Taxonomy of the genus *Mabuya* (Reptilia, Squamata, Scincidae) in Venezuela

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ABSTRACT
Venezuela is a key location in terms of the distribution of the genus *Mabuya* Fitzinger, 1826, given both its intermediate position between the Amazonian region, Middle America and the Caribbean Islands, and its remarkable diversity of bioregions. Based on material from different international major collections, a synthesis of the knowledge on *Mabuya* species from Venezuela and the neighbouring islands of Margarita, Trinidad and Tobago is given. New biogeographical data are also added, extending considerably the distribution of two species, *M. falconensis* Mijares-Urrutia & Arends, 1997 and *M. nigropunctata* (Spix, 1825). An identification key and drawings of Venezuelan species are given for the first time. This study constitutes a preliminary step for a revision of this genus which has been controversial and confusing both taxonomically and nomenclaturally. Moreover, it reveals the existence of many different populations in Venezuelan Andes and the coastal range mountains which cannot be at present identified to any known species.

KEY WORDS
Reptilia,
Squamata,
Scincidae,
Mabuya,
Neotropical species,
Trinidad,
Venezuela,
Andes.

RÉSUMÉ

Taxinomie du genre Mabuya *(Reptilia, Squamata, Scincidae) au Venezuela.*

Le Venezuela est une zone clé en terme de répartition pour le genre *Mabuya* Fitzinger, 1826, tant pour sa position intermédiaire entre la région amazonienne, l'Amérique centrale et les îles caraïbes, que pour sa remarquable diversité de biorégions. Suite à l'examen de spécimens provenant de différentes collections internationales de référence, une synthèse des connaissances portant sur les espèces de *Mabuya* du Venezuela et des îles voisines de Margarita, Trinidad et Tobago, est proposée. De nouvelles données biogéographiques sont également incluses, élargissant considérablement les aires de répartitions de deux espèces, *M. falconensis* Mijares-Urrutia & Arends, 1997 et *M. nigropunctata* (Spix, 1825). Une clé de détermination des espèces vénézuéliennes ainsi que des illustrations détaillées sont proposées pour la première fois. Ce travail constitue une approche préliminaire indispensable au projet de révision de ce genre dont la systématique est si confuse et controversée, tant d'un point de vue taxinomique que nomenclatural. De plus, il souligne l'existence de plusieurs populations présentes dans les Andes vénézuéliennes et la chaîne côtière, identifiables à aucune espèce déjà décrite.

MOTS CLÉS
Reptilia,
Squamata,
Scincidae,
Mabuya,
espèces néotropicales,
Trinidad,
Venezuela,
Andes.

INTRODUCTION

For a long time the definition of the genus *Mabuya* Fitzinger, 1826 included a large number of species occurring in tropical areas of Africa, Asia and the New World. More than 110 species were placed in *Mabuya* according to its former definition (Greer & Broadley 2000). However, this genus has been recently divided into four different genera (Mausfeld *et al*. 2002): 1) *Chinonia* Gray, 1845 (Cape Verdian clade); 2) *Euprepis* Wagler, 1830 (Afromalagasy clade), later replaced by Bauer (2003) for *Trachylepis* Fitzinger, 1843, the oldest valid designation for *Euprepis* placing this genus in the synonymy of *Mabuya* s.s.; 3) *Eutropis* Fitzinger, 1843 (Asian clade); and 4) the name *Mabuya* being reserved to the American clade. Because all Neotropical species of *Mabuya*, with the exception of *M. atlantica* from Fernando de Noronha Island, Brazil, appear to form a monophyletic group (Greer *et al*. 1999; Mausfeld *et al*. 2002; Carranza & Arnold 2003), the genus *Mabuya* will be considered in the present paper as an exclusively neotropical genus, encompassing Central America, South America, and Caribbean Islands, as suggested by Mausfeld *et al.* (2002).

Systematics of this American genus is problematic. Mainly because no general revision of this group has been undertaken since Dunn (1936) and the more recent contributions are mostly limited to descriptions of new taxa (Mijares-Urrutia & Arends 1997; Rodrigues 2000) or restricted to the Brazilian region (Ávila-Pires 1995; Rodrigues 2000; Pinto & Ávila-Pires 2004). Additionally, *Mabuya* is seemingly a morphologically conservative genus, and because it lacks a comprehensive taxonomic study there is a poor understanding of the variation of morphological characters used for diagnosing species. Consequently, species boundaries in this genus have remained controversial for more than a century. The situation is complicated by the fact that the types of *M. mabouya*, *M. nigropunctata* and *M. unimarginata* have been lost.

In this paper we review the taxonomic status of species of *Mabuya* in Venezuela as well as the

neighbouring islands of Trinidad and Tobago. Venezuela is in a key location in terms of the distribution of *Mabuya*, given its intermediate position between the Amazonian region, Middle America and the Caribbean Islands. Additionally, Venezuela is remarkable for its diversity of bioregions which contain different assemblies of species of *Mabuya*. We have listed five known species in Venezuela, three of them being considered until now as endemic to the country. Moreover, we had the opportunity to study many different populations of *Mabuya*, which apparently does not belong to any of the known species. Phylogenetic and morphological studies to establish the taxonomic status of those populations are in preparation.

