Title	On a Small Collection of Lizards and Snakes from Cameroon, West Africa
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Citation	African Study Monographs (1987), 8(2): 111-123
Issue Date	1987-10
URL	http://dx.doi.org/10.14989/68026
Right	
Type	Departmental Bulletin Paper
Textversion	publisher

ON A SMALL COLLECTION OF LIZARDS AND SNAKES FROM CAMEROON, WEST AFRICA

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ABSTRACT A small number of lizards and snakes, obtained by the Kyoto University expeditions to the southwestern part of Cameroon, West Africa, are examined. The collection consists of three species of lizards and 10 species of snakes. External characteristics of the specimens are presented, together with results of brief ecological observations.

Key Words: Lizards; Snakes; Herpetofauna; Tropical evergreen forest.

INTRODUCTION

During June, 1982 to February, 1983, and July, 1983 to February, 1984, Laboratory of Life History, Primate Research Institute, performed the expeditions to the Republic of Cameroon, West Africa. While investigating monkeys there, one of the authors (JB) made a small herpetological collection, comprising three species of lizards and 10 species of snakes.

There are several works concerning the herpetology of West Africa including Cameroon (e.g., Sternfeld, 1908; Müller, 1910; Boulenger, 1919; Mertens, 1938; Böhme, 1975; Joger, 1981, 1982; Scott, 1982). Yet, relatively little has been known for the herpetofauna of the southern part of Cameroon, where the present collection was made. Thus, although the materials are rather limited, here we describe the external morphology of the obtained specimens for the purpose of providing data for further researches on the herpetology of Cameroon. Brief notes on the natural history were added for some species on the basis of field observations.

SAMPLING LOCALITIES AND METHODS

Most specimens were collected around the tropical evergreen forest of *Reserve de Faune de Campo* (RFC: 2°22′N, 10°06′E), southwestern part of the Republic of Cameroon. A specimen of *Agama* was found in Kribi, a village c.a. 60 km northwest of RFC (Fig. 1).

Sampling was made in the daytime except for geckos. All the specimens were examined in 70% ethanol preserved condition. Measurements were made in mm. The specimens treated in this report were deposited in Department of Zoology, Faculty of Science, Kyoto University (KUZ).

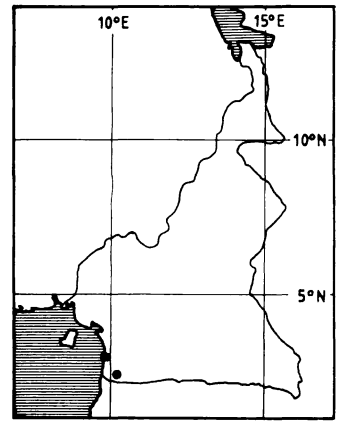

Fig. 1. Map of Cameroon showing locations of *Reserve de Faune de Campo* (indicated with a circle) and Kribi (indicated with a rectangle).

SPECIES ACCOUNTS

Order Squamata Oppel, 1811

Suborder Sauria Macartney, 1802

Family Agamidae Gray, 1827

Genus *Agama* Daudin, 1802

?Agama sylvanus Macdonald, 1981 (Fig. 2A)
1981 *Agama sylvanus* Macdonald, J. Zool. London, 193: 192 (*terra typica:* Ghana).
Specimen examined—One female hatching (KUZ R8338) collected within Kribi village on October 20, 1983.
Remarks—The specimen was a newly hatched lizard with snout to vent length (SVL) 33.6, tail length (TL) 68.0, axilla to groin length (AGL) 14.9, head length (HL) 10.7, head width (HW) 8.2, head depth (HD) 6.7, eye length (EL) 3.3, mid-body scale rows 85, vertebral scales 44 and fourth toe lamellae 24. Scale counts and measurements were obtained by the methods of Grandison (1968).

Six species of the genus *Agama* have been reported from Cameroon (Welch, 1982). However, African members of this genus have not been sufficiently studied taxonomically. After Grandison (1968) revised the Nigerian species, Macdonald (1981) described a new species from Ghana, and Moody and Böhme (1984) synonymized *Agama benueensis* with *A. doriae*. These species revised and/or described were also reported from Cameroon (Joger, 1982).

