

SOME NOTES ON SPECIES OF THE GENERA BACHIA AND SCOLECOSAURUS

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With 4 textfigures

Our herpetological collections contain only five specimens referable to the genera *Bachia* and *Scolecosaurus*, while the genus *Bachia* is represented in the Amsterdam Zoological Museum by eight specimens. Scanty though this material may be, some of the specimens proved to be of sufficient interest to justify the publication of these notes.

At present thirteen species of *Bachia*¹⁾ are known, viz., the twelve species listed in a key by Burt & Burt (1931, pp. 315-316) and *Bachia anomala* Roux (1929, p. 31). Perhaps *Apatelus bresslaui* Amaral (1935) must be referred to *Bachia* too. Roux (1929), Burt & Burt (1931) and Loveridge (1933) published notes on the variation of several characters, and these authors showed that the variation is greater than had been previously supposed by Ruthven (1925). This is also apparent from some of the following notes.

Bachia schlegeli (Dum. & Bibr.) (fig. 1)

Chalcides Schlegeli Duméril & Bibron, Erp. gén., vol. 5, 1839, p. 457.

Chalcides schlegelii, Fitzinger, Systema Reptilium, 1843, p. 22.

Microdactylus schlegeli, Boettger, 22. & 23. Ber. Offenbach. Ver. Naturk., 1883, p. 150.

Microdactylus gracilis Tschudi (M. S.), in Duméril & Bibron, Erp. gén., vol. 5, 1839, p. 457; Gray, Cat. Liz. Brit. Mus., 1845, p. 47.

Cophias tridactylus, Boulenger, Cat. Liz. Brit. Mus., vol. 2, 1885, p. 418 (part.).

Bachia tridactylus, Ruthven, Proc. Boston Soc. Nat. Hist., vol. 38, no. 3, 1925, p. 108 (part.).

Herpetochalcis heteropus Boettger, Ber. Offenbach. Ver. Naturk., 1883, p. 150.

1) I have not followed Amaral (1935, pp. 249-250) who divides the genus into two genera *Cophias* and *Chalcides*. It escaped Amaral's notice that *Cophias* Fitzinger, 1843, is preoccupied by *Cophias* Merrem, 1820, while *Chalcides* Daudin, 1801 or 1802 (an X = 22. IX. 1801—21. IX. 1802), is preoccupied by *Chalcides* Laurenti, 1768.

Cophias heteropus, Boulenger, Cat. Liz. Brit. Mus., vol. 2, 1885, p. 418.

Cophias boettgeri, Boulenger, Cat. Liz. Brit. Mus., vol. 3, 1887, pp. 507, 508.

Bachia boettgeri, Burt & Burt, Bull. Am. Mus. Nat. Hist., vol. 61, 1931, p. 316; Parker, Proc. Zool. Soc. Lond., 1935, pp. 517, 527.

Bachia heteropus, Ruthven, Proc. Boston Soc. Nat. Hist., vol. 38, no. 3, 1925, p. 108.

1 ex., ♀, ?, type, "Calcutta", don. Tschudi, Mus. Leiden, Herp. reg. no. 3580.

Chalcides schlegeli Dum. & Bibr. has been referred to the synonymy of *Cophias tridactylus* (= *Bachia tridactyla* (Daud.)) by Boulenger (1885, p. 418) and by other authors after him. A re-examination of the type

