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A NEW SPECIES OF *BACHIA* (TEIIDAE, SAURIA) FROM ESTADO BOLIVAR, VENEZUELA, WITH NOTES ON THE ZOOGEOGRAPHY OF THE GENUS

by

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With 2 text-figures

SUMMARY

Bachia guianensis nov. spec. is described from Guri, Estado Bolivar, Venezuela, on the basis of a single specimen. The species is closely related to *Bachia heteropa* (Lichtenstein), but differs from this species in lacking the interparietal scale.

INTRODUCTION

At the end of 1975 a small collection of lizards, collected by Dr. S. J. Gorzula in the Caroni River Basin, Estado Bolivar, Venezuela, arrived at the Rijksmuseum van Natuurlijke Historie (RMNH). Among these lizards was a specimen of a new species of *Bachia*. Recently one of us (Dixon, 1973) reviewed the genus *Bachia*, including in it *Ophiognomon*, while excluding *Anotosaura* and *Heterodactylus*. He recognised 15 species, of which four are polytypic with a total of 12 subspecies. The genus as recognized by Dixon (1973) occurs in South-America from Panama south to Paraguay and on some Antillean islands, but is absent west of the Andes. In the centre of this distributional area there is a strange gap from where no members of this genus have been recorded. The new species at least fills in part of this gap.

Bachia guianensis nov. spec.

Holotype. — 1 ♀, RMNH 17817, Guri (7°46'N 63°W), Estado Bolivar, Venezuela, leg. S. J. Gorzula.

Diagnosis. — A member of the *heteropa*-group with hexagonal, somewhat imbricate dorsal scales, and rectangular, juxtaposed lateral and ventral scales;

four clawed digits on each of the four limbs; supraoculars and prefontals present, interparietal absent.

Description. — Head as wide as body and neck; separated from the neck by a distinct fold; conical; 1.5 times as long as wide; snout bluntly pointed.

Rostral trapezoidal, nearly twice as wide as high; frontonasal pentagonal, anteriorly half as wide as posteriorly; prefontals irregularly hexagonal, forming a median suture; frontal regularly hexagonal; parietals having the form of 1/3 circles; supraoculars two on each side, the posterior one largest. Interparietal absent. Supralabials six, second and fifth highest, fifth not in contact with parietal. Nostril on border of single nasal and first supralabial. Loreal somewhat rectangular, in contact with anterior supraciliary, anterior subocular, preocular, nasal, second and third labials and frontonasal, touching the anterior supraocular. One small preocular; two suboculars, the anterior one elongate and narrow, the posterior one much smaller. Three supraciliaries, the anterior one largest. One postocular that appears to be in the same row as the supraciliaries. One primary, two secondary and three tertiary temporals. Ear-opening absent.

Mental trapezoidal, 1.5 times as wide as long. Five infralabials. Two pairs of large chin-shields, the anterior pair elongate, forming a long median suture, the posterior pair smaller, widely separated by large pregulars. A large heptagonal postmental.

Nine rows of gulars from the gular fold to the pectorals. Two enlarged pectoral shields. Four large preanal scales, one very large anterior and three smaller posterior ones of which the two lateral ones are larger than the central scale. Ventrals rectangular, much larger than the laterals, in 40 transverse rows between the pectorals and the preanal plate.

Body cylindrical with a lateral sulcus from behind the forelimbs to 17 annuli posteriorly of the pectorals. Anterior part of body (where lateral sulcus is present) with 8 ventral scales and 16 dorsal scales between the sulci of both sides. Part of body posteriorly of the lateral sulcus with a total of 26 scales around the body. Six dorsal scales per annulus hexagonal, imbricate, the other scales in an annulus rectangular, juxtaposed. Only the ventrals form longitudinal series, dorsals and laterals do not. Scales on the tail considerably shorter than those on the body. Twelve rows of nuchal scales between the head and the forelimbs, 50 dorsals between the head and the hind limbs, 54 till the posterior margin of the preanal plate. Four clawed digits on each of the four limbs.

