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THE HERPETOFAUNA OF NORTHERN MWINILUNGA DISTRICT, NORTHWESTERN ZAMBIA

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by

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ABSTRACT

The amphibian fauna of northwestern Zambia was quite well known, but no systematic collection of reptiles had ever been made. This was rectified when I spent the period 23 September to 12 October 1990 based at Sakeji School near Ikelenge and collected 258 reptiles and 77 amphibians. Five reptile species are new for Zambia, i.e. *Adolfus africanus*, *Causus lichtensteinii*, *Limnophis bicolor*, *Thrasops j. jacksonii* and *Rhamnophis aethiopyssa turicensis*.

INTRODUCTION

The earliest collection of reptiles and amphibians from northern Mwinilunga District was made by Mr W.F.H. Ansell while he was investigating the mammal fauna of this area during 1957 (NMZB 1502-1636). In 1973 the first Zambian specimen of *Grayia ornata* was taken from a fish trap at Isombo stream by P.D.H. Ansell (Broadley, 1983). In January 1965 a useful collection of reptiles and amphibians was made by Mr C.A. Green while on a University College of Rhodesia and Nyasaland expedition which concentrated on entomology (NMZB-UM 19236-62). A few reptiles and amphibians were collected by Mr D.L. Hancock while collecting butterflies in May 1983 (NMZB 7079-93).

An important collection of amphibians obtained in Mwinilunga District by Ronald Keith was deposited in the American Museum of Natural History (Poynton & Broadley, 1985a, 1985b, 1987, 1988).

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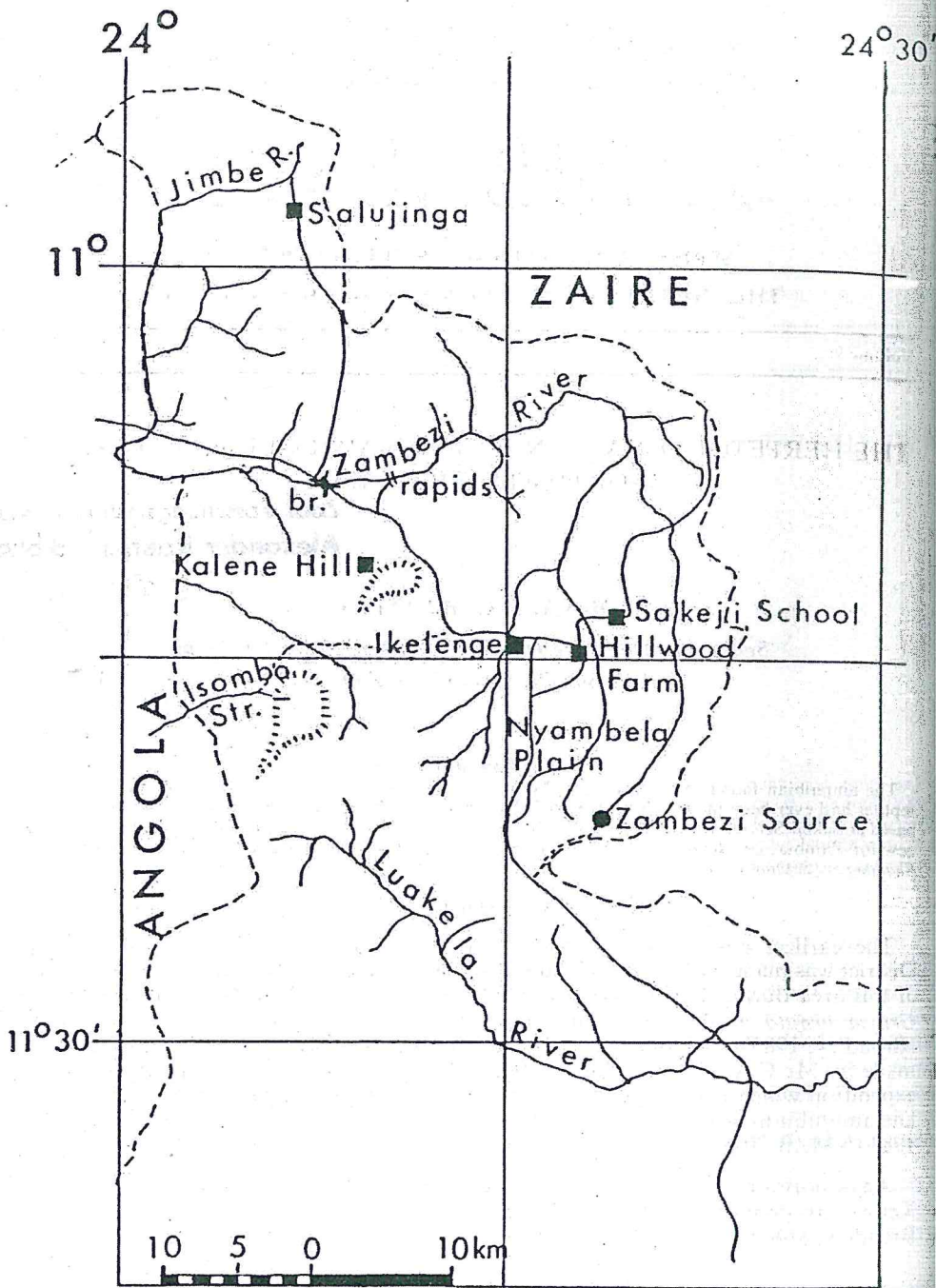


Fig. 1. Map of northern Mwinilunga District, Zambia.

It was obviously desirable that a comprehensive sample of reptiles be collected in this critical area, but it was not until September/October 1990 that I was able to get there by joining Mr Fenton ("Woody") Cotterill, who visited the area to investigate the local bat fauna.

