RUWENZORI EXPEDITION REPORTS.

15. PISCES, BATRACHIA, and REPTILIA.

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[PLATES VIII. & IX.*]

PISCES.

ONLY one species of Fish, the widely distributed *Tilapia nilotica*, L., was known from Ruwenzori, where specimens were found, between 5000 and 6000 feet, by Mr. G. F. Scott Elliot. The same fish was obtained to the S.E., at 3200 feet altitude, by Mr. R. B. Woosnam, the leader of the present Expedition. Examples of two species were obtained near Fort Portal, alt. 4500 feet, viz *Clarias carsonii* Blgr. and *Barbus portali* Blgr., the latter being a new species which I have described and figured in the 'Fishes of the Nile.' From Irumu, in the Congo Forest, alt. 3000 feet, we have examples of five species: *Alestes macrophthalmus* Gthr., *A. grandisquamis* Blgr., *A. imberi* Peters, *Barbus holotænia* Blgr., and *Barilius ubangensis* Pellegr. A small collection made in the Aruwimi River contains representatives of ten species: *Pellonula obtusirostris* Blgr., *Bryconæthiops microstoma* Gthr., *Petersius woosnami* Blgr., *Micralestes acutidens* Peters, *Labeo parvus* Blgr., *Barilius ubangensis* Pellegr., *Chelæthiops elongatus* Blgr., *Eutropius grenfelli* Blgr., *Synodontis greshoffi* Schilth., and *Mastacembelus congicus* Blgr.

Pellonula obtusirostris and *Petersius woosnami* have been described and figured in the first volume of the British Museum Catalogue of African Fresh-water Fishes.

Family CLUPEIDÆ.

1. PELLONULA OBTUSIROSTRIS Blgr.

Bouleng. Cat. Afr. F. Fish. i. p. 158, fig. 126 (1909).

Depth of body equal to length of head, $4\frac{1}{4}$ to $4\frac{1}{3}$ times in total length. Snout obtusely pointed, projecting very slightly beyond the lower jaw, not quite as long as the eye, which is three times in the length of the head and slightly exceeds the inter-orbital width; adipose lid feebly developed; maxillary extending to below the anterior third of the eye; no strongly enlarged teeth. Gill-rakers slender, shorter than the branchial lamellæ, about 15 on lower part of anterior arch. Dorsal fin with 13 rays, originating slightly in advance of the ventrals and much nearer the end of the snout

* For explanation of the Plates, see pp. 250, 252.

than the base of the caudal fin. Anal fin with 17 or 18 rays, twice as distant from the base of the ventral as from the caudal, and originating a long way behind the vertical of the dorsal. Pectoral fin $\frac{3}{5}$ to $\frac{2}{3}$ the length of the head, not reaching the ventral. Caudal forked, with pointed lobes. Caudal peduncle once and a half as long as deep. 42-44 scales in a longitudinal series, 10 in a transverse series; 12 or 13 keeled scutes between the isthmus and the ventrals, 10 between the ventrals and the anal. Body yellowish, head and a broad lateral band silvery.

Total length 72 mm.

Two specimens from the Aruwimi River.

Family CHARACINIDÆ.

2. *BRYCONÆTHIOPS MICROSTOMA* Gthr.

Aruwimi River, Upper Congo.

3. *ALESTES MACROPHthalmus* Gthr.

Irumu River.

4. *ALESTES GRANDISQUAMIS* Blgr.

Irumu River.

5. *MICRALESTES ACUTIDENS* Peters.

Irumu River.

6. *PETERSIUS WOOSNAMI* Blgr.

Bouleng. Ann. & Mag. N. H. (7) xx. 1907, p. 487; id. Cat. Afr. F. Fish. i. p. 239, fig. 183 (1909).