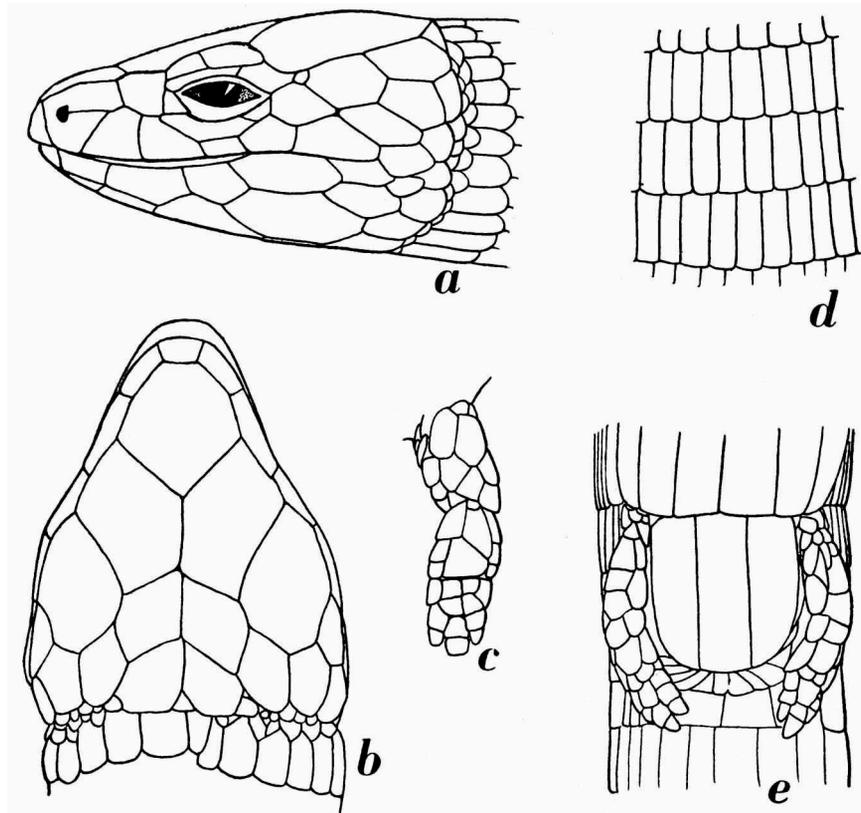


Fig. 1. *Bachia schlegeli* (Dum. & Bibr.), type. a, left side view of head; b, lower view of head; c, left fore limb; d, dorsal scales; e, anal region. $\times 7$.

proved that this point of view is not correct. *Bachia schlegeli* (Dum. & Bibr.) is a distinct species of which *Bachia boettgeri* (Blgr.) is almost certainly a synonym.

Ruthven (1925, p. 108, note 14) mentions that according to Duméril & Bibron the type of *schlegeli* has 25 longitudinal rows of scales (round the

body). This is an error, however, for Duméril & Bibron (1839, p. 457) wrote that on the back and sides ("du dos et des flancs") the scales were placed in 25 longitudinal rows; on p. 458 they mention 26 rows. Moreover they mention that the type has 8 longitudinal rows of ventral scales. Ruthven (l. c.) apparently supposed that these eight ventral rows were included in the number of 25 scale rows, but this is not the case, as is shown by the re-examination of the type.

The type has only two supraoculars; the third supraocular recorded in literature, in my opinion, is a temporal scale. The fore limb bears three clawed digits, but on the hindlimb I find only two digits, unless a rather large scale on the outer border of the foot must be considered as a very much reduced digit.

Using the key published by Burt & Burt (1931, pp. 315-316) the type of *schlegeli* must be referred to the *cophias* group on account of its quadrangular scales; as an interparietal is present, and as it has more than 30 scale rows the key leads to *Bachia boettgeri* (Blgr.). With *boettgeri* it agrees in the number of scale rows (Boettger, 1883, p. 150; Parker, 1935, pp. 517-518), in the number of supraoculars, and in the number of digits. The type of *boettgeri* (Boettger, 1883, p. 150) has two pairs of preanal pores; these are absent in the type of *schlegeli*, but this may be due to a difference in sex. The greatest difference is found in the arrangement of the preanals. While the type of *boettgeri* has six preanals, of which the two median are placed one behind the other, with a pair on each side of these, the type of *schlegeli* has only three preanals (fig. 1 e). This difference may be due to individual variation, for the number and shape of the preanals is subject to rather wide variations, as is shown for *Bachia cophias* (Schn.) in fig. 3. In the suboculars the type of *boettgeri* differs by having the posterior subocular the longest, while in *schlegeli* the opposite is the case. A comparison of the types may bring to light differences, which are not apparent from the original description by Boettger (1883, pp. 150-151), but for the present I believe these specimens to be conspecific.

