

The snakes from the rainforest of the Usambara Mountains, Tanzania: a checklist and key

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BARBOUR & LOVERIDGE (1928) list 28 forms of snakes from the rain forest or its edge between 3000 feet and 8000 feet in the Usambara Mountains. For 20 of these forms the nomenclature has been changed since 1928 and based on recent collections five species (*Dipsadoboa weneri*, *Crotaphopeltis hotamboeia*, *Dendroaspis angusticeps*, *Atractaspis bibroni*, and *Bitis nasicornis*) can be added to the list. Three species (*Lycophidion semicinctus*, *Homalosoma* (= *Duberria*) *lutrix*, and *Chilorhinophis butleri*) have been deleted from the list. A revised list, measurements and scale counts of specimens in the Zoological Museum, University of Copenhagen are presented and for the first time a tentative key to the snakes of the rain forest of the Usambaras is given.

Introduction

As a participant in the Fourth East African Wildlife Symposium in Arusha, 1978, I was requested to make a report on the status on the snake fauna in the rain forest in connection with a plan for natural conservation in the area. While doing this the need for more detailed information on the Usambara snake species became apparent. Therefore the unpublished data from the snakes deposited in the Zoological Museum, University of Copenhagen, have been included. Because the Usambara region is biologically and zoogeographically one of the most important areas in East Africa, and because it is receiving increasing attention from biologists, a tentative key to the snakes of the area is provided. Included in the key are some species which BARBOUR & LOVERIDGE (1928) recorded from the nearby savanna and open forest; one may expect these outside species to invade the rainforest as it becomes degraded.

The faunas of the East African montane rain forests pose many interesting questions. LOVERIDGE (1934) reviewed the distribution of various animal groups of these areas based on the information available at that time. The present study shows that much collecting still needs to be done, not least in the poorly investigated areas such as, e. g., the Uzungwe Mountains. Therefore it is my hope that this paper may form part of the basis for future comparisons of the snake faunas from these interesting areas.

Material

The present study has been based on the collections in the Zoological Museum, University of Copenhagen (ZMUC). The specimens have mainly been collected by teachers and students of the University of Copenhagen during field trips to the Usambara Mountains; the collection periods are June 1970, July-August 1974, December-January 1975-1976, January-February 1977, December 1978, and July 1980. Some specimens have been donated by Dr. KIM HOWELL, University of Dar es Salaam; collection periods are May 1969, March-June 1979, and January-March 1981.

An asterisk (*) associated with a specimen number indicates that the specimens were collected by a local in the vicinity of Amani in 1974.

The list of names under the heading of each species is not a strict list of synonyms. It only includes (1) the names used by BARBOUR & LOVERIDGE (1928) and LOVERIDGE (1957) when these differ from those presently in use, and (2) the names used by the most recent reviewers and revisers since 1928.

Distributional areas outside Usambara are cited from LOVERIDGE (1957) or other relevant literature.

Annotated checklist

Three species have been deleted from the list of BARBOUR & LOVERIDGE (1928). BARBOUR & LOVERIDGE cited STERNFELD's (1910) records of *Lycophidion semicinctus*, *Homalosoma* (= *Duberria*) *lutrix*, and *Chilorhinophis butleri*.

Lycophidion semicinctus, however, is a West African species, and STERNFELD's record was based on misidentified specimens of *Lycophidion capense loveridgei*.

Homalosoma lutrix (now *Duberria lutrix atriventris*) is a montane grassland form near the equator and accordingly BROADLEY (pers. comm.) has doubted its occurrence in the Usambaras.

The record of *Chilorhinophis butleri* from Amani doubted by LOVERIDGE (1958) has not been confirmed.

Family Typhlopidae

Rhinotyphlops lumbriciformis (PETERS, 1874).

Wormlike Blind-Snake.

Typhlops kleebergi, — BARBOUR & LOVERIDGE 1928.

Typhlops lumbriciformis, — LOVERIDGE 1957.

Rhinotyphlops lumbriciformis, — ROUX-ESTÈVE 1974 (Revision).

Distribution: Eastern Kenya and Tanzania; Zanzibar.

Typhlops gierrai MOCQUARD, 1897.

Usambara Spotted Blind-Snake.

Typhlops punctatus gierrai, — BARBOUR & LOVERIDGE 1928; LOVERIDGE 1957.