Depth of body equal to length of head, four times in total length. Head longer than deep, with convex upper profile; lower jaw projecting slightly beyond the upper; eye as long as the snout, three times in the length of the head; maxillary not extending to below the anterior border of the eye; 14 teeth ($\frac{6}{8}$) in the upper jaw, 8 in the lower; outer præmaxillary teeth tricuspid, inner multicuspid and inserted immediately behind the outer. Gill-rakers short, 12 on lower part of anterior arch. Dorsal fin with III 8 rays, originating above the base of the ventrals and at equal distance from the end of the snout and from the root of the caudal fin; longest ray about $\frac{3}{4}$ the length of the head. Adipose fin very small. Anal fin with III 17-18 rays. Pectoral fin shorter than the head, not reaching the ventral. Caudal peduncle as long as deep. Scales 29-30 $\frac{4\frac{1}{2}}{3\frac{1}{2}}$, 2 between lateral line and ventral. No markings, except a silvery lateral band, which is black-edged above.

Total length 70 mm.

Two specimens from the Aruwimi River, Upper Congo.

Family CYPRINIDÆ.

7. LABEO PARVUS Blgr.

Irumu River.

8. BARBUS PORTALI Blgr.

Bouleng. Ann. & Mag. N. H. (7) xviii. 1906, p. 36, and Fish. Nile, p. 243, pl. xlv. fig. 2 (1907).

Depth of body equal to the length of the head, three and two-thirds to four times in the total length. Snout rounded, longer than the eye, which is four to four and a half times in the length of the head and about once and a half in the interorbital width; latter three times in the length of the head; lips moderately developed, interrupted on the chin; barbels two on each side, the anterior once and a half to once and three-fourths, the posterior twice to twice and a half the diameter of the eye, the distance between them about two-thirds the diameter of the eye. Dorsal fin with III 7 rays, last simple ray strong, bony, coarsely serrated behind, much shorter than the head; free edge of the fin not emarginate; its distance from the occiput less than its distance from the caudal fin. Anal fin with III 5 rays, the longest one-half to three-fifths the length of the head. Pectoral fin two-thirds to three-fourths the length of the head, not reaching the ventral; latter below anterior rays of dorsal. Caudal fin deeply forked. Caudal peduncle once and a half to once and two-thirds as long as deep. Scales with fan-shaped striation, 29–31 $\frac{5\frac{1}{2}}{5\frac{1}{2}}$, 3 between lateral line and ventral, 12 round caudal peduncle. Yellowish, back olive-brown; a dark greyish lateral stripe with or without two or three blackish blotches in its course; fins whitish.

Total length 100 mm.

Described from five specimens obtained near Fort Portal, 12 miles east of Ruwenzori, at an altitude of 4500 feet, in a small stream, a tributary of the Mpanga, flowing into Lake George.

Mr. Woosnam observes that this was a common fish in the eastern streams of Ruwenzori, which it probably ascends from Lake George. It was not met with above 5500 feet.

9. BARBUS HOLOTÆNIA Blgr.

Irumu River.

10. BARILIUS UBANGENSIS Pellegr.

Irumu River.

11. CHELÆTHIOIS ELONGATUS Blgr.

Irumu River.

Family SILURIDÆ.

12. CLARIAS CARSONII Blgr.

[These little fishes were numerous in the streams flowing from the eastern side of Ruwenzori into Lake George. They appeared to frequent only the lower and more sluggish parts of the streams, and were never seen above 5500 feet.—*R. B. W.*]

13. EUTROPIUS GRENFELLI Blgr.

Irumu River.

14. SYNODONTIS GRESHOFFI Schilth.

Irumu River.

Family CICHLIDÆ.

15. TILAPIA NILOTICA L.

Ruwenzori, up to 3200 feet altitude.

Family MASTACEMBELIDÆ.

16. MASTACEMBELUS CONGICUS Blgr.

Irumu River.

BATRACHIA.

Examples of two species of Frogs, *Rana oxyrhynchus* A. Smith and *R. nutti* Blgr., were obtained by Mr. R. B. Woosnam on Ruwenzori.

1. RANA OXYRHYNCHUS A. Smith.

Mokia, S.E. Ruwenzori, 3400 ft.

2. RANA NUTTI Blgr. (Plate VIII. figs. 1 & 2.)

Mubuku Valley, E. Ruwenzori, 5000–9000 ft.

