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Reptiles and amphibians from the Kenyan coastal hinterland

N. THOMAS HÅKANSSON

*Division of Human Ecology, Lund University, Sweden**
natrix@mindspring.com

* Address for correspondence: 1944 Blairmore Rd., Lexington, KY 40502, USA.

THIS article is a contribution to the knowledge of the distribution and natural history of the herpetofauna in the cultivated zone of the Kenyan coastal hinterland. Although agricultural communities have existed for at least 2,000 years on the Kenyan coast, the last 100 years have seen an unprecedented increase in population, urban expansion and tourism development. These processes have transformed the environment by reducing the forest cover, expanding cultivation and human habitations. The effects of such changes on the distribution of reptiles and amphibians are poorly known. The present report is based on observations of reptiles and amphibians collected during residence in the coastal hinterland of Kenya from 1985 to 1986. Most observations were made around Kaloleni town, a small market center 25 Km northwest of Mombasa, situated on the coastal ridge ca. 20 Km inland from the coast (Fig. 1).

The East African coast represents an important biogeographical region with high herpetological species diversity and endemism (Broadley, *unpublished*). The herpetofauna differs markedly from that of the dry interior of eastern Africa (Schiötz 1976). While the majority of its species are representatives of a south-central African fauna, the region also includes many endemics and, in the north, several representatives of the Somalian fauna occur. As is typical for the rest of eastern Africa, the ecology, systematics and zoogeography of the coastal reptiles and amphibians is poorly known. There are very few published accounts that include collections from the Kenyan coastal strip (i.e., Loveridge, 1936a/b; Schiötz, 1975) and only one from the immediate hinterland (Malonza et al., 2006). Drewes has posted an article on the website of the California Academy of Sciences about the amphibians in the Arabuko-Sokoke forest north of Malindi (see Drewes & Altig [1996]). Although the

recent publication of two books, *A Field Guide to the Reptiles of East Africa* (Spawls et al., 2002) and *Amphibians of East Africa* (Channing & Howell, 2006) have made an immense advance in East African herpetology, further local faunal studies are still important to gather knowledge on species distribution and diversity. Such basic research is crucial to conservation programmes for the region's changing ecology that results from human transformations of local environments.

White (1983) distinguishes the coastal area from southern Somalia to northern Mozambique as a distinct floristic region - the Zanzibar-Inhambane Regional Mosaic. Prior to the introduction of agriculture and pastoralism the area was characterized by widespread forest mixed with wooded grassland and a high number of endemic forest trees (92 out of 190 species). During the last 1,000 years these forests formed patches of varying sizes, depending on human and animal activities, in a belt extending from the central Kenyan coast to the central coast of Tanzania. Today, the main forest remnants have been partially destroyed by cutting for cultivation or firewood and have become secondary wooded grassland. The remaining coastal forests are Arabuko-Sokoke, Shimba Hills and the small Kaya forests between Kwale and Kilifi. The latter have been preserved as sacred forests, called MaKaya in the language of the Mijikenda peoples who inhabit the coastal ridge.

From the border of Tanzania, to the Tana River, the Kenyan coast is characterized by relatively high rainfall exceeding an average of 1,000 mm / year, falling in two seasons, October-November and March-June. The average annual precipitation decreases rapidly toward the dry nyika thorn bush to the west, which receives 250-500 mm per annum. The severe heat of the dry season is tempered by high humidity ensuring no month is completely



Figure 1. Map of study area.