Brown above with four longitudinal series of white spots, the external rows starting five or six annuli behind the head, the inner ones starting nine

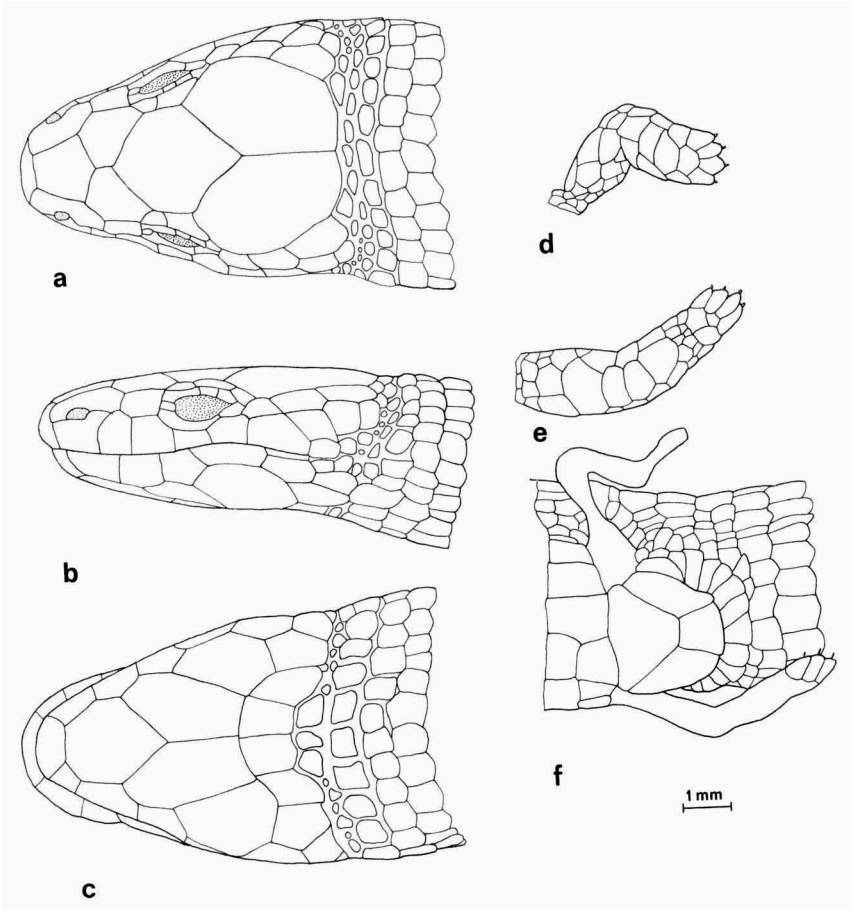

Fig. 1. *Bachia guianensis* nov. spec., holotype, RMNH 17817. a. dorsal view of head, b. lateral view of head, c. ventral view of head, d. left forelimb, e. right hind limb, f. anal region.

annuli behind the head. Spots increasing in size posteriorly. Series of spots mutually separated by one unspotted scale or an equivalent width of two adjoining scales. Spots in one longitudinal series alternately occupying the larger part of one scale, in the next annulus covering adjoining parts of two scales. The pattern of the back is continued on the tail, of which, however, the greater part is missing.

Measurements. — Total length 68 mm, snout-vent length 63 mm, head length 6.8 mm, head width 4.4 mm, forelimb length 4.2 mm, hind limb length 4.5 mm, midbody width ± 3.6 mm, axilla-groin length 45 mm.

Habitat. — The single known specimen of this species was "collected in the grounds of the GURI camp in one of the gardens. The GURI camp is on the west side of the Caroni river, it is the site of a new hydro-electrical scheme..." (Gorzula, pers. comm.). The area where the specimen comes from formerly probably was covered with rainforest.

Range and distribution. — Only known from the type-locality, which is about 100 m above sea level.

Etymology. — Named for the Guiana region of which the new species probably is an endemic element.