Redescription of the type of *Bachia schlegeli* (Dum. & Bibr.):

Rostral six-sided subtrapezoid, visible from above. Frontonasal six-sided; of the lateral sides the anteriors are much longer than the posteriors; it is broadest posteriorly, its greatest breadth equalling its length. Prefrontals absent. Frontal almost pentagonal in outline, its posterior tip truncate, forming a short transverse suture with the interparietal; its length twice that of the frontonasal, and twice its greatest breadth. Parietals about equal in length to the frontal; the greatest breadth of each is contained once and a half in its length. An interparietal completely separating the parietals; its

length equal to twice its breadth; it forms a short transverse suture with the frontal; its posterior border rounded; the lateral sides converging anteriorly. Nostril bordered below and posteriorly by the first upper labial; visible from above. Anteriorly of the nostril, the first labial and the nasal have fused. Loreal about quadrangular, in contact with the frontonasal; these two shields separating the frontal from the nasal. A small preocular; two suboculars, the anterior longest and in contact with the third to fifth upper labials. Two supraoculars, second largest; three supraciliaries, first longest, third largest. Six upper labials, fourth smallest and below the centre of the eye; second and third in contact with the loreal. Upper labials separated from the parietals. Five large temporals and two smaller ones; these latter more or less form a continuation of the row of upper labials. Parietals in contact with interparietal, frontal, 2nd supraocular, 3rd supraciliary, 2 temporals and 2 occipitals (the medial of which is also in contact with the posterior border of the interparietal). Five lower labials, 4th largest. Symphysial quadrangular, its lateral borders slightly converging posteriorly. Postmental seven-sided. First pair of chinshields five-sided, forming a median suture; shields of the second pair separated by a pair of anterior gulars; a third pair of much smaller chinshields. Eight enlarged gulars in a transverse row behind the chinshields and anterior gulars. None of the chinshields reaching the oral border. Ventral scales broader than dorsals; between the fore limbs a pair of enlarged pectorals, their length equal to once and a half that of the adjoining ventrals; 34 transverse rows of ventrals from the pectorals to the preanals (these not included). Ventrals in 8 longitudinal series, their length not quite twice their breadth; 7 transverse rows of scales from the gulars to the pectorals. Dorsal scales rectangular, juxtaposed, in regular transverse rows; 46 of these transverse rows from the occiput to the base of the hind limb; the dorsal scales are about twice as long as broad. The number of scales round the middle of the body varies from 32 to 34. At the level of the 17th transverse row of ventrals, i.e., about midway between pectorals and preanals, the number of scales round the body is 32; this same number is found at the level of the 19th and 21st transverse rows of ventrals; at the level of the 18th and 20th rows of ventrals it is 33, and at the 22nd and 23rd it is 34; at the level of the 30th row of ventrals (i. e., 5 rows in front of the preanals) the number of scales is 35, and at the level of the 31st and 32nd row it is 37. Anteriorly of the 17th transverse row of ventrals the number of scales becomes less, viz., 31 scales at the level of the 10th row of ventrals. The outer row of lateral scales is partly hidden in a groove which extends along the anterior half of the sides; these scales are very small, and often they are reduced to two triangles which meet with their tips.

Three rectangular preanals in a transverse series, the outer scutes with rounded borders. Their length equals 3 times their breadth.

No preanal pores.

Colour: Brownish above, lighter below. Tail above with four light stripes, the median pair rather indistinct; the lateral pair is also distinct on the posterior part of the back.

Measurements in mm

Length of head and body	66
Length of tail (broken)	43+
Length of head	7
Tip of snout to fore limb	14½
Distance from fore limb to hind limb	49½
Length of fore limb	4
Length of hind limb	4

Bachia anomala Roux (fig. 2)

Bachia anomala Roux, Verh. natf. Ges. Basel, vol. 40, 2nd part, 1929, p. 31.

1 ex., Caracas, Venezuela, leg. R. F. van Lansberge, 1843, Mus. Leiden, Herp. reg. no. 3579.