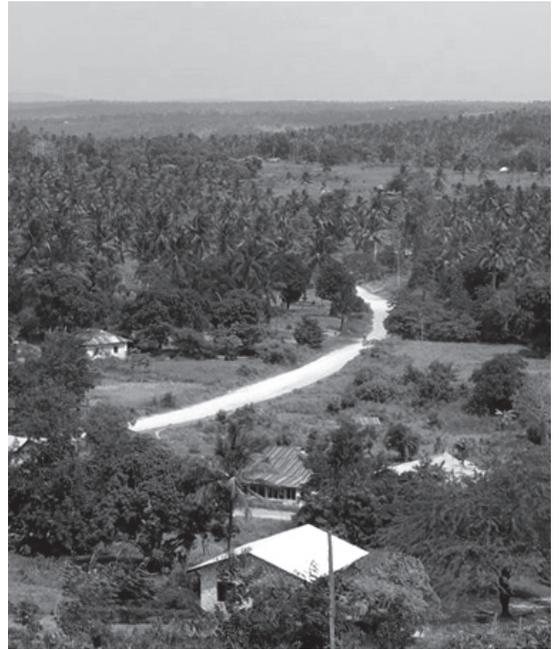


Figure 2. A view of the land around Kaloleni, July 2007.

dry. The coastal biogeographical region consists of a narrow coastal plain and ca. 15-25 Km from the shore, a ridge that culminates in a fault line at an elevation of 200-250 m above sea level. The coastal strip with high rainfall is only ca. 25 Km wide and its vegetation is wooded grassland with remnants of semi-deciduous forest. Today the coastal ridge is covered with Coconut palms and fields of Maize, Cassava, Bananas interspersed with small trees or scrubs, and Rice fields in the valleys (Fig. 2).

In addition to the ubiquitous palm plantations, rice fields with adjacent gardens and maize fields distinguish the habitat around Kaloleni. The Rice fields hold water only during the rainy season and become breeding sites for amphibians. Fields with Maize stalks, low bushes and Banana trees, as well as local mud-walled and palm thatched-roofed houses, form a habitat where snakes such as *Lamprophis fuliginosus*, *Philothamnus punctatus* and *Psammophis mossambicus* are common. During the rains, seasonal pools form along the road ditches in depressions on farmland and in Coconut palm plantations. These water logged areas are dense with amphibians that are preyed upon by snakes such as *Philothamnus hoplogaster*, *Crotaphopeltis hotamboeia*, *Crotaphopeltis*

braestrupii, and *Dipsadoboa flavida*. The amphibians are mostly active during the long rainy season, which in 1985 occurred during May-July, as well as during the short rains in November and December. As one would expect, very few frogs were observed during the dry seasons. Snakes were active during both the rainy and dry seasons with a slight variation between species. Species such as the Green Night Adder (*Causus resimus*) was conspicuously absent during the dry periods when frogs and toads (which are its main prey) are scarce.

Of the 48 species of snakes found in the Zanzibar-Inhambane Regional Mosaic of coastal Kenya, 21 are restricted to the coast but three of these also occur in the extreme west of the country (Hughes, 1983). The coast has 56% of species in common with the inland fauna of central and western Kenya.

With respect to amphibians, Schiötz (1999) recognises an East African lowland tree frog fauna occupying a region extending from the coastal area down to tropical regions of south Africa. Only widely distributed forms such as *Kassina senegalensis*, *Hyperolius nasutus* and *Hyperolius viridiflavus* are found further west from Kenya to West Africa.

METHODS AND MATERIALS

This collection was undertaken during seven months of residence in Kaloleni from 1984-1986 during visits with my wife, who was conducting anthropological fieldwork, and for my own anthropological research. Frogs and many snakes were found during night excursions with a strong head-lamp. I also established a network for snake reports by offering a small reward to anyone whom could exhibit a live snake.

All the amphibians and reptiles reported here were photographed and catalogued. Many were also preserved in alcohol and donated to the National Museums of Kenya in Nairobi (NMK indicates specimens donated to that museum). Alec Duff-Mackay and Damaris Rotich at the National Museums of Kenya identified most of the amphibian species. Those are indicated in the species list by NMK. My taxonomic nomenclature follows Spawls et al. (2002) and I avoid the use of trinomials because of the often unclear evolutionary status of morphological variation in many populations. All records are from the Kaloleni area unless stated otherwise.

