

Observations on the Reptiles and Mammals of Chacachacare, Bocas Islands, Notes on Five Species New to the Island

Sarsha A. Lall and Floyd E. Hayes

Dept. of Life Sciences, University of the West Indies,
St. Augustine, Trinidad and Tobago

INTRODUCTION

Chacachacare is the westernmost of the three major Bocas Islands between the Paria Peninsula of Venezuela and the Chaguaramas Peninsula of Trinidad. Despite many visits by zoologists to Chacachacare, much remains to be learned regarding the island's vertebrate fauna. Thus far no amphibians have been recorded from Chacachacare; however, 15 species of reptiles have been reliably reported (Bacon 1973, Boos 1983, Murphy 1997). Only two species of mammals have been reported (ffrench 1967b, Boos and Quesnel 1993). Although the relative abundance of each species of bird was provided by ffrench (1967a, 1967b, 1969), a paucity of information exists on the relative abundance of various reptile and mammal species.

In this note we report our observations on the reptiles and mammals of Chacachacare, including five species new to the island, based on several recent trips to the island. Data on the population ecology of birds

on Chacachacare and the other Bocas Islands will be published separately (Hayes *et al.* in prep.).

METHODS

We surveyed lizards at Chacachacare during 2-4 and 9-11 August 1998. All lizards observed were counted during morning hikes starting from the Nun's Quarters along the Salt Pond and Lighthouse trails. These trails are described by Comeau *et al.* (1992). Mammals and reptiles were noted during bird studies on Chacachacare between January 1997 and November 1998. Amphibians and reptiles were identified by consulting Murphy (1997), while mammals were identified by consulting Eisenberg (1989).

RESULTS AND DISCUSSION

In the species accounts below, we include all species recorded thus far from Chacachacare, including those which we have not observed. Census data on lizards are provided in Table 1. Relatively few lizards were seen on 3 October 1998 owing to intermittent rainfall.

Table 1. Abundance of lizards along trails of Chacachacare Island, October 1998.

Species	Lighthouse Trail		Salt Pond Trail	
	03 Oct	10 Oct	04 Oct	11 Oct
<i>Gonatodes v. vittatus</i>	12	20	14	5
<i>Hemidactylus</i> sp.	0	1	0	0
<i>Gymnophthalmus speciosus</i>	0	1	0	0
<i>Iguana iguana</i>	*1	0	1	**0
<i>Polychrus marmoratus</i>	0	1	0	0
<i>Mabuya bistrata</i>	0	0	1	0
<i>Ameiva ameiva</i>	0	25	13	12
<i>Cnemidophorus lemniscatus</i>	3	29	25	30

*dead

**egg shells found

Turtles

Eretmochelys i. imbricata. Previously reported (Bacon 1973). We observed turtle tracks, presumably of this species, on a small beach south of La Tinta Bay on 3 October 1998. This indicates that nesting still occurs despite environmental degradation in the Gulf of Paria.

Crocodilians

Crocodylus sp. Not observed; only one previous record (Boos 1983).

Lizards

Gonatodes v. vittatus. Frequently observed during both trips along the Salt Pond and Lighthouse Trails.

Both sexes were sighted.

Gymnophthalmus speciosus. One observed at La Tinta Bay on 10 October 1998.

Iguana iguana. On 4 October 1998, we captured a 1.2 m individual in a hole along the Salt Pond Trail. It was most likely a female since there were no large spines on its back and cracked egg shells were found nearby. A dead individual was found at Stanislas Bay on 3 October 1998.

Polychrus marmoratus. A male was captured along the coast of Stanislas Bay on 10 October 1998.

Mabuya bistrata. Previously unrecorded. On 4 October 1998, we captured an individual of this species resting at the top of a small tree along the Salt Pond Trail. It was about 8 cm SVL, its skin was smooth and the body was flattened dorsally where it was glossy chocolate-brown, with a distinct black stripe running laterally along the body from snout to tail. There was no white border above the stripe as seen in the *Gymnophthalmus speciosus*. The underside was distinctly white and the legs were short.

Ameiva ameiva. Frequently observed along both trails.