Typhlops gierrai, — LAURENT 1964 (Revision); ROUX-ESTÈVE 1974 (Revision).

Material: 1 specimen — R 52191, forest clearing at Kwamkoro Road, 1974.

Distribution: Mountain forests in Usambara and Uluguru Mountains.

Typhlops lineolatus lineolatus JAN, 1864.

Lineolate Blind-Snake.

Typhlops intermediate between *punctatus* and *gierrai*, — BARBOUR & LOVERIDGE 1928.

Typhlops boulengeri usambaricus LAURENT 1964 (Revision).

Typhlops lineolatus lineolatus, — ROUX-ESTÈVE 1974 (Revision).

Material: 1 specimen — R 52186, Amani, 1970.

Distribution: From Senegal in the west to Ethiopia in the east, and south to Angola, Zambia and Tanzania.

Family Colubridae

Natriciteres olivacea (PETERS, 1854).

Olive Marsh-Snake.

Natrix olivaceus, — BARBOUR & LOVERIDGE 1928.

Natriciteres olivacea olivacea, — LOVERIDGE 1957, 1958 (Revision).

Natriciteres olivacea, — BROADLEY 1966 (Review).

Material: 1 specimen — R 60890, Amani, 1977.

Distribution: Montane forests and marshes of Tanzania south to Zambia and west to Angola.

Boaedon fuliginosus fuliginosus (BOIE, 1827).

Common House-Snake.

Boaedon lineatus, — BARBOUR & LOVERIDGE 1928.

Material: 5 specimens — R 60891, Monga, 1974; R 60892*, 1974; R 601195, Amani, 1980; R 601196, Mazumbai, 1981; R 601197, Amani, 1981.

Distribution: Africa south of Sahara and also extending into Morocco and southwest Arabia.

Note: The systematics of this species complex are very confused; see THORPE & MCCARTHY (1978) for the most recent discussion.

Lycophidion meleagris (BOULENGER, 1893).

Speckled Wolf-Snake.

Material: 4 specimens — R 60893, Monga, 1974; R 60894, Monga, 1977; R 601021-22, Mazumbai, West Usambara, 1978.

Distribution: Usambara; Magrotto and Uluguru Mountains, west through Zaire to Angola.

Lycophidion capense loveridgei LAURENT, 1968.

Usambara Wolf-Snake.

Lycophidion capense, — BARBOUR & LOVERIDGE 1928.

Lycophidion semicinctum, — BARBOUR & LOVERIDGE 1928.

Lycophidion capense capense, — LOVERIDGE 1957.

Distribution: Coastal Kenya to northern shore of Lake Nyasa through highlands of Tanzania.

Note: BARBOUR & LOVERIDGE cite STERNFELD's (1910) record of *Lycophidion semicinctum* from Usambara. According to LAURENT (1968), this species is restricted to West Africa. As the range of variation of STERNFELD's specimens falls within the range of variation of *L. capense loveridgei*, I refer STERNFELD's specimens to this species.

Mehelya capensis capensis (SMITH, 1847).

Southeastern Cape File-Snake.

Mehelya capensis, — BARBOUR & LOVERIDGE 1928.

Mehelya capensis capensis, — LOVERIDGE 1939 (Revision).

Material: 1 specimen — R 60895, Amani, 1976.

Distribution: Tanzania south through Malawi to Natal, west through Botswana to Angola.

Mehelya nyassae (GÜNTHER, 1888).

Black File-Snake.

Mehelya nyassae, — LOVERIDGE 1939 (Revision).

Distribution: Kenya, Tanzania and Zanzibar, south through Mozambique, Malawi and Zambia to the Transvaal and Natal. Also in Burundi and Rwanda.

Philothamnus macrops (BOULENGER, 1895).

Usambara Green-Snake.

Chlorophis macrops, — BARBOUR & LOVERIDGE 1928.

Philothamnus macrops, — LOVERIDGE 1958 (Revision); HUGHES, in press (Revision).

Material: 3 specimens — R 60896, Amani Pond, 1974; R 60897*, 1974; R 60898, Sigi River, 1974.

Distribution: Coastal Tanzania and Zanzibar.

Philothamnus battersbyi LOVERIDGE, 1951.

Northeastern Green-Snake.

Chlorophis neglectus, — BARBOUR & LOVERIDGE 1928.

Philothamnus irregularis battersbyi LOVERIDGE 1951.

