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Observations on a nesting caecilian from Silhouette island, Seychelles

Sascha Pawlowski

Certified Ecotoxicologist (according to GDCh and SETAC GLB)
Jahnstr. 22, 68623 Lampertheim, GERMANY
[spawlows@gmx.de]

Abstract: During several excursions into the ancient forest of Silhouette island in December 2015, several caecilians were found, which where believed to be all of the same species namely *Hypogeophis rostratus.* At the area of Gratte Fesse, a nesting adult female was found underneath a log, guarding about 4 eggs of about 1 cm diameter. Furthermore, several hatchlings were also found at the nesting site. These recent findings on the nesting female are in line with others several decades before, although the presence of hatchlings remaining at the nesting area has not been described before in scientific literature.

Introduction

The granitic Seychelles islands are currently inhabited by up to six endemic caecilians which are believed to be remnants from the old Gondwana continent (Nussbaum 1984). On Silhouette island, the fourth largest of the granite islands, all six caecilian species are considered as indigenous, although they may be hard to find and even harder to identify as a distinct species (Gerlach 2007; Pawlowski & Krämer 2010). During several excursions along existing paths on Silhouette island from November 29th to December 11th, 2015, some observations on caecilians were made, including an observation on a nesting adult female.

Materials and methods

Excursions usually started between 8:00 and 9.00 h in the morning and lasted until about 16:00 to 17:00 h in the afternoon. The main route that was followed was the one leading from La Passe to Grand Barbe, and the routes from La Passe to Anse Mondon and from La Passe to Jardin Marron (lower part only) were observed once during this time. Small logs, bark and stones along this passage were carefully lifted and undersides were observed for any caecilians present. All pieces lifted were carefully turned back into its original position after observation in order to prevent any significant disturbance of the microhabitat.

Air temperatures were measured along the path at regular intervals (usually every 15 min) once or twice per walk using a digital thermometer (Amadigit, -40 to 120 °C; ± 1 °C).

Results

Weather and temperature conditions

The weather conditions ranged from slightly cloudy to raining. Measured temperatures ranged from 26.5 to 30.9 °C at the lowland forest area and from 24.8 to 28.6 °C at the mid and high latitude forest (Fig. 1).

Caecilians

All caecilians located in the forest area were solely found on the trail from La Passe to Grand Barbe in the mid- and high-altitude forest. The trail to Anse Mondon was found to be too dry and much to steep to be a suitable habitat for caecilians at the time of observations. The trail to Jardin Marron was too overgrown to take a more detailed analysis of the soil fauna.

Two adults and several larvae/juveniles were found which were deemed to be the same species (Table 1). The first juvenile was found underneath a piece of bark and measured about 8 cm in total length and was brownish in colour (Fig 2a-d). The second specimen was an adult of about 25 cm which was found underneath a stone at a flat river bed (Fig. 3a-d). Although, specific GPS data are missing, both locations were at the eastern side of the forest. The third location was at the western side of Silhouette on the way to Gratte Fesse. At this site an adult female of about 20 to 25 cm in size was found nesting underneath a larger log (Fig. 4a-d). In addition to this adult up to five eggs with a diameter of about 1 cm each as well as two to three hatchlings (about 8 cm in length). The eggs were all transparent and moving embryos with a dark upper and a light

Table 1. Date and number of caecilians found

Date	Location	Number of animals	Age status	remarks
05.12.15	1	1	Adult	Found underneath a flat stone
06.12.15	2	1	Hatchling	Found underneath a piece of bark
07.12.15	3	0,1,2-3	1 adult female 2 - 3 hatchlings 5 eggs	Nesting adult female, found underneath a log

