

AMPHIBIANS AND REPTILES OF THE OUTAMBA-KILIMI REGION, SIERRA LEONE

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In 1980, the government of Sierra Leone endorsed the establishment of several protected wilderness reserves for the conservation of native plants and animals. The largest reserves were the Outambi and the Kilimi areas in northern Sierra Leone. With the assistance of the International Union for the Conservation of Nature and Natural Resources (IUCN) and the World Wildlife Fund (WWF), these two reserves were jointly administered as a national park by the government and the IUCN/WWF through June 1984. In April-May 1984, a Smithsonian team conducted a small mammal survey in the park and also collected representatives of the park's herpetofauna. This collection is summarized below. Species identifications were made from a variety of published sources and confirmed, when possible, by comparison to voucher specimens in the National Museum of Natural History (USNM) collections. The major sources were Cisse and Karns (1979), Guibe and Lamotte (1957, 1958, and others), Lamotte (1967, 1971), Poynton (1964), Schiötz (1964, 1967), Tandy and Keith (1972), and Villiers (1975).

Woodland savanna is the dominant habitat type in both reserves. The higher and rockier landscapes are typical open savanna. Riverine forests form narrow corridors along the Great Scaries River, Little Scaries River, and their numerous tributaries.

SPECIES NOTES

AMPHIBIA

Family BUFONIDAE

Bufo gutturalis. — Four adults, one gravid female (70.5 mm SVL) and one gynandromorph; first record of this species for Sierra Leone. The female has numerous maturing ova (0.9-1.0 mm diameter), all with pigmented animal poles. The males have unpigmented, elongated lobular testes. The gynandromorphic specimen has a well developed testis and a small ovary with early vitellogenic ova on the left and ovary with maturing ova and no testis on the right. In alcohol, dorsal ground colour is beige through brown and contains two pair of large spots. The spots, scapular and sacral, are often irregular shaped and

dark brown; there is a scattering of other dark spots on head, back and sides. The venter is usually yellowish white. The males and the gynandromorph have black chins and throats, vocal sac openings and nuptial pads on thumbs. Cranial crests are low to absent; the parotoids are flat, long and kidney-shaped. USNM 248894-97.

Bufo maculatus. — Six adult females ($x = 58.7$ mm, 56.3-65.4 mm) with maturing or mature ova and five adult males (58.7 mm, 45.2-49.9 mm); first record of this species for Sierra Leone. The late vitellogenic ova are 0.5-0.7 mm in diameter with pigmented animal poles; the mature ova are 0.9-1.0 mm and entirely pigmented in black. In alcohol, female dorsal ground colour is olive tan with indistinct spotting. The pairs of scapular and sacral spots are the most apparent spots, and are irregular-shaped brown and edged with chocolate brown. A thin white middorsal stripe is commonly present and is occasionally broken. Venter is white, immaculate in some and with a speckled chest in others. The dorsal pattern in males is faded version of the female pattern; males are more unicolour and are covered by numerous tiny keratinous spines. Their venters are usually immaculate. Cranial crests are not evident and the parotoids are low and elongate. USNM 248798-808.

Family HYPEROLIIDAE

Hyperolius occidentalis. — A gravid female (33.2 mm SVL) with maturing ova. The ova are 0.8-0.8 mm in diameter and pigmented on animal pole. In alcohol, the frog is a uniform grayish beige with a diffuse, dark dorsolateral stripe running from corner of eye to tympanum and from axilla to iniquen. The thigh and crus behind the knees and underside of hindfeet are pinkish orange.

cf. *Kassina*. — The head and forelimbs of this frog were discovered in the stomach of a *Philothamnus heterodermus*. Not catalogued.

Family MICROHYLIDAE

Phrynomerus microps. — A gravid female (56.6 mm SVL) containing numerous mature ova (1.0-1.15 mm in diameter) with pigmented animal poles; first record of

this species for Sierra Leone. In alcohol, the dorsum is covered with a large, reddish brown arrow-shaped area extending from the tip of the snout to the vent; the fore- and hindlimbs bear similarly coloured spots. The sides of the head and body are black, grading to a dusky brown on the venter. USNM 248812.

Family RANIDAE

Arthroleptis sp. — A presumably adult male (22.7 mm SVL) with unpigmented testes.

Dicroglossus occipitalis. An adult male (94.6 mm SVL) with moderate sized testes and a gravid female (101.4 mm). The laterally placed vocal sacs are evident in the male suggesting recent vocalization. The venter of the male is immaculate white, whereas the female's venter is uniform dusky brown. The ova are 1.6-1.8 mm in diameter and have pigmented animal poles. USNM 248813-14.

