



MYTH AND TRUTH ON THE HERPETOFAUNA OF CHIRIBIQUETE: FROM THE LOST WORLD TO THE LAST WORLD

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SUMMARY

The herpetofauna of the Chiribiquete National Natural Park, a huge natural and cultural monument in the northwestern Amazonia of Colombia, has been one of the largest myths regarding the biodiversity of the country, and a biogeographic unknown. Despite the databases referring to the subject, and the specimens hosted by national biological collections, little has been carefully reviewed to the present and almost nothing has been published. Hereby we present a comprehensive review of the composition of that fauna, which to date contains 58 described species of reptiles, and 43 described species of amphibians, 7 reptile species and 10 amphibian species that we now consider undescribed, and a list of "expected" species to be present inside the park's borders, according to the occurrence records available for them. We elaborate on the myth and the truth of our current knowledge, and discuss the role of molecular taxonomy in discovering both.

Keywords

Biodiversity, biogeography, amphibians, reptiles, Amazonia

RESUMEN

La herpetofauna del Parque Nacional Natural Serranía de Chiribiquete, un impresionante monumento natural y cultural en el extremo noroccidental de la Amazonia colombiana, ha sido uno de los mayores mitos sobre la biodiversidad del país y una incógnita biogeográfica. A pesar de las bases de datos que hacen referencia a registros biológicos en su territorio, y de los especímenes albergados por colecciones biológicas nacionales, poco se ha revisado cuidadosamente hasta el presente y casi nada se ha publicado. Aquí presentamos una revisión exhaustiva de la composición de esa fauna, que hasta la fecha contiene 58 especies descritas de reptiles, y 42 especies descritas de anfibios; 7 especies de reptiles y 10 especies de anfibios que actualmente consideramos indescritas, así como una lista de especies "esperadas" dentro de las fronteras del parque, de acuerdo con los registros de presencia disponibles para ellas. Ahondamos también en los conceptos de mito y realidad aplicados a nuestro estado del conocimiento y discutimos el papel de la taxonomía molecular en el descubrimiento de los conceptos arriba mencionados.

Palabras clave

Biodiversidad, biogeografía, anfibios, reptiles, Amazonia.

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INTRODUCTION

Serranía de Chiribiquete is the largest continental National Natural Park (NNP) of Colombia, comprising nearly 3 million hectares in the confluence of the forests of the Northwestern Amazonia, the savannas of the Southwestern Orinoquia and the tepuys of the western Guiana shield. Its impressive combination of rock art, with nearly eighty pictographic complexes which comprise more than 200,000 paintings, is complemented with a dazzling biodiversity and an astonishing landscape beauty, still in the process of being inventoried. The NNP has been included in the Tentative List of the Unesco's World Heritage Sites (WHS) since 1993 and currently there is an ongoing process for supporting its nomination as a full WHS.

The first scientific exploration of Chiribiquete was carried out by Richard Evans Schultes, during the 1940's, apparently without collection records of amphibians and reptiles. After the park was declared, three expeditions were made in 1992: the first one was purely botanical, and the second and the third covered botany and zoology (butterflies and terrestrial vertebrates). Little of the second and third expeditions has been published. In 2010, an inventory was made at two points slightly to the south of the original park, to support the enlargement proposal of the original Chiribiquete NNP, which was 1.298.900 ha at that time. Consequently, the park was extended in 2013 to its actual size, but the biological information available to nominate the area as a WHS was still very fragmentary.

To obtain the necessary support for the nomination process, three biodiversity expeditions were developed recently, in three sampling periods between November 2015 and February 2017. With the aim of supplementing the findings of the expeditions, during 2016 and 2017 we carried out a careful revision of all the biological collections in Colombia that were supposed to contain herpetological specimens from the NNP as it is currently defined, as well as of not published nor peer reviewed technical documents and management plans for the area containing a biodiversity component. Given the little utility of the available literature, the most recent three expeditions mentioned above had to be redesigned to help beyond fulfilling Unesco's

requirements for the nomination of the area as a Mixed WHS, but also to confirm the biological distinctiveness of the park, and to justify the original declaration of the area as a NNP.

It is worth to remark that, for several years, the site of Puerto Rastrojo biological station ("Puerto Abeja", Caquetá border in the Mesay river, which was incorporated into the park with the 2013 increment of area) has been visited by collectors, and a relatively extensive collection of selected groups is now distributed among several biological collections in Colombia. Same happens with the results and specimens of the remaining expeditions before the 2015-2017 effort: specimens have been sleeping in jars in the museums of the country, where they remained ignored for 25 years. One can speculate on the reasons why that information remained untouched for that long, but the truth is that, in the absence of confirmed records and published literature, the current knowledge about the herpetofauna of Chiribiquete is made of mythology, a term which we will elaborate on later.

METHODS

Our aim is to describe, to the extent of our knowledge, the actual composition of the herpetofauna of Chiribiquete based on evidence. For that purpose, we consider "evidence" all the specimen vouchers and tissues that exist in biological collections of Colombia, as well as few dated rock paintings that we have been allowed to detail. We do not consider photographs of frogs as evidence in this case –and only eventually we consider pictures of large and common reptiles– because, apart from aposematic dendrobatids, crocodiles and turtles, it is almost impossible and irresponsible to identify amphibians or reptiles based on color, without checking other morphological characters. In addition, if a photograph is not properly accompanied by its metadata, nothing can inform one where it was taken, or when. Nevertheless, photography of non-collected specimens is the most traditional way of building species lists in our country.

At the end, we obtained the evidence for this review from three sources: first, the specimens hosted by all the biological collections we reviewed in the country

(see Annex 1, Examined collections and vouchers). Second, our own fieldwork, both to Puerto Abeja and to the northern and central tepuys. And last, but not least, the literature we reviewed in search of records from Chiribiquete based on vouchers, whose identifications could be confirmed by us or by the expertise of our colleagues.

During the field expeditions, we conducted free searches during night and day, trying to sample all the available landscape units in each locality. We also tried to sample the ground fauna with the help of pitfall traps, of varying size, according to the soil conditions. As a general norm, only the riverbanks and flooding areas were deep enough to dig and bury the traps, but we did not obtain almost anything from there. The only places where the pitfall traps were somehow effective were localities near Yavilla river, where Raúl Pedroza Banda collected nearly 7 lizard species, some microhylids and few dendrobatids for the first area enlargement. Neither the tepuy areas, nor the varillal forests were suitable for pitfall trapping, and the only option for collecting herps in such inhospitable places was direct sight and prosecution, to our own risk.

