

Preliminary Inventory of the Amphibians and Reptiles of Serranía de los Churumbelos

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Resumen

Se realizó una pequeña colección herpetológica por medio de hallazgos ocasionales y búsquedas nocturnas por varios miembros del equipo. Se presentan 16 extensiones de rango significativas para anfibios y reptiles, incluyendo cuatro nuevas especies para Colombia (*Centrolene audax*, *Cochranella cochranae*, *Epipedobates hahneli* y *Scinax cuentomma*) y dos nuevas segundas localidades para el país para *Synapturanus rabus* y *Morunasaurus annularis*.

Summary

A collection of herptiles was made at each site by various team members, using random encounters and night searches. 16 significant range extensions in Amphibia and Reptilia are presented below. These include four new species for Colombia (*Centrolene audax*, *Cochranella cochranae*, *Ameerega hahneli* and *Scinax cruentommus*) and two second localities for Colombia (*Synapturanus rabus* and *Morunasaurus annularis*).

Introduction

Colombia is one of the most diverse countries in the world in terms of herpetofauna. 475 species of reptiles are known from the country, making Colombia the fourth most diverse country in the world in this group (Sanchez *et al.* 1995). Colombia is known to host at least 698 species of Amphibians, the world's No. 2 species total (Angulo *et al.*, 2006). But even this figure is an underestimate, evidenced by the high rate of new discoveries. For instance, Lynch and Ruiz-Carranza (1996) considered that around 30 of the estimated 100 frog species of the genus *Eleutherodactylus* in the west Andes to be undescribed. Relative ease of identification and continuing new discoveries make herptiles a particularly exciting group to study on an expedition such as this. It was therefore considered a worthwhile use of expedition time to take notes on all reptiles and amphibians encountered by team members, and to conduct 2-3 night searches for a few hours at each site.

The Amazonian regions surrounding the Serranía de los Churumbelos were surveyed briefly for amphibians and reptiles in 1988 (Piamonte for 2 days - unpublished results but specimens catalogued in ICN herpetology collection). However, until Colombia '98 and the EBA Project, the upper elevations were completely unknown.

Survey Methods

Herptiles were sampled non-systematically, non-intensively and non-comprehensively combining the *ad hoc* efforts of all team members and using the following three techniques:

- (i) **Night Searches:** Two to three night searches were conducted at each site. Where possible, transects were cut along a c. 200 m length of a stream leaving potential herptile habitats undisturbed where possible. Alternatively or additionally, the main bird observation transect was used for searches. Captures were placed in plastic zip-bags with a little water and vegetation, and left overnight for inspection and collection the following morning.
- (ii) **Random encounters:** All team members and guides were asked to catch any herptiles encountered.
- (iii) **Pitfall captures:** At SS1-4 only, entomologists laid pitfall traps, largely for capturing *Coleoptera*. These also produced good numbers of herptile captures.

Identification Protocol

For each individual caught the following were noted:

- Time, location and micro-habitat caught;
- Measurements of eye-nose; body; eye dimensions; head width; tail and scale counts (for Reptilia);
- General morphological / color description taken

Some photographs were taken: A specimen was taken of each morphospecies caught. Due to the lack of identification guides, the inadequacy of photographic evidence, and the real chance of discovery of new or unstudied species, this was considered necessary. The collection was identified by Dr John Lynch, and is catalogued at ICN.

Species Accounts

For each species, the previously-known range is presented, based on Frost *et al.* (2006) (Amphibia) and Sanchez-C. *et al.* (1995) (Reptilia), unless otherwise stated. The significance of the record is then presented. As Serranía de los Churumbelos was known only by analogy prior to 1998, almost all records are new locations or range extensions of one sort or another. For this reason, an inventory of all species encountered is presented in the **Appendix**. The more significant records are as follows:

Amphibia

Centrolene audax: This species was previously unknown in Colombia, considered endemic to subtropical forest in Ecuador. One individual was captured *ca.* 1.5 m up in understorey vegetation at **SS4**, representing the first location for the species in Colombia and a northwards range extension of *ca.* 200 km.

Cochranella cochranae: This species was previously unknown in Colombia, with the closest records from northern Ecuador. One individual was captured, calling “peep” *ca.* 3 m up in a small sapling in the centre of a small stream during a night search at **SS3**. This represents the first location for the species in Colombia and a northwards range extension of *ca.* 200 km.

