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## **A HERPETOLOGICAL RECONNAISSANCE OF MPALA RESEARCH CENTRE, LAIKIPIA, KENYA**

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### **ABSTRACT**

Reptiles and amphibians are reported from Mpala Research Centre, located in semi-arid savannah on the Laikipia Plateau of central Kenya, at 1650 m elevation at 0.293° N and 36.899° E. An intensive survey was undertaken 5–7 July 1998, supplemented by incidental sampling on other occasions. A total of 17 species are known from Mpala Research Centre: 4 toads and frogs, 1 tortoise, 7 lizards, and 5 snakes.

### **INTRODUCTION**

The Mpala Research Centre (MRC) and the adjacent Mpala Ranch are located in semi-arid savannah on the Laikipia Plateau of central Kenya, west of Mount Kenya. MRC is at 1650 m elevation at 0.293° N and 36.899° E. MRC is a biological field station managed in collaboration with Kenya Wildlife Service, National Museums of Kenya, Princeton University, and the Smithsonian Institution. Young *et al.* (1997) and Keesing (1998, 2000) provide general descriptions of the environment. Annual mean rainfall at MRC is between 550 and 600 mm, but with substantial spatial and temporal heterogeneity.

Although MRC has excellent facilities and is well situated in one of the most biologically interesting regions within Kenya, little biodiversity inventory has been undertaken there. Moreover, the Laikipia area in general has historically been ignored by visiting biological expeditions as well as collecting by Kenya residents, apparently because it is outside of the famous wildlife parks. Steindachner (1891) described several reptiles from "Leikipia" that were collected by Ludwig von Höhnel when his expedition traversed the Laikipia Plateau in late 1887 (von Höhnel, 1894). The George Vanderbilt African Expedition of 1934 was briefly in Laikipia in July 1934, fairly near the present site of Mpala (Rehn, 1936), but the herpetological report does not record specimens collected any closer to Mpala than Nanyuki

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(Loveridge, 1937). The only reptiles or amphibians recorded in the literature from Mpala are two species of snakes (Keesing, 1998).

The present survey was intended as the beginning of a herpetological survey of the Mpala area. One period of intensive sampling was undertaken (5–7 July 1998) followed by incidental herpetological observations during entomological fieldwork. The entomological fieldwork covered 24 nights in 11 sets from May 1998 to December 1999, but increasingly severe drought and logistic constraints prevented further intensive herpetological sampling. In the meantime, MRC visitors have been using our informal report in the absence of anything better. Thus, we offer the following data as starting point and hope that it will encourage others to fill in the many gaps.

A team of five collectors visited MRC 5–7 July 1998 specifically to collect insects, amphibians, and reptiles. The weather was largely overcast during our stay, with brief sunny intervals. The highest temperature recorded was 18° C, midday 7 July. The high for 6 July was 15° C. The lowest temperature we recorded was 12° C at 7 p.m. on 5 July, but overnight lows were certainly below 10° C. Our sampling was limited to the immediate vicinity of MRC, and did not include the adjacent river. We encountered 14 species and collected 28 specimens of 12 of those, as detailed below. The total number of specimens collected is followed by the catalog numbers for specimens deposited in the Smithsonian Institution (USNM) and National Museums of Kenya (NMK).

A total of 17 species are known from MRC and immediate vicinity: 14 species recorded July 1998, one tree frog recorded July 1999, and two snakes recorded by Keesing (1998). The 17 species includes 4 toads and frogs, 1 tortoise, 7 lizards, and 5 snakes. A more intensive survey of the Kora National Reserve, a much lower (270–490 m) and larger area to the east of Mount Kenya, found 44 species including 5 toads and frogs, 4 turtles and tortoises, 19 lizards, 15 snakes, and one crocodile (Cheptumo *et al.*, 1986). Another intensive survey at the Mkomazi Game Reserve in northern Tanzania, also a much larger and more diverse area than MRC, found 65 species including 14 frogs and toads, 3 turtles and tortoises, 32 lizards and 16 snakes (Cherry *et al.*, 1999, Flemming and Bates, 1999).

General information on Kenyan herpetology can be found in Hedges (1983), Marais (1992), Spawls (1978) and Spawls and Rotich (1999).

## RESULTS

### **Amphibia: Anura**

*Bufo garmani* Meek (1 USNM 533124, 1 NMK A/3557). Common large toads, basically gray with brown markings. There may be rust reddish in the dorsal markings and on the backs of the thighs.

*Kassina senegalensis* (Dumeril & Bibron) (1 NMK A/3597). A pretty, boldly spotted, small frog, called "running frog" by Hedges (1983), who provides a good colour photo mislabeled (figure 101). The ground colour is olive-tan; the large spots are chocolate to gray-brown.

