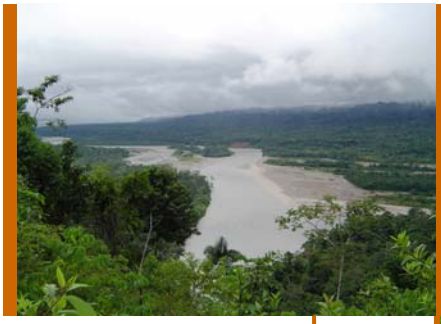
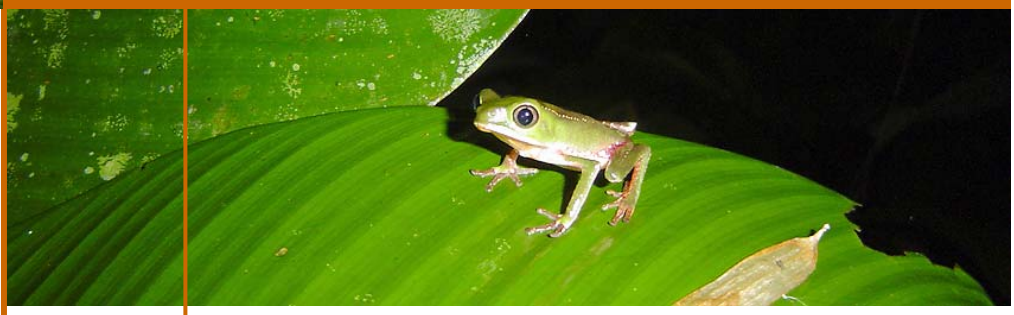
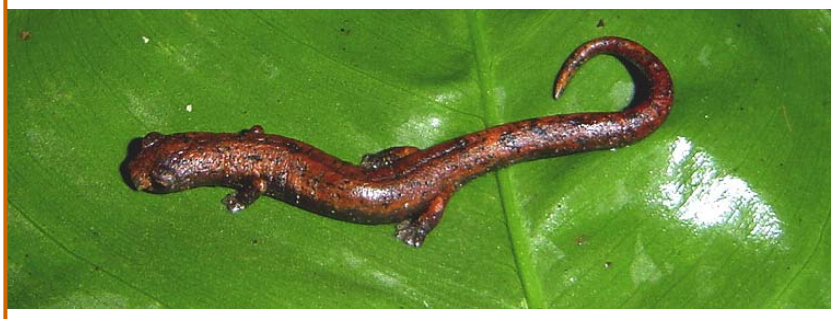
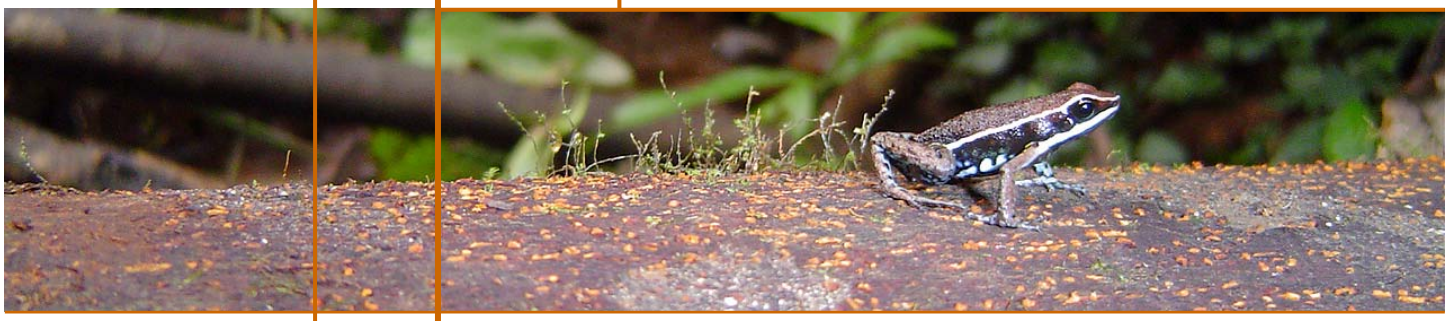


Amphibians and Reptiles from Pantiacolla Lodge, Manu National Park, Peru







TECHNICAL REPORT SERIES
Num. 1

AndígenA

2005

by

César L. Barrio-Amorós

&

Juan Carlos Chaparro-Auza

AndígenA is a Venezuelan non-profit foundation whose mission is the conservation of the Neotropical Biodiversity, with emphasis in the Andean Region.

AndígenA means "born in the Andes" and it reflects the origin of this organization: an initiative of a group of young professionals and naturalists concerned by the lack of effective conservation programs in the Andean Region of Venezuela.

AndígenA is also the genus that identifies a group of beautiful blue toucans that live in the cloud forests of The Andes, and whose image, transformed into a "modern petroglyph", is our institutional logo.

AndígenA works under the philosophy of respect for native cultures, while in search of viable solutions to the current problems of nature conservation. In order to achieve this, we are carrying out a series of projects on basic and applied biological research, analyses of economic alternatives, and the implementation of environmental education programs, based mainly on community participation.

This publication as digital file, avoids the use of the paper, contributing this way to avoid the tropical forests destruction.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Amphibians and Reptiles from Pantiacolla Lodge, Manu National Park, Peru

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Manu National Park (MNP) is located in the provinces of Manu and Paucartambo (Departments of "Madre de Dios" and "Cuzco" respectively), comprising lands on the eastern slopes of the Peruvian Andes and the Amazon. The geographical limits to the north are the watershed that separate the basins of Manu and Las Piedras rivers (72° 01'W, 11° 17'S). To the south, the area where the road from Paucartambo heads to the north-west turn offs to Tres Cruces (71° 30'W, 13° 11'S); to the east, the region on the left margin of the Alto Madre de Dios River to the Pilcopata River, Department of Cuzco (71° 10'W, 12° 18'S); and to the west the watershed separating the basins of the Manu and Camisea Rivers – as well as the limit between the Departments of Cuzco and Madre de Dios (72° 22'W, 11° 45'S).