Philothamnus irregularis battersbyi, — LOVERIDGE 1957 and 1958 (Revision).

Philothamnus battersbyi, — HUGHES, in press (Revision).

Material: 3 specimens — R 60768, Amani, 1970; R 60899*, 1974; R 60955, Mazumbai, West Usambara, 1978.

Distribution: Sudan (east of the Nile), east through Ethiopia to Somalia, south through Uganda and Kenya to (and including) the Usambaras, Tanzania, west to Lake Victoria.

Philothamnus semivariiegatus (SMITH, 1847).

Spotted Wood-Snake.

Philothamnus semivariiegatus semivariiegatus, — LOVERIDGE 1957 and 1958 (Revision).

Philothamnus semivariiegatus, — HUGHES, in press (Revision).

Material: 1 specimen — R 60900, forest clearing at Kwamkoro Road, 1974.

Distribution: Practically all Africa south 16°N. except virgin forest areas bordering the Gulf of Guinea and certain islands therein, also a vague coastal region from southern French Congo to Angola, i. e. the range is from Gambia, east to Eritrea (not recorded from Ethiopia), south to Natal and adjacent Cape Province (absent from the Cape Peninsula).

Prosymna ambigua stuhlmanni (PFEFFER, 1893).

East African Shovel-Snout.

Prosymna ambigua, — BARBOUR & LOVERIDGE 1928.

Prosymna ambigua stuhlmanni, — LOVERIDGE 1958 (Revision); BROADLEY 1980 (Revision).

Distribution: East Africa from southern Somalia south to Zululand, extending west to eastern Zambia, Zimbabwe and the Transvaal.

Geodipsas vauerocegae TORNIER, 1902.

Usambara Forest-Snake.

Material: 4 specimens — R 63905-907*, 1974; R 63961, Amani, 1980.

Distribution: Virgin forests of Usambara, Magrotto and Uluguru Mountains.

Dipsadoboa weneri (BOULENGER, 1897).

Dipsadoboa weneri, — LAURENT 1951 (Review).

Crotaphopeltis weneri, — LOVERIDGE 1957.

Material: 1 specimen — R 63887*, 1974.

Distribution: Usambara Mountains.

Note: BARBOUR & LOVERIDGE (1928) probably overlooked the fact that *Leptodira weneri* was described by BOULENGER (1897), since they did not list this species. There has been some dispute as to the proper status of *Dipsadoboa weneri* and *D. shrevei*, as their distributions are allopatric. Tentatively I consider them good species (RASMUSSEN 1979, and in prep.).

Crotaphopeltis hotamboeia (LAURENTI, 1768).

White-lipped Snake.

Crotaphopeltis hotamboeia hotamboeia, — BARBOUR & LOVERIDGE 1928; LOVERIDGE 1957.

Crotaphopeltis hotamboeia, — BROADLEY 1968a (Review).

Material: 5 specimens — R 63910, Monga, 1974; R 63911, Amani, 1975; R 63917, Amani, 1977; R 63963, Mazumbai, 1981; R 63964, Ambangulu, 1981.

Distribution: Most of Africa south of about 15°N.

Note: BARBOUR & LOVERIDGE did not record this species from the rain forest, so the species is new to the list. A revision is in preparation (RASMUSSEN).

Crotaphopeltis tornieri (WERNER, 1907).

Sylvicoline White-lipped Snake.

Crotaphopeltis hotamboeia tornieri, — BARBOUR & LOVERIDGE 1928; LOVERIDGE 1957.

Crotaphopeltis tornieri, — BROADLEY 1968a (Review).

Material: 4 specimens — R 63908-909, Monga, 1974; R 63912, Amani, 1975; R 63965, Amani, 1980.

Distribution: Virgin forests of the Usambara, Uluguru, and Rungwe Mountains, Tanzania, south to Misuku Mountains, northern Malawi.

Note: BROADLEY (1968a) recorded *C. h. hotamboeia* and *C. hotamboeia tornieri* as occurring sympatrically in Rungwe Mountains, and accordingly considered them good species. The two species occur sympatrically in the Usambaras as well.

Thelotornis capensis mossambicanus (BOCAGE, 1895).

Northern Vine-Snake.

Thelotornis kirtlandii, — BARBOUR & LOVERIDGE 1928.

Thelotornis kirtlandii kirtlandii, — LOVERIDGE 1944 (Revision), 1957; BROADLEY 1968b.