This is a little-known species. It was described by me (*Ann. & Mag. N. H.* (6) xviii. 1896, p. 467) from specimens obtained in Lake Tanganyika by Mr. W. Nutt, and the British Museum has since received specimens from various parts of British East Africa. Specimens from Kilimanjaro have been referred by Tornier (*Kriechth. Deutsch-Ost-Afr.* p. 92, 1897) to *R. bravana* Peters, which species I regard as identical with *R. galamensis* D. & B.

The following description is taken from the Ruwenzori specimens :—

Vomerine teeth in two strong, slightly oblique series between the choanæ. Head as long as broad, or a little longer than broad; snout rounded, scarcely projecting, slightly longer than the diameter of the orbit; canthus rostralis obtuse; loreal region very oblique and slightly concave; nostril equally distant from the eye and from the tip of the snout, or a little nearer the former; interorbital space a little narrower than the upper eyelid; tympanum very distinct, two-thirds to three-fourths the diameter of the eye. Fingers obtusely pointed, first and second equal; toes slender, obtusely pointed, two-thirds webbed; subarticular tubercles small; a small elliptical inner metatarsal tubercle, measuring one-third the length of the inner toe. Tibia as long as or a little longer than the fore limb, as long as the foot; tibio-tarsal articulation reaching the tip of the snout or beyond. Skin smooth; a narrow but very prominent glandular dorso-lateral fold from the upper eyelid to the sacral region. Greyish or olive-brown above, with more or less distinct darker spots; a broad, light, dark-edged vertebral band sometimes present; a dark streak from the end of the snout, through the nostril, to the eye; a dark temporal spot; a light streak from below the eye to the angle of the mouth; limbs with dark cross-bands; lower parts white, throat with brownish marblings.

The largest specimen measures 64 mm. from snout to vent.

Rana nutti is very nearly related to *R. angolensis* Bocage.

Two female specimens, showing variations in the markings, are figured on Plate VIII. figs. 1 & 2.

REPTILIA.

The species of Lizards obtained on Ruwenzori by Mr. Woosnam are *Agama atricollis*, A. Smith, *Lacerta jacksonii* Blgr., *Mabuia maculilabris* Hallow., *Mabuia striata* Peters, and the undescribed *Lygosoma* for which I proposed the name *L. meleagris*. This is here redescribed and figured, and I have appended notes on the specimen of the little-known *Lacerta jacksoni*.

Chameleons are represented by *Chamæleon senegalensis* Daud. (*lævigatus* Gray) and *C. ellioti* Gthr., obtained at the foot of the mountain (5000–6000 feet) by Mr. G. F. Scott Elliot; *C. johnstoni* Blgr., and *C. xenorhinus* Blgr., two remarkable forms discovered by Sir H. H. Johnston, and of which further examples were collected during the Expedition; and a small species, *C. rudis* Blgr., of which a female had been previously obtained by Sir H. H. Johnston, but which could not be properly understood until the male was discovered by Mr. Woosnam and his party.

Of Snakes, *Leptodira hotambœia* Laur. and *Elaphechis guentheri* Bocage were brought home from the foot of Ruwenzori by Mr. G. F. Scott Elliot; *Chlorophis emini* Gthr.

and *Naia nigricollis* Reinh. by the Ruwenzori Expedition, to which we also owe the discovery of a new Tree-Viper, described below as *Atheris woosnami*.

Family AGAMIDÆ.

1. AGAMA ATRICOLLIS A. Smith.

[Common on the plains around Ruwenzori, but not found on the mountains above 5000 feet.—R. B. W.]

Family LACERTIDÆ.

2. LACERTA JACKSONI Blgr.

Bouleng. Proc. Zool. Soc. 1899, p. 96, pl. x.

This species was described from a single male specimen procured at Ravine Station, Mau Mountains, on the main route from Mombasa to Lake Victoria, at an altitude of 7500 feet. It was presented to the British Museum by Mr. F. J. Jackson. A second specimen, a female, was obtained by the Expedition, on the east side of Ruwenzori, at a height of 8500 feet, on the trunk of a tree.