Agama sylvanus agrees with the present specimen by having homogeneous keeled scales both on dorsum and venter, as well as large number of the fourth toe lamellae (19–23). The former, however, differs from the present species in possessing lower

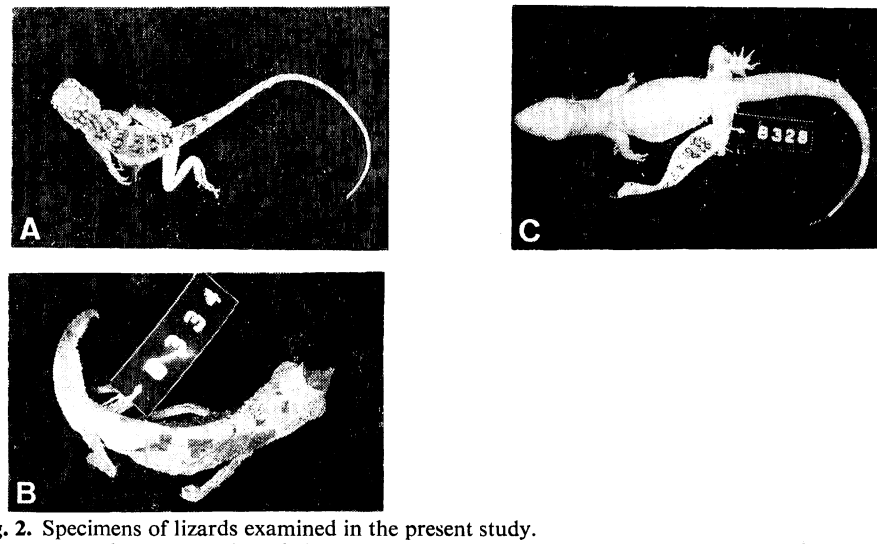

Fig. 2. Specimens of lizards examined in the present study.
A: ?*Agama sylvanus*; B: *Rhampholeon spectrum spectrum*; C: *Hemidactylus fasciatus fasciatus*.

number of mid-body scale rows (56–66). *A. doriae benueensis* resembles the animal in having large number of mid-body scale rows (74–98) and fourth toe lamellae (18–23), as well as homogeneous keeled dorsal scales, but is different from this specimen in having no keels on the ventral scales. The remaining four species were distinct from the specimen in possessing heterogeneous dorsal scales, smaller number of mid-body scale rows or smaller number of fourth toe lamellae. Here we tentatively identified the specimen as *A. sylvanus*, showing the intraspecific variation in the mid-body scale rows. It is necessary to obtain the more specimens from this locality and to examine enough comparative specimens for confirming the above identification.

Stomach and intestine content analysis showed that this young lizard ate small ants only. The content included 13 ants, composed of three different genus. Although Macdonald (1981) noted *A. sylvanus* ate a variety of types of insects, at least the juvenile of the species may be specialized as an ant eater.

Family Chamaeleontidae Gray, 1827

Genus *Rhampholeon* Günther, 1874

Rhampholeon spectrum spectrum (Buchholz, 1874) (Fig. 2B)
1874 *Chamaeleo superciliaris* (non Kuhl), Buchholz, Monber. Akad. Berlin, 81.
1874 *Chamaeleo spectrum* Buchholz, Monber. Akad. Berlin, 298. (*terra typica*: Victoria and Bonjongo, Cameroon).
1874 *Rhampholeon spectrum*—Günther, Proc. Zool. Soc. London, 443.
1887 *Rhampholeon spectrum*—Boulenger, Cat. Liz. Brit. Mus., 3: 476.
1902 *Rhampholeon spectrum*—Werner, Zool. Jahrb. Syst., 15: 428.

1911 *Rhampholeon affinis*, Steindachner, Anz. Akad. Wien, 10: 178.
1938 *Brookesia spectrum*—Mertens, Abh. senckenberg. naturf. Ges., 442: 43.
Specimen examined—One male adult (KUZ R8334), collected in forest of FRC on October 20, 1983.
Remarks—This species is a short-tailed small chamaeleon which is called as a spectacled pigmy chamaeleon. It has a short appendage on the rostral, and sharp denticles at the inner base of each claw. The anterior two third of the tail was thickened for the present male specimen. Measurements: SVL 51.6; TL 27.4; AGL 28.0; HL 16.9; HW 10.0; HD 10.8; EL 2.7; SEL 6.2.

Stomach content included a cricket. The testes and epidydimys were well developed. It indicates this male was in breeding condition.