Thelotornis capensis mossambicanus, — BROADLEY 1979 (Review).

Distribution: East Africa from southern Somalia south to Mozambique, extending west to south-east Zaire, Zambia, and Zimbabwe.

Note: BROADLEY (1979) recently revived the name *mossambicanus* for the eastern populations of *T. capensis* which occur from central Mozambique northwards. The specimens occurring in the Usambaras present some problems as they look like intergrades between *T. kirtlandii* and *T. capensis mossambicanus*. The characters they have in common with *T. kirtlandii*, however, are apparently primitive and accordingly the Usambara specimens are referred to *T. capensis mossambicanus*.

Dispholidus typus typus (SMITH, 1829).

Boomslang.

Dispholidus typus, — BARBOUR & LOVERIDGE 1928; LOVERIDGE 1957.

Dispholidus typus typus, — LAURENT 1955.

Material: 1 specimen — R 63966, Mazumbai, 1969.

Distribution: Almost ubiquitous in savanna areas of Africa south of the Sahara, but absent from the western rain forests and the arid southwest.

Amblyodipsas polylepis hildebrandtii (PETERS, 1877).

Hildebrandt's Purple-Gloss Snake.

Calamelaps unicolor, — BARBOUR & LOVERIDGE 1928.

Calamelaps unicolor hildebrandtii, — WITTE & LAURENT 1947 (Revision).

Calamelaps unicolor unicolor, — LOVERIDGE 1957.

Amblyodipsas polylepis hildebrandtii, — BROADLEY 1971b (Revision).

Distribution: Coastal Kenya, eastern and southern Tanzania.

Aparallactus weneri BOULENGER, 1895.

Usambara Centipede-Eater.

Aparallactus weneri, — LOVERIDGE 1944 (Revision); WITTE & LAURENT 1947 (Revision).

Material: 4 specimens — R 63913-15*, 1974; R 63916, Amani, 1977.

Distribution: Eastern Tanzania.

Aparallactus guentheri BOULENGER, 1895.

Guenther's Centipede-Eater.

Aparallactus uluguruensis, — BARBOUR & LOVERIDGE 1928.

Aparallactus capensis uluguruensis, — LOVERIDGE 1944 (Revision); WITTE & LAURENT 1947 (Revision).

Distribution: Coastal Kenya; Tanzania and Zanzibar south to Zambia.

Note: There has been some confusion as to the *A. uluguruensis* and *A. guentheri* as the former was based on the uniformly plumbeous adult form and the latter on the ring-necked young form (LOVERIDGE 1957: 287).

Atractaspis bibronii GÜNTHER, 1868.

Bibron's Burrowing-Viper.

Atractaspis rostrata, — BARBOUR & LOVERIDGE 1928.

Atractaspis bibronii rostrata, — LAURENT 1950 (Revision); LOVERIDGE 1957.

Atractaspis bibronii, — HUGHES, in press (Revision).

Material: 1 specimen — R 68210, Amani, 1976.

Distribution: Kenya and Tanzania (Zanzibar coast; possibly Zanzibar), south to Mozambique (north of the Zambezi River), west through Malawi and Zambia to southern Zaire.

Note: BARBOUR & LOVERIDGE did not record this species from the Usambaras, which may be due to the secretive habits of these snakes.

Dasypeltis medici medici (BIANCONI, 1859).

Rufous Egg-Eater.

Dasypeltis scaber, — BARBOUR & LOVERIDGE 1928.

Dasypeltis medici medici, — GANS 1959 (Revision).

Distribution: Coastal East Africa. Extreme S. Kenya, Tanzania, Mozambique; N. Zululand, inland to Malawi, E. Zimbabwe.

Family Elapidae

Elapsoidea nigra GÜNTHER, 1888.

Black Garter-Snake.

Elapsoidea guentheri (incl. *nigra*), — BARBOUR & LOVERIDGE 1928.

Elapsoidea sundevalli nigra, — LOVERIDGE 1944 (Revision), 1957.

Elapsoidea nigra, — BROADLEY 1971a (Revision).

Material: 6 specimens — R 63476-77, Monga, 1974; R 65478, Amani, 1974; R 65479*, 1974; R 65480, Amani, 1975; R 65490, Mazumbai, 1979.

Distribution: Usambara, Magrotto and Uluguru Mountains in north-eastern Tanzania.