The head is smaller and shorter than in the type, and the body more elongate, these differences being sexual. The granules between the supraoculars and the superciliaries are reduced to three on the right side and to two on the left; the occipital is much shorter and a little broader than the interparietal; on the left side the parietal is in contact with the fourth supraocular and the upper postocular, on the right side with the fourth supraocular only. The dorsal scales are very faintly keeled; 37 scales across the middle of the body; 27 transverse series of ventral plates. The hind limb barely reaches the axil. Femoral pores 18-19. The belly, in the spirit-specimen, is pale blue.

Measurements:—

From end of snout to vent 71 mm.; head 17; width of head 11; fore limb 25; hind limb 35.

Judging from the description, I am in doubt as to Tornier's *L. vauereselli* (Zool. Anz. 1902, p. 701) being specifically distinguishable from *L. jacksoni*. The temporal scales, perfectly smooth in the Ruwenzori specimen, are feebly keeled in the type. The statement "Nur 8 Femoralporen an jeder Seite" (p. 702) is contradicted further down (p. 703), "Femoralporen 16 an jeder Seite."

Family SCINCIDÆ.

3. MABUIA MACULILABRIS Hallöw.

Mokia, S.E. Ruwenzori, 3400 feet.

4. *MABUIA STRIATA* Peters.

[Numerous in the Mubuku Valley, E. Ruwenzori, up to 6500 feet.—*R. B. W.*]

5. *LYGOSOMA MELEAGRIS* Blgr. (Plate VIII. figs. 3, 3 *a*, 3 *b*.)

Bouleng. Ann. & Mag. N. H. (7) xix. 1907, p. 488.

Body much elongate; limbs small, with four very short digits; the distance between the end of the snout and the fore limb is contained twice and a half in the distance between axilla and groin. Snout very short, obtuse; lower eyelid scaly; nostril pierced between two nasals; no supranasal; fronto-nasal broader than long, broadly in contact with the rostral and with the frontal; præfrontals minute; frontal not much larger than fronto-parietals, in contact with the first and second supraoculars; four supraoculars; five supraciliaries; fronto-parietals distinct, larger than the interparietal; parietals forming a suture behind the interparietal; a pair of nuchals; fourth upper labial below the centre of the eye. Ear-opening minute, about as large as the nostril. 22 smooth scales round the middle of the body. Median præanals scarcely enlarged. The length of the hind limb equals the distance between the anterior border of the eye and the fore limb; second and third toes (normally third and fourth, the hallux being absent) equal, with 12 lamellæ inferiorly. Tail long and thick. Upper surface of head and back blackish-brown, with small round white spots; sides of body, belly, hind limbs, and base of tail uniform orange; a black streak on the temple and along the side of the neck; throat black; greater part of tail brown above and white beneath, spotted with black.

Total length	166 mm.	Fore limb	10 mm.
Head	10 „	Hind limb	15 „
Width of head	7 „	Tail (reproduced)	105 „
Body	51 „		

A single specimen from the Mubuku Valley, E. Ruwenzori, altitude 7000 feet.

This species belongs to the section *Siaphos* Gray, which a few years ago was represented by only a few Malayan and Australasian species. Five closely related species have now been described from Africa:—

(1) *L. kilimensis* Stejneger (Proc. U.S. Nat. Mus. xiv. 1891, p. 405).—Digits 5—5, longest with 13–15 lamellæ below; ear-opening much larger than nostril; 24 scales round body. Kilimanjaro.

(2) *L. thomasi* Tornier (Zool. Jahrb., Syst. xix. 1903, p. 175).—Digits 5—5, longest with 12 lamellæ below; ear-opening not much larger than nostril; fronto-nasal fused with frontal; 24 scales round body. Nairobi.

(3) *L. aloysii-sabandiæ* Peracca (Boll. Mus. Zool. Tor. xxii. 1907, no. 553).—Digits 5—5 (pollex rudimentary and clawless), longest with 14 lamellæ below; ear-opening not much larger than nostril; 22 scales round body. Mitiana and Toro.

(4) *L. meleagris* Blgr.—Digits 4—4, longest with 12 lamellæ below ; ear-opening not much larger than nostril ; 22 scales round body. Ruwenzori.