MNP covers 1,532,806 ha. within a huge Biosphere Reserve conformed by a Reserved Zone (257,000 ha.) and a "Cultural Zone" (91,395 ha.). In this way, the protected area, sums a total area of 1,881,200 ha. (WCMC, 1997).

For this reason Manu is the largest protected area of Peru, and encompasses a world-famous biodiversity hotspot. It includes many of the most pristine Amazonian and Andean habitats in Peru, regions with the greatest biological diversity on Earth. The area encompasses multiple ecological zones, from snow covered summits to dwarf elfin forests, grasslands or "*puna*" above tree-line, including cloud forests below and rainforests in the hot moist lowlands.

Peru is considered one of the most biologically rich countries regarding its avian diversity. Of the approximately 9,000 species of birds known, over 1,700 are found in Peru. MNP protects over half of the bird species known in this country (1,000 spp.); 200 mammal species; 1,200 butterfly species; 2,500 plant species; 103 species of dragonflies and 135 arboreal ant species. It has been calculated that the present number of reptile species in Peru surpasses 300, a number that places Peru within the top 5 countries with the greatest reptile diversity on Earth. The MNP has 125 species, representing a one third of all species from Peru. Regarding amphibian diversity, Peru is also considered one of the top 5. According to a complete list of amphibians published in 1993, Peru has 315 species of amphibians (Rodríguez *et al*. 1993). Even so, every year this number is increasing, as a result of many discoveries done in MNP by Peruvian herpetologists and foreign scientists.

Although there are data for isolated localities such as Pakitza (Morales & McDiarmid 1996); Cocha Cashu (Rodriguez & Cadle 1990; Arizabal 1996); Kosñipata Valley (Hurtado 1997); Tres Cruces-San Pedro (Chaparro 2000); Pantiacolla (Svara & Chaparro 2002), and Esperanza (Chaparro & Mendoza 2003); to date a basic species checklist, which incorporates an updated list for the entire zone including the two protected natural areas, has not been written. In addition, newly discovered species (Grant & Rodríguez 2001), (Rodriguez 1994), (Rodríguez & Myers 1993) (Chaparro & Gluesenkamp, unpublished data), (de la Riva & Chaparro, unpublished data) need to be acknowledged, in addition to the numerous new registers carried out by previous researchers (Arizabal 1996, Chaparro & Mendoza 2003, Svara & Chaparro 2002, Chaparro 2000).

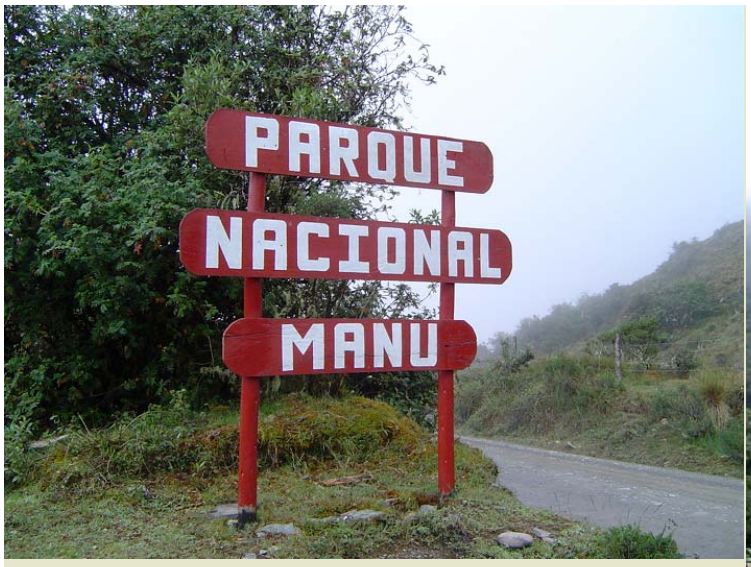
Pantiacolla Lodge (PL) is located in Alto Madre de Dios river, in a zone generally described as Premontane Rainforest, in the High Amazon basin. The coordinates (taken with a GPS Garmin e-trex) from the main Lodge backyard are as follow: S 12º 39' 08'', W 71º 13' 48''; altitude: 437 m. a. s. l.

The senior author of this report spent 8 days, from 15 May 2004 to 22 May 2004 in this area, identifying reptiles and amphibians as part of a rapid ecological assessment.

During this period a cloud forest location in the trail from Cuzco, San Pedro (S 13º 03' 30'', W 71º 32' 56'', 1369 m. a. s. l.), was also visited and a boat was necessary to reach PL.

As result of this effort, a preliminary commented list of the herpetological fauna is presented herein.