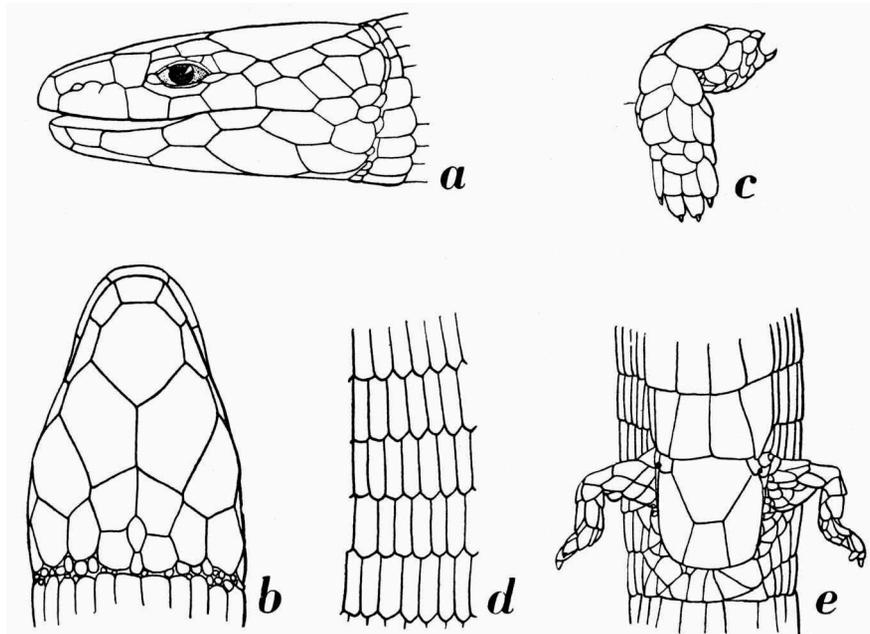


Fig. 2. *Bachia anomala* Roux. a, left side view of head; b, lower view of head; c, right fore limb; d, dorsal scales; e, anal region. $\times 7$.

This specimen agrees well with the description of the type and paratype. It has two supraoculars and three supraciliaries; on the left side two suboculars, and on the right side three suboculars. Back covered with hexagonal, imbricate scales, which are placed in 46 transverse rows from the occiput to the base of the hind limb. Lower surface covered by 7 transverse rows of ventrals in front of the enlarged pectorals, and by 34 transverse rows of ventrals from the pectorals to the preanals. At the level of the 17th transverse row of ventrals (counted from the pectorals) this specimen has 26 scales round the body. Four large preanals, arranged as follows: two median shields, one behind the other, with on each side one large shield. These large lateral shields have a very narrow scale along their outer border. One preanal pore on each side.

Fore limb with four clawed digits; hind limb with two clawed digits.

Head and body 45 mm; tail ca. 86 mm.

***Bachia cophias* (Schn.) (fig. 3)**

Chamaesaura cophias, Schneider, Hist. Amph., pt. 2, 1801, p. 209.

Cophias flavescens, Boulenger, Cat. Liz. Brit. Mus., 2nd ed., vol. 2, 1885, p. 418.

Bachia cophias, Ruthven, Proc. Boston Soc. Nat. Hist., vol. 38, 1925, p. 109; Burt & Burt, Bull. Am. Mus. Nat. Hist., vol. 61, 1931, p. 320; Burt & Burt, Trans. Ac. Sci. St. Louis, vol. 28, 1933, p. 56.

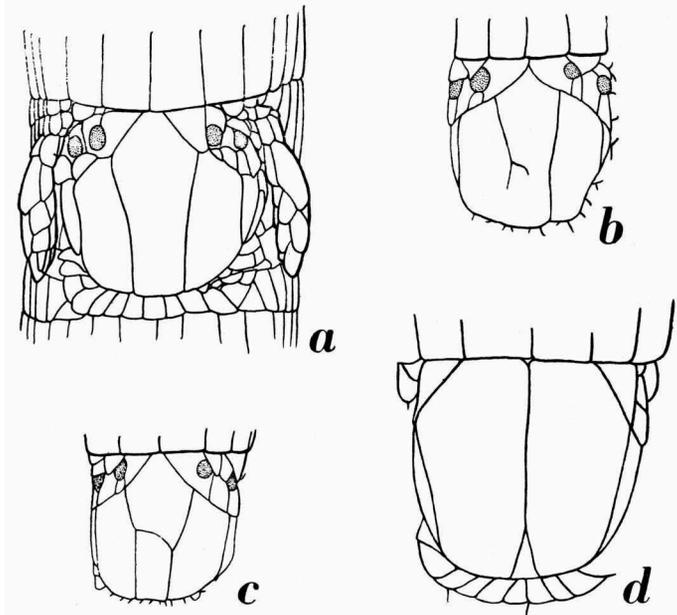


Fig. 3. *Bachia cophias* (Schn.), anal region. a, b, and c, loc.?, leg. Wisman; d, Ananas Mt., Surinam. a-c, $\times 7$; d, $\times 10$.

1 ex., ♂, loc.?, Mus. Leiden, Herp. reg. no. 3581.

1 ex., ♀, Ananas Mountain, Surinam, leg. Dr. J. H. A. T. Tresling, Zool. Mus. Amsterdam.

3 ex., ♂ ♂, loc.?, don. Wisman, 1899, Zool. Mus. Amsterdam.