SPECIES ACCOUNTS

AMPHIBIA

Xenopus muelleri - NMK

A large population frequented a rectangular concrete well enclosure.

Bufo gutturalis

This toad is extremely common and occurred calling in most waterbodies, even in the dry season.

Bufo maculatus - NMK

It was only found in a dry creek bed at the Kaya Kambe forest, none occurred in cultivated areas.

Phrynomantis bifasciatus - NMK

These colourful frogs are abundant during rains when they congregate around temporary ponds. They often remain inactive, emerging to breed only after several days of rain.

Pyxicephalus edulis - NMK

This species was uncommon. I observed only six

individuals, of which five were males, calling from a temporary pool during the rains in December 1985. The edible bullfrog is found along the coastal plains from northern south Africa to southern Somalia (Lanza, 1981; Channing & Howell 2006). Although having a primarily coastal distribution the species has also been recorded from the Tana River Primate National Reserve (Malonza et al., 2006) and the Kora National Park (Cheptumo et al., 1986) about 80 and 300 Km from the coast respectively. The exact taxonomic status of Kenyan *Pyxicephalus* sp. has been unclear for some time. According to Alec Duff-Mackay (pers. comm.) and Robert Drewes (pers. comm.) specimens on the Kenyan coast are not *Pyxicephalus adspersus*, and, in 1985, Duff-Mackay (pers. comm.) suggested that they should be classified as *Pyxicephalus flavigula*. Lanza (1981) lists Somali specimens as *P. adspersus*, but proposes that their status is not clear and merits genetic investigation (B. Lanza, pers. comm.). However, Channing & Howell (2006) categorize the coastal populations as *P. edulis*, and the specimen depicted in their book conforms to those that I collected.

Phrynobatrachus ukingensis ssp. - NMK (Fig. 3a)

This species is very common around ponds and occurs in at least two morphs; grayish with darker patches, and with a light mid-ventral strip from nose to vent. A. Duff-Mackay (pers. comm.), an authority on Kenyan amphibians, tentatively assigned them as an undetermined subspecies. *P. ukingensis* is also listed by Drewes & Altig (1996) as occurring in the Arabuko-Sokoke forest. However, Channing & Howell (2006) do not include Kenya in the distribution of this frog.

Phrynobatrachus acridoides - NMK

Common around water bodies and occurs in several morphs; 1. Grayish brown with darker patches. 2. Same as above but with light tan mid-ventral strip from snout to vent. 3. Gray with a green mid-ventral stripe.

Arthroleptis stenodactylus - NMK

Except for one individual in Kaloleni, all others were found among dead leaves at the bottom of a dry creek in Kaya Kambe forest.

Ptychadena oxyrynchus - NMK

Very common around different water bodies.

Ptychadena mossambica - NMK

Very common, occurs in two morphs, either with a yellow or light green longitudinal dorsal line.

Chiromantis xerampelina - NMK

The Southern Foam-nest Frog is very common around Kaloleni. It is active during the rainy seasons when it breeds in the temporary ponds that form in farm land and along road ditches. One female was observed forming a nest together with three males with one clinging to her neck and another to her lower body above the hind legs. A third male sat close to the female. According to Channing & Howell (2006) the peripheral males fertilize a proportion of the eggs. Interestingly female reproductive strategies involving multiple fathers are currently being discovered among many vertebrates, for example European Adders (*Vipera berus*) (Madsen et al., 1992).

Afrixalus fornasini - NMK

Common around temporary and permanent water, these frogs occurred in two morphs; one uniform yellow, which predominates, and one with a longitudinal light band from nose to vent. The latter form probably constituted less than a quarter of the observed specimens. The males were calling from reeds and grasses in the water or at the immediate edge. I observed one pair in amplexus on a reed at the end of the short rains in mid December.