RESULTS

The myth

The first –and only—published notice of the herpetofauna of NNP Serranía de Chiribiquete was produced on 1996, in which M.C. Blázquez, a researcher of the Doñana Biological Station in Spain, presented her results on a short behavioral-ecological study carried on the hilltop of one of the northern tepuys ($0^{\circ}56'15''$ N, $72^{\circ}43'06''$ W) between November and December of 1992 –precisely, when the first biological expeditions to the Serranía were performed (Blázquez, 1996). Based on that paper, *Ameiva ameiva* was clearly present, but the population of that tepuy was smaller in size, and in body size, compared to other known Amazonian populations. Interestingly, Blázquez (*op. cit*) also mentions the impoverished aspect of the hilltop in terms of herpetological biodiversity for an Amazonian or Guyanean landscape. During her survey, she reports observations of only five species

of reptiles: *Anolis* sp. (Dactyloidae), *Kentropyx* sp. (Teiidae), *Plica* sp. (Tropiduridae), and two colubrid snakes: *Leptodeira annulata* and *Mastigodryas* sp. Amphibians, in her words, were more frequently found, but only 4 families: Bufonidae, Centrolenidae, Hylidae and Leptodactylidae (no species names were reported).

Blázquez findings contrast deeply with the only previous (and available) assessment of the herpetofaunal diversity of Chiribiquete, presented in the first enlargement proposal of the NNP, “Parque Nacional Natural Serranía de Chiribiquete–Propuesta de Ampliación”, which is synthesized in the Resolution No. 1038/2013 of the Ministry of Environment and Sustainable Development. By means of this resolution, an area almost twice the original one, in departments Caquetá and Guaviare, is included in the NNP Serranía de Chiribiquete. Textually, the resolution reports 41 reptiles and 49 amphibian species, for the area to be included in the extension. However, almost no detail is provided regarding the added species to the ‘previous’ list (which either does not exist, or has never been made publicly available). The resolution also mentions some “important species” of amphibians and reptiles for conservation purposes, and to support the critical role of the ecosystems converging in the area. The reptiles comprise *Corallus hortulanus* and *Eunectes murinus* (Boiidae), *Rhinobothryum lentiginosum* (Colubridae), *Podocnemis expansa* (Podocnemididae) and *Kentropyx striata* (Teiidae). The amphibians mentioned include *Epipedobates femoralis* (today *Allobates femoralis*, Aromobatidae, but see below), *Adelophryne adiastola* (Brachycephalidae), *Eleutherodactylus vilarsi* (currently known as *Pristimantis vilarsi*, family Craugastoridae, but see below), *Ranitomeya ventrimaculata* (Dendrobatidae), *Hypsiboas microderma* and *Scinax* sp. (Hylidae), *Leptodactylus* sp. and *Leptodactylus stenodema* (Leptodactylidae), and *Ctenophryne* sp. and *Otophryne pyburni* (Microhylidae).

As a point for further discussion it is worth mentioning that *Eunectes murinus* was not assessed for the current IUCN red list, and it was categorized recently as LC –of low concern—for Colombia (Morales-Betancourt *et al.*, 2015), while *Podocnemis expansa* (the ‘charapa’), is currently critically endangered (CR) in Colombia (Martínez-Callejas *et al.*,

2015) but it was regarded LC globally, because data are not updated. Two of the mentioned amphibians do pertain to CITES appendixes –the aromobatid and the dendrobatid, and apparently are related to the biogeographic regions also mentioned in the text, but still no evidence supports their distribution limits as presented.

On the other hand, the document “Annex G. Línea base de la caracterización biológica de ecosistemas incluidos en el área de influencia del PNN Serranía de Chiribiquete, (Sectores Sur y Norte)” (Dirección Territorial Amazonia-UAESPNN, Patrimonio Natural & Fundación Puerto Rastrojo, 2011), which is supposed to support the text included in the resolution, contains a slightly different number of species (a total of 88, 49 amphibians and 39 reptiles), while an available Power Point™ presentation to the Academia Colombiana de Ciencias, on the name of the Ministry of Environment and Sustainable Development, and the Administration of National Natural Parks, mentions 60 species of reptiles and 57 species of amphibians for the park, but also without a list.

All those reports are based on the collections performed by Raúl Pedroza Banda, which are, by far, the most extensive collections (and fieldwork) developed in the past and the present area of the park. Fortunately, whether their dissimilarities correspond to punctuated increments of the knowledge, or to simple disregards, is not an issue when there are specimens in biological collections that can be reviewed anytime, by different people –and expertise— and different degrees of care and responsibility. In fact, the final document of the Management Plan for the NNP Serranía de Chiribiquete 2016-2020, an attachment of the nomination proposal for Unesco’s WHS presented in 2016 (UAESPNN, 2016), defines the first conservation objective of the area as “To maintain the ecological integrity of the ecosystems of the extreme west of the biogeographical Province of Guyana, in order to contribute to the survival of endemic or endangered species, and of ecological processes which sustain continuity of the biomass of the Andes, Guyana and Amazonia”, which actually summarizes better the need for biological information with a purpose beyond the intrinsic value of each species present in the area.

That value has been indicated by the indigenous communities for millennia, so that they have represented some of the species already mentioned in their giant ancient pictographs, as same as in the more recent paintings and oral traditions that contribute to maintain the myth. To date, we have had the opportunity of reviewing only a tiny insignificant part of the known rock paintings, but we have been able to identify some charismatic and mythical reptile species such as the “talla x” viper (*Bothrops atrox* (L., 1758)), the anaconda (*Eunectes murinus* (L., 1758)), some ‘elephant-foot’ dancing tortoises (*Chelonoidis denticulatus* (L., 1766)), as it was recorded by Castaño-Mora, 2002) and edible turtles as *Podocnemis* (probably *P. expansa* (Schweiger, 1821) and *Podocnemis unifilis* (Troschel, 1848), which were reported in the area by Patricio von Hildebrand from Fundación Puerto Rastrojo). We only have found two lizards in the paintings already reviewed: the iguana (*Iguana iguana*), which may have been a source of protein, and a long-tailed slender lizard, which conforms to a tropidurid or polychrotid shape (both currently present).