MATERIALS AND METHODS

The scale nomenclature used to describe specimens was based on Ávila-Pires (1995). Diagnoses, based both on the literature and the examined material, are intended to distinguish between taxa known from Venezuela and the Guianan region. Drawings were made with a stereomicroscope Leica MS5 equipped with a camera lucida. The specimens, preserved in 70% ethanol, are housed in the American Museum of Natural History, New York (AMNH), the Carnegie Museum, Pittsburgh (CM), the Field Museum, Chicago (FMNH), the Los Angeles County Museum (LACM), the Museo de Historia Natural La Salle, Caracas (MHNLS), the Muséum national d'Histoire naturelle, Paris (MNHN), the Museu Paraense Emilio Goeldi, Belém (MPEG), the Nationaal Natuurhistorisch Museum Naturalis, Leiden (RMNH), the Sam Noble Oklahoma Museum of Natural History, Norman (OMNH), the Colección de Anfibios y Reptiles del Laboratorio de Biogeografía, Universidad de Los Andes, Mérida (ULABG) and the University of Michigan Museum of Zoology, Ann Arbor (UMMZ). Other cited acronyms refer to the Australian Museum, Sydney (AM), the Estación Biológica de Rancho Grande of Maracay (EBRG), the Museum of Comparative Zoology, Harvard (MCZ), the Museu de Zoologia da Universidade de São Paulo (MZUSP) and the University of Texas, Arlington (UTA).

RESULTS AND DISCUSSION

State of knowledge on the nomenclature of South American *Mabuya*

The nomenclatural history of *Mabuya* is problematic and controversial because some names available have been repeatedly applied incorrectly to different species. In this section we present a brief summary of the nomenclatural problems of South American *Mabuya*.

The binomen *Mabuya mabouya*, firstly created by Lacepède (1788) to refer to an Antillean species, was later used to refer to a complex of species encompassing a wide range, from Mexico and the Caribbean islands, to Amazonian region (Dunn 1936; Burger 1952; Peters & Donoso-Barros 1970; Hoogmoed 1973; Schwartz & Henderson 1991; Ramirez-Pinilla *et al.* 2002). Vanzolini (1981) considered it very improbable that an Antillean species, *M. mabouya*, would be so widely distributed and present in Brazil. This supposition was recently reinforced by Miralles (2005), who designated a neotype for this species restricted to Southern Lesser Antilles. Rebouças-Spieker (1981b) described *M. ficta* for the Brazilian Amazonia, but this species was later considered a synonym of *M. bistriata* (Spix, 1825) by Ávila-Pires (1995), based on the examination of the lectotype of *M. bistriata*, designated by Hoogmoed & Gruber (1983). Consequently, Ávila-Pires (1995) used for the other Amazonian species (erroneously called *M. bistriata* by Vanzolini [1981]) the name *M. nigropunctata* (Spix, 1825) and designated a neotype for this species. In conclusion, *M. nigropunctata* is the correct name for the most widely distributed species in the northern part of South America. *Mabuya bistriata* is recognized as a distinct species, distributed along large rivers of Brazilian Amazonia (Ávila-Pires 1995) and French Guiana (Massary *et al.* 2001). Rodrigues (2000) does not

share this point of view, considering that the lectotype of *M. bistriata* and the neotype of *M. nigropunctata* do not agree with the figures drawn by Spix in 1825, in their original descriptions. As a consequence, he advocates using the names *M. bistriata* and *M. ficta* (*sensu* Rebouças-Spieker [1981a, b]). However, given the lack of significant details in Spix's descriptions and drawings, and the absolute necessity to respect and stabilize the zoological nomenclature, we prefer following the definition of *M. bistriata* and *M. nigropunctata* given by Ávila-Pires (1995).

In conclusion, we recognize 17 distinct species of *Mabuya* on the South American continent: *M. agilis* (Raddi, 1823); *M. agmosticha* Rodrigues, 2000; *M. arajara* Rebouças-Spieker, 1981; *M. bistriata* (Spix, 1825) (*sensu* Ávila-Pires [1995]); *M. caissara* Rebouças-Spieker, 1974; *M. carvalhoi* Rebouças-Spieker & Vanzolini, 1990; *M. cochabambae* Dunn, 1936; *M. croizati* Horton, 1973; *M. dorsivittata* Cope, 1862; *M. falconensis* Mijares-Urrutia & Arends, 1997; *M. frenata* (Cope, 1862); *M. guaporicola* Dunn, 1936; *M. heathi* Schmidt & Inger, 1951; *M. macrorhyncha* Hoge, 1946; *M. meridensis* Miralles, Rivas & Schargel, 2005; *M. nigropalmata* Andersson, 1918 and *M. nigropunctata* (Spix, 1825) (*sensu* Ávila-Pires [1995]) (Ávila-Pires [1995]; Mijares-Urrutia & Arends 1997; Rodrigues 2000; Mausfeld & Lötters 2001). Five of them, *M. carvalhoi*, *M. croizati*, *M. falconensis*, *M. meridensis* and *M. nigropunctata*, are known from Venezuela (Horton 1973; Mijares-Urrutia & Arends 1997; Molina 1998; Miralles *et al.* 2005).

Systematics of Venezuelan species

Although Ávila-Pires (1995) had clarified the status of Amazonian species of *Mabuya*, the taxonomy of northern South American species remains poorly understood. In Venezuela, Gorzula & Señaris (1999) adopted the name *M. bistriata* (= *M. nigropunctata* sensu Ávila-Pires [1995]) for populations formerly referred to *M. mabouya*. Our observations indicate that *M. bistriata* is not known from Venezuela and that population referred to this species are either *M. nigropunctata* or populations that cannot be assigned with confidence to any known species. However, because *M. bistriata* is likely to occur in southern Venezuela we have decided to include this species in the identification key presented at the end of this paper.

The five known Venezuelan species belonging to the genus *Mabuya* can be separated into two very distinct phenotypic groups. The first one is formed by *M. carvalhoi* and *M. croizati* which are presumably sister species united by the following synapomorphies: frontoparietals fused, snout acute and a high number of nuchal scales (most often three to four pairs). The second group formed by *M. falconensis*, *M. meridensis* and *M. nigropunctata*, does not seem to form a clade and share only plesiomorphic characteristics: paired frontoparietals, a more rounded snout and a single pair of nuchals.