This species is a real arboreal lizard as well as other chamaeleons. Its morphology of hands indicates the adaptation for an arboreal life. However this individual was walking on the forest floor, when it was captured. It probably moved by walking from tree to tree.

Family Gekkonidae Gray, 1825

Genus *Hemidactylus* Oken, 1817

Hemidactylus fasciatus fasciatus Gray, 1842 (Fig. 2C)
1842 *Hemidactylus fasciatus* Gray, Zool. Misc.,: 58. (*terra typica*: unknown).
1847 *Hemidactylus fasciatus*—Boulenger, Cat. Liz. Brit. Mus., 1: 124.
1845 *Leirus ornatus* Gray, Cat. Spec. Liz. Coll. Brit. Mus.: 157. (*terra typica*: West Africa).
1857 *Hemidactylus formosus* Hallowell, Proc. Acad. Nat. Sci., Philadelphia, 1856: 148. (*terra typica*: Liberia).
1947 *Hemidactylus fasciatus fasciatus*—Loveridge, Bull. Mus. Comp. Zool., Cambridge, 98: 124.
Specimens examined—Seven male adults and six female adults (KUZ R8317–29), collected in RFC from August 13 to September 15, 1983.
Remarks—This species is a medium-sized gecko with U-shaped bands on dorsum. Dorsal part of the body is covered with small granules among which are scattered smooth or feebly striated tubercles. Measurements and scale counts were shown as below. The averages of each sex were shown with ranges in parentheses. Male: SVL 65.5 (55.9–72.8); AGL 31.6 (26.2–36.2); HL 17.3 (15.0–19.8); HW 13.0 (11.2–14.8); HD 7.6 (6.2–8.5); EL 4.3 (3.8–5.0); SEL 7.8 (7.3–9.1); Supralabials (SL) 10.9 (9–13); Infralabials (IL) 8.7 (8–11); Fourth toe lamellae (TL4) 9.4 (8–10); First toe lamellae (TL1) 14.0 (14–14); Preano-femral pores 36.0 (33–38). Female: SVL 64.2 (51.2–70.2); AGL 29.2 (23.0–31.3); HL 16.5 (14.0–18.2); HW 12.1 (10.3–13.1); HD 7.0 (5.9–8.2); EL 4.3 (3.8–4.8); SEL 7.5 (6.5–8.1); SL 10.9 (10–12); IL 9.0 (8–10); TL4 8.9 (8–10); TL1 6.8 (6–7).

This species is a common house gecko in this region. All the specimens were captured on the walls of houses in the night. Four specimens had no stomach contents