Ameerega hahneli: Known from the Amazon basin in Peru, Ecuador and Brazil. One individual collected in an entomologist’s pitfall trap at **SS1** is apparently the first Colombian record, and range extension of *ca.* 200 km northwards from records in northeastern Ecuador.

Epipedobates trivittatus: Distributed through the Colombian Amazon, the only previous Eastern Andes foothills record of this species is from Dpto. Putumayo. Two individuals captured on the forest floor at **SS2** represent the first location on the Cordillera Oriental in Colombia and a small elevation extension from 500 m to 700 m.

Dendropsophus triangulum: Previously known from records in Amazonia up to 100 m elevation. One individual captured at **SS1** presents a small range and elevation extension to the foothills of the Cordillera Oriental at 350 m.

Scinax cruentommus: Known widely from the Amazonian basin in Brazil, Ecuador and Peru. One individual collected in a pitfall trap at **SS1** is apparently the first record for Colombia, and a range extension of *ca.* 200 km northwards from records in northeastern Ecuador.

Leptodactylus andreae: Previously known only below 200 m. Individuals captured at **SS1** and **SS2** present a range and elevation extension to the foothills of the Cordillera Oriental at 700 m elevation.

Eleutherodactylus ockendeni: Previously known only to 400 m. Captured at **SS2** (700 m), presenting a small upslope elevation extension.

Eleutherodactylus sulcatus: This superspecies is previously known only from Amazonian sites to 400 m. Captured in pitfall traps and on the forest floor at **SS2** (700 m) and at **SS4** (1,450 m), present an upwards elevation extension of over 1,000 m, with **SS4** records possibly relating to an undescribed taxon.

Eleutherodactylus w-nigrum: Previously known from the west slope of the Cordillera Oriental south to Dpto. Santander and from the head of the Magdalena Valley in Dpto. Huila. Common in forest clearings at **SS5** and **SS7**. These represent the first records from the east slope of the Andes in Colombia, as well as the southernmost records in its Colombian range. This species is probably expanding in range with increasing deforestation along the Amazonian eastern slope of the Andes.

Synapturanus rabus: This species, recently described, is known from just one other distant Colombian record in Dpto. Vaupés at 100 m elevation. One individual was captured at **SS2** in a pitfall trap. It represents the second Colombian record and a range extension of over 700 km westwards as well as an elevation extension to 700 m.

Unidentified individuals, undescribed, unknown or unstudied, were also collected, most of them from the higher elevation sites. These comprised one *Bufo* and 7 *Eleutherodactylus* species. These are pending further study.

Reptilia

Neusticurus cochrani: This species was previously only known north to Dpto. Putumayo. Two individuals captured on the forest floor at **SS4**, one by a stream, the other on the meseta landform, ‘Alto Cagadero’, represent a small northerly range extension and the first location of this species on the Cordillera Oriental.

Morunasaurus annularis: Previously known from only one previous Colombian record at Puerto Asís, Putumayo. One individual was flushed out of a large tree being felled for a campsite at **SS3**. This represents the second Colombian record, the first for the Cordillera Oriental, and a northerly range extension of *ca.* 120 km.

Drymoluber dichrous: Previous Colombian records extend south to the Orinoco Basin llanos at Villaviciencio, Dpto. Meta. One individual captured at **SS2** represents a southerly range extension of 450 km in Colombia and suggests a link to populations in Ecuador and Peru.

***Helicops angulatus*:** Previous Colombian records are from the Atlantic coast with one east slope record in Dpto. Meta. One captured at **SS1** presents a range extension in Colombia of *ca.*400 km southwards.

***Imantodes cenchoa*:** Previous records on the Colombian Cordillera Oriental of this species are only as far south as Dpto. Cundinamarca. Two individuals captured in understorey vegetation at **SS3** represent a southerly range extension in Colombia of *ca.*500 km, suggesting a link to populations in Ecuador.

Discussion and Conclusions

From this small collection, a trend can be observed with decreasing diversity with increasing elevation. However, the species from **SS1** were mostly well-known and common species, whereas many of the higher elevation species, especially in Amphibia, remain unidentified.

A disappointing diversity and number of herptiles were recorded at **SS5**, **SS6** and **SS7**, compared to the lower elevation sites. This is considered due to (i) 4 team members compared to 14 at **SS1-SS4** for random encounters; (ii) the lack of entomologists using pitfall traps which produced many herptile specimens at **SS1-SS4**; (iii) the lack of a bat specialist also looking for frogs at night at **SS5** to **SS7**; (iv) predominantly herptile-poor ridge-top habitat (especially at **SS6**); and (v) decreasing biodiversity with increased altitude.