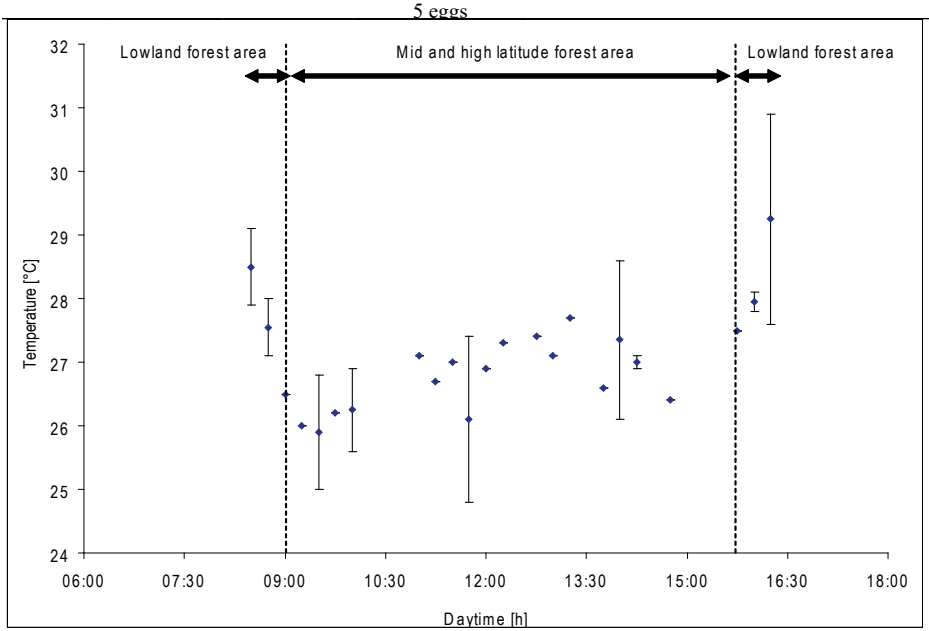

Fig. 1. Temperatures measured at the trail from La Passe to Grand Barbe

Fig. 2. Juvenile *H. rostratus.* a) site; b) trail with bark pieces; c) juvenile; d) head area.

Fig. 3. Adult *H. rostratus*. a) site; b) rocks in the shallow river bed; c) adult; d) head.

Fig. 4. Nesting *H. rostratus*. a) site; b) wooden trunk with nest; c) nesting adult with eggs; d) nesting adult with eggs and hatchlings

underside could be clearly identified. Both adults and hatchlings were blackish in colour, however the underside of the hatchlings turned out to be lighter, similar to the embryos in the eggs.

Unlike the other caecilians found before, both adult female and hatchlings remained at this site and did not disappear even after a few minutes of observation before the log was placed back into its original position.

Discussion and conclusion

All specimens found were detected as individuals, which the exception of an adult breeding female which was associated with several hatchlings. The overall number of caecilians found along the trails on Silhouette was rather low, but comparable to other observations on La Digue or Mahé where caecilians were found only occasionally during the past years (pers. obs.). In all species (2 adults and one juvenile) found the tentacles are much closer to the nostrils than to the eyes. Based on the size of the adults, the species could be either *Grandisonia alternans* (Stejneger, 1893) or *Hypogeophis rostratus* (Cuvier, 1829) with maximum length of 156 to 330 mm and 204 to 365 mm, respectively (Gerlach 2007). The egg diameter of about 1 cm; however, corresponds to egg sizes known for *Hypogeophis rostratus* (up to 1 cm), whereas known egg diameter

for *Grandisonia alternans* ranged from about 4 to 5 mm (Nussbaum 1984). The presence of one of the adults in a shallow stream does not seem indicative for *H. rostratus*, but other caecilians (namely *Praslina cooperi* Boulenger, 1909) have been found in small streams on Mahé (pers. obs.).

This was the first time a breeding female was found on the granite islands by the author during about 18 years of observations; however, breeding and guarding of the eggs is known from several Seychelles caecilian species (Nussbaum 1984). Although the nesting female was found during the rainy season (December), other authors reported that *H. rostratus* breeds throughout the year having clutch sizes of 6 to 30 ovoid eggs. Due to the high latitude of the rain forest, both rainfall and mist may not be limited to the typical rainy season, therefore soil moisture remains rather high all through the year. As the number of eggs including the hatchlings was at the lower end, it may be possible that some of the hatchlings have left the nesting site already, however, it remains unclear at this stage as the nest was only observed once.

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