Cloud forest (left) at 2,000 meters of altitude in Manu National Park.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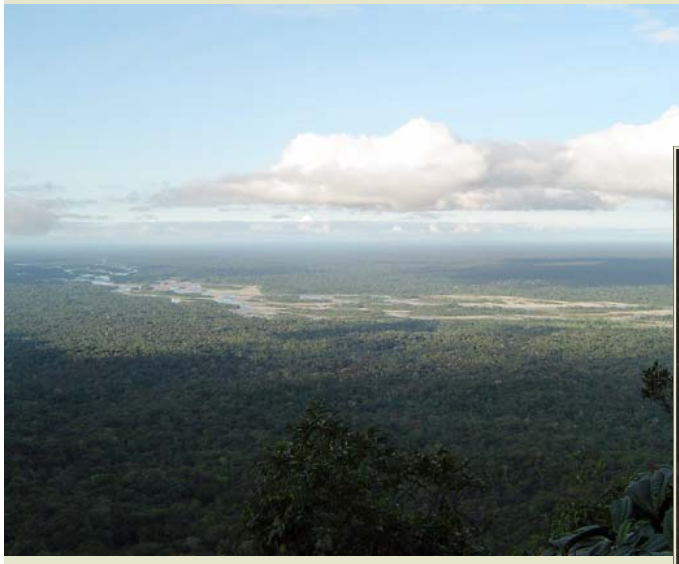
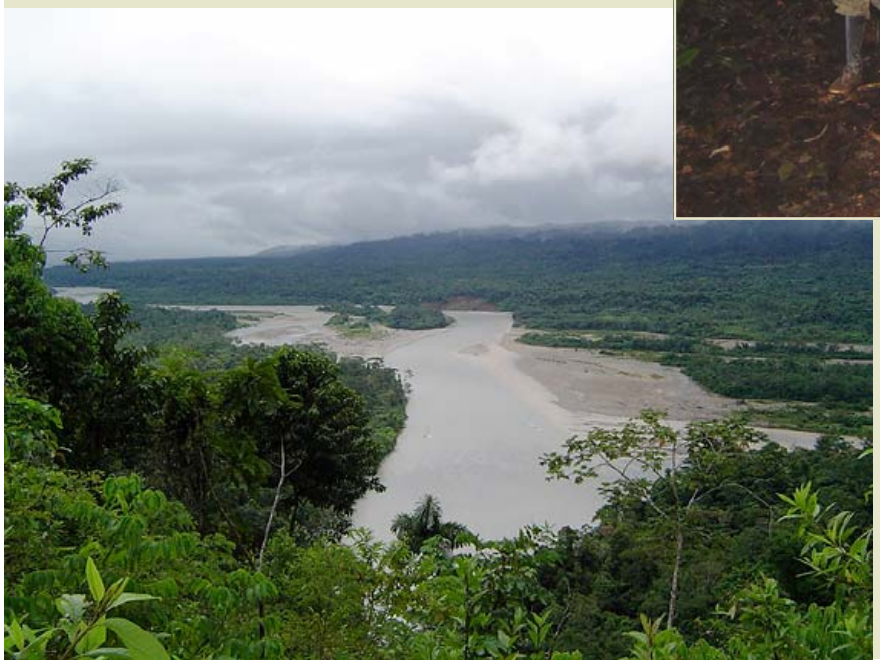




Order Anura
Family Centrolenidae

***Hyalinobatrachium* sp.**

Some glass frogs callings were heard coming high from the bushes along a nearby creek from San Pedro. The call was characteristic of that from this genus.

Family Hylidae

***Hypsiboas balzani* Boulenger, 1898**

Along the road from San Pedro to Patria, closer to San Pedro (Cock-of-the-Rock Lodge), there are some ditches and pools with standing water and some small creeks that cross the road. In some of the ditches, numerous tadpoles were seen. At night, an active search was carried about, but curiously, even with a very humid night, no frog calls were listened. Shortly after, an adult male and one female of this species were found, and two recently metamorphosed individual, one still retaining its long tail. All individuals except the male, were at about 1,5 m high in under storey bushes, always hidden from direct vision. The male was in the spray zone of a small waterfall, on a leaf at 30 cm from the ground. Both sexes are indistinguishable but for the vocal sac, which is present in males. Colored pale green with reddish dorso-lateral lines; flanks grayish with white round spots. Some genera of hylidae has changed after the review of Faivovich *et al* .(2005). We follow the current nomenclature.

Male (top), female (middle), and recent metamorphosed (below) of Hypsiboas balzani at San Pedro, Manu, Peru.

Eleutherodactylus danae Duellman, 1978

In the same area, on a exposed leaf at 1 m high on the ground, a young *Eleutherodactylus* (later identified as *E. danae* with the help of Juan Carlos Chaparro at Cuzco) was seen.

This species has the dorsum dark brown, chocolate, with very small yellow spots spread along the body, especially on the head and anterior part of the dorsum. A more dark brown diffuse interorbital bar, and a sacro-dorsal chevron also diffuse dark brown, with the vertex directed to the head; also another smaller sacral chevron postero-dorsally. Flanks stripped, background light beige, with some dark brown diagonal stripes. Inguinal region black with yellow spots, as much as in the posterior part of the thighs. Supratympanic stripe black. Upper lip whitish, with chocolate labial bars from the eye. Loreal region dark chocolate, clearly defined from the upper head area, which is lighter. Canthus rostralis very definite, with a very narrow white line. Immediately surrounded inferiorly by a broader dark brown canthal stripe. Iris bronze.

Eleutherodactylus danae, a small species of rain frog from cloud forests of Manu.

Pantiacolla Lodge and Surroundings (15-22 May, 2004)

The day when CLBA reached Pantiacolla, also started a "Friaje", a very cold and humid wind blowing from the south and the mountains. The temperature was not taken, but I suppose a descent of more than 10 ºC compared with normal mean temperature, which is about 24ºC, and cloudy days with small rains.

The Friaje lasted all my stay except the last day, when a spectacular radiant sun appeared. That was the day when the only snake was photographed (see below). This weather is not restrictive for amphibians, but it is for reptiles.

Forest creek at Pantiacolla, habitat of several species, among them, Epipedobates macero and Potamites ecpleopus.

Order Urodela
Family Plethodonthidae

***Bolitoglossa altamazonica* (Cope, 1874)**

Two specimens on leafs along one of the principal trails were seen on the first night, one at 60 cm from the ground, the other at 1.30 m.