The area investigated is shown in Fig. 1. Hillwood Farm covers two quarter-degree squares, 1124A2 indicated by "(N)" and 1124A4 indicated by "(S)".

SYSTEMATIC SECTION
REPTILIA
CHELONII
PELOMEDUSIDAE
PELUSIOS NANUS Laurent

NMZB 10609 Kazombi Dambo, Hillwood Farm (N)

A subadult shell with a carapace length of 67 mm was found between clumps of grass in a wide dambo. Five live specimens were brought in from Sakeji stream, a female has a carapace length of 120 mm, the maximum recorded for this dwarf terrapin.

TESTUDINIDAE
KINIXYS SPEKII Gray

NMZB-UM 32965 Zambezi Rapids

An adult male with a shell length of 176 mm and shell length/height ratio of 2,35. The carapace pattern is zonary and the lower proximal lower edge of the supracaudal is mesially excavate — characteristic of this species (Broadley, 1989).

A live male for Ikelenge has a shell length of 184 mm and a shell length/height ratio of 2,59, while a female has a shell length 149 mm and shell length/height ratio 2,44.

There are two other specimens from Ikelenge which may be hybrids between *K. spekii* and the southwestern populations of *K. belliana* which inhabit Angola and western Zaire. These populations were previously assumed to be *K. spekii* (Broadley, 1989), but examination of the limited material available shows it all to be *K. belliana*. Most of the Angolan material was destroyed when the Museu Bocage was destroyed by fire.

An adult female (NMZB 10582 Hillwood Farm) has a shell length of 178 mm and a shell length/height ratio of 2,17. A live male from Ikelenge has a carapace length of 163 mm and a shell length/height ratio of 2,09, he is unusual in having the femoral shields separated by long sutures between the abdominals and anals. Both have the ventral face of the supracaudal slightly narrowed mesially.

The female was brought to me after being caught in a bush fire while aestivating in dry mud. The plastron was caked with mud, but most carapacial plates were burnt or had fallen off and the tortoise was bleeding from the nostrils. It was prepared as a skeleton. The male tortoise shows traces of the zonary pattern on the carapacial shields typical of *K. spekii*, but the relatively convex carapaces suggest *K. belliana*.

SAURIA
GEKKONIDAE

LYGODACTYLUS ANGULARIS HEENENI Witte

NMZB 10507-8 Hillwood Farm (N)
NMZB 10614, 10780 Sakeji School

Two males and two females with 3 nasals, rostral and first labial contacting the nostril; internasals 1 or 2; anterior snout scales 4 or 5, mental without clefts; postmentals 2 or 3; preanal pores 7 or 8; lamellae under fourth toe 5 or 6; supracaudals 7 rows per verticil; subcaudals single, 3 rows per verticil; throat with irregular dark vermiculation.

These arboreal geckos were collected on buildings and a pergola. This race has not previously been recorded in Zambia. The typical form was collected on the Mushishima farm buildings near Chingola.

LYGODACTYLUS CAPENSIS CAPENSIS (A. Smith)

NMZB 10540-2, 10575, 10695-6 Hillwood Farm (S)

Three males and three females with 2-3 nasals, the first labial and (rarely) the rostral contacting the nostril; internasals 1 or 2; anterior snout scales 4; mental with lateral clefts; postmentals 3; preanal pores 6; lamellae under fourth toe 5-6; supracaudals 7 rows per verticil; subcaudals semidivided, 3 rows per vertical (except for NMZB 10696, which is aberrant in having two longitudinal rows of median subcaudals enlarged); throat with irregular grey stippling.

This series was collected when a D4 bulldozer was clearing a former cassava field for conversion to pasture. The geckos were living on partially burnt tree trunks left over from the clearing of the original miombo woodland five years earlier.

HEMIDACTYLUS MABOUIA (Jonnés)

NMZB 10655 Sakeji School

This normally common commensal of man was surprisingly rare in this area. This female was taken at night on an outer door of one of the school buildings.

AGAMIDAE
STELLIO ATRICOLLIS (A. Smith)

NMZB 1506 Ikelenge
NMZB 7081 Zambezi Bridge, NW of Ikelenge
NMZB 10485, 10613 Sakeji School
NMZB 10521, 10574 Hillwood Farm
NMZB 10659 Isombo Stream

Three males and three females from miombo woodland areas.

CHAMAELEONIDAE
CHAMAELEO DILEPIS DILEPIS (Leach)

NMZB 1519 Ikelenge
NMZB 10644 Hillwood Farm (S)

SCINCIDAE
LYGOSOMINAE

MABUYA MACULILABRIS MACULILABRIS (Gray)

NMZB 10597, 10615 Sakeji School
NMZB 10946 Hillwood Farm (N)

Three adults with 5 supraciliaries; 32-34 midbody scale rows and 16 lamellae beneath the fourth toe.

These skinks were commonly seen basking on tree trunks, especially along streams. Others were foraging in leaf litter.

MABUYA VARIA (Peters)

NMZB 1513, 1516-8 Zambezi Rapids
NMZB-UM 8340-1 Kalene Hill
NMZB 10513, 10518-9, 10546 Hillwood Farm (S)

Supraciliaries 5 (rarely 6); midbody scale rows 34-36; lamellae beneath fourth toe 19-21.

This terrestrial species was common in savanna habitats.

MABUYA STRIATA WAHLBERGII (Peters)

NMZB 10487 Sakeji School
NMZB 10510-2, 10523-6, 10543-5 Hillwood Farm

Upper labials anterior to subocular usually 5, rarely 6, subocular not reaching lip in one specimen; midbody scale rows 36-40, dorsals with 5-7 keels in adults; lamellae beneath fourth toe 18-23.