The truth

Based on our extensive revision plus our own surveys, the herpetofauna of Chiribiquete is comprised of **58** species of reptiles, and **43** species of amphibians (Table 1a-d) already named. In addition, we have vouchers for 7 reptiles (2 snakes, 5 lizards, Table 1a, b) and 10 frogs (one brachycephalid, 3 bufonids, 3 hylids, 2 leptodactylids and one microhylid, Table 1d) that we consider to be undescribed species (named with letters in Table 1). Undescribed snakes are colubrids (*Dendrophidion*, *Thamnodynastes*) and the lizards are 2 gymnophthalmids (*Loxopholis*, *Neusticurus*), one sphaerodactylid (*Lepidoblepharis*) and 2 tropidurids (*Plica*). Bufonid frogs are members of *Rhinella*, the brachycephalid is *Adelophryne*, the hylids are *Scinax*, the leptodactylids are *Leptodactylus* and the microhylid is *Elachistocleis*. Beyond that, we expect Chiribiquete to contain 60 additional species of reptiles (Table 1a-c) and 57 additional species of amphibians (Table 1d), which would yield an amazing total 118 species of reptiles, and 101 species of amphibians.

TABLE 1. PRESENT AND EXPECTED SPECIES OF AMPHIBIANS AND REPTILES IN THE SERRANÍA DE CHIRIBIQUETE NATIONAL NATURAL PARK (COLOMBIA). NAMES OF SPECIES IN PROCESS OF DESCRIPTION CORRESPOND TO A LETTER. ABBREVIATIONS: A.O: AUTORIZED OBSERVER. PICTOGRAPHY: RECORD ACCORDING TO A PICTOGRAPHIC REPRESENTATION FROM THE ANCIENT INHABITANTS OF THE AREA. PICTURE: RECORD ACCORDING TO A PICTURE TAKEN BY AN AUTHORIZED OBSERVER THAT WE COULD VERIFY IN THE FIELD OR IN THE COLLECTIONS WE REVIEWED.

Family	Genus	Recorded species	Record source	Locality	Expected species
Boidae	<i>Boa</i>				<i>Boa constrictor</i>
	<i>Corallus</i>	<i>Corallus hortulanus</i>	voucher	Caquetá, Solano, Yavilla 4	<i>Corallus batesi</i>
	<i>Epicrates</i>				<i>Epicrates cenchria</i>
	<i>Eunectes</i>	<i>Eunectes murinus</i>	pictography voucher	Caquetá, Araracuara, Abrigo de roca Caimán	
Colubridae	<i>Atractus</i>	<i>Atractus latifrons</i>	voucher	Caquetá, Solano, Meseta Norte	<i>Atractus collaris</i> <i>Atractus elaps</i> <i>Atractus major</i> <i>Atractus punctiventris</i> <i>Atractus schach</i> <i>Atractus snethlageae</i> <i>Atractus torquatus</i>
	<i>Chironius</i>	<i>Chironius fuscus</i>	voucher	Caquetá, Solano, Puerto Santander, Cachivera Masaca, río Mesay	<i>Chironius exoletus</i>
		<i>Chironius multiventris</i>	voucher	Caquetá, Solano, Raudal La Gamitana, río Yarí Caquetá, Solano, Río Yavilla	<i>Chironius scurrulus</i>
	<i>Dendrophidion</i>	<i>Dendrophidion sp. A</i>	voucher	Caquetá, Solano, Puerto Abeja, río Mesay	
	<i>Dipsas</i>	<i>Dipsas catesbyi</i>	voucher	Caquetá, Solano, río Yavilla	<i>Dipsas pavonina</i>
	<i>Erythrolamprus</i>				<i>Erythrolamprus aesculapii</i>
	<i>Helicops</i>	<i>Helicops angulatus</i>	voucher	Caquetá, Solano, raudal La Gamitana Caquetá, Solano, río Cuñare, sector "El Tubo" Guaviare, Calamar, Meseta Caño Negro	
		<i>Helicops pastazae</i>	voucher	Guaviare, Calamar, Río Tunia	
		<i>Helicops hagmanni</i>	voucher	Caquetá, Solano, río Mesay	
	<i>Hydrodynastes</i>				<i>Hydrodynastes bicinctus</i>
	<i>Hydrops</i>				<i>Hydrops triangularis</i>
	<i>Imantodes</i>	<i>Imantodes cenchoa</i>	voucher	Caquetá, Solano, Yarí 3	<i>Imantodes lentiferus</i>
	<i>Leptodeira</i>			Caquetá, Solano, Valle de los Menhires	
				Caquetá, Solano, Valle Escondido	
				Caquetá, Solano, El Estadio	
				Caquetá, Solano, río Sararamano, afluente del Mesay	
				Caquetá, Solano, Puerto Abeja, río Mesay	
	<i>Leptophis</i>	<i>Leptophis sp.</i>	muda	Caquetá, Solano, tepuyes del centro	<i>Leptophis ahaetulla</i> <i>Leptophis cupreus</i>
	<i>Liophis</i>	<i>Liophis reginæ</i>	voucher	Guaviare, Calamar, Río Tunia	<i>Liophis breviceps</i> <i>Liophis typhlus</i>
	<i>Mastigodryas</i>	<i>Mastigodryas bodaertii</i>	voucher	Caquetá, Solano, meseta Norte	
	<i>Ninia</i>				<i>Ninia atrata</i>
	<i>Oxyrhopus</i>	<i>Oxyrhopus occipitalis</i>	voucher	Caquetá, Solano, río Yavillarí	<i>Oxyrhopus petolarius</i>
		<i>Oxyrhopus vanidicus</i>	voucher	Caquetá, Solano, Puerto Abeja, río Mesay	
	<i>Oxybelis</i>			Caquetá, Solano, río Sararamano, afluente del Mesay	<i>Oxybelis fulgidus</i>
	<i>Pholidryas</i>	<i>Pholidryas argenteus</i>	voucher	Caquetá, Solano, Río Sararamano, afluente del río Mesay	
		<i>Pholidryas viridissima</i>	voucher	Caquetá, Solano, río Sararamano, afluente del Mesay	
	<i>Pseudoboa</i>	<i>Pseudoboa sp.</i>	A.O.	Caquetá, Solano, sector El Estadio	<i>Pseudoboa coronata</i>
		<i>Pseudoboa martinisi</i>	voucher	Caquetá, Solano, Yavilla 4	
	<i>Rhinobothrium</i>	<i>Rhinobothrium lentiginosum</i>	voucher	Caquetá, Solano, "Salida 3 Chiribiquete"	
				Caquetá, Solano, Yavilla 3	
	<i>Siphlophis</i>	<i>Siphlophis cervinus</i>	voucher	Caquetá, Solano, El Estadio	
		<i>Siphlophis compressus</i>	voucher	Caquetá, Solano, Puerto Abeja, río Mesay	
	<i>Spilotes</i>			Guaviare, Calamar, Río Tunia	
	<i>Tantilla</i>				<i>Tantilla melanocephala</i>
	<i>Thamnodynastes</i>	<i>Thamnodynastes sp. A</i>	voucher	Caquetá, Solano, río Cuñare, chorro El Acuario	<i>Thamnodynastes pallidus</i>