Remarks. — *Bachia guianensis* nov. spec. is regarded as a member of the *heteropa*-group (Dixon, 1973) on the basis of a combination of the following characters: four clawed toes on each of four limbs, presence of prefrontals, number of supraoculars and supraciliaries, presence of hexagonal, imbricate dorsals. However, *guianensis* has lost its interparietal, a scale that is present in all known members of the currently recognized *heteropa*-group (fide Dixon, 1973: 33). The *heteropa*-group seems to be developing extensive evolutionary modifications for burrowing (i.e., fusion of head scales, elongation of body, loss of toes and reduction in size of limbs) in drier environments. The prefrontals are eventually lost in the *heteropa*-complex as populations occupy more xeric environments from east to west, from the Paria to the Paraguana Peninsulas of Venezuela. The loss of the prefrontal appears to be caused by the expansion and enlargement of the frontonasal/frontal contact zone. The number of toes reduces from four to two across the same environmental regime. The new species, however, is occupying a more humid zone, probably with a relatively dense leaf litter, hence seems more suprateranian in habits. Probably as a consequence of this it maintains the more generalized condition of four clawed digits and the presence of prefrontal scales.

The presence or absence of an interparietal is more difficult to explain. The interparietal may be present or absent in more fossorial species, such as the *flavescens*- (even variable within one species (Hoogmoed, 1973: 254)) and *dorbignyi*-groups, so its loss is probably independent of an advanced fossorial existence. *Bachia barbouri* Burt & Burt, a highly fossorial species lacking hind limbs, prefrontals and supraoculars, and with only two supraciliaries and two toes on the forelimb, has an interparietal scale. A closely related species of *B. barbouri, B. intermedia* Noble, also highly fossorial, has a styloform hind limb, three toes on the forelimb and two supraciliaries, but lacks prefrontals, supraoculars and the interparietal.

