

Short Notes

Typhlophis ayarzaguenai Señaris, 1998 is a junior synonym of *Typhlophis squamosus* (Schlegel, 1839)

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Abstract. In 1839, Schlegel described *Typhlophis squamosus* on the basis of a single specimen from Cayenne, French Guiana. Since then the species has been reported from Brazil, Guyana and Suriname. Relying only on the original description and a subsequent short description of the holotype of *T. squamosus* by Boulenger in 1893, Señaris described *T. ayarzaguenai* from Venezuela in 1998. Señaris' description of *T. ayarzaguenai* contains several errors and discrepancies and we argue that our observations justify the consideration of *T. ayarzaguenai* as a junior synonym of *T. squamosus*. The genus *Typhlophis* thus remains monotypic and *T. squamosus* is a widespread species in the Guiana Shield.

Keywords: Anomalepididae, Guiana Shield, Guyana, taxonomy, Venezuela.

During ongoing herpetological surveys of Kaieteur National Park, west-central Guyana, a local diamond miner collected an adult *Typhlophis* and gave it to the senior author. The specimen was found while digging a pit in the vicinity of the village of Chenapou (05°01'N, 59°34'W), about 20 km airline from Kaieteur, ca. 550 m above sea level.

The specimen was compared to *Typhlophis squamosus* (Schlegel, 1839) and *T. ayarzaguenai* Señaris, 1998 (see Appendix for material examined). Our comparisons allowed us to identify the Guyanese specimen as *T. squamosus*, but also led us to detect several discrepancies in Señaris' (1998) description that do not support recognition of *T. ayarzaguenai* as a species distinct from *T. squamosus*. The holotype of *T. squamosus*, from Cayenne, French

Guiana, reported lost by McDiarmid, Campbell and Touré (1999) was located in the National Museum of Natural History in Leiden, The Netherlands (RMNH) and borrowed for examination.

We are concerned that providing a drawing of the head of the holotype of *Typhlophis squamosus* would have been useful. Unfortunately the holotype is desiccated and has large folds in the head skin, which prevented us from making a precise and valuable drawing. Instead, we provide a drawing of the head of MNHN 1999.8307, a specimen of *T. squamosus* from Saint Laurent, French Guiana (fig. 1A), and a reproduction of the original drawing of the holotype of *T. squamosus* for comparison (fig. 1B).

Typhlophis ayarzaguenai was described from three specimens collected 650 m above sea level in Bolívar State, Venezuela (Señaris, 1998). Unfortunately the new species was not compared with museum specimens of *T. squamosus* and pertinent literature was overlooked: Señaris relied only on the original description by Schlegel (1839) and a short subsequent description by Boulenger (1893). Below, we discuss the diagnostic characters given by Señaris (1998) to

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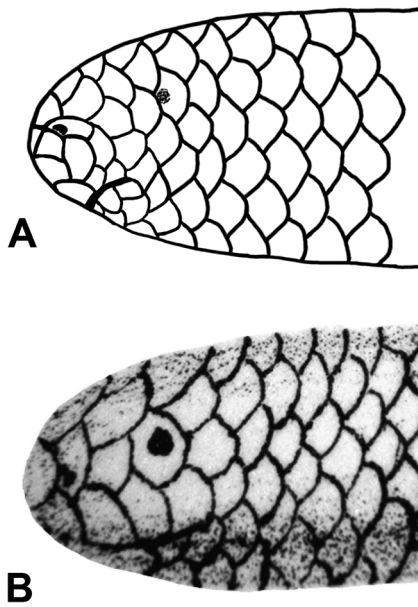


Figure 1. Lateral view of the head of *Typhlophis squamosus* showing how some scales were missed or erroneously fused in the original drawing. (A) MNHN 1999.8307, from St. Laurent, French Guiana; (B) original drawing of the head of the holotype of *T. squamosus* from Cayenne, French Guiana; reproduced from Schlegel (1839).

distinguish *T. ayarzaguenai* from *T. squamosus* (characters of the latter in parentheses) and argue how our observations justify synonymization of *T. ayarzaguenai* with *T. squamosus*.