Family	Genus	Recorded species	Record source	Locality	Expected species
Colubridae (cont.)	<i>Taeniophalus</i>				<i>Taeniophalus brevirostris</i>
	<i>Xenodon</i>	<i>Xenodon angustirostris</i>	voucher	Caquetá, Solano, Yavilla 1	<i>Xenodon suspectus</i>
		<i>Xenodon severus</i>	voucher	Caquetá, Solano, Puerto Abeja, río Mesay	
Elapidae	<i>Leptomicrurus</i>	<i>Leptomicrurus sp.</i>	A.O.	Caquetá, Solano, tepuyes del centro	<i>Leptomicrurus scutiventris</i>
	<i>Micrurus</i>	<i>Micrurus hemprichi</i>	voucher	Caquetá, trocha del Yarí, NE Araracuara	<i>Micrurus filiformis</i>
		<i>Micrurus lemniscatus</i>	voucher	Caquetá, Solano, "Salida 3 Chiribiquete"	<i>Micrurus remotus</i>
Leptotyphlopidae	<i>Leptotyphlops</i>	<i>Leptotyphlops macrolepis</i>	voucher	Caquetá, Solano, Mesetas de los Menhires	<i>Leptotyphlops brevissimum</i>
	<i>Bothriopsis</i>	<i>Bothriopsis bilineata</i>	voucher	Caquetá, Solano, Puerto Abeja, río Mesay	<i>Bothriopsis taeniata</i>
Viperidae	<i>Bothrops</i>	<i>Bothrops atrox</i>	voucher	Caquetá, Solano, parte media del Río Saramano, afluente del río Mesay	
				Caquetá, Solano, Meseta Norte	
				Caquetá, Solano, Puerto Abeja, río Mesay	
	<i>Bothrops</i>	<i>Bothrops brazili</i>	voucher	Caquetá, Solano, parte alta del río Mesay	
				Caquetá, Solano, parte media del Río Saramano, afluente del río Mesay	
				Caquetá, Solano, río Yavillari	
	<i>Lachesis</i>				<i>Lachesis muta</i>
Typhlopidae	<i>Typhlops</i>				<i>Typhlops minisquamus</i>
					<i>Typhlops reticulatus</i>

Family	Genus	Recorded species	Record source	Locality	Expected species
Amphisbaenidae	<i>Amphisbaena fuliginosa</i>		voucher	Caquetá, Solano, Puerto Abeja	<i>Amphisbaena alba</i>
	<i>Mesobaena</i>	<i>Mesobaena hubneri</i>	voucher	Caquetá, Solano, Puerto Abeja	
Dactyloidae	<i>Anolis</i>	<i>Anolis auratus</i>	voucher	Guaviare, Calamar, meseta Caño Negro	<i>Anolis trachyderma</i>
		<i>Anolis fuscoauratus</i>	voucher	Caquetá, Solano, Puerto Abeja	
		<i>Anolis nitens</i>	voucher	Caquetá, Solano, Puerto Abeja	
		<i>Anolis punctatus</i>	voucher	Caquetá, Solano, Puerto Abeja	
Gymnophthalmidae	<i>Alopoglossus</i>	<i>Alopoglossus atriventris</i>	voucher	Caquetá, Solano, Río Yavillari	
	<i>Arthrosaura</i>	<i>Arthrosaura reticulata</i>	voucher	Caquetá, Solano, Río Yavillari	
	<i>Bachia</i>	<i>Bachia flavescens</i>	voucher	Caquetá, Solano, Río Yavillari	<i>Bachia trinásale</i>
	<i>Gymnophthalmus</i>				<i>Gymnophthalmus speciosus</i>
	<i>Iphisa</i>				<i>Iphisa elegans</i>
Iguanidae	<i>Loxopholis</i>	<i>Loxopholis sp. A (aff. guianense)</i>	voucher	Caquetá, Solano, Río Yavillari	<i>Loxopholis guianense</i>
		<i>Loxopholis pericaritatum</i>	voucher	Caquetá, Solano, Río Yavillari	
		<i>Loxopholis parietale</i>	voucher	Caquetá, Solano, Río Yavillari	
	<i>Neusticurus</i>	<i>Neusticurus sp. A</i>	voucher	Caquetá, Solano, Río Yavillari	
		<i>Neusticurus medemi</i>	voucher	Caquetá, Solano, Caño Sararamano	
Potamites	<i>Potamites equestris</i>		voucher	Caquetá, Solano, Mesetas de los Menhires	
Iguanidae	<i>Iguana</i>	<i>Iguana iguana</i>	Picture A.O.	Guaviare, Calamar, Río Tunia	
Phyllodactylidae	<i>Thecadactylus</i>	<i>Thecadactylus rapicauda</i>	voucher	Caquetá, Solano, Sector Estadio	
Polychrotidae	<i>Polychrus</i>				<i>Polychrus marmoratus</i>
Scincidae	<i>Mabuya</i>	<i>Mabuya sp.</i>	A.O.	Caquetá, Solano, Sector Estadio	
Sphaerodactylidae	<i>Gonatodes</i>				<i>Gonatodes riveroi</i>
	<i>Lepidoblepharis</i>	<i>Lepidoblepharis sp. A.</i>	voucher	Caquetá, Solano, Río Yavillari	
Teiidae	<i>Pseudogonatodes</i>				<i>Pseudogonatodes guianense</i>
	<i>Ameiva</i>	<i>Ameiva ameiva</i>	voucher	Guaviare, Calamar, río Tunia Caquetá, Solano, río Yavillari	
	<i>Cnemidophorus</i>	<i>Cnemidophorus lemniscatus</i>	A.O.	Tepuyes del centro Caquetá, Solano, raudal La Gamitana	
	<i>Kentropyx</i>	<i>Kentropyx pelviceps</i>	voucher	Guaviare, Calamar, río Tunia Caquetá, Solano, río Yavillari	<i>Kentropyx altamazonica</i>
	<i>Tupinambis</i>				<i>Tupinambis teguixin</i>
Tropiduridae	<i>Plica</i>	<i>Plica plica</i>	voucher	Caquetá, Solano, río Yavilla Guaviare, Calamar, meseta Caño Negro	
		<i>Plica umbra</i>	voucher	Tepuyes del centro	
		<i>Plica sp. A</i>	voucher	Caquetá, Solano, sector la Gamitana, río Yarí	
		<i>Plica sp. B</i>	voucher	Caquetá, Solano, sector la Gamitana, río Yarí	