SYSTEMATICS

Family Scincida E Gray, 1825
Genus *Mabuya* Fitzinger, 1826

Mabuya carvalhoi
Rebouças-Spieker & Vanzolini, 1990
(Fig. 1A, B)

Mabuya sp. nov. – O'Shea 1989: 68.

Mabuya carvalhoi Rebouças-Spieker & Vanzolini, 1990: 377. — Ávila-Pires 1995: 573. — Molina 1998: 149. — Rodrigues 2000: 314.

Type material. — Holotype: Ilha de Maracá, state of Roraima, Brazil (MZUSP 66679). Paratypes: same locality (MZUSP 66671 to 66678, 66680, 69648, 69649, AMNH 137372 [= MZUSP 64958 in the original description]).

Material examined. — **Brazil.** Roraima state, Ilha de Maracá, 1 paratype (AMNH 137372).
Venezuela. Amazonas state, Coyowa-Terri, 1 spec. (MHNLS 14471).

Distribution (Fig. 5). — *Mabuya carvalhoi* has been reported from the southeastern border of the Amazonas state in Venezuela (Molina 1998) and from Roraima state in Brazil (Rebouças-Spieker & Vanzolini 1990).

Diagnosis. — *Mabuya* with fused prefrontals and frontoparietals, parietal plates in contact with each other

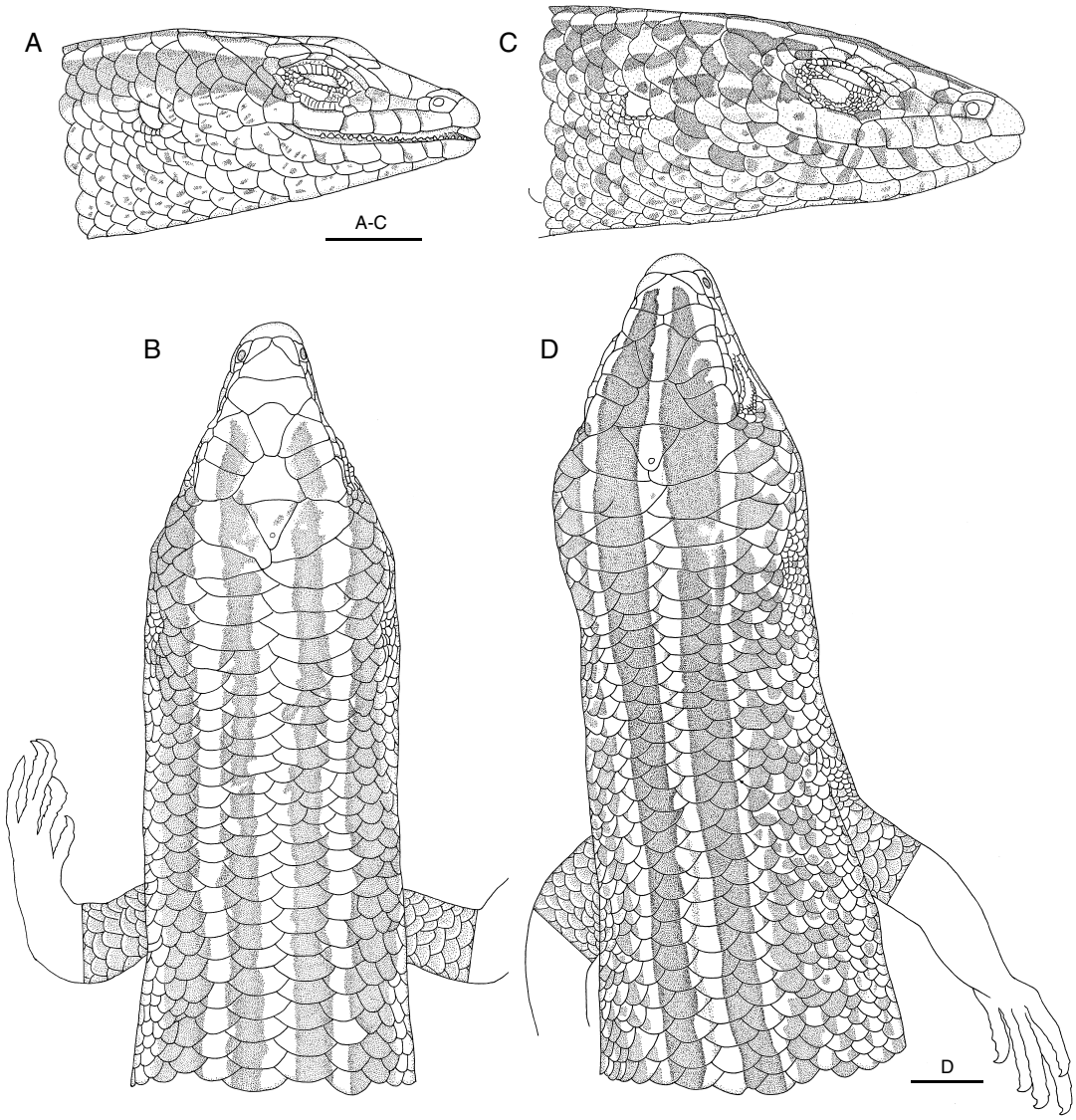

FIG. 1. — Lateral view of the head and dorsal view of the anterior part of the body of *Mabuya carvalhoi* Rebouças-Spieker & Vanzolini, 1990 (AMNH 137372) (**A**, **B**) and *M. croizati* Horton, 1973 (CM 7982) (**C**, **D**). Scale bars: 4 mm.

behind the interparietal plate, three to four pairs of nuchals. Four supraciliaries, the first usually the longest. Palms and soles light coloured, but scales on these areas often with a darker margin. Body with six longitudinal dark stripes; two dorsal stripes running from supraoculars scales to the base of the tail where they fuse, two dorsolateral stripes and two lateral stripes.