The variation of some of the scale characters is indicated in the following table.

specimen	scales from occiput to hind limb	ventrals from gulars to pectorals	ventrals from pectorals to preanals	scales round body	supraciliaries	head + body in mm	tail in mm	
reg. no. 3581	46	7	33	30	2	70	78	(regenerated?)
Ananas Mt.	49	7	37	28	3	72	77	(regenerated)
don. Wisman	48	7	35	29	3	64½	61	(tip regenerated)
	48	8	35	30	2	65½	86	
	47	7	35	29	2	60½	90	

The preanals are rather variable as shown in fig. 3.

***Bachia barbouri* Burt & Burt (fig. 4)**

Bachia intermedia Noble, Ann. New York Ac. Sci., vol. 29, 1921, p. 142 (part.).

Bachia barbouri Burt & Burt, Bull. Am. Mus. Nat. Hist., vol. 61, 1931, p. 318, figs. 5-8; Burt & Burt, Trans. Ac. Sci. St. Louis. vol. 28, no. 1, 1933, p. 56; Loveridge, Copeia, 1933, no. 1, p. 42.

4 ex., Bellavista, Peru, September 23rd, 1916, leg. G. K. Noble, received as paratypes of *Bachia intermedia* Noble from the Museum of Comparative Zoölogy (M. C. Z. nos. 14760-14763), Zoological Museum, Amsterdam.

Bachia barbouri was described by Burt & Burt (1931, p. 318, figs. 5-8) from a single specimen. In some points the description does not tally with the figures accompanying it. Thus the description mentions three infraoculars, while fig. 6 shows only two; the labials are stated to be separated from the parietals, but in fig. 6 the fifth upper labial is shown to be narrowly in contact with the parietal.

The four specimens examined by me show some variations which may be described here. In three specimens (as in the type) the interparietals separate the parietals completely, but in one specimen (no. 14761, fig. 4b) the parietals form a median suture anteriorly, while they are separated

from each other posteriorly. The fifth upper labial is separated from the parietal in two specimens, but in no. 14760 the fifth labial and the parietal meet in one point, while in no. 14761 these shields form a distinct suture.

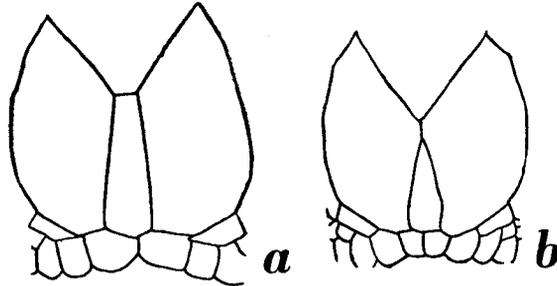


Fig. 4. *Bachia barbouri* Burt & Burt, parietals and interparietal. a, no. 14763; b, no. 14761. $\times 7$.

There are two suboculars in three specimens, but only one in no. 14760. In all four specimens the chinshields of the second pair reach the oral border between the third and fourth lower labials. The number of scale rows round the middle of the body varies from 28 (nos. 14760, 14761) to 30 (nos. 14762, 14763). Three specimens have 36 transverse rows of ventrals from the pectorals to the preanals; in no. 14763 there are 37 rows. The number of transverse rows of dorsal scales from the occiput to the level of the preanals is 44 in no. 14760, 46 in nos. 14761 and 14762, and 47 in no. 14763. No traces of hind limbs were found. Only one specimen (no. 14761) has a complete tail; this specimen measures $27\frac{1}{2}$ mm from the tip of the snout to the vent; tail 39 mm. The largest specimen (no. 14763) has a head and body length of 44 mm.

***Scolecosaurus cuvieri* (Fitz.)**

Brachypus cuvieri Fitzinger, Neue Classific. Rept., 1826, p. 50; Wagler, Nat. Syst. Amph., 1830, p. 196 (in the genus *Chalcis*).

Chalcides cuvieri, Duméril & Bibron, Erp. Gén., vol. 5, 1839, p. 453 (part.).

Scolecosaurus cuvieri, Boulenger, Cat. Liz. Brit. Mus., 2nd ed., vol. 2, 1885, p. 416 (part.); Barbour, Copeia, 1933, no. 2, pp. 74-76, fig. 1.