Naja melanoleuca HALLOWELL, 1857.

Forest Cobra.

Distribution: Forested or formerly forested areas of Central Africa from the Sahara south to the Zambezi, thence south along the Mozambique plain to Zululand and west into the eastern districts of Zimbabwe.

Note: BROADLEY kindly informed me that he has examined a specimen from Amani [in the British Museum (Natural History), B.M. 1960. 1. 2. 79] which has 17 scale rows at midbody and thus resembles some specimens from Zanzibar.

Dendroaspis angusticeps (SMITH, 1849).

Common Green Mamba.

Material: 2 specimens — R 65481, Amani, 1974; R 65491, Amani West Forest, 1979.

Distribution: Kenya, Tanzania, Zanzibar, Mozambique, Malawi, eastern Zimbabwe, Natal.

Note: BARBOUR & LOVERIDGE (1928) cite NIEDEN's (1910) record of *D. angusticeps* from Amani. However, they grouped it together with the savanna and open forest species from lower altitudes. These specimens confirm the occurrence of *D. angusticeps* in the rain forest. BARBOUR & LOVERIDGE did not distinguish between the green and black mambas, viz. *D. angusticeps* and *D. polylepis*. The latter probably occurs at lower altitudes in the Usambaras and perhaps at the edge of the rain forest.

Family Viperidae

Bitis gabonica gabonica (DUMÉRIL & BIBRON, 1854).

Gaboon-Viper.

Bitis gabonica, — BARBOUR & LOVERIDGE 1928.

Material: 1 specimen — R 68211, Amani Pond, 1974.

Distribution: Southern Sudan; Uganda; Tanzania; Zaire; Gabon; Angola; Zambia; eastern Zimbabwe; Mozambique; Zululand.

Bitis nasicornis (SHAW, 1802).

Rhinoceros-horned Viper.

Distribution: West Africa as far north as Guinea, southerly (excepting Sierra Leone) and westerly to Cameroun, Fernando Poo, Gabon and Congo-Kinshasa, thence easterly to southern Sudan (east to Imatong Mountains), Uganda, Rwanda, Burundi, western Kenya and Uluguru Mountains, Tanzania; southerly, Congo-Kinshasa to Angola, not in Katanga (PITMAN 1974).

Note: It has been confirmed (HOWELL, pers. comm.; MADSEN, pers. comm.) that the Nairobi Museum possesses a specimen of this species from the Usambara Mountains collected by R. LEAKEY.

Atheris ceratophorus WERNER, 1895.

Usambara Mountain Bush-Viper.

Material: 1 specimen — R 68233, Mazumbai, 1981.

Distribution: Usambara Mountains.

Note: This species has been regarded as endemic to the Usambara Mountains. Recent collections seem to indicate a wider distribution (RASMUSSEN & HOWELL, in prep.).

Table 1. Measurements and scale counts of the snakes deposited in the Zoological Museum, University of Copenhagen. See text for explanation.