These specimens differ from typical *M. s. wahlbergii* in having distinct pale dorsolateral stripes two scales wide, which are separated by five rows bearing dark longitudinal lines.

This species was common on buildings and on tree-trunks and logs in former miombo woodland areas.

EUMECIA ANCHIETAE ANCHIETAE Bocage

NMZB 10758 Ikelenge

This is the pelvic region and tail of an adult recovered from the stomach of a *Psammophis sibilans leopardinus*. There are three toes on the hind limb.

PANASPIS WAHLBERGII (A. Smith)

NMZB 10547 Hillwood Farm (S)
NMZB 10599 Kalene Hill

Midbody scale rows 24-28. The first specimen was uncovered by the bulldozer clearing the old cassava field, the second was under a stone at the old mission site.

LACERTIDAE
ADOLFUS AFRICANUS Boulenger

NMZB 10723-4 Zambezi Source

Two males with 20 midbody scale rows, outer ventrals with a trace of keeling only anteriorly. Red-brown above, with a dorsolateral line of pale spots; flanks dark brown with a pale stripe from lower edge of ear opening to shoulder and a ventrolateral line of pale spots; ventrum greenish.

New for Zambia; these specimens represent a southwestern range extension of 325km from the Upemba National Park (Witte, 1953). A number of specimens were seen basking on tree trunks in the open forest at the Zambezi source. One was seen on a log spanning the Isombo Stream.

ICHNOTROPIS BIVITTATA BIVITTATA (Bocage)

NMZB 1511 Sakeji stream at 11°22'S: 24°15'E

A female with 38 midbody scale rows.

ICHNOTROPIS CAPENSIS (A. Smith)

NMZB 10520, 10548-53, 10576-9, 10624, 10645-7, 10697-701 Hillwood Farm
NMZB 10755 Jimbe Source

Twenty-one adults with 36-40 midbody scale rows.

This was a common species in savanna areas. Specimens were found in the stomachs of a *Philothamnus semivariatus* and a *Thelotornis kirlandii*.

CORDYLIDAE

GERRHOSAURUS MULTILINEATUS MULTILINEATUS Bocage

NMZB 4949-62 Sakeji Stream
NMZB 10573, 10583-4, 10588, 10600-3, 10936 Ikelenge

Twenty-two adults and one juvenile with 24 (rarely 22 or 26) dorsal scale rows and proximal supracaudal scales strongly spinose.

Grey-brown above, some specimens coppery orange on the flanks, others with blue-grey on sides of neck and throat; ventrum white.

Largest male (NMZB 10936) $180 + 347 = 527$ mm, but NMZB 10584 has snout-vent length 200 mm; largest female (NMZB 4950) $200 + 295 = 495$ mm.

These large plated lizards were common in the miombo woodland, where they were usually found basking close to their burrows. Gravid females contained 3-6 eggs measuring up to 27 x 12 mm. Stomach contents consisted largely of grasshoppers.

TETRADACTYLUS ELLENBERGERI (Angel)

NMZB 10663 Ikelenge

A subadult (56 + 200 mm) with 12 dorsal scale rows.

VARANIDAE

VARANUS ALBIGULARIS ANGOLENSIS Schmidt

NMZB 7331 Isombo Stream

NMZB 10442 Ikelenge

A subadult and an adult male with 119-136 midbody scale rows and 74-78 ventrals between collar and groin. The male (NMZB 10442) measured $630 + 830 = 1460$ mm.

The subadult is dull yellow speckled with black and with a series of transverse rows of confluent black-bordered yellow spots forming crossbands; chin and throat dark grey, ventrum dull yellow with a grey network.

The adult is blackish above with transverse series of large yellow spots and yellow crossbands on the tail; throat black, ventrum light grey with a black network.

The scale counts of eleven *V. albigularis* from northern Zambia (midbody scales rows 118-136 and ventrals from collar to groin 74-86) agree with those given for the race *angolensis* by Mertens (1942). Although there is an overlap with typical *V. albigularis* in these counts, *angolensis* is readily distinguished by its dark throat and a vertebral band of enlarged scales which extend from the occiput to proximal portion of the tail. Live specimens of *V. a. angolensis* have been illustrated by Witte (1953) and Laurent (1964).

VARANUS NILOTICUS NILOTICUS (Linnaeus)

NMZB-UM 10355 Ikelenge

NMZB 10607 Sakeji School

The skin of a 1880 mm specimen and the head of a male which measured $680 + 1035$ mm. No attempt was made to obtain a series of this common reptile.

AMPHISBAENIA

AMPHISBAENIDAE

ZYGASPIS QUADRIFRONS (Peters)

NMZB 10554-6 Hillwood Farm

Three adults with 204-214 annuli on body, 33-35 on tail and 16-19 + 14-16 segments in a midbody annulus.

Exposed by the bulldozer clearing the old cassava field.

SERPENTES

TYPHLOPIDAE

TYPHLOPS LINEOLATUS LINEOLATUS Jan

NMZB-UM 8337 Zambezi Rapids

NMZB 10530-1, 10650, 10692 Hillwood Farm (N & S)

NMZB 10712 Ikelenge

Midbody scale rows 24, all with a lineolate pattern.

LEPTOTYPHLOPIDAE

LEPTOTYPHLOPS NIGRICANS NIGRICANS (Schlegel)

NMZB 10598 Kalene Hill

NMZB 10662 Isombo Stream

Two adults with 224-236 dorsals in a longitudinal row; subcaudals 21-25.

The first specimen was under a stone at the old Kalene Hill mission site, the second was found dead on a path.