Hemisus guineensis. Two gravid females (47.8 & 46.4 mm SVL) bearing numerous mature ova. The ova are approximately 2.5 mm in diameter and are unpigmented. One female was captured in a marsh. USNM 248809-10.

Hylarana albolabris. An adult female (39.0 mm SVL) with tiny ovaries, but large, regressed oviducts. In alcohol, the dorsum is a uniform brown and bears a pair of dorsolateral folds extending from posterior corners of eyes to inguinae; posterior surface bears small, irregularly shaped, grayish brown spots. USNM 248815.

Hylarana galamensis. — An adult male (56.6 mm SVL) was captured in a forest. The testes are small and unpigmented. The vocal sacs are dark and flaccid, suggesting recent use. The stomach contains beetle remains. USNM 248816.

Phrynobatrachus alticola. — This small (12.8 mm SVL), dark brown frog with warty skin was removed from the stomach of a *Philothamnus heterodermus*. USNM 248991.

Phrynobatrachus fraterculus. — A small (19.5 mm SVL), cream and brown striped frog; skin is smooth and hindfeet are weakly webbed. This frog was also removed from the stomach of a *Philothamnus heterodermus*. USNM 248992.

Ptychadena oxyrhynchus. — An adult male (56.5 mm SVL) with large, unpigmented testes and dark, flaccid vocal sacs.

Ptychadena superciliaris. — an adult male (40.1 mm SVL) with dark, flaccid vocal sacs (inferior) and large, heavily pigmented testes was collected in Guinea Woodland. In alcohol, the ground colour is grayish and immaculate dorsally except for a faint interocular bar.

On each side, a dark brown stripe extends from the tip of the snout through eye and tympanum to midway on the side of the body; the upper lip is light coloured. Small black spots occur in the inguinal area. The posterior surface of the thigh is coloured as dorsum with a few faint light spots in a horizontal row. The venter is an immaculate white. The dorsum is smooth with only the faintest indication of longitudinal folds on the posterior half of the body. The hindfeet are fully webbed. USNM 248817.

Ptychadena tournieri. — Two females (34.3 & 56.9 mm SVL). The immature female's ovary contains small previtellogenic ova. The larger female is gravid with 0.9 - 1.0 mm ova, pigmented animal poles. USNM 248823-24.

Ptychadena sp. — Two male (46.2 & 46.7 mm SVL) and female (46.7 mm) were captured in a woodland area. The ovaries and oviducts of female are small. The males' testes are moderate-sized and unpigmented, their vocal sacs inferior. The specimens have five pairs of distinct glandular ridges on the back and fully webbed hindfeet. In alcohol, the dorsal ground colour is a dark greyish tan with small elliptical dark spots aligned on the ridges. A thin dark stripe extends from nares to eye, but not through, from eye to tympanum, and from tympanum to axilla. Posterior surface of thigh is dark brown with a scalloped light stripe dorsally and a row of unequal-sized spots below. The venter is white with an orangish tint. USNM 248818-20.

Ptychadena sp. — An immature female? (43.5 mm SVL) with very faint dorsal ridges and fully webbed hindfeet. In alcohol, the dorsum is brown, sides a grayish beige; there is a scattering of small black streaks and spots dorsally and dorsolaterally from the axilla to inguen. A narrow dark stripe extends from tip of snout to and through tympanum; upper lip is a light beige. The back of the thigh is dark brown with two horizontal light stripes. Venter is immaculate white USNM 248821.

REPTILIA

Family CROCODYLIDAE

Crocodylus niloticus. — A skull (266 mm from tip of snout to occipital condyle) and incomplete mandible were found in the Kilimi area. USNM 248848.

Family PELOMEDUSIDAE

Pelusios castaneus. — Two shells (123 & 186 mm CL), both missing the anterior lobes of the plastrons. Absence of these lobes makes identification less certain, although the shells match Bour's (1983) key characteristics in most respects. Presumably, the turtles and crocodile were killed and eaten by local hunters. The carapacial scutes of both turtles are dark brown, almost black, and rugose owing to the retention of successive scutes; the plastral scutes are brownish yellow with lateral and posterior edges darkened to brown or black. USNM 248846-47.