	ZMIC-NO	SEX	L	V	A	SC	SQ	LOT	S.L.	I.L.
<i>T. gierrai</i>	R 52191	-	49	-	-	-	28	-	-	-
<i>T. l. lineolatus</i>	R 52186	-	37	-	-	-	28	-	-	-
<i>B. f. fuliginosus</i>	R 60891	♀	36	210	1	61/61+1	27	1-1-2+1-2	8(4-5)/9(5-6)	9(1-4)
" " "	R 60892	♂	51	196	1	60/60+1+1	27	1-1-2-1-2	8(4-5)	9(1-4)
" " "	R 601195	♀	37	208	1	51/51+1	29	2/2-1-2-1-2	8(4-5)	9(1-4)
" " "	R 601196	♀	NC	NC	1	49/49+1	29	1-1-2-1-2	8(4-5)	9(1-4)
" " "	R 601197	♀	39	214	1	50/50+1	27	1-1-2-1-2	8(3-5)	9(1-4)
<i>L. meleagris</i>	R 60893	♂	30	146	1	31/31+1	15	1-1-2-1-2	8(3-5)	8(1-5)
" " "	R 60894	♀	22	156	1	27/27+1	15	1-1-2-1-2	8(3-5)	8(1-5)
" " "	R 601021	♀	36	164	1	22/22+1	15	1-1-2-1-2	8(3-5)	8(1-5)
" " "	R 601022	♀	38	163	1	23/23+1	15	1-1-2-2-3	8(3-5)	8(1-5/1-4)
<i>P. macrops</i>	R 60896	♂	52	135	2	69/69+X	13	1-1-2-1-1/2	8(4-5)/9(5-6)	10(1-5)
" " "	R 60897	♀	25	138	2	80/80+1	13	1-1-2-1-1	9(4-6)/8(3-5)	10(1-5)
" " "	R 60898	♀	33	143	1	78/78+1	13	1-1-2-1-1	9(5-6)/9(4-5)	11(1-5)/10(1-5)
<i>P. battersbyi</i>	R 60768	♀	54	148	2	91/91+1	15	1-1-2-1-1	8(4-5)	10(1-5)
" " "	R 60899	♀	43	161	2	110/110+1	15	1-1-2-1-1/2	9(5-6)	11(1-5)
" " "	R 60955	♀	71	162	2	78/78+X	15	1-1-2-1-2	9(5-6)	11(1-5)
<i>P. semivariegatus</i>	R 60900	♂	103	174	1	NC	15	1-1-2-2-2	9(5-6)	11(1-5)/10(1-5)
<i>G. vauerocegae</i>	R 63905	♀	37	126	1	35/35+1	17	1-1-2-1-2	7(3-4)	7(1-3)
" " "	R 63906	♂	25	123	1	40/40+1	17	1-1-2-1-2	7(3-4)	7(1-3)
" " "	R 63907	♂	28	125	1	40/40+1	17	1-1-2-1-2	7(3-4)	7(1-3)
" " "	R 63961	♀	29	128	1	37/37+1	17	1-1-2-1-2	7(3-4)	7(1-3)
<i>D. weneri</i>	R 63887	♂	35	213	1	102/102+1	19	1-1-2-1-2	8(3-5)	10(1-4)
<i>C. hotamboeia</i>	R 63910	♀	37	145	1	41/41+1+1	19	1-1/2-2-1-2	8(4-5)/9(5-6)	10(1-5)
" " "	R 63911	♂	42	152	1	44/44+1	19	1-1-2-1-2/1	8(3-5)	10(1-5)
" " "	R 63917	♀	22	151	1	48/48+1	19	1-1-1-1-2	8(4-5)	10(1-5)
" " "	R 63963	♂	63	167	1	48/48+1	19	1-1-2-1-2	9(4-6)/8(3-5)	10(1-5)
" " "	R 63964	♀	34	161	1	42/42+1	19	1-2-2-1-1/2	9(4-6)	10(1-5)/11(1-6)
<i>C. tornieri</i>	R 63908	♂	34	151	1	45/45+1	17	1-1-2-1-2	8(4-5)	10(1-5)
" " "	R 63909	♂	40	156	1	44/44+1	17	1-2-2-1-2	8(3-5)	10(1-5)
" " "	R 63912	♂	28	149	1	44/44+1	17	1-1-2-1-2	8(3-5)	10(1-5)
" " "	R 63965	♀	16	147	1	51/51+1	17	1-3-2-1-2	8(3-5)	10(1-5)
<i>D. typus</i>	R 63966	NC	NC	NC	NC	NC	NC	1-1-3-1-2	7(3-4)	10(1-4)
<i>A. weneri</i>	R 63913	♀	13	154	1	34+1	15	0-1-2-1-1	6(2-3)	6(1-3)
" " "	R 63914	♀	32	161	1	34+1	15	0-1-2-1-1	6(2-3)	6(1-3)
" " "	R 63915	♀	29	156	1	34+1	15	0-1-2-1-1	6(2-3)	6(1-3)
" " "	R 63916	♂	27	150	1	35+1	15	0-1-2-1-1	6(2-3)	6(1-3)
<i>A. bibroni</i>	R 68210	♀	21	NC	1	23+1	23	0-1-1-1-2	6(3-4)	5(1-3)
<i>E. nigra</i>	R 65476	♂	32	159	1	20/20+1	13	0-1-2-NC/1-NC/2	7(3-4)	7(1-4)
" " "	R 65477	♂	32	162	1	21/21+1	13	0-1-2-1-2	7(3-4)	7(1-4)
" " "	R 65478	♂	48	155	1	20/20+1	13	0-1-2-1-2	7(3-4)	7(1-4)
" " "	R 65479	♀	44	159	1	2/2+3+9/9+1	13	0-1-2-1-2	7(3-4)	7(1-4)/(1-3)
" " "	R 65480	♂	33	158+1/1	1	1/1+1+18/18+1	13	0-1-2-1-2	7(3-4)	7(1-4)
" " "	R 65490	♀	19	157	1	20/20+1	13	0-1-2-1-2	7(3-4)	7(1-4)
<i>D. angusticeps</i>	R 65481	♂	198	211+0/1	2	118/118+1	19	0-2-3-2-3	8(4-5)	11(1-3)/12(1-3)
" " "	R 65491	NC	NC	NC	NC	NC	NC	0-2-4-2-3	8(4)	11(1-4)/10(1-4)
<i>B. g. gabonica</i>	R 68211	♂	120	130	1	1/1+9+18/18+1	37	-	14/15	18(1-5)/19(1-6)
<i>A. ceratophorus</i>	R 68234	♂	44	140	1	53+1	21	-	10/9	9(1-3)

