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Lists of Species

Preliminary Checklist of Amphibians and Reptiles from Baramita, Guyana

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Abstract: We provide an initial checklist of the herpetofauna of Baramita, a lowland rainforest site in the Northwest Region of Guyana. Twenty-five amphibian and 28 reptile species were collected during two separate dry-season visits. New country records for two species of snakes are documented, contributing to the knowledge on the incompletely known herpetofauna of Guyana.

Introduction

In our first paper (MacCulloch and Reynolds 2012) we briefly review some recent pertinent literature on the amphibians and reptiles of the Guiana Shield Region (Starace 1998; Gorzula and Señaris 1999; Lescure and Marty 2000; Reynolds *et al.* 2001; Avila-Pires 2005; Donnelly *et al.* 2005, McDiarmid and Donnelly 2005; Señaris and MacCulloch 2005; MacCulloch *et al.* 2007, Kok and Kalamandeen 2008, MacCulloch and Lathrop 2009, Cole *et al.* in press) and report on the herpetofauna at two upland sites in the southern foothills of the Pakaraima Mountains in west-central Guyana. In this companion paper, we report the results from two separate collecting trips to the lowland forests near Baramita. There is relatively little recent literature on the herpetofaunas at specific lowland sites in Guyana. Donnelly *et al.* (2005) reported on the herpetofauna of the Iwokrama lowland tropical rainforest in central Guyana, and Ernst *et al.* (2005) reviewed the anuran fauna of the Mabura Hill Forest Reserve, also in central Guyana. This paper provides the first report on the herpetofauna from a tropical lowland rainforest site in north western Guyana.

Materials and Methods

Study area

Baramita (07°22'14" N, 60°29'28" W, elevation *ca.* 120 m, Figure 1) is an Amerindian village located near the eastern Venezuela border in the Northwest Region of Guyana within an extensive area of continuous tall, evergreen, non-flooded rainforest (Huber *et al.* 1995). The Northwest Region is sparsely inhabited by primarily Carib and Arawak Amerindians, but Baramita is one of the largest Amerindian communities in Guyana (Adams 1982). The airstrip at Baramita (Figure 2) is flanked by several large, sturdy, single-level wooden houses built upon 2 m tall pilings. Baramita is an old mining community with numerous trails leading off to abandoned mines (*e.g.*, Golden City, Millionaire, and Old World, among others), as well as to a large swampy area that had once been a man-made lake for landing sea planes that serviced the mining operations. The immediate area around Baramita is primarily disturbed, low-canopy secondary forest. Away from the village, moist, lowland, non-flooded primary forest with tall canopy becomes dominant and is present on trails to the east and south and along the Baramita and Barama Rivers.

Specimen Collection

Field work was conducted during the dry season in both 1992 and 1999. RDM collected in this vicinity from 23 September to 18 October 1992, and RPR collected there from 10–18 June 1999. The forest and soil was dry, and stream flow was continuous but slow during both visits. An occasional heavy shower occurred during the last few days of the 1999 visit, and the local villagers indicated that the onset of the rain season, which typically begins in May, was about to begin. The majority of collections were made in clearings and disturbed forest around the village and in secondary and primary forest along trails leading to mine sites within a few km of the village. On both visits, most specimens were collected by hand capture during the day and night, but RDM also employed pitfall traps. The 1992 specimens were collected and exported under permit number 1506 issued by the Guyana Ministry of Agriculture. In 1999, specimens were collected and exported under permits issued by the Wildlife Unit of the Guyana Environmental Protection Agency, the Minister of Amerindian Affairs, and CITES permit number 00594.

Specimens were euthanized using approved methods as recommended by the American Society of Ichthyologists and Herpetologists, The Herpetologists' League, and the Society for the Study of Amphibians and Reptiles, preserved in 10% formalin, and subsequently stored in 70% ethanol. Tissue was removed from most specimens. Specimens are deposited in the collections of the Royal Ontario Museum (ROM) and Smithsonian Institution's National Museum of

Natural History (USNM).

Amphibian taxonomy follows Frost (2011). Reptile taxonomy follows Avila-Pires (2005), with modifications by Frost *et al.* (2001), Gamble *et al.* (2008), Adalsteinsson *et al.* (2009) and Zaher *et al.* (2009).