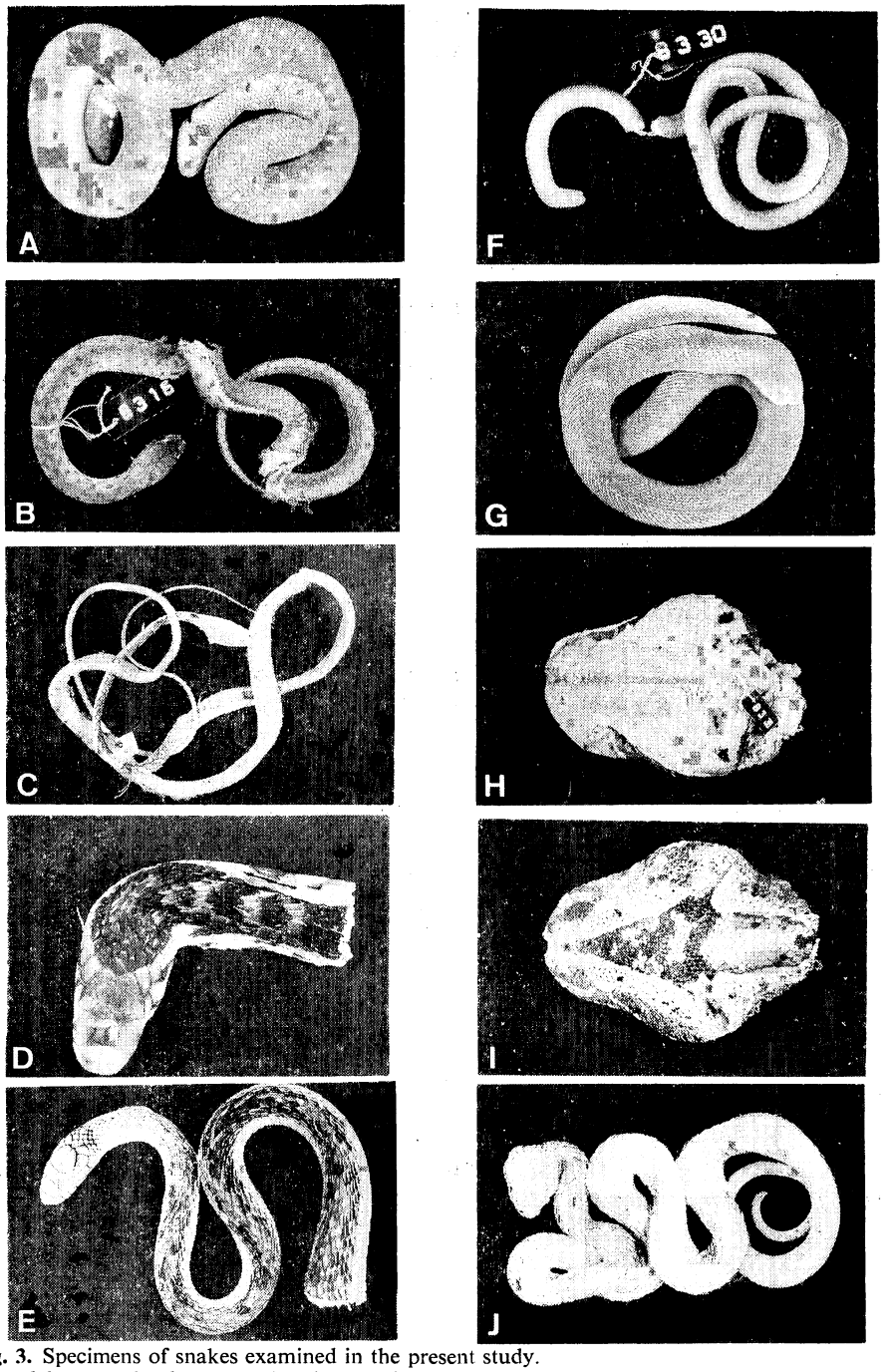

Fig. 3. Specimens of snakes examined in the present study.
A: *Calabaria reinhardtii*; B: *Hydraethiops melanogaster*; C: *Thelotornis kirtlandii*; D: *Naja melanoleuca melanoleuca*; E: *Dendroaspis jamesonii jamesonii*; F: *Atractaspis reticulata reticulata*; G: *Atractaspis corpulenta corpulenta*; H: *Bitis gabonica*; I: *Bitis nasicornis*; J: *Atheris squamiger*.

and the remaining nine stomachs included items of seven categories. The numbers of food items are shown with frequencies in parentheses as below:

winged ants	33 (67.3)
lepidopteran larvae	4 (8.2)
beetles	1 (2.0)
flies	3 (6.1)
crickets & grasshoppers	4 (8.2)
spiders	3 (6.1)
sloughs	1 (2.0)

Three individuals ate 6, 13 and 14 winged ants, respectively, but worker ants were not found in any stomachs. These insects including winged ants, probably gathered in the light of houses. One of these geckos swallowed a slough of a gecko, which might be its own.

Suborder Serpentes Linnaeus, 1758

Family BOIDAE Bonaparte, 1831

Genus *Calabaria* Gray, 1858

Calabaria reinhardtii (Schlegel, 1848) (Fig. 3A)
1848 *Eryx reinhardtii* Schlegel, Bijdr. Dierk. 1: 2, (*terra typica*: Gold Coast).
1858 *Calabaria fusca* Gray, Proc. Zool. Soc. London, p. 155.
1958 *Rphoptrura reinhardtii* Peters, Monber. Berlin. Acad., p. 340.
Specimens examined—One adult male (KUZ R8336), collected as a dead body on the road in the forest, during the second expedition.
Remarks—Head small, as well as neck. Rostral large, almost as long as wide, exposed dorsally. Nasals not divided. Nostril opening laterally. Snout rather short, roundish at tip. Body cylindrical. Internasal paired. Two pairs of prefrontals, much as wide as long. Supraocular divided. Frontal large, half as long as wide. Parietals small. Eye small, a single preocular and two postoculars. Eight supralabials, third and fourth entering eye. Mental triangular. Infralabials nine on left, 10 on right. First pair in contact with each other. No distinct postmentals. Body scales smooth, 29 rows at neck, 34 rows at mid-body, 25 rows at just before cloaca. Ventrals 221, anal entire. Subcaudals 24, not paired. Snout to vent length 635, tail length 57.