The ongoing effort to document and describe the Amphibia and Reptilia of Colombia is a Herculean task. A large amount of new distributional data has been collected during this study, as no previous herpetological studies had taken place in Serranía de los Churumbelos. Importantly, several taxa have been collected which remain undescribed, or for which no description yet exists. These await further study.

Herptiles is a group which demonstrates well the need for more effective conservation of the Andean forests of Colombia. Unless protective measures become effective, undescribed species will become extinct before we have the chance to know that they once existed. Furthermore, the Churumbelos provide the only known location for four Colombian species, and are therefore of extremely high national conservation importance. Even from this brief non-comprehensive study, it is clear that the Churumbelos, containing several poorly-known or undescribed forms in pristine forest, constitutes an important site for herptiles conservation and study.

Appendix: Inventory of Reptiles and Amphibians

Species	SS1 (350 m)		SS2	SS3	SS4	SS5	SS6	SS7
	1998	2000	(700 m)	(1100 m)	(1450 m)	(1900 m)	(2250 m)	(2500 m)
Class Amphibia, Order Anura								
Bufonidae								
<i>Chaunus marinus</i>	4 (3)	Present						
<i>Chaunus sp.</i>				1				
<i>Rhinella margaritifera sp. 1</i>	4	(2)	4					
<i>Rhinella margaritifera sp. 1</i>			2					
<i>Dendrophryniscus minutus</i>	1(1)	(1)						
Centrolenidae								
<i>Centrolene audax</i>					1			
<i>Cochranella cochranae</i>				1				
Dendrobatidae								
<i>Epipedobates hahneli</i>	1							
<i>Epipedobates trivittatus</i>			1 (1) ; 1 (17)	tadpoles (SS2)				
Hylidae								
<i>Hemiphractus sp?</i>		1						
<i>Hypsiboas boans</i>	1	(2)						
<i>Hypsiboas geographicus</i>	1(3)							
<i>Hypsiboas lanciformis</i>	1							
<i>Hypsiboas punctatus</i>	1							
<i>Dendropsophus triangulum</i>	1							
<i>Scinax cruentommus</i>	1							
Leptodactylidae								
<i>Leptodactylus andreae</i>	1		1					
<i>Eleutherodactylus conspicillatus</i>			1					
<i>Eleutherodactylus lanthanites</i>			1					
<i>Eleutherodactylus ockendeni</i>	1	(4)	1					
<i>Eleutherodactylus sp. 1</i>				1	1			
<i>Eleutherodactylus sp. 2</i>					1			
<i>Eleutherodactylus sp. 3</i>				1				

<i>Eleutherodactylus sp. 4</i>						1	
<i>Eleutherodactylus sp. 5</i>						1	
<i>Eleutherodactylus sp. 6</i>					1		
<i>Eleutherodactylus sp. 7</i>				5 (2)	1	2	
<i>Eleutherodactylus sulcatus</i>		3			1		
<i>Eleutherodactylus w-nigrum</i>				3 (3)		(1)	
<i>Engystomops petersi</i>		1					
Microhylidae							
<i>Synapturanus rabus</i>			1				
Ranidae							
<i>Lithobates palmipes</i>			1				
Class Reptilia, Order Squamata, Suborder Sauria							
Gekkonidae							
<i>Gonotodes concinnatus</i>		(1)	1				
Gymnophthalmidae							
<i>Leposoma parietale</i>			1		1		
<i>Neusticurus cochrani</i>					2		
<i>Neusticurus ecleopus</i>			1		1		
<i>Prionodactylus argulus</i>			1				
Iguanidae							
<i>Anolis (nitens/chrysolepis) scypheus</i>			1				
<i>Anolis punctatus</i>		1					
<i>Anolis trachyderma</i>		1					
<i>Morunasaurus annularis</i>			1				
<i>Phenacosaurus heterodermus</i>						1	
Teiidae							
<i>Ameiva ameiva</i>		1					
Class Reptilia, Order Squamata, Suborder Ophidia							
Colubridae							
<i>Atractus elaps</i>		1					
<i>Chironius monticola</i>					1		
<i>Drymoluber dichrous</i>			1				
<i>Helicops angulatus</i>		1					
<i>Imantodes cenchoa</i>				2			
TOTAL SPECIES PER SITE	20	12	11	8	2	2	3

Key: 5(3) means 8 individuals captured, 5 collected and 3 released.



References

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