Results and Discussion

Our surveys of the herpetofauna at Baramita produced a total of 53 species of anurans, lizards, snakes, and turtles. Caecilians, crocodilians, and amphisbaenians were not recorded but are expected to be present. Salamanders do not occur in the Guiana Shield.

Amphibians were collected in greater numbers than reptiles, although reptile diversity was higher (25 amphibian species in nine families vs. 28 reptile species in 13 families).

Figure 1. Map of Guyana showing location of Baramita.

Figure 2. Airstrip and secondary forest at Baramita.

The majority of all specimens were collected along forest trails from the forest floor, from trail-side vegetation, at stream crossings and pools, and from riparian habitat along the Barama and Baramita Rivers. *Rhinella marina*, *Scinax ruber*, *Ameiva ameiva*, *Kentropyx calcarata, Plica plica*, *Leptophis ahaetulla* and *Siphlophis compressus* were also found in the cleared area around the air field and in the vicinity of dwellings. Larvae of *Ameerega trivittata* were collected from the backs of three adult males.

We collected two species of snakes that have not been reported previously from Guyana; *Rhinobothryum lentiginosum,* and *Imantodes lentiferus*. Both species have a widespread distribution in western South America from Colombia and Venezuela south to Bolivia (*I. lentiferus*) or Paraguay (*R. lentiginosum*) and are also recorded from French Guiana. The previously known distributions, however, all had an apparent gap between eastern Venezuela and French Guiana (Avila-Pires 2005, Starace 1998). Our collection of these species from Baramita partially fills this gap in their distributions.

Species collected and specimen catalog numbers are in Table 1. Photographs of some species are in Figure 3.

Like other South American lowland herpetofaunas, the amphibians at Baramita are dominated by frogs and toads, and the reptiles by lizards and snakes. Among the anurans, Hylidae (10 spp.) are most diverse followed by Leptodactylidae (five spp.). Similarly, hylids were more diverse than leptodactylids in the central Guyana lowland anuran faunas reported for Iwokrama (Donnelly *et al.* 2005) and Mabura Hill (Ernst *et al.* 2005). For the squamates at Baramita, lizards and snakes are each represented by six families, but the snakes are considerably more speciose with 17 species vs. 10 species for the lizards. A similar squamate pattern was reported for Iwokrama (Donnelly *et al.* 2005, appendix 17.1); seven families and 41 species of snakes vs. six families and 23 species of lizards.

Not surprisingly, the lowland herpetofauna at Baramita is somewhat more diverse than the herpetofauna we recorded at the west-central Guyana upland sites of Paramakatoi and Kato (MacCulloch and Reynolds 2012). At Baramita, 25 anurans, 27 squamates and one turtle species were found, whereas the combined herpetofauna we recorded at Paramakatoi and Kato was 20 anurans, 22 squamates and two turtle species.

Table 1. Amphibians and reptiles collected at Baramita.