Data

The data of the specimens in the Zoological Museum of Copenhagen are given in Table 1. The abbreviations used are: L = total length (cm) in preserved condition, V = number of ventrals (DOWLING 1951), A = anal plate, SC =

number of subcaudals, SQ = number of midbody scale rows, SL = number of supralabials (number in parentheses = supralabials in contact with eye), IL = number of infralabials (number in parentheses = infralabials in contact with anterior chinshields), LOT = number of loreals, pre- and postoculars, and anterior and posterior temporals indicated in this same order. If differences are present between the two sides of the head, both counts are given, a diagonal separating the number of scales on the right side from the corresponding number on the left side.

Tentative key

Some savanna and open forest elements have been included in this key as these species probably enter the area in question as a result of the degrading of the rain forest. More species will probably be included in the future.

1. Body wormlike, covered with small, smooth scales 38
- Body covered with small scales above, but with enlarged scales (ventrals) on the belly 2
2. Ventrals narrower than body *Python sebae*
- Ventrals as broad as, or almost as broad as, body 3
3. Loreal absent 4
- Loreal present 13
4. Body scales in 13 rows at midbody *Elapsoidea nigra*
- Body scales in more than 13 rows at midbody 5
5. Body scales in 15 rows at midbody 6
- Body scales in more than 15 rows at midbody 8
6. Subcaudals in two rows *Duberria lutrix atriventris*
- Subcaudals in a single row 7
7. First pair of infralabials in contact behind mental .. *Aparallactus wernerii*
- First pair of infralabials not in contact behind mental *Aparallactus guentheri*
8. Anal scale entire 9
- Anal scale divided 11
9. Subcaudals in a single row *Atractaspis bibroni*
- Subcaudals in two rows 10
10. Six upper labials the sixth not in contact with the postoculars *Naja nigricollis nigricollis*
- Seven upper labials the sixth in contact with the postoculars *Naja melanoleuca*
11. Anterior temporals suppressed by a large supralabial scale in contact with the parietal *Amblyodipsas polylepis hildebrandtii*
- Not as above 12
12. Body scales in 19 rows at midbody *Dendroaspis angusticeps*
- Body scales in 23 rows at midbody *Dendroaspis polylepis polylepis*
13. Body scales in 13 rows at midbody *Philothamnus macrops*
- Body scales in more than 13 rows at midbody 14