VIPERIDAE
CAUSUS LICHTENSTEINII (Jan)

NMZB 10606, 10686 Sakeji School

Midbody scale rows 14-15; ventrals 134 (male) and 140 (female); subcaudals (single) 17 (male) and 14 (female); supralabials 6 or 7.

Olive green above, with a white chevron on the nape; chin and throat bright yellow with black crossbands on neck, rest of ventrum white; tongue black with an orange band.

The male was killed at the edge of a patch of forest by the spring which supplies Sakeji School; the female was near the Sakeji river.

This species is new for Zambia. There is a single record from the Shaba Province of Zaire, this being from Lubumbashi, slightly further south (Witte, 1953).

CAUSUS BILINEATUS Boulenger

NMZB 10604, 10676-80, 10685, 10718, 10750, 10765, 10794 Ikelenge
NMZB 10774-7 Nyambela Plain

Twelve males and three females, with 17 (rarely 16 or 18) midbody scale rows; ventrals 126-140 in males, 130-138 in females; subcaudals 25-30 in males, 23-28 in females; supralabials 6 (7 on one side of one snake).

Largest male (NMZB 10750) $445 + 62 = 507$ mm; largest female (NMZB 10604) $275 + 33 = 308$ mm.

The pale dorsolateral lines are distinct in all specimens.

CAUSUS RHOMBEATUS (Lichtenstein)

NMZB-UM 8338; NMZB 10629, 10704, 10722, 10744 Ikelenge
NMZB 10622 Nyambela Plain

Three males and three females, with 17-19 midbody scale rows; ventrals 132-141 in males, 138-141 in females; subcaudals 26-27 in males, 22-24 in females; supralabials 6.

Four specimens resemble previously examined Zambian material, with the dark dorsal markings only indicated on scale edges. One male (NMZB 10722) and one female (NMZB 10704) are pale grey with strongly contrasted jet black dorsal markings. The male has 132 ventrals and 26 subcaudals, the female 139 ventrals and 24 subcaudals, counts close to those recorded for *C. maculatus* in Angola (Laurent, 1964), but differences in head shield proportions recorded by Laurent were not detectable.

NMZB-UM 8338 was recovered from a lizard Buzzard (*Kaupifalco monogrammicus*).

BITIS ARIETANS ARIETANS (Merrem)

NMZB 10587 Hillwood Farm
NMZB 10726-8, 10781-2 Ikelenge

A male and five females with 31-33 midbody scale rows; ventrals 126 in male, 126-129 in females; subcaudals 26 in male, 13-17 in females.

These specimens were very dark dorsally with strongly contrasted yellow chevrons. Two of the females were gravid, with 29 and 22 near full-term embryos on 9 October.

BITIS GABONICA GABONICA (Duméril & Bibron)

NMZB 10656 Ikelenge
NMZB 10753 Jimbe Source

Two subadult females with 39-43 midbody scale rows; 130-131 ventrals and 19-20 subcaudals.

ATRACTASPIDIDAE
ATRACTASPIS CONGICA ORIENTALIS Laurent

NMZB 10651, 10693 Hillwood Farm (S)
NMZB 10683 Ikelenge

Two males and a female with 18-19 midbody scale rows; ventrals 190-191 in males, 211 in female; cloacal entire or divided; subcaudals 21-23 in males, 18 in females, the proximal 2-9 single, the remainder paired; first pair of infralabials widely separated.

The female contained developing eggs and four nestling rodents.

ELAPIDAE
NAJA MELANOLEUCA Hallowell

NMZB-UM 8339 Zambezi Rapids, Ikelenge
NMZB 10730 Ikelenge

An adult male and female with 19 midbody scale rows; ventrals 212 in male, 214 in female; subcaudals 62 in male, 57 in female; *subfulva* colouration.

NAJA NIGRICOLLIS NIGRICOLLIS (Reinhardt)

NMZB 10605, 10623, 10664, 10729, 10743, 10748, 10796 Ikelenge
NMZB 10754 Jimbe Source

Five males and three females with 17-19 midbody scale rows; ventrals 176-183 in males, 179-183 in females; subcaudals 55-59 in males, 54-56 in females; cuneates 1-3.

Dorsum grey-brown in subadults, black in adults.

NMZB 10605 had a juvenile *Gerrhosaurus multilineatus* in its stomach.

DENDROASPIS POLYLEPIS Günther

NMZB 10713 Ikelenge

A male with 21 midbody scale rows, 265 ventrals and 130 subcaudals.

DENDROASPIS JAMESONI JAMESONI (Traill)

Local people informed us that a green mamba occurs in the forested areas, but no specimens were brought in. Pike (1964) has recorded this species from Lake Bangweulu, but unfortunately the specimens were destroyed in a fire.

COLUBRIDAE
LAMPROPHIS FULIGINOSUS (Boie)

NMZB 4973-4 Sakeji Stream
NMZB 10585 Hillwood Farm (S)
NMZB 10707, 10737, 10745, 10795 Ikelenge
NMZB 10784 Sakeji School

Two males and five females with 25-29 midbody scale rows; ventrals 192 in males, 213-227 in females; subcaudals 56-63 in males, 46-51 in females.

NMZB 10745 was olive green dorsally, the others were light grey or grey-brown. Specimens from southern Zambia are red-brown above (e.g. NMZB 10478 collected at Lusaka on the journey to the north), while those from the Northern Province are blackish.

LYCOPHIDION MULTIMACULATUM Boettger

NMZB 10580, 10694 Hillwood Farm (S)
NMZB 10763, 10786 Ikelenge
NMZB 10798 Sakeji School

One male and five females with 17-17-15 scale rows; ventrals 168 in male, 172-175 in females; subcaudals 34 in male, 25-29 in females.