Ground color dark brown with several cream-yellow dots scattered on dorsum. Dark gray in venter and tail tip.

Family COLUBRIDAE Gray, 1825

Genus *Hydraethiops* Günther, 1872

Hydraethiops melanogaster Günther, 1872 (Fig. 3B)
1872 *Hydraethiops melanogaster* Günther, Ann. Mag. Nat. Hist., 9(4): 28.

1908 *Hydraethiops melanogaster* Sternfeld, Mitt. Zool. Mus. Berlin, 3: 404.
1923 *Hydraethiops melanogaster* Schmidt, Bull. Am. Mus. Nat. Hist., 49: 60.
Specimens examined—One juvenile (KUZ R8316), collected in the forest of RFC during the first expedition (Oct. 15, 1982).
Remarks—Head distinctly wider than neck. Rostral pentagonal, half as long as wide, exposed dorsally. Nasal deeply notched ventrally, but not wholly divided. Nostril opening dorsally. Snout short. Internasal single, as long as wide. Prefrontal paired, slightly wider than long. Frontal, supraoculars and parietals, one and a half as long as wide. Eye rather small. A single large preocular, two postoculars. Supralabials 10, fifth and sixth entering eye. Temporals 1+2+3. Mental small, triangular. Infralabials 12, first pair in contact with each other, first to fifth in contact with primary postmentals. Body roundish above, flattened below. Tail short. Dorsal scales 25 rows at neck, 23 rows at mid-body, 21 rows at just before cloaca. Scales of two outermost rows on each side smooth, the others moderately to strongly keeled. Ventrals 135, anal divided. Subcaudals 41, paired. Snout to vent length 222, tail length 50.

Ground color grayish tan with four rows of dark dots on dorsum, a longitudinal light brown stripe on lateroventral region. Dark brown on venter.

In several characters, the present specimen agrees with *Hydraethiops melanogaster* appearing in the descriptions by Boulenger (1893, 1919), Schmidt (1923) and Lanza and Vanni (1976). On the other hand, this specimen differs from these descriptions in lacking keels in dorsal scales of two outermost rows, as well as in possessing fewer ventrals. Two species have hitherto been known for the genus *Hydraethiops*, and the other species, *H. laevis*, is known from Cameroon. This species is, however, quite distinct from the present specimen in several characters such as larger ventral counts, fewer dorsal scale rows, etc. (Boulenger, 1904, 1919). Although specific allocation of the present specimen might be problematic, we here regarded it as indicating intraspecific variation in *H. melanogaster*.

Welch (1982) listed *H. melanogaster* as occurring only in Gabon, Congo and Zaire, overlooking Boulenger (1919). The present specimen also indicates the occurrence of *H. melanogaster* in Cameroon.

Genus *Thelotornis* Smith, 1849

Thelotornis kirtlandii (Hallowell, 1844) (Fig. 3C)
1844 *Leptophis kirtlandii* Hallowell, Proc. Acad. Nat. Sci., Philadelphia, p. 62 (*terra tipica*: Liberia)
1854 *Oxybelis lecomtei* Duméril et Bibron, Erpét. Gén., 7: 827 (*terra typica*: Gabon, Congo).
1854 *Tragops rufulus* Duméril et Bibron, Erpét. Gén., 7: 827. (*terra typica*: Senegal).
1856 *Oxybelis violacea* Fischer, Abhand. Nat. Ver. Hamburg, 3: 91.
1882 *Thelotornis kirtlandii* Peter, Reise nach Mossambique, III: 185.
Specimens examined—One adult female (KUZ R8332), collected in the tropical evergreen forest of the RFC during the second expedition.
Remarks—Head much elongated, wider than neck. Rostral wider than long, exposed

dorsally. Nasal divided. Nostril opening laterally. Snout long, tapering, roundish at tip, with distinct dorsolateral ridge. Internasal and prefrontal paired, each as long as wide. Frontal and supraocular twice as long as wide. Parietals slightly longer than wide. Eye large. A single large preocular, three small postoculars. Eight supralabials, fourth and fifth entering eye. Temporals 1+2 on left, 1+1 on right. Mental small. Ten infralabials, first in contact with each other, first to fourth entering primary postmentals. Body, long, rather compressed. Dorsal scales 21 rows at neck, 19 rows at mid-body, 15 rows at just before cloaca. Scales of outermost row on each side smooth, the other rows slightly to moderately keeled. Ventrals 178, anal divided. Subcaudals 164, paired. Snout to vent length 672, tail length 421.