(1) 24 rows of mid-body scales (21). As pointed out by Señaris (1998: 304), according to the original description *Typhlophis squamosus* has 21 rows of mid-body scales (Schlegel, 1839). However, as mentioned by Señaris (1998: 309), a subsequent short description of the holotype by Boulenger (1893) raised that number to 24. Gasc and Rodrigues (1980) and Chippaux (1986) notably reported 24 rows of mid-body scales in *T. squamosus* from French Guiana, and Cunha and Nascimento (1978) reported 24 rows of mid-body scales in *T. squamosus* from Pará, Brazil. Nevertheless, Señaris used the number of mid-body scales as a diagnostic character arguing that *T. ayarzaguenai* has more mid-body scales than *T. squamosus*. We examined the holotype of *T. squamosus* (RMNH 3685, unsexed) and confirm that the number of mid-

body scales in that specimen is 24 and not 21. Four other museum specimens from Brazil and French Guiana also have 24 rows of mid-body scales.

(2) Higher number of cephalic scales between the eye and the rostral: two cephalic scales between the eye and the rostral (one). This is obviously an error from the author and we assume that Señaris meant “nostril” but wrote “rostral”. Indeed, her drawing (Señaris, 1998: 306) shows two scales between the eye and the nostril, but at least five scales between the eye and the rostral. As stated above, Señaris (1998) did not compare her putative new species with museum material and based this assertion on the drawing provided by Schlegel (1839) in the original description of *Typhlophis squamosus* (see fig. 1B). But Amaral (1978) and later Chippaux (1986) provided drawings of the head of *T. squamosus* showing two scales between the eye and the nostril. Examination of the holotype of *T. squamosus* definitely confirmed the occurrence of two scales between the eye and the nostril and not one as illustrated in the original description. In fact Schlegel’s (1839) illustration poorly reflects the reality, which is not surprising since even with modern microscopes it may be challenging to correctly count cephalic scales in *Typhlophis*.

(3) Nostrils separated from the rostral by a scale (in contact with the rostral). Again, this statement is based on the drawing provided by Schlegel (1839) in the original description of *Typhlophis squamosus* (see fig. 1B). Examination of the holotype of *T. squamosus* and four other specimens from Brazil and French Guiana reveals that nostrils are separated from the rostral by a scale in this species, as shown in fig. 1A and as also illustrated by Amaral (1978) and Chippaux (1986).

(4) Rostral proportionally larger. Examination of the holotype of *T. squamosus* and four other museum specimens from Brazil and French Guiana and comparisons with the holotype (MHNLS 12865) and one paratype (EBRG

3087) of *T. ayarzaguenai* shows no distinct difference in the size of the rostral.

(5) Longer body length. Señaris (1998) stated that both species might be distinguished from each other by their body length, reported as varying from 175 to 195 mm in *Typhlophis ayarzaguenai* versus 130 mm in *T. squamosus*. Señaris based this assertion on the Boulenger's (1893) description of *T. squamosus*. She was apparently unaware of a publication by Cunha and Nascimento (1978) in which the authors gave 225 mm as the maximum total length of *T. squamosus* from their sample collected around Belém, Pará, Brazil [later Cunha and Nascimento (1993) considered that population as possibly isolated, but did not comment further on their hypothesis; McDiarmid, Campbell and Touré (1999) evoked the possibility of an introduction, which would explain the disjunct distribution]. Señaris also missed Chipaux (1986), who mentioned 225 mm as the maximum total length in *T. squamosus* [based on the paper by Cunha and Nascimento (1978)]. Later, Starace (1998) indicated a total length of 150-200 mm in *T. squamosus* from French Guiana and cited a maximum total length of 225 mm, based on Cunha and Nascimento (1978). We examined BMNH 95.3.29.1 another specimen of *T. squamosus* from Pará, Brazil, and that specimen has a total length of 194 mm.

(6) Lack of spine at the tip of the tail (present). Señaris (1998) based this assertion on the drawing in the original description of *Typhlophis squamosus* and on the description by Boulenger (1893) who wrote: "tail as long as broad, ending with a spine". Examination of the holotype of *T. squamosus* and four museum specimens from Brazil and French Guiana indicates that there is no real "spine" at the tip of the tail of *T. squamosus*, but a slightly pointed terminal scale. In some specimens this "point" is more developed than in others and this character seems variable.