Mabuya croizati Horton, 1973
(Fig. 1C, D)

Mabuya croizati Horton, 1973: 75. — Molina 1998: 149. — Rebouças-Spieker & Vanzolini 1990: 377. — Rodrigues 2000: 314.

Mabuya nigropalmata – Burt & Burt 1933: 86 (part). — Dunn 1936: 554 (part).

TYPE MATERIAL. — Holotype: Mt Turimiquire, Sucre state, Venezuela (AMNH 29314). Paratypes: Mt Turimiquire (AMNH 29215); Elvecia (MCZ 39735, 39736).

MATERIAL EXAMINED. — **Venezuela.** Anzoategui state, Turimiquire massif, summit of Cerro La laguna, 2200 m, 1 spec. (EBRG 3797). — Sucre state, Turumiquire massif, holotype (AMNH 29314); Elvecia, Turumiquire massif, 3 specs (CM 7978, 7982, 7988); Turumiquire massif, 10 specs (FMNH 17796, 17797, 17798-428 to 17798-430, 17799-434 to 17799-438).

DISTRIBUTION (Fig. 5). — *Mabuya croizati* seems to be endemic to the Turimiquire massif in northeastern Venezuela. This species is reported for the first time in the Anzoategui state, in the western part of the Turimiquire massif (EBRG 3797).

DIAGNOSIS. — *Mabuya* with paired prefrontals and fused frontoparietals, parietal plates in contact with each other behind the interparietal plate, two to four pairs of nuchals. Five, rarely six, supraciliaries subequal in size. Palms and soles dark coloured. Body with six longitudinal dark stripes; two dorsal stripes running from supranasals or frontonasal, to the base of the tail where they fuse, two dorsolateral stripes and two lateral stripes.

REMARKS

Mabuya croizati is geographically separated from its presumably sister species, *M. carvalhoi*, by lowlands and the Orinoco River. Steyermark (1966) recognized that the flora of the Turimiquire massif shares many species with the Venezuelan Guyana. Such correlated observations suggest that those two bioregions could have been in contact in the past.

Mabuya falconensis
Mijares-Urrutia & Arends, 1997
(Fig. 2A, B)

Mabuya falconensis Mijares-Urrutia & Arends, 1997: 595. — Molina 1998: 149.

TYPE MATERIAL. — Holotype: Cerro Santa Ana, Península de Paraguaná, Falcón state, Venezuela (EBRG 1727). Paratypes: Miranda, Falcón state (ULABG 2115); Colina, Falcón state (ULABG 2116).

MATERIAL EXAMINED. — **Colombia.** Guajira state, Rio Barbacoa Arroyo de Arenas, 1 spec. (UMMZ 54793).

Venezuela. Carabobo state, Lago de Valencia, 2 specs (MHNLS 5511, 5512); Palma Solar, Morón, 1 spec. (MHNLS 5852); Bahia de Patanemo, 2 specs (MHNLS 6087, 6302). — Falcón state, Sierra San Luis, Curimagua, 1 spec. (MHNLS 9526); Península de Paraguaná, Reserva Biologíca de Monte Cano, 200 m, 1 spec. (MHNLS 17095); Tucacas, 2 specs (UMMZ 55927, 55932). — Miranda state, Higuerote, 1 spec. (MHNLS 16654). — Sucre state, Chacopata, 1 spec. (MHNLS 9040). — Yaracuy state, Boquerón, 1 spec. (UMMZ 55924).

DISTRIBUTION (Fig. 6). — Until now, *M. falconensis* was considered as an endemic xerophilous species of the Falcón state, only known from a small area around its type locality (Mijares-Urrutia & Arends 1997). During our revision, we have discovered many other localities for this species. East of the Falcón state, specimens have been found in Yaracuy state, at Boqueron (UMMZ 55924), in Carabobo state (MHNLS 5511, 5512, 5852, 6087, 6302) and in Sucre state, in the Península de Araya (MHNLS 9040). West of Falcón state, a specimen from the northeastern Colombia, Guajira, has been also clearly identified as belonging to this species (UMMZ 54793). Those observations extend markedly its distribution along the northern coast. The same pattern of distribution is found in *Cnemidophorus arenivagus* Markezich, Cole & Dessauer, 1997, a species endemic to the semiarid coast of northern South America (Markezich *et al.* 1997).

DIAGNOSIS. — *Mabuya* with paired prefrontals and frontoparietals, parietal plates in contact with each other behind the interparietal plate, a single pair of nuchals. Four supraciliaries, the second longest. Palms and soles light coloured. On each side a wide, dark lateral ill-defined band. Dorsolateral light stripes absent.

REMARKS

Color pattern of *M. falconensis* can be very variable in a same population. Some specimens have the dorsum nearly lacking all dark spots (MHNLS 9526) whereas others have a high density of spots aligned in eight narrow longitudinal stripes (MHNLS 17095, UMMZ 55927). *Mabuya falconensis* shares superficial characters with *M. mabouya*, a geographically neighbouring species from Southern Lesser Antilles (Miralles 2005): these two possibly closely related species inhabit xerophilous environment (Mijares-Urrutia & Arends 1997; Breuil 2002) and have in common an accute snout and a similar colour pattern. *Mabuya falconensis* can be distinguished from *M. mabouya* in having four supraocular (versus three) and a smaller size.