Family AGAMIDAE

Agama agama. — Two adult males (105.7 & 108.4 mm SVL) and five adult females ($x = 82.8, 72.8-88.4$ mm). The males have enlarged testes. The smallest female contains five shelled oviducal eggs (3 left, 2 right) of approximately 15 mm maximum length. The other females (83.7-88.4 mm) have vitellogenic follicles (8-9 mm in diameter), typically three in each ovary. USNM 248825-31.

Family SCINCIDAE

Lygosoma fernandi. — Two females (82.6 & 117.3 mm SVL) were collected in forested areas. The small female has seven early vitellogenic follicles (ca. 1.5 mm diameter); the larger female contains two shelled oviducal eggs (19-20 mm maximum length). The broad middorsal stripe is tan in the large female and brown in the small one. Both were captured in woodlands. USNM 248832-33.

Mabuya affinis. — A juvenile (23.7 mm SVL), two adult females (60.4 and 66.1 mm), and four adult males ($x = 56.4, 55.6-57.9$ mm). The juvenile shows a healed yolk-sac scar, scales nearly overlapping on scar's midline. One female has four shelled oviducal eggs (ca. 10.5 mm maximum length); the other one had seven vitellogenic follicles (ca. 4.0 mm diameter). The visibility of the dorsolateral dark stripe is quite variable, i.e., absent in the largest female and almost absent to well-marked in the adult males; there is certainly no evidence of sexual dimorphism in this feature.

Family VARANIDAE

Varanus niloticus. — A hatchling monitor (105.1 mm SVL) was found dead on the bank of the Kaba River; there are no outward signs of predation. The yolk-sac scar is quite evident, healed but with scale rows widely separated. In alcohol, the dorsum is black with seven transverse rows of white spots from axilla to inguen; venter shows a black reticulum on a white background. USNM 2489842.

Family COLUBRIDAE

Lamprophis lineatus. — An adult male (542 mm SVL). USNM 248843.

Crotaphopeltis hotamboiea. — An adult female 415 mm SVL bearing six shelled oviducal eggs (ca. 18 mm maximum length). USNM 248844.

Philothamnus heterodermus. — A gluttonous, adult male (514 mm SVL) was captured along a stream while it was consuming a *Bufo maculatus* (USNM 248709). An examination of the snake's stomach contents revealed a *Phrynobatrachus alticola* (swallowed head first), a *Phrynobatrachus fraterculus*, a *Kassina* (both swallowed hind first), and numerous insect remains — some orthopterans. USNM 248845.

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TABLE 1

Amphibians and reptiles of the Outambi-Kilimi region. The records derive from a provisional fauna list (Teleki and Baldwin, 1981; abbreviated as TB) and the 1984 Smithsonian survey (S).

Species	Sources
AMPHIBIA	
SALIENTIA	
<i>Bufo gutturalis</i>	S
<i>Bufo macalatus</i>	S
<i>Hyperolius occidentalis</i>	S
cf. <i>Kassina</i>	S
<i>Phrynomerus microps</i>	S
<i>Arthroleptis</i>	S
<i>Dicroglossus occipitalis</i>	S
<i>Hemisus guiniensis</i>	S
<i>Hylarana albolabris</i>	
<i>Hylarana galmensis</i>	
<i>Phrynobatrachus alticola</i>	S
<i>Phrynobatrachus fraterculus</i>	S
<i>Ptychadena oxyrhynchus</i>	S
<i>Ptychaden superciliaris</i>	S
<i>Ptychadena tournieri</i>	S
<i>Ptychadena</i> sp. a & b	S
REPTILIA	
CROCODYLIA	
<i>Crocodylus cataphractus</i>	TB
<i>Crocodylus niloticus</i>	S, TB
TESTUDINES	
<i>Pelusios castaneus</i>	S
SAURIA	
<i>Agama agama</i>	S
<i>Chamaeleo senegalensis</i>	TB
<i>Lygosoma fernandi</i>	S
<i>Mabuya affinis</i>	S
<i>Mabuya perrotetii</i>	TB
<i>Varanus exanthematicus</i>	TB
<i>Varanus niloticus</i>	S, TB
SERPENTES	
<i>Python regius</i>	TB
<i>Python sebae</i>	TB
<i>Lamprophis lineatus</i>	S
<i>Crotaphopeltis hotamboiea</i>	S
<i>Dispholidus typus</i>	TB
<i>Philothamnus heterodermus</i>	S
<i>Naja melanoleuca</i>	TB
<i>Naja nigricollis</i>	TB
<i>Bitis arietans</i>	TB
<i>Bitis gabonica</i>	TB