Dorsal color dark chocolate brown and light beige, with suffusions in between. Head dark chocolate brown, except the interorbital region and snout, which are yellowish beige. The dorsal beige seems to form two dorsolateral stripes, but not clearly defined! Tail with a dominant rufous color, with some yellowish beige and some small white spots on the tail sides. Flanks dark with scattered small white spots, more abundant to the ventral region, which is dark but with many white diffuse spots. Iris light brown. Hands and feet almost completely webbed. Apparently it was a young male.

Another male, being dorsally lighter brown, with a diffuse dark chocolate vertebral line, was seen. Face yellowish beige. A triangle with the vertex looking posterior on the top of the head. Flanks darkish without white spots. Belly gray.

It was surprising to asses the abundance of this species in comparison with those detected in Venezuela, where salamanders are not reported to be common. We noted it to be abundant in rainforest with wild bamboo patches. Watching the leafs under the bamboos, we were all the time aware of a lot of “salamanders”, which in turn were no more than the dead bamboo light brown leafs (the same color as the majority of salamanders observed) on the living green leafs of the bushes where the salamanders also stand. Some salamanders were completely quite, while others were walking very slowly, perhaps foraging, or just moving.

Family Bufonidae

***Bufo marinus* Linnaeus, 1758**

Start to call after three days without rainfall. They call insistently from the shore of the main river Madre de Dios, which was descending in water level.

***Bufo margaritifer* group**

After several days without rain, a short but heavy rain was falling, then a male was seen close to a pool formed by a fallen tree. It was brownish gray with a light beige vertebral stripe, and a diagonal row of pinkish conical tubercles on the flanks.

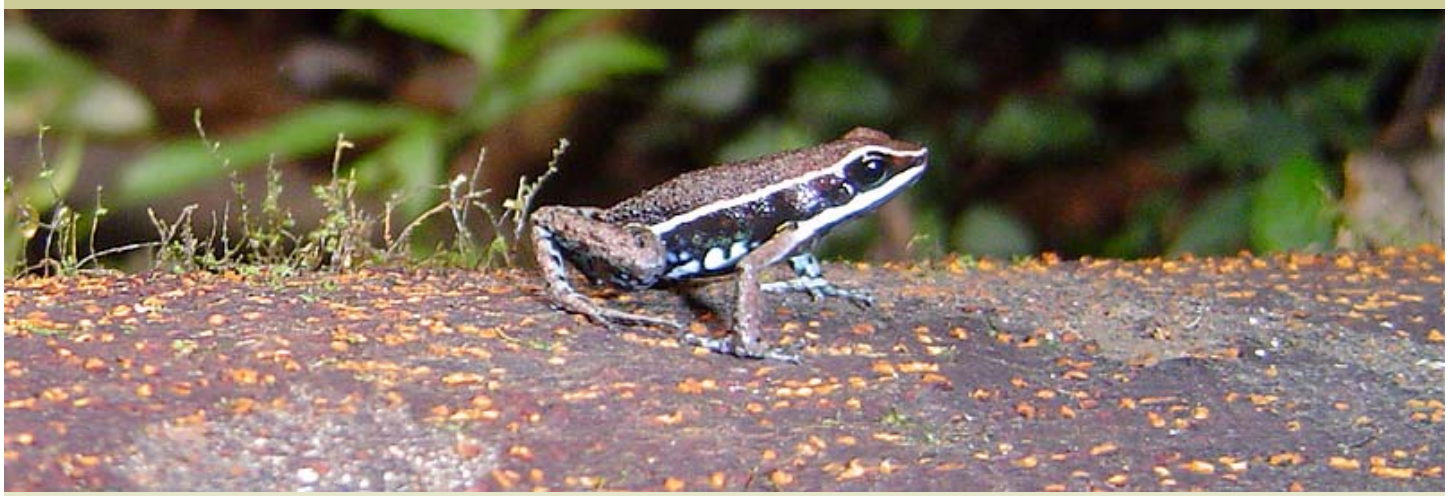
Family Dendrobatidae

***Colostethus cf. trilineatus* (Boulenger, 1884)**

Only a specimen already preserved observed. Specimen of 17 mm, dorsum finely granular, brown with two light dorsolateral lines, a ventrolateral white line, and a unique black cross bar on the hind limbs; ventraly, the skin is smooth and cream in color. Snout truncated dorsally and rounded in profile.

***Epipedobates hahneli* (Boulenger, 1884)**

Two specimens were sleeping on leafs 30 cm from the ground at night. One was active during the day, along a creek with non current water but pools. It escaped under a palm leaf. Dorsum dark brown, skin granular. White dorsolateral stripe from snout to the groin. Flanks black. Labial line white to the arm. A ventrolateral stripe is present but consistent in bluish broken stripes. Flash marks yellow in axillas, anterior part of the thighs close to the groin, and posterior part of the tibia, in all cases bordered by black. All inferior parts black with blue spots; inferior part of arms yellow. This species is poisonous to small predators, but no effect can be on humans after the hands are washed.



Epipedobates hahneli (left and top) is a dull colored aposematic dendrobatid, with a venter highly contrasting.

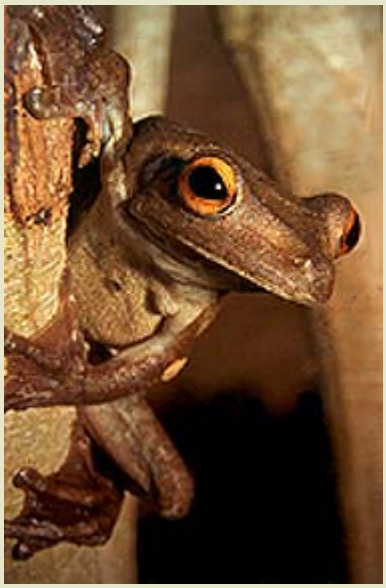
Epipedobates macero (right and below) is, by contrast, a brightly colored aposematic dendrobatid.