Ground color bluish gray in most parts of body, slightly lighter on venter. Two longitudinal rows of white dots on dorsum. Labial and chin regions creamy white.

Family ELAPIDAE Boie, 1827

Genus *Naja* Laurenti, 1768

Naja melanoleuca melanoleuca (Hallowell, 1857) (Fig. 3D)

1857 *Naja haje* var. *melanoleuca* Hallowell, Proc Acad. Nat. Sci. Philadelphia, 61: 72. (*terra typica*: Gabon).

1876 *Naja annulata* Buchholz and Peters, Monber. Berlin Acad., p. 119.

1884 *Aspidelaps bocagii* Sauvage, Bull. Soc. Zool. France, p. 205.

1885 *Naja haje* var. *leucosticta*, Fischer, Jahrb. Hamb. Wiss. Anst., 2: 115.

1893 *Naja melanoleuca* Matschie, Mitth. Deutsch. Schutzgeb., 6: 214.

Specimens examined—One adult (KUZ R8340, head and anterior part of neck only). This animal was found dead in a trap near a cultivated field in the forest during the second expedition.

Remarks—Head only slightly wider than neck. Rostral triangular, wider than long, exposed dorsally. Nasal divided, nostril opening laterally. Snout short, roundish at tip. Internasal and prefrontal divided, one and a half as wide as long. Frontal as long as wide, smaller than supraocular. Parietals large, one and a half times as long as wide. Eye moderate in size. A single preocular, three postoculars. Seven supralabials, sixth largest, third and fourth entering eye. Temporals 1+2 on both sides. Mental small, triangular. Infralabials eight, first in contact with each other, second very small, fifth largest, first to fourth in contact with primary postmentals. Scales smooth, 29 rows at neck. Total length exceeded 2000.

Ground color of head dark grayish tan dorsally, cream yellow ventrally. Distinct dark line on posterior margin of each labial. Neck, dark gray on dorsum, creamy yellow with a dark transverse band of three-ventral's width on venter.

Genus *Dendroaspis* Schlegel, 1848

Dendroaspis jamesonii jamesonii (Traill, 1843) (Fig. 3E)

1843 *Elaps jamesonii* Traill, *In* Schlegel ed. Essai Phys. Serpents, p. 179.

1888 *Dendraspis jamesonii* Boettger, Ger. Senck. Ges., p. 85.

1903 *Dendraspis neglectus* Bocage, J. Sci. Lisboa, 2(7): 44.
1936 *Dendroaspis jamesonii jamesonii* Loveridge, Proc. Biol. Soc., Washington, 49: 63.

Specimens examined—One adult male (KUZ R8337), collected in the forest of RFC by an inhabitant during the second expedition.

Remarks—Head slightly elongated, wider than neck. Rostral relatively small, triangular, exposed dorsally. Nasal wholly divided by nostril opening laterally. Snout tapering, blunt at tip. Body slightly compressed. Internasal and prefrontal paired, almost as long as wide. Loreal lacking. Frontal slightly wider than long. Supraocular slightly longer than wide. Eye moderate in size, with three preoculars and four postoculars. Eight supralabials, fourth entering eye. Two temporals. Mental small, triangular. Eight infralabials, first in contact with each other. First, third and fourth infralabials in contact with primary postmental. Body scales smooth, 21 rows at neck, 17 rows at mid-body, 11 rows at just before cloaca. Ventrals 217 in Dowling's system, 220 in wider-than-long system. Anal divided. Subcaudals 117, paired. Snout to vent length 1604, tail length 582.

Anterior half of dorsum dark gray. Ground color of head, venter, and posterior half of dorsum pale greenish tan. Black margin on each scale, especially distinct in tail, forming reticulation.

Family VIPERIDAE Gray, 1825

Genus *Atractaspis* Smith, 1949

Atractaspis reticulata reticulata (Sjöstedt, 1896) (Fig. 3F)
1896 *Atractaspis reticulata*, Sjöstedt, Zool. Anz., 19: 516 (*terra typica*: Cameroon)
1950 *Atractaspis reticulata reticulata*, Laurent, Mem. Inst. R. Sci. Nat. Belgique, 38: 38.