Family	Genus	Recorded species	Record source	Locality	Expected species
Chelidae	<i>Chelus</i>				<i>Chelus fimbriatus</i>
	<i>Mesoclemmis</i>				<i>Mesoclemmis gibba</i>
	<i>Phrynops</i>				<i>Phrynops geoffroanus</i>
	<i>Platemys</i>				<i>Platemys platicephala</i>
	<i>Rhinemys</i>				<i>Rhinemys rufipes</i>
Kinosternidae	<i>Kinosternon</i>				<i>Kinosternon scorpioides</i>
Podocnemididae	<i>Podocnemis</i>	<i>Podocnemis expansa</i>	PNN Propuesta de la ampliación Pictography	Caquetá, Solano, abrigo de roca Caimán	<i>Podocnemis sextuberculata</i>
		<i>Podocnemis unifilis</i>	PNN Propuesta de la ampliación		
	<i>Peltoccephalus</i>				<i>Peltoccephalus dumerili-anus</i>
Testudinidae	<i>Chelonoidis</i>	<i>Chelonoidis denticulata</i>	Castaño-Mora, 2002		<i>Chelonoidis carbonaria</i>
Alligatoridae	<i>Paleosuchus</i>	<i>Paleosuchus palpebrosus</i>	PNN Propuesta de primera ampliación		
		<i>Paleosuchus trigonatus</i>	Personal observation Pictures A.O.	Tepuyes del centro	

Family	Genus	Recorded species	Record source	Locality	Expected species
Brachycephalidae	<i>Adelophryne</i>	<i>Adelophryne sp. A.</i>	voucher	Caquetá, Solano, río Yavilla	<i>Adelophryne adiastola</i>
	<i>Eleutherodactylus</i>	<i>Eleutherodactylus malkini</i>	voucher	Caquetá, Solano, sector central de la serranía de Chiribiquete	
		<i>Eleutherodactylus vilarsi</i>	voucher	Caquetá, Solano, sector Estadio Caquetá, Solano, tepuyes del sur Caquetá, Solano, raudal La Gamitana Guaviare, Calamar, meseta Caño Negro Guaviare, Calamar, río Tunia	
		<i>Oreobates</i>			<i>Oreobates quixensis</i>
Bufonidae	<i>Amazophrynellina</i>	<i>Amazophrynellina minuta</i>	voucher	Caquetá, Solano, río Yavillarí	
	<i>Chaunus</i>	<i>Chaunus marinus</i>	voucher	Caquetá, Solano, raudal La Gamitana Caquetá, Solano, río Yavillarí Caquetá, río Yari Guaviare, Calamar, meseta Caño Negro	
	<i>Rhinella</i>	<i>Rhaebo guttatus</i>	voucher	Guaviare, Calamar, río Tunia	
		<i>Rhinella acutirostris</i>	voucher	Caquetá, Solano, tepuyes del centro	<i>Rhinella proboscidea</i>
		<i>Rhinella ceratophrys</i>	voucher	Guaviare, Calamar, río Tunia	
		<i>Rhinella dapsilis</i>	voucher	Caquetá, Río Mesay, Puerto Abeja	
		<i>Rhinella margaritifera</i>	voucher	Caquetá, Solano, río Cuemaní Caquetá, Solano, río Cuñare Caquetá, Río Mesay Caquetá, Solano, río Sararamano Caquetá, río Yari	
		<i>Rhinella sp. A</i>	voucher	Guaviare, Calamar, meseta Caño Negro	
		<i>Rhinella sp. B</i>	voucher	Caquetá, Solano, sector central de la serranía de Chiribiquete	
		<i>Rhinella sp. C</i>	voucher	Caquetá, Solano, río Yavillarí	
Centrolenidae	<i>Hyalinobatrachium</i>	<i>Hyalinobatrachium ruedai</i>	voucher literature	Guaviare, Miraflores, Chiribiquete	
Dendrobatidae	<i>Allobates</i>	<i>Allobates femoralis</i>	voucher	Caquetá, Solano, río Yavillarí	
	<i>Ameerega</i>				<i>Ameerega bahneli</i>
					<i>Ameerega trivittata</i>
	<i>Hyloxalus</i>	<i>Hyloxalus facio-punctatus</i>	voucher	Caquetá, Solano, Yavilla 1	
		<i>Hyloxalus picachos</i>	voucher	Caquetá, Solano, río Yavillarí Caquetá, Solano, sector Estadio	
Ranitomeyidae	<i>Ranitomeya</i>	<i>Ranitomeya defleri</i>	voucher	Caquetá, Solano, Yavilla 1	<i>Ranitomeya ventrimaculata</i>
Hemiphractidae	<i>Hemiphractus</i>				<i>Hemiphractus proboscidea</i>