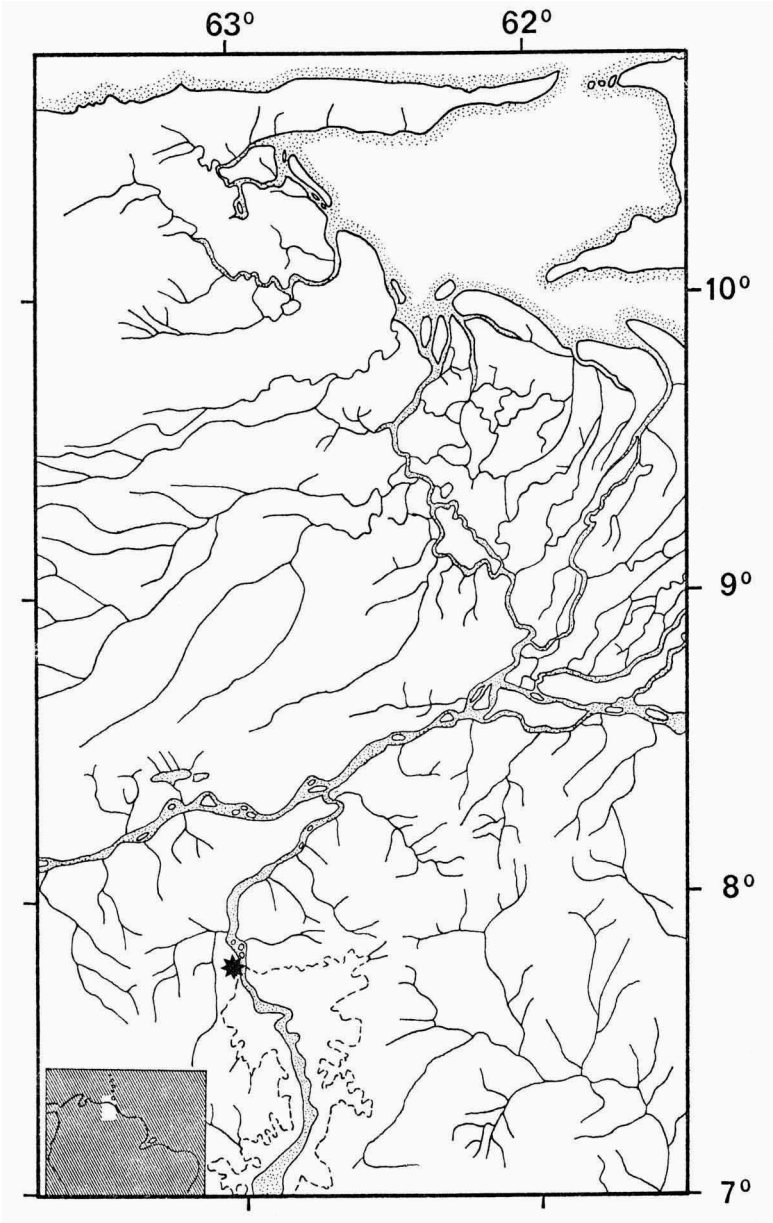

Fig. 2. Map of the northern part of Estado Bolivar, with adjoining parts of Estados Monagas and Sucre and of the Territorio Delta Amacuro. Guri is indicated with a star. The interrupted line in the lower half of the map indicates the future limits of the projected artificial lake.

Zoogeography. — *B. guianensis* nov. spec. seems to be the sole representative of the genus in the Venezuelan part of Guiana. Though *Bachia cophias* (Schneider) (= *B. monodactylus* of Dixon, 1973) reaches the border between Venezuela and Guyana, the species hitherto has not yet been reported from Venezuela on the basis of material actually collected there. Donoso-Barros (1968) did report the species from Caripito on the authority of Beebe (1945). However, Beebe in this publication explicitly states that *B. heteropa* (Lichtenstein) was the only species of the genus *Bachia* found there, and the specimens of *B. cophias* he reports on were from Kartabo, Guyana. Apparently Donoso-Barros confused Beebe's data. On the basis of Donoso-Barros' (1968) information one of us (Hoogmoed, 1973: 28) erroneously considered *B. cophias* as occurring in Venezuelan Guiana. *B. cophias* apparently is a species belonging to the Guianan centre fauna and therefore might be expected to occur in Venezuelan Guiana as well, though probably only in its easternmost part. *B. heteropa,* the geographically closest relative of *B. guianensis* nov. spec., is a member of the Caribbean centre fauna and presumably does not occur south of the Orinoco River. As nearly all species of *Bachia* seem to occur allopatrically it is not very likely that other species of *Bachia* will be found in the Caroni River basin. It is our guess that *B. guianensis* nov. spec. may turn out to be an element of the Pantepui centre fauna and may very well prove to occur over the greater part of the Estado Bolivar and the Territorio Amazonas. It may be relevant to state here that most species of *Bachia* show good correlations with the faunal centres as recognised by Müller (1973), e.g.: *pallidiceps* (Cope) is a faunal element of the Colombian-Pacific centre, *flavescens* (Bonnaterre) and *cophias* (Schneider) of the Guianan centre, *heteropa* (Lichtenstein) of the Caribbean centre, *trisanale* (Cope) of the Ucayali subcentre of the Amazonian centre, *intermedia* Noble and *barbouri* Burt & Burt of the Marañon centre, *talpa* Ruthven of the Sierra Nevada centre and *bicolor* (Cope) of the Santa Marta centre. The remaining six species (*panoplia* Thomas, *scolecoides* Vanzolini, *bresslaui* (Amaral), *dorbignyi* (Duméril & Bibron), *peruana* (Werner) and *huallagana* Dixon) are allocated to the Amazonian centre. As Müller (1973: 87) pointed out already, the Amazonian centre could probably be further subdivided and the ranges of at least three of the species (*dorbignyi, peruana* and *huallagana*) might very well turn out to be indicative for the limits of some of these subcentres. It may be added that these distributions coincide with some of the refuges proposed by Turner (1975) and Brown *et al.* (1974) for the butterflies *Heliconius erato* (L.) and *H. melpomene* (L.).

Acknowledgements

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