***Epipedobates macero* Rodríguez and Myers, 1993**

In the same stream close to the main Lodge, after turning a lot of stones and logs, a juvenile was under a rotten log, and an adult was inside a rolled palm leaf. Dorsum black with red granules, more intense in the anterior part of the body and head. A lateral and a ventrolateral stripes yellow; flanks black; limbs black with small bluish spots; ventral side cobalt blue with fine black reticulum on the posterior part. Iris bronze. This species is poisonous to small predators, but no effect can be on humans after the hands are washed.

***Hypsyboas boans* Linnaeus, 1758**

Also start to call after three days without rains. Several males call high in the trees along the main river Madre de Dios. Because the river bed is of rocks, they cannot make sand nests, but females lay the film of eggs protected between appropriate rocks.

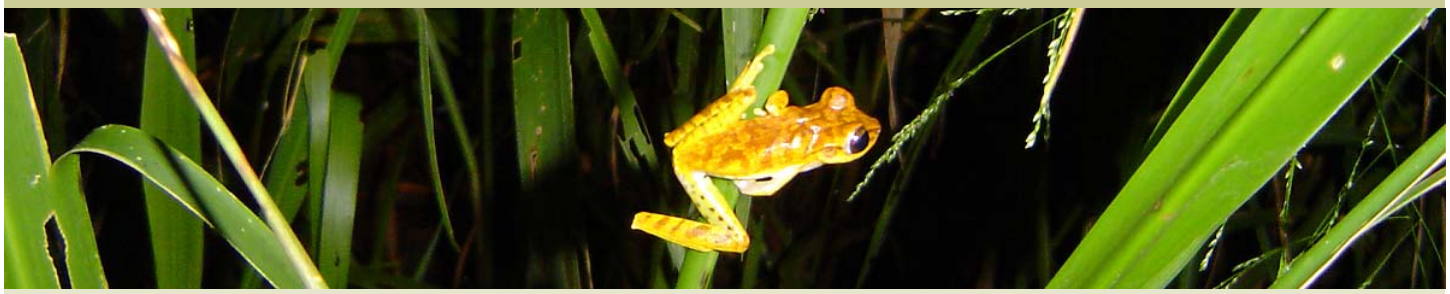


***Hypsiboas calcaratus* Troschel, 1848**

A pool species, nor particularly abundant (this confirm my observations in Venezuela), always in a relation 1/10 with *H. fasciata* and perhaps 1/15 with *H. geographica*. Also it was never so exposed as *H. fasciata*.

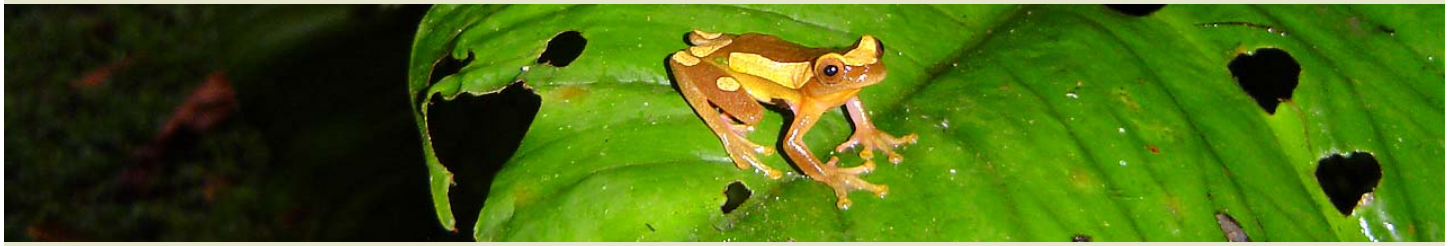
***Hypsiboas fasciatus* Günther, 1859**

One of the most abundant species in the pools of Manu (as well in Tambopata). Males are calling esporadically even in dry nights. In appropriate nights thousands of males calls perched from low bushes and stems. At nigh their coloration is yellow, while at daylight they become brown.



***Hypsiboas geographicus* Spix, 1824**

The most abundant species during my stay in PL. They inhabit pools and are sympatric with *H. calcaratus*, *H. fasciatus*, *Dendropsophus leucophyllatus*, and *Phyllomedusa vaillanti*. Also it was observed in the shores of Madre de Dios river, when the waters were descending, calling with *H. boans*, but in a much lower position, sometimes even directly exposed on rocks and boulders. Their call resembles that of *Sphaenorhynchus lacteus* (or more popularly, to a duck).



Hypsiboas fasciatus, a very abundant medium sized tree frog (top).

Hypsiboas geographicus, a very abundant big tree frog (middle).

Dendropsophus leucophyllatus, a rare medium sized tree frog (down).