Family	Genus	Recorded species	Record source	Locality	Expected species
Hylidae	<i>Boana</i>	<i>Boana boans</i>	voucher	Caquetá, Solano, Cachivera Masaca Caquetá, Solano, río Mesay Guaviare, Calamar, río Tunia Guaviare, Calamar, meseta Caño Negro	<i>Boana wavrini</i>
		<i>Boana cinerascens</i>	voucher	Caquetá, Solano, río Yavillarí Caquetá, Solano, raudal La Gamitana	
		<i>Boana fasciata s.l.</i>	voucher	Caquetá, Solano, raudal La Gamitana Guaviare, Calamar, río Tunia	
		<i>Boana geographica</i>	voucher	Caquetá, Solano, río Yavillarí	
		<i>Boana hobbsi</i>	voucher	Caquetá, Solano, río Yaní, sector La Gamitana Caquetá, Solano, río Yavillarí	
		<i>Boana hutchinsi</i>	voucher	Caquetá, Solano, río Yaní, sector La Gamitana Caquetá, Solano, río Yavilla	
		<i>Boana lanciformis</i>	voucher	Caquetá, Solano, ríos Yavilla y Yavillarí Guaviare, Calamar, río Tunia	
	<i>Dendropsophus</i>	<i>Dendropsophus brevifrons</i>	voucher	Caquetá, Solano, río Yavillarí	<i>Dendropsophus bokermanni</i>
		<i>Dendropsophus parviceps</i>	voucher	Caquetá, Solano, río Yavillarí	<i>Dendropsophus marmoratus</i> <i>Dendropsophus minutus</i> <i>Dendropsophus triangulum</i>
	<i>Osteocephalus</i>	<i>Osteocephalus leprieurii</i>	voucher	Caquetá, Solano, río Yavillarí	<i>Osteocephalus cabrerai</i>
		<i>Osteocephalus planiceps</i>	voucher	Caquetá, Solano, río Yaní, sector La Gamitana Caquetá, Solano, río Yavilla Caquetá, Solano, río Yavillarí Caquetá, Solano, tepuyes centrales de la serranía Caquetá, Solano, tepuyes del sur Guaviare, Calamar, río Tunia	<i>Osteocephalus verruciger</i>
		<i>Osteocephalus tau-rinus</i>	voucher	Caquetá, Solano, río Yavilla Caquetá, Solano, río Yavillarí Guaviare, Calamar, río Tunia	
		<i>Osteocephalus yasuni</i>	voucher	Caquetá, Solano, río Yavilla Caquetá, Solano, río Yavillarí	
	<i>Phyllomedusa</i>	<i>Phyllomedusa vai-llanti</i>	voucher	Caquetá, Solano, río Yavillarí Guaviare, Calamar, río Tunia	<i>Phyllomedusa tarsius</i>
					<i>Phyllomedusa coelestis</i>
	<i>Scinax</i>	<i>Scinax cruentommus</i>	tadpoles	Guaviare, Calamar, río Tunia	<i>Scinax funereus</i>
		<i>Scinax garbei</i>	voucher	Caquetá, Solano, ríos Yavilla y Yavillarí	<i>Scinax karenannae</i>
		<i>Scinax ruber</i>	voucher	Guaviare, Calamar, río Tunia	<i>Scinax lindsayi</i>
		<i>Scinax sp. T</i>	voucher	Guaviare, Calamar, meseta Caño Negro	<i>Scinax wandae</i>
		<i>Scinax sp. W</i>	voucher	Caquetá, Solano, río Yavillarí	
	<i>Sphaenorhynchus</i>	<i>Scinax sp. S</i>	voucher	Caquetá, Solano, raudal La Gamitana	
					<i>Sphaenorhynchus lacteus</i>
					<i>Trachycephalus coriaceus</i>
					<i>Trachycephalus resinifictrix</i>
					<i>Trachycephalus typhonius</i>
Leptodactylidae	<i>Adenomera</i>	<i>Adenomera andreae</i>	voucher	Caquetá, Solano, río Yavillarí	<i>Adenomera hylaedactyla</i>
					<i>Adenomera sp. P</i> (Fouquet et al., 2014)
	<i>Leptodactylus</i>	<i>Leptodactylus diedrus</i>		Caquetá, Solano, río Yaní, sector La Gamitana Caquetá, Solano, río Yavillarí	
		<i>Leptodactylus leptodactyloides</i>		Caquetá, Solano, río Yavilla Caquetá, Solano, río Yaní, sector La Gamitana Caquetá, Solano, río Yavillarí	
		<i>Leptodactylus pentadactylus</i>		Caquetá, Solano, río Yavillarí	
		<i>Leptodactylus rho-domystax</i>		Caquetá, Solano, río Yavilla Caquetá, Solano, río Yavillarí	
		<i>Leptodactylus stenodema</i>		Caquetá, Solano, río Yaní, sector La Gamitana	
		<i>Leptodactylus wagneri</i>		Caquetá, Solano, Cachivera Masaca Caquetá, Solano, río Mesay Guaviare, Calamar, río Tunia Guaviare, Calamar, meseta Caño Negro	
		<i>Leptodactylus sp. A</i>		Caquetá, Solano, tepuyes del centro	
		<i>Leptodactylus sp. B</i>		Caquetá, Solano, sector Estadio	
	<i>Lithodytes</i>	<i>Lithodytes lineatus</i>		Caquetá, Solano, Puerto Abeja	
	<i>Pseudopaludicola</i>	<i>Pseudopaludicola boliviiana</i>		Guaviare, Calamar, río Tunia	

Family	Genus	Recorded species	Record source	Locality	Expected species
Microhylidae	<i>Chiasmocleis</i>	<i>Chiasmocleis bassleri</i>		Caquetá, Solano, río Yavillarí	<i>Chiasmocleis ventrimaculata</i>
	<i>Elachistocleis</i>	<i>Elachistocleis sp. A</i>		Caquetá, Solano, río Yavillarí	
	<i>Otophryne</i>	<i>Otophryne pyburni</i>		Caquetá, Solano, río Yavillarí	
	<i>Synapuranus</i>			Caquetá, Solano, río Yarí, sector La Gamitana	<i>Synapturanus mirandariberoi</i>
Pipidae	<i>Pipa</i>				<i>Pipa pipa</i>
Ranidae	<i>Lithobates</i>				<i>Lithobates palmipes</i>
Caeciliidae	<i>Caecilia</i>				<i>Caecilia tentaculata</i>
Siphonopidae	<i>Microcaecilia</i>				<i>Microcaecilia albiceps</i>
	<i>Siphonops</i>				<i>Siphonops annulatus</i>
Typhlonectidae	<i>Potamotyphlus</i>				<i>Potamotyphlus kaupii</i>
	<i>Typhlonectes</i>				<i>Typhlonectes compressicauda</i>
Plethodontidae	<i>Bolitoglossa</i>				<i>Bolitoglossa altamazonica</i>

It is important to remark, however, that our expectations are largely speculative, and based on our assumption that the climatic and ecological conditions are similar in Chiriquete than in other Colombian Amazonia localities, whose herpetological fauna is better known to us. Besides, the taxonomic classification system that we subscribe seeks to avoid the explosion of names (hence, the over-diversification) to the Family level and below, currently in use by many colleagues. We do not recognize the taxonomy proposed by Hedges *et al.* (2008) for *Eleutherodactylus/Pristimantis*, Adalsteinsson *et al.* (2009) for Leptotyphlopidae, Zaher *et al.* (2009) for some colubrids, Hedges & Conn (2012) for *Mabouya*, Hedges *et al.* (2014) for Typhlopidae, Duellman *et al.* (2016) for *Scinax*, *Sphaenorhynchus* and the new subfamilies proposed therein. We also have serious concerns regarding the maintenance of Aromobatidae and Dendrobatidae after Grant *et al.* (2017), because we find selective support in the consequences of their findings: they transfer *Allobates picachos* to *Hyloxalus* (where it should have been placed from the beginning, according to Coloma, pers. com.) but without modifying the artificial division that remains when Aromobatidae and Dendrobatidae are individualized. Over-classification based solely on molecular evidence, and the disparity of criteria—if there are any—for naming groups or clades in a single paper or even in each one of its topologies weakens their findings, transforming evidence in a customized tool for producing instability in nomenclature, or the new hyper-taxonomy. Having all these recent developments on Integrative Taxonomy (i.e. Gehara *et al.* 2014, Ferrao *et al.* 2016, Rakotoarison *et al.*

2017), the absence of morphological/behavioral/ecological characters supporting the molecular classification complies with a comfortable science, which depends exclusively on the sampling effort.