Specimens examined—One adult (sex unknown, KUZ R8330), collected during the second expedition.

Remarks—Head small, almost as wide as neck. Rostral pentagonal, exposed dorsally. Nasal not divided. Nostril opening laterally. Snout short, roundish at tip. Internasals and prefrontals paired, each shield one and a half to two times as wide as long. Frontal large, almost as long as wide. Supraocular very small. Parietals large, one and a half times as long as wide. Eye small. A single preocular and a single postocular. Five supralabials, third and fourth entering eye. A single temporal on each side. Mental small. Five infralabials, first and second pairs in contact with each other, third much elongated. No distinctly enlarged postmentals. Body long, cylindrical. Tail very short, tapering and pointing to tip. Scales smooth, 19 rows at neck, 23 rows at mid-body, 19 rows at just before cloaca. Ventrals 327. Anal divided. Subcaudals 22, paired. Snout to vent length 273, tail length 13.

Dark brown on dorsum, pale brown on venter, without any markings.

Atractaspis corpulenta corpulenta (Hallowell, 1854) (Fig. 3G)
1854 *Brachycranion corpulentum* Hallowell, Proc. Ac. Philadelphia, 1854: 99 (*terra typica*: Cameroon).

1857 *Atractaspis corpulentus* Hallowell, Proc. Acad. Nat. Sci. 1857: 70.
1958 *Atractaspis corpulenta corpulenta* Laurent, Rev. Zool. Bot. Afr., 58: 115–128.
Specimens examined—One adult female (KUZ R8315), collected on the ground in the forest of RFC during the first expedition (Aug., 1982).
Remarks—Head not much enlarged, almost as wide as neck. Rostral triangular, almost as long as wide, exposed dorsally. Nasal not divided. Nostril opening laterally. Snout short, roundish at tip. Internasals and prefrontals paired, each shield one and a half to twice as wide as long. Frontal large, as long as wide. Supraocular small. Parietals slightly longer than wide. Eye relatively small. A single precular and a single postocular. Five supralabials, third and fourth entering eye. A single large temporal. Mental large. Seven infralabials, first and second pairs in contact with each other. No distinct postmentals. Body short, cylindrical. Tail very short, tapering, pointing to tip. Scales smooth, 26 rows at neck, 27 rows at mid-body, 21 rows at just before cloaca. Ventrals 180. Anal entire. Subcaudals 25, not paired. Snout to vent length 202, tail length 22.

Dorsum dark brown, venter light brown without markings.

Genus *Bitis* Gray, 1842

Bitis gabonica (Duméril et Bibron, 1854) (Fig. 3H)
1847 *Cerastes nasicornis* Hallowell (*non* Shaw), Proc. Acad. Philadelphia, p. 319.
1854 *Echidna gabonica*, Duméril et Bibron, Erpét. Gén. 7: 1428.
1856 *Echidna rhinoceros* Duméril, Rev. & Mag. Zool., p. 220.
1859 *Clotho rhinoceros*, Cope, Proc. Acad. Philadelphia, p. 340.
1882 *Bitis rhinoceros* Peters, Monber. Berlin Acad., 3: 146.
Specimens examined—Two adults (KUZ R8338, R8341, both head and anterior part of neck only). The former found on the ground of the forest in RFC during the second expedition. The latter also found on the ground of the forest in RFC also during the second expedition.
Remarks—Head large, rather depressed, much wider than neck. Rostral very small, pentagonal, invisible dorsally. Nostril opening dorsally. Snout very short and wide, roundish at tip. Internasals paired, each with a vertical horn-like projection. Dorsum of head covered with slightly to moderately keeled scales, 14 between eyes. Supralabials 13 to 15, all separated from eye. Mental small, triangular. Infralabials 17 to 18, first in contact with each other. Primary postmentals distinctly enlarged, in contact with first four to five infralabials. Scales on ventral surface of head smooth. Total length of KUZ R8338 was approximately 1600.

Ground color of head grayish tan, with a narrow dark brown mid-line on dorsum, and two broad band of the same color extending from eye to labial region.

One of the authors (JB) noticed KUZ R8341 on the floor of the forest by alarm calls of squirrels. He investigated the specimen by dissecting just after the capture, and found an adult squirrel, probably *Protoxenus stangeri* or *Epixerus ebii*. KUZ R8338 possessed 40 yolked follicles.