Cnemidophorus lemniscatus. This species was the most frequently observed lizard on the island, all sightings being female. However, we examined a live male specimen captured by Rajendra Mahabir at the lighthouse on 10 October 1998. Our data indicate that the *Cnemidophorus lemniscatus* population is bisexual, with a strong female-skewed sex ratio. Whether females reproduce parthenogenetically, as some unisexual populations apparently do in South America (Murphy 1997), remains to be determined.

The following six lizards were not observed during this study, but have been reported previously on the island: *Gonatodes ceciliae*, *Hemidactylus mabouia*, *Hemidactylus palaichthus*, *Thecadactylus rapicauda*, *Bachia heteropa trinitatis*, and *Anolis chrysolepis planiceps*.

Lizards were considerably more abundant than turtles, snakes or mammals, and would be an ideal group for further studies of their population ecology.

Snakes

Mastigodryas b. boddaerti. Five individual observed during our trips.

Oxybelis aeneus. Previously unrecorded. On 11

October 1998, an individual of this distinctive species was observed in bushes beside the Nuns' Quarters, and the following description was made: long, thin body; large, pointed head; brown above, hint of slight darker blotches; sharply defined creamy underparts; faint blacker line through eye, separating browner head from paler underparts.

Pseudoboa newwiedii. Previously unrecorded. On 5 November, we captured and photographed a ± 0.8 m long snake on a dirt path at La Tinta. It was light brown above and creamy white below, with a distinctly pointed, slightly upturned snout resembling Murphy's (1997) description of a "unique spade-shaped rostral scale". The photograph clearly shows that the dorsal portion of the head lacked the darker brown-black colouration typical of adults from Trinidad (Murphy 1997). The snake did not attempt to bite. This species has been previously reported from Gaspar Grande (Boos 1983), thus its occurrence on Chacachacare is not unexpected.

Mammals

Glossophaga longirostris. Previously recorded by French (1967b). No small, terrestrial species of bats were observed.

Noctilio leporinus. Previously unrecorded. P. Bacon, one of us (Hayes) and students from the University of the West Indies observed a few individuals of this distinctive species fishing at night in Chacachacare Bay in November 1997, 2-4 and October 1998.

Sciurus granatensis. This species was previously reported from the old leprosarium hospital by Ishmael Samad (Boos and Quesnel 1993). On 20 October 1996, one of us (Hayes) observed a single squirrel in the same area. However, none were observed elsewhere on the island. Boos and Quesnel (1993) suggested that these squirrels may be the descendants of escaped pets. Our observations indicate that at least one individual still survived.

Rattus rattus. Previously unrecorded. On 9 October 1998, an unidentified rat was briefly seen at night at the Nuns' Quarters. During the morning of 11 October 1998, approximately 250 m from the Nuns' Quarters in the forest, we observed a brown-coloured rat as it climbed down a tree and ate a seed less than 1 m from where we were standing. It scurried away as

we attempted to capture it. It was distinguished from *R. norvegicus* by its relatively longer tail and arboreal behaviour (Eisenberg 1989). The occurrence of this introduced species is not surprising given the long history of human habitation.

CONCLUSIONS

Further data on the biodiversity of Chacachacare and other Bocas Islands are needed to better understand the historical and ecological biogeography of the islands. Thus far the only serious attempt at biogeographical analysis was conducted for the tiny Five Islands Archipelago (Temple 1986). Topics which should be addressed include: the routes and timing of colonizations; the effects of island size, topography and degree of isolation on species richness; changes in the composition of the biota (turnover rates); and rates of extinction for various taxonomic groups. Data on density and biomass are needed to better understand the reasons why smaller islands often have higher densities of organisms (density compensation), with reduced competition and predation. From a conservation perspective, population data may enable us to better protect threatened or endangered species.

The impact of humans on the biota of Chacachacare is poorly understood. Islands are highly susceptible to invasion by introduced species (Brown and Gibson 1983). *Sciurus granatensis* and *Rattus rattus*, both of which were probably introduced by humans, apparently occur in low densities and may be confined to formerly inhabited areas; their impact on the native flora and fauna appears to be minimal.

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