We follow Curcio *et al.* 2009 in recognizing *Liophis* as distinct from *Erythrolamprus*, and we recognize *Bothriopsis* following Campbell & Lamar (2004), based on morphological evidence (prehensile tail). We consider that *Leposoma* was paraphyletic before Goicoechea *et al.* (2016), as it is well supported by different lines of evidence, so then we accept *Loxopholis*. However, based on their topologies, we do not find any reason to separate *Alopoglossus* and *Arthrosaura* in a different family (Alopoglossidae).

DISCUSSION

The amphibians and reptiles that we have documented from the NNP Serranía de Chiriquete support the idea of a hidden—but not lost—world for the Serranía area (above 450 masl), with some *Leptodactylus*, *Loxopholis* and *Rhinella* species apparently restricted to their own hilltop. The basins, on the contrary, represent a unique mosaic composed of Amazonian, Andean, Guyanean and Orinoquean elements, all converging in the lowlands around the larger—and richer—rivers and forests of Amazonian physiognomy. We must recognize, though, that our knowledge is still very fragmentary, given that the sum of the superficial extension of all the collecting sites that have been surveyed for herpetofaunal components to date may not yield more than 30 squared kilometers.

The species previously reported mainly for the eastern Andean piedmont (*Hyloxalus picachos* (Ardila-Robayo, Acosta Galvis & Coloma, 2000), *Helicops pastazae* Shreve, 1934 and *Leptodactylus wagneri* (Peters, 1862)) found in the NNP Serranía de Chiribiquete witness a previous (paleozoic) connection between the piedmont of the Cordillera Oriental, the Serranía de la Macarena and the more western tepuys of South America, now supported also by geological evidence provided by the combination of quarzitic mountains and granitic basements with titanium and ammonium oxides. Some “Guyanean elements” (*Bachia*, *Eleutherodactylus vilarsi*, *Otophryne*) are also present in the area, and their distributions relate to the drier tepuyean hilltops better than the lowlands. Our discovery of *Hyloxalus picachos*, both in the lowlands and in the tepuy area represent, as well, the second published record of the species, and a challenge for future biogeographic studies. This happens also with the apparently isolated (but neighboring) populations of *Leptodactylus*, restricted to each hilltop, and with the apparently real absence of Amazonian lowland hylid clades such as *Dendropsophus* in the piedmonts of such little mountains.

Chiribiquete seems to be an unrepeatable space because all its richness, including the 17 amphibian and reptile species apparently still unnamed, its natural beauty in the landscapes and in the oldest evidence of the presence of humans in America. But we can also postulate and test a new hypothesis: Chiribiquete is not a part of the tepuyean “lost world”. On the contrary, it is the “last world” for several Andean, Guyanean and Caribbean species whose extreme distribution limits converge into the park area, creating the perfect canvas for depicting diversification processes occurring along the many isolated tepuyean tops and their watery connections with the Amazon basins.

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ANNEX 1. COLLECTIONS AND VOUCHERS REVIEWED (ORDERED ALPHABETICALLY)

Acronyms: ASM: Ángela M. Suárez Mayorga; JDL: John D. Lynch; JMR: Juan Manuel Renjifo; JPH: Juan Pablo Hurtado; IAvH: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt; ICN: Instituto de Ciencias Naturales, Facultad de Ciencias, Universidad Nacional de Colombia; S.N.: number unassigned or lacking

Note: the identification of the vouchers referred below occurred in different times and with different levels of processing in each biological collection. Therefore, when there is no number following the acronym it means that such number was unknown at the moment of the review.

AMPHIBIA

Brachycephalidae

Adelophryne sp A.

ICN 55949-50

Eleutherodactylus malkini

ICN 55951-2

Eleutherodactylus vilarsi

ICN 55953-69 Caquetá

ICN 56297-9 Guaviare

ICN 56300 Caquetá

Bufonidae

Amazophrynellia minuta

ICN 55976-8

Chaunus marinus

ICN 55971-5 Caquetá

ICN 56228-9 Guaviare

Rhaebo guttatus

ICN 56230 Guaviare

Rhinella acutirostris

ICN 56237-40 Caquetá

Rhinella ceratophrys

ICN 56231 Guaviare

Rhinella dapsilis

IAvH

Rhinella margaritifera

IAvH

Rhinella sp.

ICN 55979-94 Caquetá

ICN 56232-3 Guaviare

ICN 56234-6 Caquetá

Dendrobatidae

Allobates femoralis

ICN 55995-6

Hyloxalus fasciopunctulatus

ICN 55997

Hyloxalus picachos

ICN 55948 Caquetá

ICN 56241-2 Caquetá

Ranitomeya defleri

ICN 55998-56001

Hylidae

Boana boans

ICN 56013-7

ICN 56243-51 Guaviare

Boana cinerascens

ICN 56018-20

Boana fasciata s.l.