Dorsum stippled grey with confluent black blotches, chin white, ventrum black and white, largely black mesially.

This form is regarded as a full species because it is sympatric with *L. capense capense* 15 km WSW of Katima Mulilo in the Caprivi Strip (Namibia).

The largest female (NMZB 10694: 410 + 40 mm) laid 7 eggs after capture. NMZB 10798 had a *Mabuya maculilabris* in her stomach. The Hillwood Farm specimens were exposed by the bulldozer, the big female was beneath a large log.

GRAYIA ORNATA (Bocage)

NMZL (National Museum of Zambia, Livingstone) 1517 Isombo Stream.

A female with 17 midbody scale rows, 148 ventrals and 70 subcaudals. Banded phase. Length 820 + 245 = 1065 mm.

This snake had a very large *Rana angolensis* in its stomach (Broadley, 1983).

GRAYIA THOLLONI Mocquard

NMZB 10660 Isombo Stream

A male (360 + 250 mm) with 15 midbody scale rows, 135 ventrals and 114 subcaudals. Transverse banding distinct.

The only previous Zambian record was from Lake Chisi, Mweru Wantipa (Broadley, 1983). This new record represents a range extension of about 80 km to the south-west from M'Pala, Kanzenze (Witte, 1953).

NATRICITERES VARIEGATA BIPOSTOCULARIS Broadley

NMZB 10778-9 Ikelenge

A pair with 17-17-15 dorsal scale rows; ventrals 130 in male, 136 in female;

subcaudals 73 in male, 72 in female; postoculars 2 on one side, 3 on 3 sides (i.e. atypical for this subspecies).

The male has black vertebral and lateral stripes and brown dorsolateral stripes. The female has the vertebral stripe maroon, dorsolateral stripes red-brown and lateral stripes blackish-brown.

The male had small tadpoles in his throat.

LIMNOPHIS BICOLOR Günther

NMZB 10731 Ikelenge

A large female (553 + 107 mm) with 19-19-17 dorsal scale rows; ventrals 136; subcaudals 46; parietals narrowly separated from the sixth supralabial.

This specimen agrees with typical bicolor in all the characters cited by Laurent (1964), except that the anterior temporal narrowly separates the parietal from the sixth supralabial. However, Ikelenge is surrounded by records of *L. bicolor bangweolicus* (Mertens) and I therefore consider that *L. bangweolicus* should be treated as a full species. The striking difference in head shapes of the two species (see Laurent, 1964, Fig. 30/31) suggests that they may differ in feeding habits.

PSAMMOPHYLAX TRITAENIATUS (Günther)

NMZB 10581 Hillwood Farm (S)

A male with 148 ventrals, 50 subcaudals and no vertebral stripe. Uncovered by the bulldozer clearing the old cassava field.

RHAMPHIOPHIS ACUTUS ACUTUS (Günther)

NMZB 10532 Hillwood Farm (S) — skeleton

NMZB 10634, 10684, 10738, 10759, 10764 Ikelenge

NMZB 10773 Nyambela Plain

Two males and four females with 17 midbody scale rows; ventrals 176-182 in males, 163-173 in females; subcaudals 59-64 in males and 58-63 in females. The trident marking on top of the head may be present or absent.

Largest male (NMZB 10759) 875 + 173 = 1048 mm; largest female (NMZB 10764) 660 + 155 = 815 mm.

It was interesting to find that this population represents the typical form and not the subspecies *jappi* of the Zambezi flood plains in western Zambia, which has higher ventral and subcaudal counts (Broadley, 1971a).

NMZB 10738 contained a *Hemisus marmoratus*.

PSAMMOPHIS SIBILANS LEOPARDINUS Bocage

NMZB 10635-6, 10736, 10757 Ikelenge

Two males and two females with 17 midbody scale rows; ventrals 152-157 in males, 154-156 in females; cloacal divided; subcaudals 80 in male, 75-77 in females. Olive brown, with the distinctive dorsal "double chain pattern" in yellow bordered with black, many lateral scales are tipped with black. Ventrums greenish yellow, the free edges of the ventrals irregularly spotted with black.

The only previous Zambian records were from Mporokoso and Mbala (Broadley, 1971b). The new records serve to bridge the gap between northern Zambia and Angola.

PSAMMOPHIS PHILLIPSII (Hallowell)

NMZB 10734-5 Ikelenge

Two females with 17 midbody scale rows; 176-178 ventrals; cloacal divided; subcaudals 99.

One stomach contained a bird, the other a frog (*Ptychadena sp.*)

POLEMON CHRISTYI (Boulenger)

NMZB 10797 Ikelenge

A female with 15 midbody scale rows; 225 ventrals and 16 subcaudals.

PROSYMNA AMBIGUA AMBIGUA Bocage

NMZB 10752 Ikelenge

A male with 15 midbody scale rows; 122 ventrals; cloacal entire; 29 subcaudals; 6 supralabials with 2, 3 and 4 entering the orbit; preocular 1; postoculars 2; temporals 1+2.

This specimen has the lowest ventral count recorded for the species and it represents a southern range extension. The only specimens previously recorded from Zambia are from Mbala (Broadley, 1980).

PHILOTHAMNUS ANGOLENSIS Bocage

NMZB 10612 Hillwood Farm (S)

NMZB 10631-2, 10639-40, 10709-10, 10766-9, 10783, 10787-91 Ikelenge

Thirteen males and four females with 15 midbody scale rows; ventrals 143-154 in males, 155-158 in females; cloacal divided; subcaudals 101-109 in males, 91-102 in females; supralabials 9, with 4, 5, 6 entering orbit, rarely 10 (5, 6, 7) or 8 (3, 4, 5); infralabials 9-11, the first 4-6 in contact with anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 1 or 1 + 2.