***Dendropsophus leucophyllatus* (Bereis, 1783)**

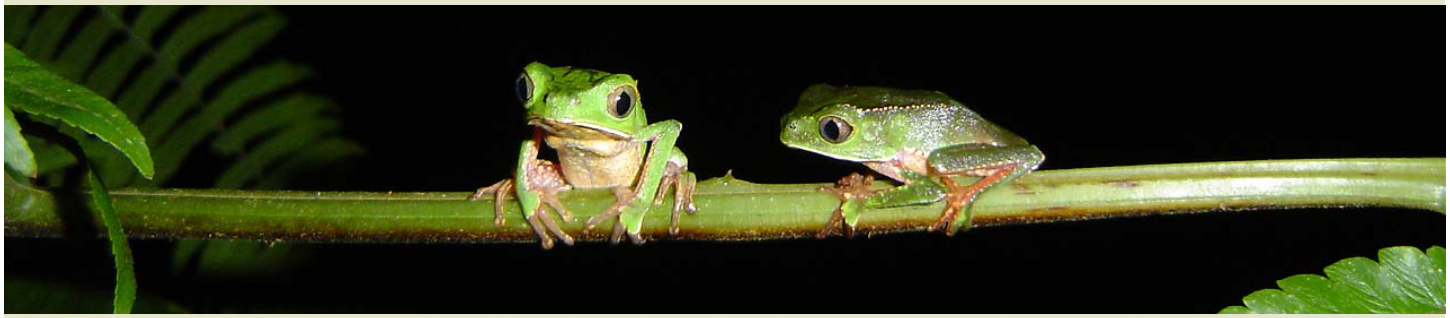
This species was only heard once in the principal pool of PL, and two males were seen and photographed. Apparently rare, at least at the moment I spend the time in PL. This spectacular frog is called in English clown tree frog, because of its fancy pattern, chocolate brown with yellow spots on limbs and two wide dorsolateral stripes, connected anteriorly on the head.

***Scinax "ruber"* (Laurenti, 1768)**

Some *Scinax "ruber"*-like were observed in the main patio of PL. The first author is reviewing the species in its NE range and is sure that the upper Amazon species is not the same. These animals are attracted by human constructions, such as a bathrooms, kitchens, and showers, which keep humidity even in the dry season. Main dorsal color light green, with two dorsolateral stripes; irregular dark green markings on the body.

***Phyllomedusa vaillanti* Boulenger, 1882**

Two young specimens observed the first nigh on *Heliconia* leafs. Dorsally green with two dorsolateral rows of white warts. Ventrally orange with a pectoral white large spot, surrounded of brown, and interiorly with a smaller green spot; a midventral line from the chin to the cloaca. Recent metamorphs with tail were in helicon leafs around the main pool in successive nights. We could not see any adult. *Phyllomedusa* tadpoles were seen in various pools, but we cannot be certain of its identification. Other species occurring in the area include *P. camba* and *P. tomopterna*.



The white lined leaf frog is a slow movement tree frog, often encountered on Heliconia leafs, and low bushes.

***Adenomera* sp.**

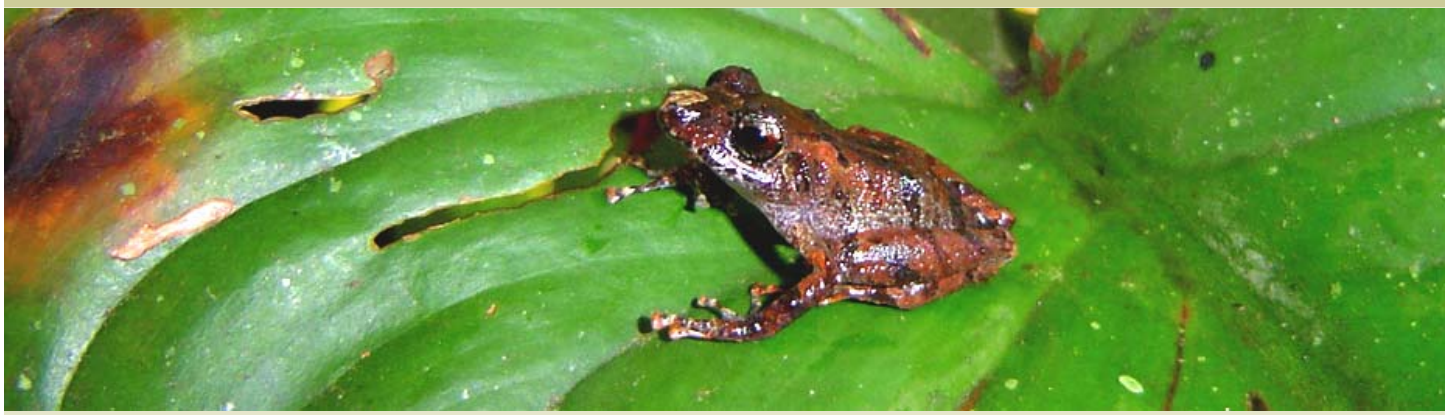
Only one specimen was observed, not similar with any Venezuelan species, *A. andreae* or *hylaedactyla*.

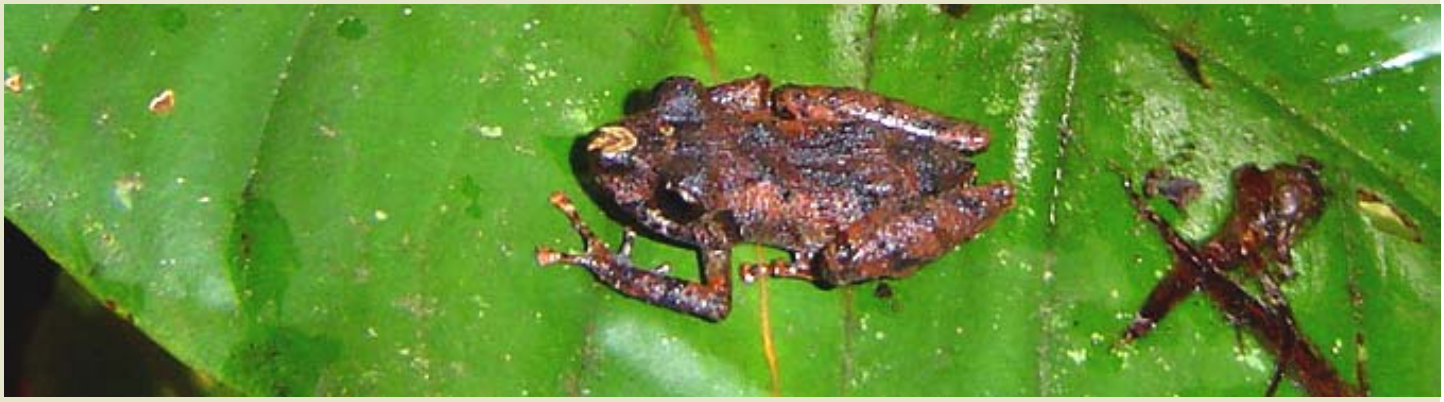
***Edalorhina perezi* Jimenez de la Espada, 1875**