*Tomopterna cryptotis* (Boulenger) (1 NMK A/3586). Looks like an earless toad, olive and gray with a pink stripe and yellow marbling on the abdomen and thighs in life: subtly colourful.

*Hyperolius viridiflavus pantherinus* (Steindachner) (1 NMK A/3680). Collected in the black cotton soil area on *Acacia drepanolobium* after rain, 18 July 1999, by Tina Kuklenski and Scott Miller. Schiøtz (1999) discusses the difficult nature of taxa within this complex.

**Reptila: Testudines**

*Geochelone pardalis* (Bell) (none collected). Common. We encountered a large female walking along at 4 p.m., 6 July 1998, during a brief sunny interval, temperature only about 15° C. Both live individuals and dead shells seen on many other occasions.

**Reptila: Squamata**

*Hemidactylus brookii* (Gray) (8 USNM 533129-36, 1 NMK L/2282). This immigrant exotic species is rapidly becoming the standard edificarian gecko of Kenya and is the most conspicuous and apparently abundant reptile at Mpala. They were easily collected around lights on buildings even past 10 p.m. when temperatures could not have exceeded 10° C. As an index to its invasive spread, it is not mentioned by Hedges (1983), although it was found at Kora in the early 1980s (Cheptumo *et al.*, 1986).

*Lygodactylus picturatus* Peters (2 USNM 533137-38). This pretty little gecko was diurnal during our stay; it is crepuscular to nocturnal at Nguruman, 600 m, in southern Kenya. A brightly coloured individual will have sooty head stripes on lemon yellow, bluish legs and tail, and a bright yellow mid-venter set off laterally with white. Many are more subdued shades of ash to charcoal grey with yellowish and bluish tints.

*Mabuya varia* (Peters) (2 USNM 533139-40, 1 NMK L/2253). A common, typical skink: brown with near-black lateral stripes, set off with near-white ventrolaterally. At this elevation, it would be an excellent candidate for life-history studies.

Black scincoid (none collected). We observed three large—to half a meter—black skink-like lizards in the stone walls when it warmed up on 7 July. They might be easy to capture with double funnel traps placed among the stones.

*Agama agama* Linnaeus (4 USNM 533125-28). Our male had orange-red shoulders, a purplish head with brick-red suffusions, and a dark red throat. His body was slate-green with lots of scattered sky-blue scales, especially posterodistally. Females and young were olive with some yellow on their throats. Active during the fleeting sunny periods; obviously abundant.

*Nucras* sp. cf. *boulengeri* (1 NMK L/2279). This lovely little lizard could not be identified with certainty. It was found under a rock at 5 p.m., 6 July by W. Lu. We would expect it to be a fast-moving heliophile in habitats 15° C warmer than ambient at Mpala (e.g., 30° C). In life, the legs and proximal tail were orange-pink; the tail became bright orange-red distally. The bold facial pattern was cream-yellow on gray-brown. There were ochre-yellow lateral dots on this ground on the body, and a rusty-pink zone along the sides of the off-white venter. There was a middorsal stripe of bright golden-yellow, flanked by fawn-brown, black-edged stripes. There were duller golden dorsolateral stripes.

*Chameleo bitaeniatus* (Fischer) (1 NMK L/2257). An apparent juvenile, ca 3 cm SVL. Said by staff to be uncommon.

*Typhlops lineolatus* Jan (1 USNM 533143, 1 NMK S/3436). Big, stout fellows; blackish-brown with gray around mouths and vents. Under rocks.

*Lamprophis fuliginosus* (Boie) (1 USNM 533141). This is the "common brown house snake" called "Boaedon" by Hedges (1983). Good accounts are provided by Marais (1992) and Branch (1988). Ours was plain, dull grey-brown; paler below; and with light facial trim lines. It was crawling along the kitchen wall at 7 p.m., 5 July, at 12° C.

*Psammophis subtaeniatus* Peters (1 USNM 533142). This beautiful, rather long (to 1.4 m), elegant snake is illustrated with colour photos in Hedges (1983), Branch (1988) and

Marais (1992). The most detailed account is Marais (1992). Ours had a butter-yellow belly and an elaborate ash-grey head pattern on a rich brown ground. The iris had a red-gold pupil ring and was rust-brown from 10–2 o'clock. Might be common enough for a life history study.

*Naja* sp. An unidentified cobra was recorded by Keesing (1998).

*Bitis arietans* Merrem. The puff adder was recorded by Keesing (1998).

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