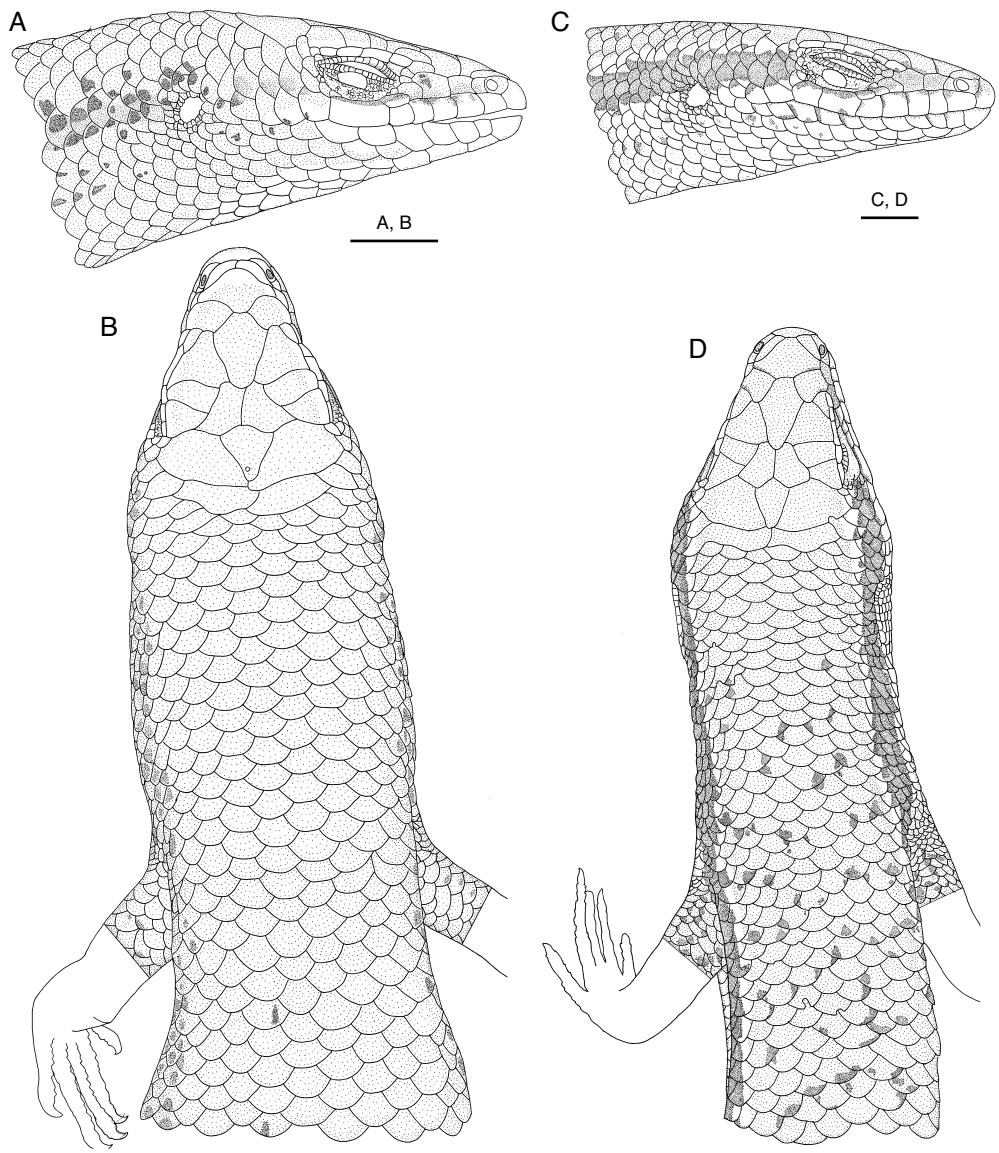

FIG. 2. — Lateral view of the head and dorsal view of the anterior part of the body of *Mabuya falconensis* Mijares-Urrutia & Arends, 1997 (MHNLS 5512) (**A**, **B**) and *M. nigropunctata* (Spix, 1825) (MHNLS 16203) (**C**, **D**). Scale bars: 4 mm.

Mabuya meridensis
Miralles, Rivas & Schargel, 2005
(Fig. 3A, B)

Mabuya meridensis Miralles, Rivas & Schargel, 2005: 3.

TYPE MATERIAL. — Holotype: Mérida, Mérida state, Venezuela (ULABG 1570). Paratypes: region of Mérida (AMNH 13405 to 13408, 13526; ULABG 4153, 4281; UMMZ 57435).

MATERIAL EXAMINED. — **Venezuela.** Mérida state, holotype (ULABG 1570); vicinity of Mérida, 8 paratypes (AMNH 13405 to 13408, 13526; ULABG 4153, 4281; UMMZ 57435); 3 specs (MHNLS 923, 1393, 17081).

DISTRIBUTION (Fig. 5). — *Mabuya meridensis* seems to be endemic to the vicinity of Mérida, between 1300 m and 2200 m above sea level.

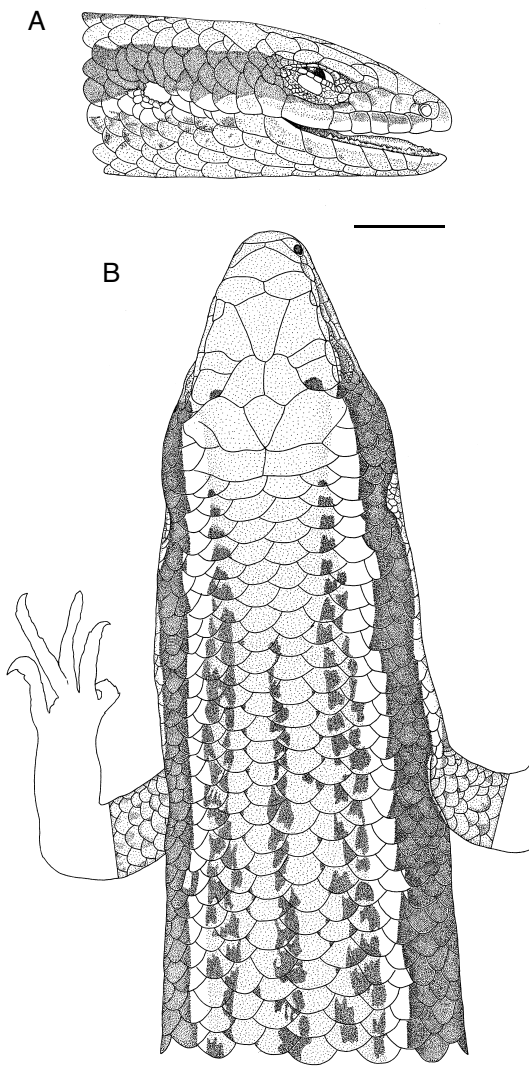

FIG. 3. — Lateral view of the head (**A**) and dorsal view of the anterior part of the body (**B**) of holotype of *Mabuya meridensis* Miralles, Rivas & Schargel, 2005 (ULABG 1570). Scale bar: 4 mm.