Largest male (NMZB 10783) 685 + 350 = 1035 mm; largest female (NMZB 10639) 655 + 285 = 940 mm.

NMZB 10612 was caught in a *Lantana camara* bush at the edge of a small dam, others were seen along the Sakeji River. NMZB 10767 contained 8 eggs measuring 27 x 13 mm on 10 October.

PHILOTHAMNUS HOPLOGASTER (Günther)

NMZB 1502 Isombo Stream (head only)

NMZB 10638, 10672, 10708, 10721, 10741, 10747, 10751, 10792 Ikelenge

One male and seven females with 15 (rarely 13) midbody scale rows; ventrals 143 in male, 143-152 in females; cloacal divided; subcaudals 78 in male, 64-72 in females; supralabials 8 (rarely 7), 4 & 5 (rarely 3 & 4) entering orbit; infralabials 8-10, the first 4 or 5 in contact with anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 1.

PHILOTHAMNUS ORNATUS Bocage

NMZB 10668-71, 10771-2 Ikelenge

A male and 5 females with 15 midbody scale rows; ventrals 155 in male, 154-164 in

females; cloacal divided; subcaudals 111 in male, 94-100 in females; supralabials 8 (rarely 9), 3, 4 & 5 (rarely 4, 5 & 6) entering orbit; infralabials 10 (rarely 11), the first 5 (rarely 6) in contact with anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 1.

Only male (NMZB 10771) $378 + 201 = 579$ mm; largest female (NMZB 10668) $495 + 217 = 712$ mm.

All specimens have a well defined yellow-bordered brown vertebral stripe and the sides of the head and flanks heavily blotched with black.

NMZB 10670 had a *Ptychadena porosissima* in her stomach.

PHILOTHAMNUS HETEROLEPIDOTUS Günther

NMZB 10641-3, 10673, 10740, 10770 Ikelenge

Four males and two females with 15 midbody scale rows; ventrals 170-173 in males 171-174 in females; cloacal divided; subcaudals 109-119 in males, 101 in female; supralabials 8 or 9, 3, 4 & 5 or 4, 5 & 6 (rarely 4 & 5 only) entering orbit, infralabials 9 or 10, the first 5 (rarely 4) in contact with anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 1.

Largest male (NMZB 10740) $420 + 223 = 643$ mm; larger female (NMZB 10770) $488 + 207$ mm (tail truncated).

PHILOTHAMNUS SEMIVARIEGATUS (A. Smith)

NMZB 10621 Sakeji School

A female with 15 midbody scale rows; ventrals 185; cloacal divided; subcaudals 120 + (tail truncated); supralabials 9, 4, 5 & 6 entering orbit; infralabials 10, first 5 in contact with anterior sublinguals; preocular 1; postoculars 2; temporals 2 + 2 + 2.

Uniform green above, except for a white spot at the base of each scale.

This specimen was killed near the Sakeji River and had an *Ichnotropis capensis* in her stomach.

CROTAPHOPELTIS HOTAMBOEIA (Laurent)

NMZB 10608, 10608A, 10619 Ikelenge

Two males and a female with 19 midbody scale rows; ventrals 158-161 in males, 161 in female; cloacal entire; subcaudals 34-37 in males, 32 in female; supralabials 8, 3, 4 & 5 entering orbit; infralabials 9-10, the first 4 or 5 in contact with the anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 2.

NMZB 10619 had a *Bufo gutturalis* in her stomach.

DIPSADOBOA SHREVEI SHREVEI (Loveridge)

NMZB 10620, 10637, 10657, 10666, 10756 Ikelenge

A male and four females with 19 midbody scale rows; ventrals 216 in male, 209-215 in females; cloacal entire; subcaudals 78 in male, 74-77 in females; supralabials 8, 3, 4 & 5 (rarely 4 & 5 only) entering orbit; infralabials 10-11, the first 5 in contact with the anterior sublinguals; preocular 1; postoculars 2; temporals 1 + 2 (rarely 1 + 1 + 2).

Uniform black or with a pale suffusion on chin and throat.

NMZB 10657 had a *Chamaeleo dilepis* in her stomach.

THRASOPS JACKSONII JACKSONII Günther

NMZB 10658, 10717, 10749 Ikelenge

An adult male and female and a subadult male with 19 midbody scale rows; ventrals 193-194 in males, 199 in female; cloacal divided; subcaudals 141-150 in males, 136+ in female; supralabials 8 (rarely 9), 4 & 5 (rarely 5 & 6) entering orbit; infralabials 9-10, the first 4 or 5 entering orbit; preocular 1; postoculars 3; temporals 1 + 1.

Larger male (NMZB 10717) 1190 + 506 = 1696 mm; female (NMZB 10658) 1180 + 500 mm (tail truncated).

The female is uniform black, but the adult male has the sides of the head grey and chin and throat yellowish. The subadult male was mottled olive green and black above, below greenish with dark edges to the ventrals.

NMZB 10749 had a fledgling bird in his stomach.

This is a new species for Zambia and also a southern range extension. The nearest previous locality is M'Pala in the Lualaba District of Zaire.

RHAMNOPHIS AETHIOPISSA ITURIENSIS Schmidt

NMZB 10633, 10665, 10706, 10746, 10793 Ikelenge

NMZB 10725 Zambezi Source

Two males and four females with 15 midbody scale rows, the vertebral row enlarged; ventrals 161-163 in males, 160-165 in females; cloacal divided; subcaudals 126+ in males, 132-142 in females (4 snakes have truncated tails); supralabials 7 or 8 (rarely 9), 3 & 4 or 4 & 5 (rarely 5 & 6) entering orbit; infralabials 7-10, the first 4 or 5 in contact with the anterior sublinguals; postoculars 3 (rarely 4), the lower one in contact with 2 or 3 labials; a single large temporal.