Barbour (1933, p. 74) correctly recognizes the validity of Fitzinger's *Brachypus cuvieri*, thus refuting his earlier opinion (Barbour, 1914, p. 315) that the name was a nomen nudum. A single specimen from "South America" in the collections of our museum (Herp. reg. no. 3582) must be referred to this species. It has the prefrontals broadly in contact; three supraoculars and three supraciliaries; 27 transverse rows of ventrals from the pectorals to the preanals. At the level of the 14th transverse row of

ventrals (counted from the pectorals) the number of scales round the body is 28; at the level of the 20th row of ventrals this number is 30. Dorsal scales in 41 transverse rows from the occiput to the base of the hind limb. The frontal is as long as broad. Left fore limb with three digits; right fore limb and both hind limbs with four digits. Length of head $7\frac{1}{4}$ mm; length of head and body $53\frac{1}{2}$ mm; tail broken, ca. 99 mm; total length ca. $152\frac{1}{2}$ mm. The length of the head is contained about 7.4 times in that of head and body, and about 21 times in the total length.

Scolecosaurus trinitatis Barbour

Scolecosaurus trinitatis Barbour, Mem. Mus. Comp. Zoöl., vol. 44, no. 2, 1914, p. 316; Burt & Burt, Bull. Am. Mus. Nat. Hist., vol. 61, 1931, p. 376; Barbour, Copeia, 1933, no. 2, pp. 75-76.

Chalcides cuvieri, Duméril & Bibron, Erp. Gén., vol. 5, 1839, p. 453 (part.).

1 ex., banks of the Orinoco, received from the Paris Museum, 1844, Mus. Leiden, Herp. reg. no. 3578

Like the specimen from the Orinoco in the Paris Museum described by Barbour (1933, pp. 75-76), this specimen agrees best with *Scolecosaurus trinitatis* Barbour. The prefrontals are separated, the frontonasal and the frontal forming a short suture. Three supraoculars and three supraciliaries. Ventrals in 26 transverse rows from the pectorals to the preanals. At the level of the 14th transverse row of ventrals 28 scales round the body, at the level of the 22nd row 30 scales round the body. Dorsal scales in 41 transverse rows from the occiput to the base of the hind limbs. The frontal is nearly twice as long as broad. All limbs with four digits. Length of head 7 mm; length of head and body 50 mm; length of tail 99 mm; total length 149 mm. The length of the head is contained 7.1 times in that of head and body, and 21 times in the total length.

LITERATURE

- AMARAL, A. DO, 1935. Estudos sobre Lacertios neotropicos. II. Novo genero e especie de lagarto do Brazil. Mem. Inst. Butantan, vol. 9, pp. 247-250, pl. figs. 1-3.
- BARBOUR, TH., 1914. A Contribution to the Zoögeography of the West Indies, with especial reference to Amphibians and Reptiles. Mem. Mus. Comp. Zoöl., vol. 44, no. 2, pp. 205-360, 1 pl.
- , 1933. Notes on *Scolecosaurus*. Copeia, 1933, no. 2, pp. 74-77, fig. 1.
- BOETTGER, O., 1883. Herpetologische Mittheilungen. I. Kurze Notizen über Reptilien und Amphibien in der Heidelberger Universitäts-Sammlung. Ber. Offenbach. Ver. Naturk., 22/23, pp. 147-152.
- BOULENGER, G. A., 1885. Catalogue of the Lizards in the British Museum, 2nd ed., vol. 2, XIII + 497 pp., 24 pls.

- BURT, CH. E., & M. D. BURT, 1931. South American Lizards in the collection of the American Museum of Natural History. Bull. Am. Mus. Nat. Hist., vol. 61, pp. 227-395, figs. 1-15.
- DUMÉRIL, A. M. C., & G. BIBRON, 1839. *Erpétologie générale ou Histoire Naturelle complète des Reptiles*, vol. 5. Paris, VIII + 855 pp.
- LOVERIDGE, A., 1933. On *Bachia intermedia* Noble and *Bachia barbouri* Burt. Copeia, no. 1, p. 42.
- PARKER, H. W., 1935. The Frogs, Lizards, and Snakes of British Guiana. Proc. Zool. Soc. Lond., 1935, pp. 505-530.
- ROUX, J., 1929. Sur deux Reptiles nouveaux du Vénézuéla. Verh. Naturf. Ges. Basel, vol. 40, 2nd part, pp. 29-34.
- RUTHVEN, A. G., 1925. Lizards of the Genus *Bachia*. Proc. Boston Soc. Nat. Hist., vol. 38, no. 3, pp. 101-109.
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