(5) *L. blochmanni* Tornier (*t. c.* p. 173).—Digits 3—3 ; ear-opening much larger than nostril ; 22 scales round body. Lake Kivu.

Family CHAMÆLEONTIDÆ.

6. CHAMÆLEON SENEGALENSIS Daud.

I cannot regard Gray's *C. lævigatus* as more than a variety of this species, for reasons which will be given in a paper to be published in the 'Annals' of the Genoa Museum.

7. CHAMÆLEON ELLIOTI Gthr. (Plate VIII. figs. 4, 4 a.)

[These Chameleons were numerous on the lower slopes of Ruwenzori from 5000 to 6000 ft., especially among the rough scrubby vegetation which springs up on the sites of old cultivations. None was obtained or seen above 6000 ft.—*R. B. W.*]

8. CHAMÆLEON RUDIS Blgr. (Plate VIII. figs. 5, 5 a, 6.)

Bouleng. Ann. & Mag. N. H. (7) xviii. 1906, p. 441.

Head short, the casque feebly raised posteriorly, with feeble, tubercular parietal crest ; the distance between the commissure of the mouth and the extremity of the casque equals the length of the mouth ; no rostral appendages ; lateral crest merely indicated ; no trace of occipital lobes ; 10 scales across the interorbital space. Body covered with large, very convex granules of irregular size, intermixed with still larger ones, some of which are arranged in a dorso-lateral series ; a dorsal crest of conical tubercles, the largest of which alternate with one or two smaller ones ; a series of long, conical, spine-like tubercles forms an uninterrupted gular-ventral crest, the longest tubercles, on the throat, measuring half the diameter of the orbit. No tarsal process. Tail as long as or a little shorter than head and body, crested like the back. Male dark olive-grey, female nearly black, with some of the larger tubercles on the body yellowish.

	♂.	♀.
Total length	113	98 mm.
From end of snout to extremity of mandible . .	16	13 „
„ „ „ casque . . .	18	15 „
Greatest width at temple	11	9 „
Depth of skull, mandible included	13	11 „
Body	41	40 „
Tibia	10	9 „
Tail	56	45 „

A single specimen, a gravid female, of this small Chameleon was presented by Sir H. H. Johnston to the British Museum in 1901. I had referred it provisionally to *C. bitæniatus* Fisch., from which it differs in the coarser scaling and in the much longer spine-like tubercles forming the gular-ventral crest, and it was briefly alluded to by Mr. J. L. Monk ('Zoologist,' 1903, p. 324) as likely to prove a new species, a view which is confirmed by the discovery of the male by the Ruwenzori Expedition, in the Mubuku Valley, on the east side of the mountain, at an altitude of 10,000 feet.

[A specimen (no. 24, 2nd Feb., 1906) was found at 10,000 ft., just where the bamboo and tree-heath zones meet and intermingle, forming rather more open patchy country. This specimen was much smaller than the *C. ellioti* met with lower down and of a dirty grey-green colour. At this altitude (10,000 ft.) the vegetation was sometimes white with frost in the early morning. During the time we were encamped there the native porters (about 20 in number) were offered rewards for finding Chameleons, but they never found but this one, which was sitting on a rotten stump of tree-heath. I fully expected this alpine Chameleon to be of a different species to *C. ellioti*, which is met with below 6000 ft., where the climate is hot and tropical.—R. B. W.]

Those who regard *C. ellioti* and *C. hoehnelii* as races or local varieties of *C. bitæniatus* would of course place *C. rudis* under the same species—and I should be the last to blame them, having at one time held the same opinion.

9. CHAMÆLEON JOHNSTONI Blgr.

[This Chameleon was obtained only in the Mubuku Valley, E. Ruwenzori, between 6000 and 7000 feet, and it did not appear to be very plentiful. It is found usually among the lower bushes and shrubs just below the forest-line, or in the open spaces where native clearings had been made just inside the forest.—R. B. W.]

10. CHAMÆLEON XENORHINUS Blgr.

[This Chameleon was obtained only in the Mubuku Valley, E. Ruwenzori, from 6000 to 7000 feet, and was found in much the same kind of situations as *C. johnstoni*, but it appeared to be more partial to the larger trees and was found upon the trunks. We noticed, too, that this Chameleon when first caught was always of a much darker colour than *C. johnstoni*, almost black, and never became very much lighter. It is not improbable that it lives in the large forest-trees, where its presence would be almost impossible to detect.—R. B. W.]

