

# A Survey of Nocturnal Primates in Rhoko Forest, Nigeria, 14-18 January 2009

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## INTRODUCTION

Two previous surveys of nocturnal primates in the Rhoko forest of Cross River State, Nigeria, by Elizabeth Pimley in 2003 (Pimley, 2004) and by Leah Schein in 2008 (Schein, 2008) had identified six sympatric species, but the relative frequency of sightings of different species was very different in the two studies and when compared with surveys in the nearby Korup National Park, Cameroon (Bearder and Honess, 1992). In addition there was a suggestion that angwantibos (*Arctocebus calabarensis*) in the area were unusually large.



*G. demidovii* (courtesy S. Bearder)

The aim of our study was to clarify the results of the earlier Rhoko surveys and to compare the relative frequency of detection of the various prosimian species with surveys in Korup and in the Okomu National Park, Nigeria, using exactly the same methods.

## METHODS

With the assistance of staff of the CERCOPAN field site at Rhoko (Iko Esai Community Forest) we conducted transect surveys after dusk and before dawn along established pathways in the vicinity of the main camp. These transect surveys were in one direction and, if we returned along the same path, no further counts were made. We also conducted some day walks to observe the forest and other wildlife species.

Evening surveys were conducted between 19:00 and 21:30 h, and morning surveys between 04:30 and 06:30 h. At the time of our field work the moon was waning in its second quarter. Dusk (when colours were no longer visible) came at about 18:50 h and dawn at about 06:15 h. In addition to surveys, we interviewed the CERCOPAN staff member (an ex-hunter) who helped Schein to identify prosimians during her survey. He was asked to name each species he had encountered at night using his own language and to provide details of their size, appearance and behaviour.

During night surveys, two observers walked slowly (at approximately 1 km/h) while scanning vegetation with battery-powered head torches. Prosimians were detected from the distinctive “eye shine” reflected from our torchlight, and from their distinctive calls, some of which were recorded. We noted the position and height in the forest canopy of each initial sighting. We attempted to keep animals in view for at least five minutes, observing them with binoculars, filming them with a video recorder, and noting features of body size, coloration, locomotion and support use.

The communication system of each species of bushbaby includes a number of diagnostic calls that can help identify animals even when they cannot be seen. However, because the accuracy of identification by sound can vary with the expertise of the observer, and the calls of pottos and angwantibos are rare or absent, the number of animals seen per hour may be a more reliable measure when making comparisons between studies by different researchers.

#### RESULTS FROM SURVEY WALKS

We made 7 transect walks, with a total survey time of 14 hours and 15 minutes.

Table 1 summarizes information on the species seen, characteristic features of their appearance and biology, the numbers of individuals observed and the heights at which they were first noted.

From these observations, and previously confirmed sightings of angwantibos, it is clear that the six species of prosimian primates at Rhoko are the same as those found in the Korup National Park where we have conducted extensive surveys (Bearder and Honess 1992). These are Demidoff's dwarf bushbaby (*Galagoides demidovii*), Thomas's dwarf bushbaby (*Galagoides thomasi*), Allen's bushbaby (*Sciurocheirus alleni*), the pallid needle-clawed bushbaby (*Euoticus pallidus*), the central potto (*Perodicticus edwardsi*) and the Calabar angwantibo (*Arctocebus calabarensis*). Demidoff's bushbaby was the first to call in the evening and was seen and heard in the same areas as Allen's and needle-clawed bushbabies.

Thomas's bushbaby and the potto were seen less often and occur most frequently in more mature forest. The potto typically moves higher in the canopy than the bushbabies.



Allen's bushbaby or galago (*Sciurocheirus alleni*)



View of Demidoff's Dwarf Galago (*Galagoides demidovii*) at night

The rate of location (number of animals seen or heard per hour) of each species at Rhoko was in line with the same species counted during a much longer survey (214 hours) in the Korup National Park about 75 km southeast of Rhoko (Table 2). The main differences were that Thomas's bushbaby called much less frequently in Rhoko, and pottos were considerably more common. Our data on the relative density of different species at Rhoko differ from those of Schein (2008) who located 29 angwantibos during 358 hours of surveys, 22 of which were detected during static surveys from a fixed point. The very high number of angwantibos may be a result of the different

observation method (static vs. transect surveys), or the different season when the surveys were made (wet vs. dry), but it also emerged from our questioning of Schein's guide that local people group pottos and angwantibos under the same name. This may also help to explain why animals that were called angwantibos by the local guide sometimes appeared to be unusually large.

Few other nocturnal mammals were sighted, but the calls of tree hyrax (*Dendrohyrax arborealis*) were very common (44 calls in 3 hours 40 minutes on one evening). The only other mammal observed was one palm civet (*Nandinia binotata*) at a height of 18 m. This is a low rate of sighting of larger mammals at night compared with Korup where 15 species were observed at a rate of 0.47 per hour.

Background noise from calling insects was remarkably loud during evening surveys.

During day surveys, only the putty-nosed guenon (*Cercopithecus nictitans*) was seen or heard.