Afrixalus sylvaticus - NMK (Fig. 3b)

Very common in the rice fields around Kaloleni. This small (ca. 20 mm long) tree-frog was first described by Schiötz (1974) and was previously known only from the type locality in Kwale south of Mombasa. In the collections of the California Academy of Sciences there are also three specimens from Shimba Hills, Kwale District, collected in 1981. Its distribution to the north of Mombasa is poorly known. Schiötz (1974) writes that some frogs from the Tana River may belong to this species. It seems to be restricted to the highland ridge. There are no specimens from the coastal strip in the extensive collection in the California Academy of Sciences.

The species identification was corroborated from a photograph by Robert Drewes (pers. comm.).

Afrixalus brachycnemis - NMK

This species is common and found in the same localities as *A. sylvaticus*. The Short-legged Spiny Reed Frog is a savanna species that is known from several localities along the Kenyan and Tanzanian coasts (Channing & Howell, 2006).

Leptopelis argenteus - NMK

Very common during the long rains in June - July when it is usually found on scrubs and maize stalks at some distance from water sitting at 1.0-1.5 m height. During the short rains in November - December it was virtually absent. I found only a few individuals and none were calling.

Kassina senegalensis - NMK

Several individuals were heard calling at the side of a temporary pond. Although widespread and common in Kenya, this species was only found in two ponds in Kaloleni.

Kassina maculatus - NMK

These frogs were commonly found in temporary ponds where several males floating in the water could often be seen and heard calling.

Hyperolius tuberilinguis - NMK

Common around temporary waters during rainy seasons, these frogs call from low positions among grass in and around pools.

Hyperolius pusillus

The Translucent Reed Frog was observed in a single pond at Rabai, a few kilometers south of Kambe.

Hyperolius parkeri - NMK

This species was only found at one permanent pond on the road to Mariakani. Two individuals were observed on large grass tussocks at the edge of the water at ca. 1.5 meters above ground.

Hemisus marmoratus - NMK

A few specimens were found on the ground near temporary ponds in the cultivated landscape.

REPTILIA

CHELONIANS

Pelusios castanoides

This turtle was common in rainy season ponds. One specimen was also found in a flooded dirt track.

Kinixys spekii / *Kinixys belliana*

Spawls et al. (2002) tentatively recognize these as separate species but adds that intermediates exist on the northern coast. Bell's Hinged Tortoise (*K. belliana*) has a domed carapace with a radial pattern while *K. spekii* has a flat shell with a 'zonal' pattern. Both forms were very common in the areas where they were found; in gardens, on footpaths and crossing the roads during the day.

SQUAMATA

Lygodactylus picturatus

This diurnal gecko was common on tree trunks and banana stems. It is also recorded from the lower Tana River (Malonza et al., 2006).

Hemidactylus mabuya - NMK

Ubiquitous in and outside houses and also found on cliffs by Kombeni River at Rabai.

Hemidactylus brookii - NMK

The only observed specimen was found on a large rock in Rabai.

Chamaeleo dilepis

The Flap-necked Chameleon is very common in the Kaloleni area. It was found in the low branches of trees and frequently on scrubs of about 1.0 m in height. Although I found many juveniles with body lengths of ca. 3 cm in May and November, I observed only a few adults during these months. This possibly indicates two breeding periods corresponding to the two rainy seasons. I also observed several individuals of this species in Malindi. These specimens had noticeably larger flaps than those found in Kaloleni. Spawls & Rotich (1997) discuss the variation in ear flaps in this species and note that the Somalian populations have smaller flaps than those found on the Kenyan coast. Interestingly, I have found several specimens of *C. dilepis* on the North Pare Mountain in northeastern Tanzania, which lack visible flaps. These were

deposited in the Department of Zoology at the University of Dar-es-Salaam in 1989.

Rieppeleon kerstenii

Commonly found at night sleeping on straws and grasses ca. 20 cm above ground. The average body length was 5.5 cm. When captured this species emitted a low frequency sound and vibrations.

Mabuya planifrons - NMK

One animal was found in forest litter at Rabai close to the Kombeni River.

Gerrhosaurus flavigularis

These lizards were sporadically observed along hedges and close to large bushes into which they retreated when disturbed.