Family COLUBRIDÆ.

11. CHLOROPHIS EMINI Gthr.

Mubuku Valley, E. Ruwenzori, 5000 feet.

12. NAIA NIGRICOLLIS Reinh.

Mokia, S.E. Ruwenzori, 3400 feet.

Family VIPERIDÆ.

13. ATHERIS WOOSNAMI Blgr. (Plate IX.)

Bouleng. Ann. & Mag. N. H. (7) xviii. 1906, p. 37.

In shape the head resembles that of *Vipera berus*, being more elongate than in the other species of *Atheris*, truncate at the end, and provided with a sharp canthus rostralis; the eye is rather small, its diameter about half the length of the snout in the adult. The end of the snout below the canthus rostralis and between the nasal and first labial shields is covered by four smooth shields: a rostral, which is twice and a half to three times as broad as deep, and above it three shields in a row, the median of which may be regarded as detached from a rostral such as exists in a typical Viper. The scales on the snout and vertex may be smooth or more or less strongly keeled, further back they are all strongly keeled; there are 8 to 10 across the crown from eye to eye and 12 to 15 round the eye, which is separated from the upper labials by one or two series of scales; the upper labials number 10 on each side; there are 3 or 4 pairs of small chin-shields, the anterior largest and in contact with 3 or 4 lower labials; unlike those of the other *Atheris*, the gular scales are smooth or very faintly keeled. The highest number of scales across the body varies between 25 and 30; all are strongly keeled. Ventrals 151 in males, 158 to 162 in females; anal entire; subcaudals 49 to 52 in males, 44 to 47 in females*.

In coloration as well as in form and scaling this *Atheris* departs less than its congeners from the typical Viper pattern, the characteristic zigzag dorsal band and the reversed initial (V) on the head being present in some specimens. The ground-colour varies from olive-green to bright grass-green above, from yellowish to pale green beneath; the keels of most of the scales are black, and the upper head-scales are edged with black; there is usually a dorsal series of large black rhombs, which may be confluent into a zigzag band, and a lateral series of smaller black spots; a Λ- or A-shaped black marking on the top of the head, the apex between the eyes; a black streak on

* In the large series of *Atheris chlorocephalis* and *A. squamiger* in the British Museum, which renders the distinction of these two supposed species an almost impossible task, the variation in the number of ventrals ranges between 145 and 165 for males, 152 and 176 for females, and that of subcaudals between 52 and 65 for males, 46 and 59 for females.

each side of the head, from above the nostril to above the last labial shield ; the end of the tail is black or blackish.

The largest specimen measures 630 mm., in which the tail enters for 85.

[Several specimens of this very distinct species were obtained in the Mubuku Valley, E. Ruwenzori, between 6000 and 6500 feet altitude.

This fine Snake may sometimes be seen coiled up round the stem of elephant-grass 10 feet above the ground. One of the specimens contains embryos.—*R. B. W.*]

PLATE VIII.

PLATE VIII.

Figs. 1, 2. *Rana nutti* Blgr., p. 240. Females.

Fig. 3. *Lygosoma meleagris* Blgr., p. 243.

3 *a.* „ „ Enlarged view of upper surface of head.

3 *b.* „ „ „ „ side of head.

4. *Chamæleon ellioti* Gthr., p. 244. Female.

4 *a.* „ „ Upper view of head.

5. „ *rudis* Blgr., p. 244. Male.

5 *a.* „ „ Upper view of head.

6. „ „ Female.

1, 2. RANA NUTTI. 3. LYGOSOMA MELEAGRIS.
4. CHAMÆLEON ELLIOTI. 5, 6. CHAMÆLEON RUDIS.

PLATE IX.

PLATE IX.

Atheris woosnami Blgr., p. 246.

Female, with side view of head and enlarged view of end of snout.

J. Green del. et Chromo lith.

ATHERIS WOOSNAMI.