Taken the last day in the afternoon, jumping in the leaf litter. A peculiar species with a dark brown dorsum with light brown and white irregular markings. Some protuberant tubercles and folds dorsally, with a conspicuous chevron with the vertex pointing the head, which has also tubercles on the interorbital region; protuberant tubercles on the upper eyelid. Ulnar and tarsal rows of tubercles. Flanks black, groin white with black eye-marks immediately superior to the groin. Flash marks yellow and white. Hind limbs cross barred. Iris gray.

***Eleutherodactylus ockendeni* (Boulenger, 1912)**

Small species of rainforest dweller *Eleutherodactylus*. Two main patterns, with a lot of variations. One was dorsally chocolate brown with a diffuse interorbital bar and a dorsal W. Interlabial bars dark brown. Short snout, with a not well defined canthus rostralis. Four small tubercles on the upper eyelid; calcars present but not prominent. Tympanum medium sized, 1/3 of eye diameter. Discs expanded, especially on Fingers III and IV. No flash marks. Eye with yellow iris superiorly, and bronze inferiorly. Pupil black. Ventrally grayish, without especial markings. A very conspicuous mark on the top of snout almost always much lighter than the rest of dorsal head coloration, maybe with disruptive purpose.





Variation to this pattern can be more tubercular skin, more prominent calcars, ulnar and tarsal tubercles; the W can be more contrasted or almost invisible. A young specimen had a vertebral line yellow.

The other markedly different pattern is as follows: More tubercular skin, central part of the dorsum black, with small, scattered white marks. Dorsolateral parts and flanks yellowish beige, with a contrasting supratympanic black fold. Nasal mark very conspicuous, white. Disc on digits orangish.

This species has a special distribution, concentrated on trail Tinamú close to the principal “cocha” (pool), and for days was only observed there. Days after, I observed some young individuals far from this first locality. Young can be on the forest litter during the day, but adults were always on leafs at night.

The peculiar coloration of the head, with this particular nasal mark must be considered as disruptive, as the whole animal looks like a piece of lichen.

***Eleutherodactylus buccinator* Rodríguez, 1994**

A conspicuous species in the *conspicillatus* group, with an elongated snout. Not so abundant like *E. toftae*, but more encountered as warmer night were noted. An important variability is noted. An adult female of about 5 cm, was chocolate brown dorsally, almost uniform, only with some diffuse dark brown markings. Two very conspicuous dorsolateral folds. *Canthus rostralis* also very conspicuous, with a white line continuing superiorly along the eye; loreal region black, contrasting with the dorsal brown. Tympanum medium sized, with a black supratympanic fold which not obscure the tympanum. Fore limbs: brown with dark brown stripes. Anteriorly arm and forearm black. Discs on digits not very expanded. Groin and concealed surfaces of thighs reddish. Belly white, throat marbled with brown and white.

Eleutherodactylus buccinator show a highly diverse pattern variation, as is seen in these male (top and right) and female (below).

An apparent male was completely different, grayish dorsally, the flanks becoming lighter, to reach a completely white belly, except the chin which is gray, and some diffuse dark spots on the throat. Groin and concealed surfaces of thighs red. Arm yellow, and forearm gray, separated by a black ring. Postero-inferior to the tympanum it is a pale yellow spot. Knees pale yellow with black spots, also present on the heel. Some young specimens were also observed, more close to the female description.

All were on the forest litter during the evening, except the female that was apparently sleeping at night on a leaf at 30 cm from the ground.

***Eleutherodactylus toftae* Duellman, 1978**

Small species, with a long snout, dorsally dark brown, with a few diffuse light brown spots. Shagreened skin with two not very well conspicuous dorsolateral folds. Iris yellowish except on the anterior and posterior ends of the eye (horizontally) which are reddish, with a light yellow ring around the black pupil. Tympanum small. White, bordered superiorly by a supratympanic black narrow fold. Yellow inguinal spots, bordered of black. Ventral side white with a blackish gular stripe, and scattered small spots.

The most abundant species of *Eleutherodactylus* in PL, as well as in Tambopata Wasaí Lodge. It is always close to the ground, on leafs, not higher than 30 cm.

***Physalaemus petersi* Jiménez de la Espada, 1872**

Only one specimen was observed on one of the principal trails, on the ground. Dorsum dark chocolate with red warts. Limbs beige with small warts forming folds, also red but not so conspicuous. Digits without terminal discs. Concealed surfaces of hind limbs white with black spots. A reddish spot in the inguinal region. Ventrally, a white gular stripe on black throat.

***Leptodactylus mystaceus* Spix, 1824**

This species very similar to *L. dydimus*, was rare in the area (probably more common in clears of the forest or close to the main river). One was in a small burrow in the football camp, and damaged when the workers were cleaning it for a game. Dorsum light brown with darker brown spots, surrounded by a narrow whitish line, a black canthal and supratympanic stripes, and a white upper lip stripe. Flanks salmon, and hind limbs cross barred. Two dorsolateral folds and two lateral folds. Groin and concealed surfaces of the thighs yellowish.