FAMILY	SPECIES	INSTITUTIONAL CATALOG NUMBERS
Amphibia		
Aromobatidae	*Allobates femoralis*	ROM 22777-22785; USNM 535737
Bufonidae	*Rhinella marina*	ROM 22810-11, 22965; USNM 535733-36
	Rhinella martyi	ROM 22813-33; USNM 535732
Dendrobatidae	*Ameerega hahneli*	ROM 22788-808, 22812, 42229-35
	Ameerega trivittata	ROM 22772-76; USNM 535738-48, 535815-17
	Dendrobates leucomelas	ROM 22770-71
Hylidae	*Dendropsophus marmoratus*	USNM 535749
	Dendropsophus minutus	USNM 535750-59
	Hypsiboas boans	ROM 22966
	Hypsiboas cinerascens	ROM 22750-53
	Hypsiboas multifasciatus	ROM 22755-59; USNM 535760-61
	Osteocephalus taurinus	ROM 22737-39, 22754
	Phyllomedusa bicolor	ROM 22740
	Phyllomedusa vaillanti	USNM 535781-83
	Scinax ruber	ROM 22742-43; USNM 535762-72
	Scinax x-signatus	ROM 22745-22749
Leiuperidae	*Physalaemus cuvieri*	USNM 535775-535780
Leptodactylidae	*Leptodactylus hylaedactylus*	ROM 22760
	Leptodactylus knudseni	ROM 22762-65; USNM 535773
	Leptodactylus lineatus	ROM 22783, 22786-87
	Leptodactylus mystaceus	ROM 22767
	Leptodactylus validus	ROM 40183-87; USNM 535774
Microhylidae	*Ctenophryne geayi*	ROM 22769
Pipidae	*Pipa arrabali*	ROM 22809
Strabomantidae	*Pristimantis sp.*	ROM 22766
Reptilia		
Gymnophthalmidae	*Echinosaura sulcarostrum*	ROM 22892-94
	Leposoma percarinatum	USNM 535792
Polychrotidae	*Anolis planiceps*	ROM 22853-68; USNM 535793-94
Scincidae	*Mabuya nigropunctata*	ROM 22887-91; USNM 535801
Sphaerodactylidae	*Gonatodes annularis*	ROM 22921-64; USNM 535787, 535791
	Gonatodes humeralis	USNM 535784-86, 535788-90
Teiidae	*Ameiva ameiva*	ROM 22896-900; USNM 53802-05
	Kentropyx calcarata	ROM 22901-20; USNM535806
Tropiduridae	*Plica plica*	ROM 22850; USNM 535795-800
	Plica umbra	ROM 22851-52
Boidae	*Corallus hortulanus*	ROM 22849
Colubridae	*Chironius fuscus*	ROM 22845-46
	Leptophis ahaetulla	USNM 535809-10
	Mastigodryas boddaerti	ROM 22840-41
	Rhinobothryum lentiginosum	USNM 535812
	Tantilla melanocephala	ROM 22839
Dipsadidae	*Dipsas variegata*	USNM 535807
	Imantodes lentiferus	USNM 535808
	Liophis miliaris	ROM 22837
	Liophis typhlus	ROM 22838
	Oxyrhopus petolarius	ROM 22843; USNM 535811
	Siphlophis compressus	USNM 535813
	Xenodon severus	ROM 22842
Elapidae	*Micrurus hemprichii*	ROM 22836
	Micrurus lemniscatus	ROM 22834-35
Leptotyphlopidae	*Epictia albifrons*	ROM 22847; USNM 535814
Viperidae	*Bothrops atrox*	ROM 22848
Testudinidae	*Chelonoidis denticulata*	USNM 535818

The herpetofaunal composition we recorded for Baramita is not directly comparable to the more rigorously sampled lowland central Guyana sites at the Iwokrama Forest or at the Mabura Hill Forest Reserve. A number of factors limit comparisons of the Baramita herpetofauna with these other sites, including the habitat disturbance surrounding Baramita due to long-term mining practices and human habitation, as well as our sampling effort that was of limited duration and conducted only during the dry seasons. Despite this, our species list for Baramita offers the best currently available information for a disturbed lowland forest site in northwestern Guyana, and provides a solid start to documenting the herpetofaunal composition in this region. In addition, the fact that we were able to document two snake taxa that were not previously reported from Guyana during our limited collecting emphasizes the need for continued sampling of the herpetofauna in the Northwest Region of Guyana.

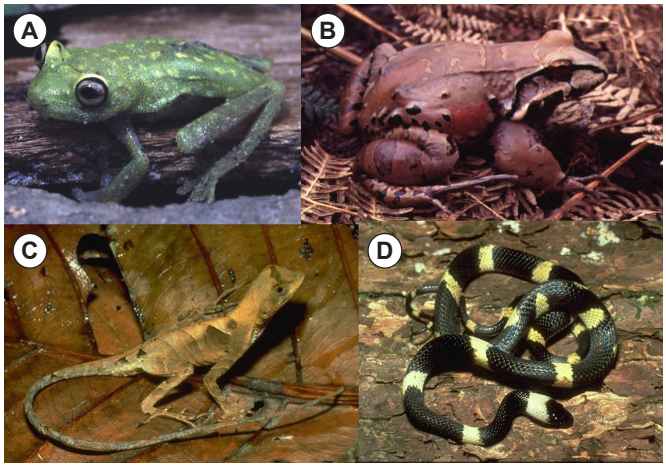

Figure 3. A. *Hypsiboas cinerascens*, B. *Leptodactylus knudseni*, C. *Anolis planiceps*, D. *Oxyrhopus petolarius*.

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