Gerrhosaurus major

This species was observed more frequently than *G. flavigularis*. It was particularly common around termite mounds into which it retreated.

Varanus niloticus

This monitor species was occasionally encountered along footpaths in the cultivated zone but would quickly and noisily disappear into undergrowth.

SERPENTES

Causus resimus

Three specimens were found in the month of June in the day near a large rice field during the long rains. No Green Night Adders (*C. resimus*) were observed between November and June despite searching. This snake has an undeserved reputation among local people who called it 'Mganga uya' which means 'doctor go back' in the Giriama language. The name implies that a bite causes instant death and the doctor may as well return home. In reality its venom is quite weak and it is the envenomation apparatus that is often inefficient (Spawls & Branch, 1995). These snakes subsist predominantly on frogs and toads.

Bitis arietans

The Puff Adder is a widespread savanna species in sub-Saharan Africa. No live specimens were encountered within habitats but two dead

specimens, killed on the road were observed. Both were about 120 cm total length.

Atractaspis bibronii - NMK

I found one 64 cm male crossing a tarmac road at 21:00 and a smaller specimen, ca. 30 cm long, was found under a banana leaf around 22:00. The latter bit me in the middle finger of the left hand. I felt immediate sharp pain followed by rapid swelling of the hand that then spread to the fore-arm. The swelling disappeared after a week. Further information about the bite can be found in Udvardy & Håkansson (1996).

Dendroaspis angusticeps

The only Green Mamba (*D. angusticeps*) found was a ca. 180 cm long gravid, irascible female that had taken up residence in the palm-thatched roof of a house. According to Spawls & Branch (1995) this is a favorite place of shelter. Despite intensive search I never found another. Hence, one would guess that it is probably not as common on the coastal ridge of the area, which is unusual considering that the Green Mamba is reputed to be abundant along the coastal strip. This is a species typical of eastern semi-deciduous forests, riverine vegetation and highland rain forests like those around Amani, East Usambara.

Naja ashei

The only specimen found was a 165 cm long male that had lodged itself in the roof beam of a latrine. This uniformly brown Spitting Cobra was formerly known as *Naja nigricollis* but has recently been described as a new species and named after the late James Ashe in honour of his contributions to east African herpetology (Wuster & Broadley, 2007). It is the largest of the spitting cobras reaching a length of 2700 mm, and is distributed along the coast from southern Somalia, and southeastern Ethiopia to southern Kenya. The northern and western limits of its range are still unclear.

Lamprophis fuliginosus

This common snake is usually found in close proximity to, and inside, houses. One afternoon I observed a *L. fuliginosus* consuming a house gecko (*Hemidactylus mabuya*).

Psammophis mossambicus (Fig. 4a)

Two males and one female were captured for measurements. Their coloration was light brown with a longitudinal row of black-edged scales along the back and with total lengths of 150, 150, and 115 cm respectively. The female captured in January was gravid. These snakes were abundant in the area, often found close to human habitation, and were active diurnally. This species has often been killed by cars whilst crossing roads in search of prey. The scale counts of the specimens followed Broadley's (2002) description but their ventral counts were at the lower end of the variation, 150-180. *P. mossambicus* may reach 190 cm in Tanzania (Broadley & Howell, 1991). The genus *Psammophis* is currently taxonomically unstable, especially the two species treated herein. Most of the work conducted by Broadley (2002) has been on southern African material and no comparative systematic studies exist on snakes from eastern Africa. Most recently Spawls et al. (2002) have attempted to clarify the *Psammophis sibilans* / *Psammophis subtaenitaus* complex

Psammophis orientalis (Fig. 4b)

Four specimens of the Western Stripe-bellied Sand Snake were found. Two were found hiding on the ground and two on top of low bushes. According to Broadley (pers. comm.), who examined photographs of the largest specimen, it strongly resembled individuals from Mozambique with an ill defined dorso-lateral stripe but with strongly marked black ventral lines. The largest was a 132 cm (90 SVL + 42 TL) male resting under a palm trunk. This snake had 170 ventrals and 103 subcaudals. For males of this species, Spawls et al. (2002) gives the number of subcaudals as 94 -116 and ventrals as 146 -170. The character that immediately distinguishes *P. orientalis* from *P. mossambicus* is the pair of black ventral lines on yellow background and the more rounded head that lacks the 'Roman nose' of the latter. It also attains a smaller size. Spawls et al. (2002) give a maximum length for for this species in east Africa of 122 cm.

