from Três Lagoas, Minas Gerais (FURG.1344) (Daniel Loebmann).

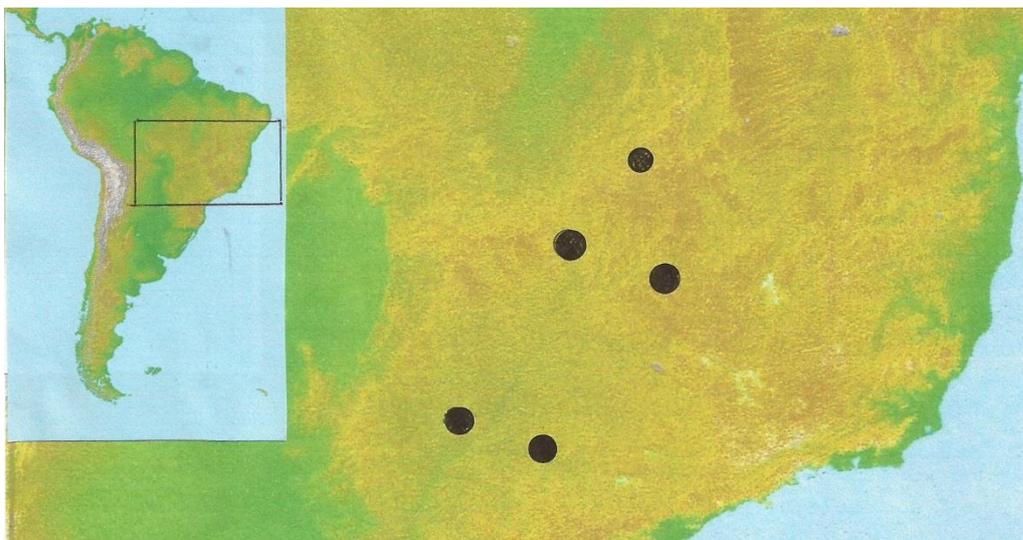


Figura 6 - Map of Central Brazil with the location of the collected specimens.