The head is blue-green, the dorsum green with many orange spots, especially on the vertebral scale row and some scattered black scales, tail striped — each scale row orange mesially, black laterally; chin and throat white, rest of ventrum pale orange.

Larger male (NMZB 10745) 875 + 434+ = 1309+ mm; largest female (NMZB 10633) 666 + 360 = 1026 mm.

This species is new for Zambia and has not been recorded from the Shaba Province of Zaire. The nearest record is from Calonda in northeastern Angola (Laurent, 1964) 500 km northwest of Ikelenge.

DISPHOLIDUS TYPUS PUNCTATUS Laurent

NMZB 10586 Hillwood Farm (N)

NMZB 10661 Isombo Stream

NMZB 10705, 10714-5, 10732-3, 10760-2 Ikelenge

Five males and five females with 19 midbody scale rows; ventrals 172-178 in males, 177-185 in females; cloacal divided; subcaudals 100-117 in males, 101-110 in females; supralabials 7, 3 & 4 entering orbit; infralabials 9-11, the first 4 or 5 in contact with anterior sublinguals; preocular 1; postoculars 3 (rarely 2); temporals 1 + 2.

Males are black with a yellow spot on each head shield and dorsal scale, ventrum cream, each ventral bordered with black. One female is red-brown above with chin and throat white and rest of ventrum pink, two others are grey above and below and the remaining two retain washed-out juvenile colouration.

Largest male (NMZB 10732) $1110 + 365 = 1475$ mm; largest female (NMZB 10762) $965 + 325 = 1290$ mm.

NMZB 10586 contained a *Chamaeleo dilepis* and NMZB 10761 a bird.

THELOTORNIS KIRTLANDII (Hallowell)

NMZB 10785 Ikelenge

A female (750 + 448 mm) with 19 midbody scale rows; ventrals 171; cloacal divided; subcaudals 156; supralabials 8, 4 & 5 entering orbit; infralabials 9, the first 3 in contact with the anterior sublinguals; loreal 1; preocular 1; postoculars 2 or 3; temporals 1 + 2.

Top of head and temporal region uniform emerald green, supralabials uniform grey. Neck with well-defined black crossbands.

This fine specimen had an *Ichnotropis capensis* in her stomach.

This is the first record of this forest species from Zambia and it provides another record of sympatry with the savanna form *T. capensis oatesii*. The nearest *T. kirtlandii* localities are in the Upemba National Park in Zaire (Witte, 1953) and Dundo in northwestern Angola (Laurent, 1964): see map in Broadley (1979).

THELOTORNIS CAPENSIS OATESII (Günther)

NMZB 10690-1, 10711, 10719-20 Ikelenge.

Three males and two females with 19 (17 in one) midbody scale rows; ventrals 157-161 in males, 160-167 in females, cloacal divided; subcaudals 141-150 in males, 133-140 in females; supralabials 8, 4 & 5 entering orbit; infralabials 9-12, the first 3-5 in contact with the anterior sublinguals; preocular 1; postoculars 2 or 3 (1 on one side of NMZB 10719); temporals 1 + 2.

Top of head blue-green with a speckled pink and black "Y" marking, temporals pink margined with black; labials white with black speckling (as in Broadley, 1979: Fig. 1d). Neck with two black lateral blotches.

DASYPELTIS SCABRA (Linnaeus)

NMZB 10667 Ikelenge

A female with 27 midbody scale rows; 225 ventrals; cloacal entire; 51 subcaudals; supralabials 7, 3 & 4 entering orbit; preocular 1; postoculars 2; temporals 1 + 2.

Normal rhombic pattern with 52 pattern cycles from napé to vent.

AMPHIBIA PIPIDAE

XENOPUS LAEVIS PETERSII Bocage

NMZB 10557-65 Hillwood Farm (N)

BUFONIDAE
BUFO GUTTURALIS Power

NMZB-UM 19236 Zambezi Rapids
NMZB 10533 Hillwood Farm (S)

BUFO FULIGINATUS Witte

NMZB 10630 Zambezi Rapids

This subadult specimen was found on a termitarium within a few metres of gallery forest.

MICROHYLIDAE
BREVICEPS cf MOSSAMBICUS Peters

NMZB 10534-5, 10652 Hillwood Farm (S)

These specimens are superficially indistinguishable from *B. mossambicus*, but their affinities seem to be with Angolan material (Poynton & Broadley, 1985a: 522). They were exposed by the bulldozer clearing the old cassava field.

RANIDAE
RANA ANGOLENSIS Bocage

NMZB-UM 19237-8 Zambezi Rapids
NMZB 7082-4 Sakeji School
NMZB 10517 Hillwood Farm (S)

HYLARANA DARLINGI (Boulenger)

NMZB 10568 Hillwood Farm (N)
NMZB 10653 Hillwood Farm (S)
NMZB 10675 Isombo Stream

NMZB 10653 was in a moist area at the edge of an old cassava field (formerly miombo woodland) and NMZB 10675 was near derelict fish ponds at the edge of gallery forest.

HYLARANA LEMAIREI (Witte)

NMZB 7085 Sakeji School
NMZB 10589-92, 10742 Zambezi Source
NMZB 11033 Isombo Stream

This species was common in leaf litter on the banks of the infant Zambezi. NMZB 7085 was on a log across a stream in a forest.