DIAGNOSIS. — *Mabuya* with paired prefrontals and frontoparietals, parietal plates in contact with each other behind the interparietal plate, a single pair of nuchals. Four supraciliaries, the second longest. Palms and soles dark coloured. Seven dark band along body: one very thin vertebral stripe; two dorsolateral stripes ill-defined, formed by a succession of aligned dots; two upper lateral and two lower lateral stripes.

Mabuya nigropunctata (Spix, 1825) (Fig. 2C, D)

Scincus nigropunctatus Spix, 1825: 24.

Euprepis surinamensis Hallowell, 1856: 154.

Mabuia surinamensis – Cope 1862: 186.

Mabuia agilis var. *nigropunctata* Boulenger, 1887: 192 (part).

Mabuia aurata – Boulenger 1887: 189 (part). — Goeldi 1902: 535 (part).

Mabuia agilis – Goeldi 1902: 534 (part).

Mabuya agilis – Burt & Burt 1933: 86 (part). — Burt & Myers 1942: 49 (part).

Mabuya mabouya mabouya – Dunn 1936: 540 (part). — Amaral 1937a: 203 (part). — Peters & Donoso-Barros 1970: 199 (part). — Hoogmoed 1973: 209 (part).

Mabuya agilis agilis – Amaral 1937b: 1743 (part).

Mabuya mabouya – Hoogmoed 1979 : 278. — Rivero-Blanco & Dixon 1979: 296.

Mabuya bistriata – Rebouças-Spieker 1981a: 123; 1981b: 162. — Vanzolini 1981: 196. — Gorzula & Señaris 1999: 147. — Rodrigues 2000: 315. — Murphy 1997: 150. — Carranza & Arnold 2003: 279 (part).

Mabuya nigropunctata – Ávila-Pires 1995: 584. — Massary *et al.* 2001: 19.

TYPE MATERIAL. — Holotype lost, from the original type locality of "Ecgá", correct original spelling being "Ega", at present Tefé, state of Amazonas, Brazil (Ávila-Pires 1995). Neotype: Santa Rita, Município de Maraã, left margin of Rio Japurá (Lago Paricá), state of Amazonas, Brazil (MPEG 15248) (designated by Ávila-Pires 1995).

MATERIAL EXAMINED. — **Brazil.** Acre state, 5 km N Porto Walter, W of Rio Juruá, 4 specs (OMNH 37048 to 37051). — Amazonas state, Município de Castanho, 40 km S Manaus at km 12 on road to Autazes, 18 specs (OMNH 37681 to 37698). — Maranhão state, Nova Vida, 25 km E of Rio Gurupi, BR 316, 5 specs (MPEG 10690, 10691, 10693, 10695, 10698). — Para state, CEMEX, Agropecuaria Treviso LTDA, 101 km S and 18 km E Santarém, 15 specs (OMNH 36828 to 36842). — Rondonia state, Rio Formoso, Parque Estadual Guajará-Mirim, 90 km N Nova Mamoré, 7 specs (OMNH 37411 to 37417). — Roraima state, 7 km E Rio Ajaraní, BR 210, 10 specs (OMNH 36313 to 36322).
Colombia. Amazonas state, Leticia, 2 specs (CM 55601, 55602).
Ecuador. Napo province, San Francisco, Rio Napo 200 m, 1 spec. (UMMZ 84742). — Sucumbios

province, Reserva Faunistica Cuyabeno (RPF-Cuyabeno), 1 spec. (OMNH 36514).
French Guiana. St Eugene, 11 specs (MNHN 1996-4570 to 1996-4572, 1997-2206 to 1997-2213).
Guyana. Cuyuni-Mazaruni region, Kartabu, on the Mazaruni-Potaro, 5 specs (AMNH 15120 to 15122, 18183, 21326).
Peru. Loreto department, Rio Yuvineto, right bank of Rio Putumayo, 2 specs (MNHN 1978-2412, 1978-2413).
Trinidad and Tobago. Trinidad island, 1 spec. (AMNH 64528); Trinidad island, San Rafael, 8 specs (FMNH 49901 to 49908); Trinidad island, 1 spec. (UMMZ 79919).
Venezuela. Amazonas state, Parima B, 1 spec. (MHNLS 16389). — Aragua state, Quebrada, right bank of the Río San Miguel, national park Henri Pittier, 1 spec. (MHNLS 17080). — Bolívar state, foot of the Roraima Mountain, La Gran Sabana, 5°10'N, 60°47'W, 2 specs (MHNLS 11544, 11545); Serranía del Supamo, Cerro Santa Rosa, 1 spec. (MHNLS 15532). — Delta Amacuro state, Managas, 2 specs (LACM 31469, 31470); Burojoida, 1 spec. (MHNLS 4543). — Nueva Esparta state, Margarita Island, Cerro Copey, 2 specs (MHNLS 3401, 3402). — Miranda state, SW Araira, Hacienda La Ceiba, 1 spec. (MHNLS 16652); Guatire, 3 specs (MHNLS 16655, 16651, 16658). — Sucre state, Península de Paria, Las Melenas, 1 spec. (MHNLS 15533); Península de Paria, Macuro, 1 spec. (MHNLS 16203).
Suriname. Marowijne, 10 km N Wanekreek, 1 spec. (RMNH 28080). — Airstrip Paloemeu, 1 spec. (RMNH 15629). — Afobaka, 1 spec. (RMNH 15593). — Awarra savannah, Maratakka river, 1 spec. (RMNH 16453). — Paramaribo, 1 spec. (RMNH 15633). — Sipaliwini, 1 spec. (RMNH 15648). — Nickerie, km 117 on road to Amotopo, Kabalebo area, 1 spec. (RMNH 28580); Blanche Marie, 2 specs (RMNH 16468, 16469).