Bitis nasicornis (Shaw, 1802) (Fig. 3I)

1802 *Coluber nasicornis* Shaw, Nat. Misc., 3: 94. (*terra typica*: "Interior of Africa").

1803 *Vipera nasicornis* Daud. Rept., 8: 322.

1842 *Clotho nasicornis* Gray, Zool. Miscell., p. 69.

1854 *Vipera hexceras* Duméril et Bibron, Erpét. Gén., 7: 1428.

1857 *Echidna nasicornis*, Hallowell, Proc. Acad. Philadelphia, p. 62.

1890 *Bitis nasicornis*, Büttikofer, Reiseb. Liberia, 2: 144.

Specimens examined—Two adults (KUZ R8339, R8342), both head and anterior part of neck only). The former collected in the forest of RFC during the second expedition. The latter found on the ground of the forest in RFC during the first expedition (on Sept. 14, 1982).

Remarks—Head large, rather depressed, distinctly wider than neck. Rostral very small rectangular, invisible dorsally. Nostril opening dorsally. Snout very short, rather roundish at tip. Horn-like projections large, much more prominent than in *B. gabonica*. Enlarged, horn bearing internasals, separate from each other by two rows of very small scales. Dorsum of head covered with strongly keeled scales, 15 to 16 between eyes. Supralabials 17 to 18, all separated from eye. Mental triangular. Infralabials 18 to 20, first in contact with each other. Primary postmentals distinctly large, in contact with first to five infralabials. Scales on ventral surface of head smooth. Total length of KUZ R8342 approximately 1300.

On dorsum of head greenish gray in ground with a dark brown, arrow-like marking at center of head. Three broad dark bands, extending from eye backward, ventrally, and over nostril to tip of snout.

Genus *Atheris* Cope, 1862

Atheris squamiger (Hallowell, 1854) (Fig. 3J)

1854 *Echis squamigera* Hallowell, Proc. Acad. Nat. Sci., Philadelphia, p. 193 (*terra typica:* near Gabon River, French Congo).

1863 *Poecilostous Burtonii* Günther, Ann. Mag. Nat. Hist. (3), 11: 25. (*terra typica*: Cameroon).

1896 *Atheris squamigera* Boulenger, Cat. Snakes III, p. 509.

Specimens examined—One adult female (KUZ R8343), and one young (sex unknown, KUZ R8344), collected from trees in the forest of RFC during the first expedition.

Remarks—Head large, distinctly wider than neck. Rostral small, rectangular, much wider than long, and not observable dorsally. Nasal only partly divided. Nostril opening laterally. Snout very short, tapering, roundish at tip. Dorsal surface of head covered with small keeled scales; no shield. Four to five scales between nostrils. Nine scales between midst of eyes. Eye moderate in size. Nine to 11 supralabials, all separated from eye. Mental large, triangular. Nine to 10 infralabials, first pair in contact with, or separated from each other. First and second infralabials in contact with primary postmentals. Body rather compressed. Scales strongly keeled, 21 to

23 at neck, 19 to 23 at mid-body, 14 to 17 at just before cloaca. Scales in outermost rows distinctly larger than those in other rows. Ventrals 149 and 157 in Dowling's system, 151 and 158 in wider than long system. Anal not divided. Subcaudals not paired, 57 and 60. Snout to vent length of adult female and juvenile 482 and 205, tail length 102 and 42, respectively.

Adult female with yellowish green on dorsum and venter without any distinct markings. Young grayish tan, with tip of tail distinctly paler.

CONCLUSIVE REMARKS

Scott (1982) surveyed species of amphibians and reptiles collected from three plots in the tropical evergreen forest of southern Cameroon. He listed 13 species of lizards and six species of snakes, of which, however, only two species were shared with the present collection. It probably indicates the high diversity of herpetofauna, as well as the insufficiency of the herpetological survey for this region. Further systematic researches are required to elucidate characteristics of the herpetofauna of this region in relation to adjacent territories.

ACKNOWLEDGMENTS We wish to express our gratitude to M. Mitani and several inhabitants in Cameroon for providing several of the specimens used here.

Field works were supported by Grants-in-Aid for Overseas Field Research from the Ministry of Education, Science and Culture, Japan (Nos. 57041025 and 58041041, Program Director: Prof. M. Kawai).

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—Received *June 4, 1987.*

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