ICN 56021 Caquetá

ICN 56252 Guaviare

Boana geographica

ICN 56022

Boana hobbsi

ICN 56023-4

Boana butchinsi

ICN 56025-35

Boana lanciformis

ICN 56036-8 Caquetá

ICN 56253-4 Guaviare

Dendropsophus brevifrons

ICN 56002-07

Dendropsophus parviceps

ICN 56008-12

Osteocephalus leprieuri

ICN 56039-41

Osteocephalus planiceps

ICN 56042-8 Caquetá

ICN 56255 Guaviare

ICN 56256-9 Caquetá

Osteocephalus taurinus

ICN 56049-57 Caquetá

ICN 56260 Caquetá

ICN 56261-2 Guaviare
Osteocephalus yasuni
 ICN 56058-64 Caquetá
Phyllomedusa vaillanti
 ICN 56065 Caquetá
 ICN 56263 Guaviare
Scinax cruentomma
 ICN JPH(S.N.) Caquetá
Scinax garbei
 ICN 56066-72 Caquetá
Scinax ruber
 ICN 56073-5 Caquetá
Scinax sp. W, S
 ICN 56076-86 Caquetá
 ICN 56279-84 Guaviare
Scinax sp. T
 ICN 56264-78 Guaviare

Leptodactylidae
Adenomera andreae
 ICN 56087-90 Caquetá
Leptodactylus diedrus
 ICN 56091-2 Caquetá
Leptodactylus leptodactyloides
 ICN 56093-101 Caquetá
Leptodactylus pentadactylus
 ICN 56102-3 Caquetá
Leptodactylus rhodomystax
 ICN 56104-5, 56285 Caquetá
Leptodactylus stenodema
 ICN 56106-07 Caquetá
Leptodactylus wagneri
 ICN 56108-13 Caquetá
Leptodactylus sp. A
 ICN 56286-90 Caquetá
Leptodactylus sp. B
 ICN 56291-95 Caquetá
Lithodytes lineatus
 IAvH
Pseudopaludicola boliviiana
 ICN 56296 Guaviare

Microhylidae
Chiasmocelis bassleri
 ICN 56114-6
Elachistocleis sp. A
 ICN 55403-05
Otophryne pyburni
 ICN 56117-21

REPTILIA
Amphisbaenidae
Amphisbaena fuliginosa
 JDL field notes
Mesobaena hubneri
 JMR (Juan Manuel Renjifo) field notes

Boiidae
Corallus hortulanus
 ICN RPB 405 Caquetá

Colubridae
Atractus latifrons
 IAvH 4264 Caquetá
Chironius fuscus
 ICN RPB 272 Caquetá
Chironius multiventris
 ICN RPB 476 Caquetá
Dendrophidion sp. A
 ICN-R 10524 Caquetá
Dipsas catesby
 ICN RPB 404 Caquetá
Helicops angulatus
 ICN RPB 462 Caquetá
 ICN JPH 818-20, JPH 828-9, JPH 838-9 Guaviare
Helicops pastazae
 ICN 10742 Caquetá
Helicops hagmanni
 IAvH 10741 Caquetá
Imantodes cenchoa
 ICN RPB 461 Caquetá
 IAvH
Leptodeira annulata
 ICN-R 10741 Caquetá
 ICN-R 10058 Caquetá
 IAvH 4267, 4291 Caquetá
 ICN RPB 488 Caquetá
 ICN JDL 31839 Caquetá
Leptophis sp.
 ICN JDL (muda) Caquetá
Liophis reginae
 ICN JPH Guaviare
Mastigodryas bodaertii
 IAvH
Oxyrhopus occipitalis
 ICN-R 11281, RPB 279 Caquetá
Oxyrhopus vanidicus
 IAvH 4951 Caquetá
Philodryas argenteus
 IAvH 4950 Caquetá

<i>Philodryas viridissima</i>	<i>Neusticurus medemi</i>
IAvH 4952 Caquetá	IAvH
<i>Pseudoboa martinisi</i>	<i>Potamites ecpleopus</i>
ICN RPB 390 Caquetá	IAvH
<i>Rhinobothryum lentiginosum</i>	
ICN RPB 305 Caquetá	<u>Leptotyphlopidae</u>
<i>Siphlophis compressus</i>	<i>Leptotyphlops macrolepis</i>
ICN JPH 852 Caquetá	IAvH 4297-8 Caquetá
<i>Siphlophis cervinus</i>	
ICN JDL 31840 Caquetá	<u>Phyllodactylidae</u>
<i>Thamnodynastes sp. A</i>	<i>Thecadactylus rapicauda</i>
IAvH 4953 Caquetá	ICN JDL 31848 Caquetá
<i>Xenodon angustirostris</i>	
ICN RPB 347 Caquetá	<u>Sphaerodactylidae</u>
<i>Xenodon severus</i>	<i>Lepidoblepharis sp. A</i>
IAVH 4942 Caquetá	ICN RPB 289 Caquetá
 <u>Dactyloidae</u>	 <u>Teiidae</u>
<i>Anolis auratus</i>	<i>Ameiva ameiva</i>
ICN JPH 869, 877-78, S.N. Guaviare	ICN JPH 847 Guaviare
<i>Anolis fuscoauratus</i>	ICN RPB 273 Caquetá
JDL fieldnotes	<i>Kentropyx pelviceps</i>
<i>Anolis nitens</i>	ICN JPH 845-6 Guaviare
JDL fieldnotes	
<i>Anolis punctatus</i>	<u>Tropiduridae</u>
JDL fieldnotes	<i>Plica plica</i>
 <u>Elapidae</u>	ICN JPH 875 Guaviare
<i>Micrurus hemprichii</i>	ICN RPB 403 Caquetá
ICN JDL 31788 Caquetá	<i>Plica umbra</i>
<i>Micrurus lemniscatus</i>	ICN JDL 31806 Caquetá
IAvH MRR 170	IAvH
<i>Micrurus spixii</i>	<i>Plica sp. A</i>
IAvH 4295	ICN RPB 452 Caquetá
 <u>Gymnophthalmidae</u>	<i>Plica sp. B</i>
<i>Alopoglossus atriventris</i>	ICN RPB 478 Caquetá
ICN RPB 304 Caquetá	
<i>Arthrosaura reticulata</i>	 <u>Viperidae</u>
ICN RPB 383 Caquetá	<i>Bothriopsis bilineata</i>
<i>Bachia flavescens</i>	IAvH 4801 Caquetá
ICN RPB 274 Caquetá	<i>Bothrops atrox</i>
<i>Loxopholis sp. A (aff. guianense)</i>	IAvH 4946 Caquetá
ICN RPB 287-8 Caquetá	IAvH 4270 Caquetá
<i>Loxopholis pericarinatum</i>	IAvH 4935-6 Caquetá
ICN RPB 353 Caquetá	IAvH 4947 Caquetá
<i>Loxopholis parietale</i>	IAvH 4966 Caquetá
ICN JPH 849 Guaviare	ICN-R 10523 Caquetá
<i>Neusticurus sp. A</i>	<i>Bothrops brasiliensis</i>
ICN RPB 445 Caquetá	IAvH 4947, 4749 Caquetá
	ICN RPB 314 Caquetá