Philothamnus hoplogaster - NMK

Although probably common, this species was only observed near water where they slept on reeds at the



Figure 3a. *Phrynobatrachus ukingensis*, Kaloleni. ◀
3b. *Afrixalus sylvaticus*, Kaloleni. ▶▲



Figure 5. *Crotaphopeltis braestrupi*, Kaloleni. ▲



Figure 4a. *Psammophis mossambicus*, Kaloleni. ▲
4b. *Psammophis orientalis*, Kaloleni. ▼



Figure 6a. *Thelotornis mossambicus*, from Kaya Kambe. ▶
6b. *Thelotornis usambaricus* (tentative). ◀ 6c. *Thelotornis usambaricus* (tentative); note the black dorsal chevrons; from Kaya Kambe. ▲



edge of ponds. The systematics of the Green Water Snakes of the genus *Philothamnus* is unclear. While Spawls's (1978) lists the Green Water Snakes on the coast as *Philothamnus irregularis*, Hughes (1985) later confined *P. irregularis* to West Africa, while assigning the coastal populations in east Africa to *Philothamnus battersbyi* and *P. hoplogaster*. The main characteristics distinguishing these two species are higher numbers of ventrals and subcaudals for the latter. According to Hughes (1985), numbers of ventrals for *P. battersbyi* usually exceed 160 and the subcaudals 100. The specimens collected in Kaloleni were typical *P. hoplogaster*. I also examined two specimens mislabeled *Philothamnus semivariiegatus* at the NMK (nr. 2637 and 2629) from Kakuyuni, 5 Km west of Malindi, which conformed to *P. hoplogaster* with 147 and 149 ventrals respectively. The Southeastern Green-snake occurs along the east African coast from Lamu to southern Tanzania where it is also widespread westwards to Zambia, and south through Zimbabwe and eastern south Africa. The distribution of *P. battersbyi* extends through west and central Kenya.

Philothamnus punctatus

This was the most commonly observed snake in the Kaloleni area. It was found in banana groves, small trees in gardens, and it often ventures into palm-thatched roofs and walls of houses and latrines. This species was formerly subsumed under *Philothamnus semivariiegatus* but established by Hughes (1985) as a separate taxon distributed along the coast from Mozambique to northern Somalia and in the interior of northern Kenya.

Crotaphopeltis hotamboeia

One individual was found near a pond at night.

Crotaphopeltis braestrupi (Fig. 5)

Two males, 60 and 57 cm long, were found active at night close to ponds where they were probably seeking frog prey. Both specimens were black. Rasmussen (1985) based his separation of *C. braestrupi* from *Crotaphopeltis hotamboeia* on the uniform black colour and lack of white spots on the scales, and longer hemipenis. According to R. Taylor (pers. comm.) at Bioken in Watamu,

Kenyan coast, black specimens with white dots on the scales (as is typical of the usually grey – brown *C. hotamboeia*) also occur on the coastal strip.

Dipsadoboa flavida (NMK)

Three males were collected measuring 60, 47, 35 cm respectively, of which one was preserved. This attractive little snake reaches its northernmost distribution in southeastern Kenya. Three specimens were found on reeds in a pond at 22:00 hours probably hunting for frogs. One specimen kept in a cage ate reed frogs (*Afrivalus* sp.).