DISTRIBUTION (Fig. 6). — *Mabuya nigropunctata* appears to be by far the most common species of *Mabuya* in the Guyano-Amazonian region: this species is known in Brazil from the Amazonian region, the Mato Grosso state, a portion of the Atlantic forests and the cerrado region (Ávila-Pires 1995); in Amazonian part of Ecuador from the province of Sucumbios (Vitt & de la Torre 1996) and the province of Napo (UMMZ 84742); and everywhere in French Guiana (Massary *et al.* 2001) and Suriname (Hoogmoed 1973). We have also identified some specimens from Colombia (CM 55601, 55602) as belonging to this species.

DIAGNOSIS. — *Mabuya* with paired prefrontals and frontoparietals, parietal plates generally separated by the interparietal plate, a single pair of nuchals. Four to six, mostly five, usually subequal supraciliaries. Palms and soles dark, covered by small tubercules. On each side a wide, dark lateral band, bordered or not by dorsal and ventral light stripes, of which the dorsal one, when present, usually ill-defined.

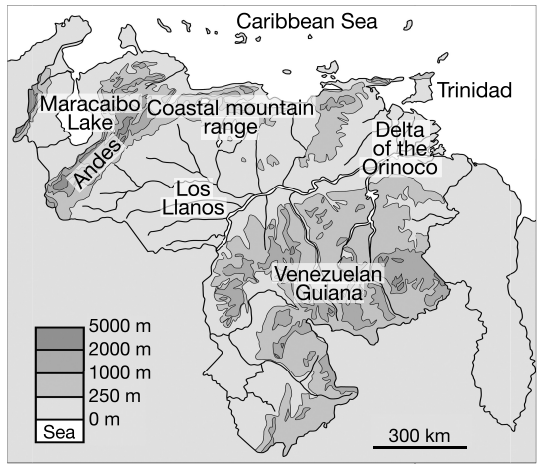

FIG. 4. — Map of Venezuela showing the major bioregions.

REMARKS
In mainland Venezuela, specimens that can clearly be assigned to *M. nigropunctata*, following Ávila-Pires (1995), have been found in six different states: Amazonas, from Parima B (MHNLS 16389); Aragua, from the Henri Pittier national park (MNHLS 17080); Bolívar, from the foothills of Cerro Santa Rosa, a tepui in serranía del Supamo (MHNLS 15532), and from the foothills of Roraima tepui (MHNLS 11544, 11545); Delta Amacuro, from Burojoida (MHNLS 4543) and Managas (LACM 31469, 31470); Miranda from Araira (MHNLS 16652) and Guatire (MHNLS 16655) and Sucre, in the península de Paria, from the path from Las Melenas to Cerro el Humo (MHNLS 15533) and from Macuro (MHNLS 16203). All those localities, except the two situated in the small coastal plain of Higuerote, Miranda state, and the one in the Henri Pittier national park, Aragua state, are in what Barrio-Amorós (1998) called "arco amazónico oriental" (eastern Amazonian arch) and what Gorzula & Señaris (1999) called "Venezuelan Guayana". We can infer that *M. nigropunctata* is present in most of the eastern part of the country. Moreover, two specimens

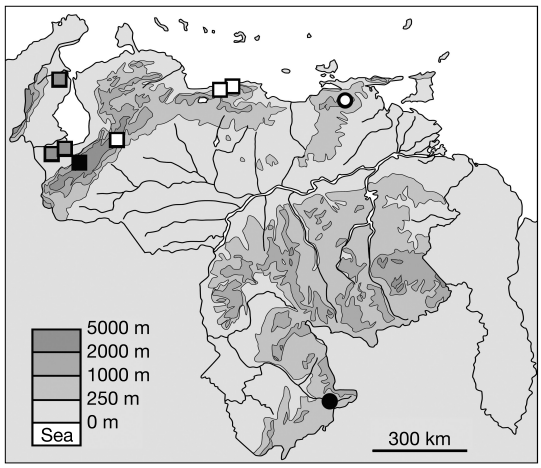

FIG. 5. — Occurence of *Mabuya carvalhoi* (●), *M. croizati* (○) and *M. meridensis* (■) in Venezuela. Occurences of Andean species complex have been also added: *Mabuya* sp. A from the coastal range and the state of Trujillo (□) and *Mabuya* sp. B from the Maracaibo lake bassin (■).

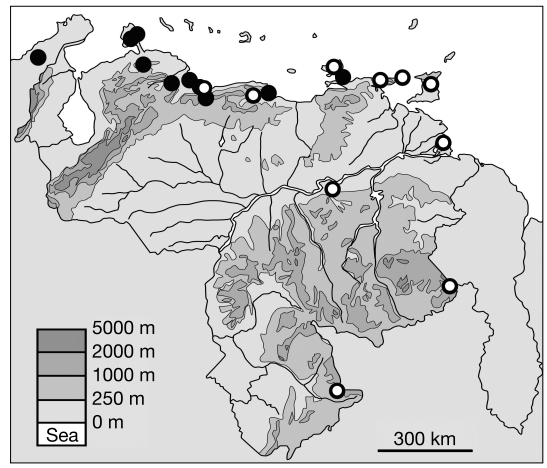

FIG. 6. — Occurence of *Mabuya falconensis* (●) and *M. nigropunctata* (○) in Venezuela, and of *M. falconensis* in neighbouring Colombia.

from Margarita Island (state of Nueva Esparta), collected in 1953 by Felipe Martín in Cerro Copey (MHNLS 3401, 3402), are also *M. nigropunctata*.