14.	Body scales in 15 rows at midbody	15
—	Body scales in more than 15 rows at midbody	21
15.	Body bright green	16
—	Body not as above	17
16.	Subcaudals rounded or angulate	<i>Philothamnus battersbyi</i>
—	Subcaudals sharply angulate	<i>Philothamnus semiovariegatus</i>
17.	Body subtriangular, body scales bicarinate	18
—	Body not subtriangular, body scales smooth	19
18.	Secondary keels on body scales strongly developed	<i>Mehelya capensis capensis</i>
—	Secondary keels on body scales reduced to two short apical ones	<i>Mehelya nyassae</i>
19.	Maxillary bones distinctly bent inward	<i>Lycophidion meleagris</i>
—	Maxillary bones not bent inward	20
20.	Snout shovel-formed	<i>Prosymna ambigua stuhlmanni</i>
—	Snout not shovel-formed, loreal small or absent	<i>Duberria lutrix atriventris</i>
21.	Body scales in 17 rows at midbody	22
—	Body scales in more than 17 rows at midbody	26
22.	Posterior nasal more or less deeply concave	<i>Crotaphopeltis tornieri</i>
—	Not as above	23
23.	Maxillary bones distinctly bent inward ..	<i>Lycophidion capense loveridgei</i>
—	Not as above	24
24.	Maxillary teeth interrupted below anterior part of eye by two much enlarged, fanglike teeth	<i>Psammophis phillipsii</i>
—	Not as above	25
25.	Anal entire, maxilla with grooved fangs	<i>Geodipsas vauerocegae</i>
—	Anal divided, maxilla without grooved fangs, scales in 17-19 rows at midbody	<i>Natriciteres olivacea</i>
26.	Body scales in 19 rows at midbody	27
—	Body scales in more than 19 rows at midbody	32
27.	Posterior nasal more or less deeply concave	28
—	Not as above	29
28.	Body scales in 15 rows one head length anterior to anus	<i>Crotaphopeltis hotamboeia</i>
—	Body scales in 13 rows one head length anterior to anus	<i>Dipsadoboa weneri</i>
29.	Maxilla with a pair of enlarged, grooved fangs posteriorly	30
—	Maxilla without grooved fangs, scales in 17-19 rows at midbody	<i>Natriciteres olivacea</i>
30.	Pupil vertically elliptical, scales smooth	<i>Telescopus semiannulatus semiannulatus</i>
—	Pupil not as above, scales keeled	31
31.	Pupil horizontal, head elongated	<i>Thelotornis capensis mossambicanus</i>
—	Pupil round, head short	<i>Dispholidus typus typus</i>
32.	Top of head covered by many small scales	33
—	Top of head covered by 9 large shields	36

33. Subcaudals single, scales in 21-25 rows at midbody . . . *Atheris ceratophorus*
 — Subcaudals paired, scales in 27-46 rows at midbody 34
34. Without pairs of erectile, horn-like scales on snout . . . *Bitis arietans arietans*
 — With 1-3 pairs of erectile, horn-like scales on snout 35
35. With one pair of erectile, horn-like scales on snout
 *Bitis gabonica gabonica*
 — With 2-3 pairs of erectile, horn-like scales on snout *Bitis nasicornis*
36. Maxilla with a pair of enlarged, grooved fangs posteriorly, scales in 19-21
 rows at midbody *Dispholidus typus typus*
 — Maxilla without grooved fangs, scales in 22-29 rows at midbody 37
37. Scales in 22-25 rows at midbody, some of which serrated
 *Dasypeltis medici medici*
 — Scales in 25-29 rows at midbody, none of which serrated
 *Boaedon fuliginosus fuliginosus*
38. Rostral more than half as broad as head at the level of the nostrils 39
 — Rostral not half as broad as head at the level of the nostrils 41
39. Eyes absent *Rhinotyphlops lumbriciformis*
 — Eyes present 40
40. Rostral shield almost rectangular posteriorly (in dorsal view)
 *Rhinotyphlops unitaeniatus*
 — Rostral shield oval posteriorly (in dorsal view)
 *Rhinotyphlops schlegelii dinga*
41. Nasal shield not or just in narrow contact with 2nd labial (area of contact
 less than one third of the length of 2nd labial)
 *Typhlops lineolatus lineolatus*
 — Nasal shield in broad contact with 2nd labial *Typhlops gierrai*

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Summary

Forty-eight specimens of snakes representing 18 species were collected in the rain forest or at its edge in the Usambara Mountains. At least 12 other species are known from the area. BARBOUR & LOVERIDGE (1928: 90) concluded that "It need not be supposed that Amani is exceptionally rich in serpent life". This may be correct if Amani is compared with rain forests from other tropical areas, but compared with other East African rain forests, I think the Usambaras are rich in serpent life.

Zusammenfassung

48 Schlangen in 18 Arten wurden im oder am Rande des Regenwaldes im Usambara-Gebirge gesammelt. Mindestens 12 andere Arten sind von diesem Gebiet bekannt. BARBOUR & LOVERIDGE (1928: 90) bemerken, daß „kaum anzunehmen ist, daß Amani besonders reich an Schlangen ist“. Dies mag richtig sein, wenn man Amani mit Regenwäldern in anderen tropischen Gebieten vergleicht, doch bin ich der Meinung, daß die Usambara-Berge im Vergleich mit anderen ostafrikanischen Regenwäldern reich an Schlangen sind.

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