PTYCHADENA SUBPUNCTATA (Bocage)

NMZB-UM 19252 Hillwood Farm (N)

PTYCHADENA OXYRHYNCHUS (A. Smith)

NMZB 10625 Hillwood Farm (S)

PTYCHADENA OBSCURA (Schmidt & Inger)

NMZB 7086 Sakeji School
Collected on mossy ground.

PTYCHADENA POROSISSIMA (Steindachner)

NMZB 1507 Isombo Stream
NMZB 1515 Nyambela Plain

Another of these frogs was found in the stomach of a *Philothamnus ornatus*.

PTYCHADENA GRANDISONAE Laurent

NMZB-UM 19239 Zambezi Rapids (grassy bog)

PTYCHADENA UZUNGWENSIS Loveridge

NMZB-UM 19240 Zambezi Rapids (grassy bog)
NMZB 10626 Hillwood Farm (S)

PTYCHADENA BUNODERMA (Boulenger)

NMZB 10494-501 Zambezi Rapids

This series was taken in bog on a granite slope south of the rapids.

PTYCHADENA TAENIOSCELIS Laurent

NMZB 10486, 10489 Sakeji School
NMZB 10493 Zambezi Rapids
NMZB 10527 Hillwood Farm (N)

PTYCHADENA GUIBEI Laurent

NMZB 10514 Kazombi Forest, Hillwood Farm (N)
NMZB 10566 Hillwood Farm (N)

Several of these frogs were seen in the leaf litter in swamp forest bordering the Kazombi stream.

PTYCHADENA KEILINGI (Monard)

NMZB-UM 19241 (to AMNH) Zambezi Rapids
NMZB-UM 19255-6 Ikelenge
NMZB 10492 Sakeji School

These frogs were taken in wet dambos in miombo woodland.

PHRYNOBATRACHUS NATALENSIS (A. Smith)

NMZB-UM 19242, NMZB 7087-8 Zambezi Rapids
NMZB 1510, 1629 Isombo Stream
NMZB 10490 Sakeji School
NMZB 10567, 10611 Hillwood Farm (N)

PHRYNOBATRACHUS MABABIENSIS FitzSimons

NMZB 10491 Sakeji School
NMZB 10515 Kazombi Forest, Hillwood Farm (N)

PHRYNOBATRACHUS PARVULUS (Boulenger)

NMZB 10502-3 Zambezi Rapids

ARTHROLEPTIDAE
ARTHROLEPTIS STENODACTYLUS Pfeffer

NMZB-UM 19261, NMZB 10716 Ikelenge

ARTHROLEPTIS XENOCHIRUS Boulenger

NMZB 10488, 10618 Sakeji School
NMZB 10593-6 Zambezi Source
NMZB 10610 Kazombi Forest, Hillwood Farm (N)
NMZB 10687-9 Zambezi Rapids

This species was common in leaf litter in all forest patches.

HYPEROLIIDAE
LETOPELIS BOCAGII (Günther)

NMZB 1509, 1636 Isombo Stream
NMZB 10522, 10536-9, 10654, 10702-3 Hillwood Farm (S)

The Hillwood Farm series was uncovered by a bulldozer clearing an old cassava field (formerly miombo woodland). Most have the typical dark dorsal markings, but some are uniform.

LETOPELIS CYNNAMOMEUS (Bocage)

NMZB-UM 19253 Hillwood Farm
NMZB 10674, 11031-2 Isombo Stream
These specimens were collected in gallery forest.

KASSINA KUVANGENSIS (Monard)

NMZB-UM 19260 Ikelenge
NMZB 10528-9, 10569-70 (tadpoles) Hillwood Farm (N)
NMZB 10616 Sakeji School

Tadpoles and metamorphosing frogs were found in a spring which supplies the fish ponds on Hillwood Farm.

KASSINA SENEGALENSIS (Duméril & Bibron)

NMZB 1514 Nyambela Plain
NMZB 10617, 10681 Sakeji School
All three specimens have large dark dorsal blotches like *K. maculata*.

KASSINULA WITTEI Laurent

NMZB 19244-6 Zambezi Rapids

Collected from bogs on a granite outcrop. Call a metallic click (C.A. Green — 14 Jan 1965).

AFRIXALUS WITTEI (Laurent)

This species was collected by R. Keith at Salujinga (Poynton & Broadley, 1987)

HYPEROLIUS PLATYCEPS MAJOR Laurent

NMZB 1508 Isombo Stream

This species was also collected by R. Keith at Salujinga.

HYPEROLIUS QUINQUEVITTATUS QUINQUEVITTATUS Bocage

NMZB-UM 19250, NMZB 10504-5 Zambezi Rapids
NMZB-UM 19251, NMZB 10627 Hillwood Farm (S)
NMZB-UM 19258-9 Ikelenge
NMZB-UM 19262 Zambia/Zaire/Angola border

HYPEROLIUS NASUTUS Günther

NMZB 7089 Hillwood Farm

HYPEROLIUS BOCAGEI Steindachner

NMZB 7090-1 Sakeji School

HYPEROLIUS MARMORATUS ALBORUFUS Laurent

NMZB-UM 19247, 19249, NMZB 10506 Zambezi Rapids
NMZB-UM 19248 Ikelenge
NMZB 7092, 10628, 10682 Sakeji School
NMZB 7093 Zambezi Bridge (west of Ikelenge)
NMZB 10509, 10516 Hillwood Farm (N)

HEMISOTIDAE

HEMISUS MARMORATUS MARMORATUS (Peters)

NMZB 10739 Ikelenge

This specimen was recovered from the stomach of a *Rhamphiophis a. acutus*.

HEMISUS GUINEENSIS MICROPS Laurent

NMZB 19243 Zambezi Rapids

This specimen was collected in miombo woodland.

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