***Physalaemus petersi*, both pictures on the top.**

***Leptodactylus mystaceus* (right)**

Family Microhylidae

***Chiasmocleis bassleri* Dunn, 1949**

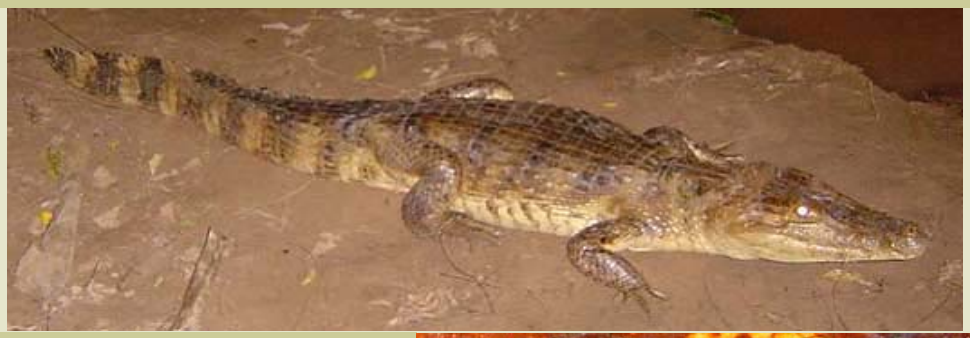
One juvenile in leaf litter during the morning. Dorsum uniform gray with a very narrow white vertebral line. Canthal and supratympanic white lines. Groin and anterior part of the thigh with black spots. Belly white with black mottled; chest and throat gray. Posterior part of the hind limbs orange.

REPTILES

Order Crocodylia
Family Alligatoridae

***Caiman crocodylus* (Linnaeus, 1758)**

A few specimens were seen in the main *cocha* or pool.



Order Squamata
Suborder Sauria
Family Gekkonidae

***Gonatodes hasemani* Griffin, 1917**

The first specimen was caught by the cooker inside a mud bread baker. It was a subadult female, grayish overall, with two dorsolateral stripes coming from behind the eyes, and black bars in between; with some gray ocelli surrounded by black. A subadult male had the same size and pattern, more contrasting, but the head and throat were orange. The male was also captured in the kitchen, both during cold and rainy days, suggesting an anthropogenic attraction, especially during these days. John Achicahuala, keeper of PL, observed the species active during warm days in the forest.

Gonatodes hasemani, subadult male (top); subadult female (below).

***Thecadactylus rapicauda* (Houttuyn, 1782)**

Discovered when moving tables in a small building in the forest. This is the largest gecko in America, and not rare in human constructions.

Family Polychrotidae

***Anolis fuscoauratus* d'Orbigny, 1837**

A female was sleeping on a leaf. It was beige with gray limbs, and a whitish vertebral stripe surrounded by dark brown.

Family Gymnophtalmidae

***Potamites ecpleopus* Cope, 1876**

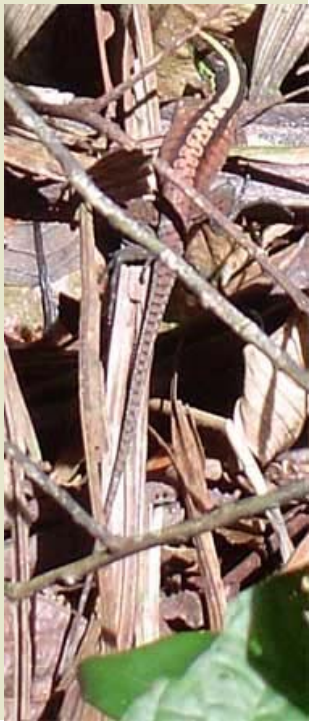
Along a small stream close to the main Lodge, we found three adult specimens, in the morning, two males and one female. One male was under a slab, and a couple was close together in the water, but in a very shallow pool. Some days after, we found a juvenile in another stream. The genus of this species was changed from *Neusticurus* to *Potamites* by Doan & Castoe (2005).

Male Potamites ecpleopus; down, female.

Family Teiidae

***Kentropyx cf. pelviceps* Cope, 1868**

Also the last day, the only sunny day in 8 days, some lizards were seen running in clears of the forest. This was the only one we could identify. We saw other species, probably *Mabuya*, and some gymnophtalmids, but were not captured.



Suborder Serpentes
Family Colubridae

***Liophis typhlus* (Linnaeus, 1758)**

The last, sunny day, during the morning, a tourist saw this snake in the stores going to the harbor. This was a probable female (by the big size and short tail) with light green dorsal coloration and some bluish diagonal stripes at midbody. The color between scales was orange. The underside of the head was white, while the belly was pinkish.

Order Testudines
Family Testudinidae

***Geochelone denticulata* (Linnaeus, 1766)**

In the main saloon of the Lodge, there is a shell of a female yellow footed tortoise of 60 cm strait carapace length, considered a giant size (more than 45 cm) for this species (Pritchard & Trebbau 1984). The record of the species is 82 cm.

César L. Barrio with a 60 cm carapace of Geochelone denticulata.

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No specimens were taken or sacrificed during this field work, they were only observed, photographed and released.

All pictures were taken by CLBA with a Digital Camera Sony DSC P72.

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César L. Barrio Amorós was born in Spain and lives in Venezuela since 1995. He is Anthropologist and Herpetologist, with special interest in ethno-herpetology. He leads tours in Venezuelan Amazon, Los Llanos and Maracaibo Lake (www.arassari.com), and is Executive Director of Fundación AndígenA (www.andigena.org). His interest to work in Peru began from his interest on poison frogs. He started a series of close collaborations with some Peruvian herpetologists regarding taxonomy and conservation of several endangered species.

César has written more than 90 popular and scientific publications, including description of several new species from Venezuela. Currently is working on the description of new poison frogs from Peru with Rainer Schulte.

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