## CONCLUSIONS

Rhoko has good numbers of nocturnal primates comparable to those found in Korup National Park. The relative frequency of seeing or hearing each species is dependent on the visibility profile of the transect routes that were surveyed and the habitat type (closed forest or forest edge); these variables have not been analysed in this report. Two of the bushbabies (*Sciurocheirus alleni* and *Euoticus pallidus*) were not found in our survey of the Okomu National Park to the west of the Niger River, confirming the previous work of Oates & Jewell (1967).

Few diurnal and nocturnal mammals were seen at Rhoko, other than prosimians. This very low rate when compared with Korup National Park is most probably a result of hunting pressures. Prosimians are too small to be worthwhile targets for hunters and therefore provide a baseline for comparison.

The protection provided by CERCOPAN to the Rhoko forest has the potential to ensure the re-establishment of an ecologically rich community of larger mammals to complement the nocturnal primates and the birds that continue to thrive in the area. Further research, as well as the monitoring of hunting pressures and other anthropogenic influences in the surrounding areas, is needed to establish why mammal numbers are relatively low and to realise the considerable potential of the site for student research projects and training courses in rainforest ecology.

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Table 1. Summary of prosimian primate sightings during transects surveys in Rhoko forest, 14-18 January 2009, and features of the species.

Species	Total no. seen S or heard H	Mean ht. (& range), m	Appearance	Locomotion	Habitat Preference	Characteristic calls
<i>Galagoides thomasi</i> , Thomas's dwarf bushbaby or galago	7 S 3 H	12 (n = 7)	Bright orange eyeshine. Larger than <i>G. demidovii</i> (80 g), with larger ears. Usually seen moving rapidly. Thicker dark brown tail, reddish brown body, and grey underside.	Leaps common. Often descends after first sighting.	Prefers medium to larger branches relatively high in canopy but can descend to ground.	Multiple crescendo. High-pitched single trills. Rapid yaps with grunts. Only call occasionally.
<i>Galagoides demidovii</i> , Demidoff's dwarf bushbaby or galago	10 S 11 H	3.25 (n = 8)	Very small (60 g). Small eyes, closer together than <i>G. thomasi</i> . Body and tail usually more grey-brown and with whiter underside. Tail thin.	Usually scuttles along narrow branches rather than leaping.	Prefers twigs and small supports (<1cm) below 5 m. Often seen in dense secondary edge vegetation and undergrowth.	Single crescendo, often answered by second animal, common at dawn and dusk. Zip-squeaks, buzzes and unit-yaps heard.
<i>Sciurocheirus alleni</i> Allen's bushbaby or galago	6 S 11 H	4 (n = 3)	Medium sized (220 g). Large red eye-shine. Bushy dark tail sometimes with a pale tip.	Rapid jumps from one vertical support to another, usually low down in vegetation.	Open understorey with medium to small vertical supports.	Plaintive drawn-out whistles repeated regularly. Other calls not heard.
<i>Euoticus pallidus</i> Pallid needle-clawed bushbaby or galago	3 S 8 H	12 (n = 3)	Medium sized (220 g). Large, well spaced eyes and yellowish eye-shine. Pelage paler than <i>S. alleni</i> .	Moves rapidly, often while calling. Large leaps.	Mid to upper canopy, on broad supports. Can cling to smooth tree trunks using 'claws'.	Shrill yaps, often answered back and forth between two animals moving together. Screeches.
<i>Perodicticus edwardsi</i> Central potto	5 S 0 H	19 (n = 4)	Larger size than bushbabies (1200 g). Eyes more widely-spaced; these can move in jiggling fashion, but may also give direct stare to torchlight. Dark brown back, grey ventrum, short tail (3-4 cm).	More fluid movements than galagos – sometimes rapid – but no leaping.	Usually uses medium to broad supports (range 2-20 cm), such as tree branches.	No calls heard.
<i>Arctocebus calabarensis</i> Angwantibo	Not seen	-	[This species has been seen and photographed by others at Rhoko.]	Slow climbing, cannot leap.	Tree fall zones and forest edge (secondary)	Not known to call.
Unidentified small galagos	7		Not seen (or heard) clearly.			

Table 2. The relative frequency of sighting and hearing nocturnal primates per hour in Rhoko (this study) and in the Korup National Park, Cameroon (Bearder and Honess 1992).

<b>SITE</b>	<i>Galagoides demidovii</i>	<i>Galagoides thomasi</i>	<i>Sciurocheirus alleni</i>	<i>Euoticus pallidus</i>	<i>Perodicticus edwardsi</i>	<i>Arctocebus calabarensis</i>
	Seen/heard	Seen/heard	Seen/heard	Seen/heard	Seen/heard	Seen/heard
<b>Rhoko</b>	0.71/0.79	0.5/0.21	0.43/0.77	0.21/0.57	0.36	0
<b>Korup</b>	0.35/1.0	0.25/1.49	0.48/0.5	0.49/0.8	0.075	0.014