Telescopus semiannulatus

One specimen was found on a field in Watamu south of Malindi. Although these snakes are common along the coastal strip none were encountered around Kaloleni on the coastal ridge. This species may be confined to the coastal strip in Kenya where it reaches its northernmost distribution around the mouth of the Sabaki River in Kenya (Spawls et al. 2002).

Dispholidus typus

One ca. 60 cm brown female was killed in a village and another was dead on a road outside Kaloleni. A juvenile was found in a bush in Watamu.

Thelotornis mossambicanus/usambaricus - NMK

Three specimens were found in Kambe Kaya forest (see Fig. 6a, b, c). Four visits to Kaya Kambe produced three individuals, each about 125 centimeters long. The snakes were found at night sleeping in trees overgrown with creepers in dense forest at about 2.5 m. The scale counts conformed to Broadley's (2001) description of coastal east African *Thelotornis*. The top of the head of two snakes was reddish brown, infused with small patches of green on the dorsal side of the head conforming to colour patterns common in southeast Zaire, northeast Zambia and north Malawi (Broadley, 1979). However, the head colour of one of the specimens was green on both top and sides, which accords with Broadley's (2001) latest description of *T. usambaricus*. Another characteristic that conformed with *T. usambaricus* was the presence of black anteriorly directed chevrons (see Figs. 6a, b, and c). For an

overview of the taxonomic history of the genus, readers are referred to Wahlgren (2006).

DISCUSSION

Broadley & Howell (1991) arranged the Tanzanian reptiles according to White's (1983) classification of floristic regions in order to understand biogeographical and macro-ecological relationships of the east African herpetofauna. Interestingly, their analysis of reptile distributions corresponds well with Schiötz's (1976) map of amphibian distributions in eastern Africa.

In order to further test the usefulness of this regional classification I arranged observations herein according to White's regions. Fourteen of the 27 reptile species (52%) and 16 of 21 amphibians (76%) found were associated with the Zanzibar-Inhumbane Regional Mosaic in Kenya and Tanzania (Broadley, [unpublished] calls this biogeographical region the east African coastal mosaic). Of these species, 13 reptiles and 13 amphibians have a primarily south-central African distribution. Two additional reptile species that are also found in the interior of Kenya are primarily southern African; *Pelomedusa subrufa* and *Chamaeleo dilepis*. Hence, the coast reptile fauna differs substantially from that of inland Kenya.

Except for *Dendroaspis angusticeps* and *Thelotornis mossambicanus / usambaricus*, none of the reptiles found on the coast seemed to be forest dependent while several amphibians were restricted to forest habitats. Drewes' (Online) research in the coastal forest of Arabuko-Sokoke revealed 25 species of amphibians of which *Mertensophryne micranotis*, *Leptopelis flavomaculatus*, and *Phrynobatrachus ukingensis* are forest species (Howell, 1993). Most of the 21 species of amphibians in the sample herein are affiliated with the moist coastal savanna, but two species are associated with forest; *Hyperolius sylvaticus* and *Phrynobatrachus ukingensis*. Hence, the majority of the species of the coastal ridge herpetofauna herein are associated with humid savanna / woodland rather than forest. The coastal floristic region possibly may not have been a continuous forest habitat. Although forests have been cleared by human activity it is likely that the large number of species of southern African affinities dominated

the fauna before humans drastically changed the vegetation cover.

With the exception of the larger coastal forests of Arabuko-Sokoke and Shimba Hills, it is questionable whether the drier coastal Kaya forests contain as many endemic reptile and amphibian species. Although my investigations of the Kaya forests do not warrant any definitive conclusions I confirm that the only species restricted to the coastal forests that I found was *Thelotornis mossambicanus / usambaricus*.

While forest habitats must be conserved to preserve biodiversity, the varied environment of the cultivated landscape can provide a rich environment for herpetofauna. Rice fields, permanent ponds, gardens, houses and refuse heaps all provide a variety of habitats for frogs and their ophidian predators. Human activities also increase the rodent population and possibly the lizard population which in turn are regular prey items for many snakes.

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