(7) 398-418 dorsal scales from the scale posterior to the rostral to the tip of the tail (345). Señaris (1998: 304) stated that the number of

"total scales" is 345 in the holotype of *Typhlophis squamosus* (reported as total dorsal scales in her abstract). Apparently, she based this statement on the original description in which Schlegel (1839: 36) mentioned "345 + 14". These numbers most likely referred to ventral and sub-caudal scales, which Señaris (1998: 309) mentioned in her discussion in contrast with her diagnosis. In her diagnosis, Señaris thus compared the number of ventral scales of *T. squamosus* with the number of dorsal scales of *T. ayarzaguenai*, which is problematic since she mentioned (Señaris, 1998: 304) that, "the total number of scales were counted from the scale posterior to the rostral to the tip of the tail". No attempt was made by us to determine the exact number of dorsal scales in the holotype of *T. squamosus* because of the state of preservation (several scales are missing) and the fragility of the specimen. The number of dorsal scales in the other *T. squamosus* specimens we examined varied from 340-377 (mean \pm SD = 351.5 ± 14.84 , $n = 4$). The number of dorsal scales is thus apparently slightly lower in *T. squamosus* than in *T. ayarzaguenai*. However, we consider the difference as interpopulation variation and certainly not a diagnostic character, first because of the small number of specimens examined, and, second, because of the absence of any other significant difference between the two species. It should also be noted that an anonymous reviewer examined several specimens of *T. squamosus* and reported 390 dorsal scales in a 213.5 mm (total length) specimen of unknown location.

In light of the above observations, we formally regard *Typhlophis ayarzaguenai* Señaris as a junior synonym of *T. squamosus* (Schlegel).

The Venezuelan specimens extend the species' known distribution by about 815 km W from Chenapou, Guyana and suggest that *Typhlophis squamosus* has a wide distribution in the Guiana Shield [as predicted by Hoogmoed (1979)], from 0 to 650 m above sea level. Amaral (1978) reported the species as abundant in the Amazon valley.

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References

- Amaral, A. do (1978): Serpentes do Brasil. Iconografia Colorida, 2nd Edition. São Paulo. Melhoramentos/Universidade de São Paulo.
- Chippaux, J.-P. (1986): Les serpents de la Guyane Française. Cayenne, ORSTOM Faune Tropicale 27.
- Cunha, O.R. da, Nascimento, F.P. do (1978): Ofídios da Amazônia. X. As cobras da região leste do Pará. Publ. Avul. Mus. Paraense Emílio Goeldi **31**: 1-218.
- Cunha, O.R. da, Nascimento, F.P. do (1993): Ofídios da Amazônia. As cobras da região leste do Pará. Bol. Mus. Paraense Emílio Goeldi **9**: 1-191.
- Gasc, J.-P., Rodrigues, M.T. (1980): Liste préliminaire des Serpents de la Guyane française. Bull. Mus. Nat. Hist. Nat. Paris **2**: 559-598.
- Hoogmoed, M.S. (1979): The herpetofauna of the Guiana region. In: The South American Herpetofauna: Its Origin, Evolution, and Dispersal, p. 217-240. Duellman, W.E., Ed., Monograph of the Museum of Natural History, University of Kansas No. 7.
- McDiarmid, R.W., Campbell, J.A., Touré, T.A. (1999): Snake Species of the World. A Taxonomic and Geographic Reference, Vol. 1. Washington, DC, The Herpetologists' League.
- Schlegel, H. (1839) [1837-1844]: Abbildungen neuer Oder unvollständig bekannter Amphibien, nach der Natur Oder dem leben entworfen. Düsseldorf, Arnz Comp.
- Señaris, J.C. (1998): A new species of *Typhlophis* (Serpentes: Anomalepididae) from Bolívar State, Venezuela. *Amphibia-Reptilia* **19**: 303-310.
- Starace, F. (1998): Guide des serpents et amphisbènes de Guyane. IBIS Rouge Editions, Guadeloupe, Guyane.

Appendix – Material examined:

Typhlophis squamosus

7 specimens: RMNH 3685 [holotype], Cayenne, Guyane Française; MNHN 1999.8306-8, Saint Laurent, Guyane Française; BMNH 95.3.29.1, Pará /Goldi, Brazil; MHNLS 12865 [holotype of *T. ayarzaguenai*]; EBRG 3087 [paratype of *T. ayarzaguenai*], both from Serranía de Los Pijiguaos, Area BAUXIVEN (Bauxitas de Venezuela, Cia.), Bolívar State, Venezuela (06°10'N, 66°50'W).

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