Populations have been registered on the islands of Trinidad and Tobago. They have been considered by many authors as *M. bistriata* (Murphy 1997; Carranza & Arnold 2003). Their assignation to this species appears improbable to us, given that this species is otherwise restricted to the Guyano-Amazonian region and is apparently absent from Venezuela. We studied specimens from Trinidad island, confirming them to be *M. nigropunctata* (AMNH 64528, FMNH 49901 to 49908, UMMZ 79919). By extension, we consider highly probable that the specimen from Tobago, Bacolet state (AMNH 73087), identified by Murphy (1997), was not *M. bistriata* but *M. nigropunctata*.

ANDEAN *MABUYA*: STRONG POLYMORPHISM OR A SPECIES COMPLEX?

MATERIAL EXAMINED. — ***Mabuya* sp. A**: **Venezuela.** Aragua state, Colonia Tovar (MHNLS 17088, 17090-17092). — Distristo capital, Caracas, Parque Nacional El Avila, Sector Mariperez (MHNLS 13262). — Miranda state, Pico Naiguata (MHNLS 16656, 16657); Sector El Amarillo, San Antonio de Los Altos (MHNLS 13734, 13735). — Trujillo state, near Bocono, front of the Laguna Negra (MHNLS 16648, 16649). — Vargas state, Club Casa de Campo Tovar (MHNLS 17089, 17093).

***Mabuya* sp. B**: **Venezuela.** Zulia state, Rio Escalante, SW lake Maracaibo, sector el Cañon (MHNLS 16647); Mara Municipality, Borders of the riecito Maché, river basin of the Cachirí river, sector La Orchila, Sierra de Perijá (MHNLS 16648); Finca Onia, 10 km del Vigia, via San Cristobal, gravid female (MHNLS 16671); extracted from the uterus of the female MHNLS 16671 (MHNLS 17035 to 17040).

During our review of Venezuelan *Mabuya*, we studied many specimens from all over the continent. It clearly appeared that more than everywhere else in South America, a very high diversity of populations occurs collectively in the coastal range and the Andes of Venezuela (Fig. 5). These populations all have a single pair of enlarged nuchals and two separated frontoparietals, but are readily distinguished between them and from known species of *Mabuya* in the cephalic scalation, color pattern or size. For the time being we prefer to include those populations in an "Andean species complex". In addition to the recently described *M. meridensis*, two putative species have

been identified in the Andean region (*Mabuya* sp. A from the coastal range and Trujillo state, and *Mabuya* sp. B from the Maracaibo lake basin). A study based on molecular data and detailed morphological analysis is in preparation to critically test the validity of these putative species.

CONCLUSIONS

This preliminary work shows that the genus *Mabuya* is widely distributed through Venezuela, with the exception of los Llanos of the Orinoco, dry lowland open formations (Rivero-Blanco & Dixon 1979) between the Andes and the Guiana shield (Fig. 4). But above all, it reveals that many *Mabuya* from the highlands cannot be identified to any known species, allowing us to focus now on those undetermined populations. Indeed, taxonomic studies on mountainous *Mabuya* are virtually non-existent despite their ubiquitous representation in those highlands by many apparently different species. It seems highly probable that the complex geography of those altitudinal regions involved numerous parapatric speciation phenomena in the genus. Descriptions of new species and molecular phylogenetic analysis in preparation should permit us to clarify this very confuse situation.

KEY TO THE SPECIES OF VENEZUELAN SKINKS OF THE GENUS *MABUYA*

In Venezuela, Mabuya can be easily distinguished from all other lizard genera by the presence of a translucent disk (or window) in the lower eyelid, two supranasals, and uniform cycloid body scales. Mabuya of the Andean species complex are included in the following key. Mabuya bistriata is also included in the key, even if it has not yet been reported in Venezuela. Indeed, given the distribution and ecology of this species, its presence in the southern part of the country seems possible.

1. A single pair of nuchal scales, two separated frontoparietal scales 2
— More than a single pair of nuchal scales, frontoparietals fused into a single scale .. 3

2. Presence of a vertebral dark stripe ..... *M. meridensis* (Fig. 3A, B)
— Absence of vertebral dark stripes 4

3. Prefrontals plates fused into a single scale, two dark dorsals stripes start up to the eyes, four supraciliaries ..... *M. carvalhoi* (Fig. 1A, B)
— Two separated prefrontals plates, the two dark dorsals stripes start up to the nostrils, five supraciliaries ..... *M. croizati* (Fig. 1C, D)

4. Four supraciliaries with second longest, parietals scales always in contact with each other behind interparietal scale 5
— Five or six supraciliaries subequal in size, parietal scales generally separated by interparietal scale ..... *M. nigropunctata* (Fig. 2C, D)

5. Palms and soles light coloured (same colour than belly) 6
— Palms and soles dark coloured (darker than belly) 7

6. Long snout, ill-defined dark lateral stripe at each side composed of small fused dark dots and not bordered dorsally by a light stripe, no dorsolateral dark stripes ..... *M. falconensis* (Fig. 2A, B)
— Short snout, well defined dark lateral stripes at each side and bordered dorsally by a light stripe, two short dorsolateral dark stripes ..... *M. bistriata*

7. Two dorsolateral dark stripes, well defined white lateral stripes ..... *Mabuya* sp. A (coastal range and Trujillo state)
— No dorsolateral dark stripes, ill defined white lateral stripes *Mabuya* sp. B (Zulia state)

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