Fig. 21. *Perca fluviatilis*, p. 950.
22. *Zeus faber*, p. 950.
23. *Anarrhichas lupus*, p. 950.
24. *Labrus maculatus*, p. 951.
25. *Exocœtus brachysoma*, p. 951.

PLATE LXV.

Fig. 26. *Lophius piscatorius*, p. 951.
27. *Cottus scorpio*, p. 951.
28. *Trigla cuculus*, p. 951.
29. *Cyclopterus lumpus*, p. 951.
30. *Fistularia tabaccaria*, p. 952.
31. *Saccobranchus fossilis*, p. 952.
32. *Silurus glanis*, p. 952.
33. *Syngnathus acus*, p. 952.
34. *Gadus æglefinus*, p. 952.
35. *Blennius pholis*, p. 953.
36. *Orthagoriscus truncatus*, p. 953.
37. *Tetrodon palembangensis*, p. 953.

4. On the Reptiles, Batrachians, and Fishes collected by the late Mr. John Whitehead in the Interior of Hainan. By G. A. BOULENGER, F.R.S.

[Received October 31, 1899.]

(Plates LXVI.–LXIX.)

During his short stay in Hainan, where he died on June 2 of the present year, Mr. John Whitehead had succeeded in collecting a small number of cold-blooded vertebrates in the Five-finger Mountains, in the interior of the island. The fact that so many of the few species represented in the collection are new, tends to show how rich a harvest these unexplored mountains would have yielded but for the fatal climate which has deprived the zoological world of one of its most enthusiastic and successful members.

REPTILES.

1. DRACO WHITEHEADI, sp. n. (Plate LXVI. fig. 1.)

Head small; snout considerably longer than the diameter of the orbit; nostril lateral, directed outwards; tympanum scaly. Upper head-scales unequal, strongly keeled; 8 or 9 upper labials. Male's gular appendage very large, once and a half as long as the head. A rudimentary nuchal crest. Dorsal scales a little larger than ventrals, irregular, obtusely keeled; on each side of the back a series of enlarged, keeled dorsal scales. The fore limb stretched forward reaches the tip of the snout, the hind limb between the elbow and the axilla. Reddish brown above, with dark transverse

bars and small black spots; wing-membranes brick-red above, with small round black spots, colourless and unspotted beneath; gular appendage blue at the end, blackish in front, and red behind at the base.

Total length....	232 millim.	Fore limb ..	34 millim.
Head	17 „	Hind limb..	43 „
Width of head..	11 „	Tail	148 „
Body	69 „		

Very closely allied to *D. maculatus* Gray, but snout longer and coloration different.

A single male specimen.

2. Acanthosaura hainanensis, sp. n. (Plate LXVI. fig. 2.)

Snout as long as the diameter of the orbit; canthus rostralis and supraciliary edge angular; tympanum smaller than the eye-opening; upper head-scales keeled, larger on the supraorbital region and in the middle of the forehead; a spine, measuring one third the diameter of the orbit, terminates the supraciliary edge; 11 or 12 upper and as many lower labials; gular scales strongly keeled, smaller than the ventrals. An oblique fold on each side of the neck, in front of the shoulder; a spine, measuring two fifths the diameter of the orbit, on each side of the nape above the tympanum. Nuchal crest not continuous with the dorsal, composed of rather slender compressed spines, the longest of which measure nearly half the diameter of the orbit. Dorsal crest low, composed of triangular compressed scales pointing backwards, subequal in size throughout the back. Dorsal scales very small, intermixed with irregularly scattered, enlarged, rhomboidal, more or less strongly keeled ones; ventral scales about as large as the enlarged dorsals, strongly keeled. Fore limb and tibia above with subequal keeled scales, femur with unequal ones; fourth finger a little longer than third; the adpressed hind limb reaches the eye. Tail feebly compressed, covered with uniform strongly keeled scales, which are larger on the lower surface. Olive-brown above, with rather indistinct wavy darker cross-bars; a dark, light-edged rhomboidal marking between the shoulders, produced forwards along the base of the nuchal crest; antehumeral fold blackish; limbs and tail with light transverse bars.

Total length....	250 millim.	Fore limb ..	52 millim.
Head	25 „	Hind limb ..	79 „
Width of head..	17 „	Tail	145 „
Body	70 „		

Most nearly allied to *A. crucifera* Blgr.

A single female specimen.

3. Calotes versicolor Daud.

4. Tropidonotus chrysargus Schleg.

BATRACHIANS.

1. Rana graminea, sp. n. (Plate LXVII. fig. 1.)

Vomerine teeth in two short oblique series between the choanæ, nearer to each other than to the latter. Head depressed, as long as broad; snout rounded, scarcely projecting, as long as the diameter of the orbit; canthus rostralis well-marked; loreal region concave; nostril nearer the end of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. Fingers and toes rather slender, with small but well-developed disks; first finger not extending beyond second; toes nearly entirely webbed; a single, feebly prominent, oval, inner metatarsal tubercle. The tibio-tarsal articulation reaches beyond the tip of the snout; tibia as long as the distance from end of snout to sacrum. Skin smooth; a moderately broad, feebly prominent glandular lateral fold; another fold from below the eye to the shoulder, followed by a strong glandule. Bright green above, brownish on the sides of the head and body, below the canthus rostralis and the dorso-lateral fold, and on the limbs; upper lip white; limbs with regular dark cross-bars; hinder side of thighs marbled dark brown and yellow; lower parts white. Male with two external vocal sacs, in front of the arms; no humeral gland.

From snout to vent 48 millim.

Allied to *R. erythræa* Schleg. Distinguished by the shorter snout, the longer hind limbs, the external vocal sacs, and the coloration. Also allied to *R. jerboa* Gthr. and *R. whiteheadi* Blgr., in which the digital disks are larger and the hind limb longer still.

Two male specimens.

2. Rana andersoni Blgr.

This species, first discovered in the Hotha Valley, Yunnan, by Dr. J. Anderson, has since been found in the Kakhyen Hills, Upper Burma, by Signor L. Fea, and at Kuatun, N.W. Fokien, by Mr. J. D. La Touche.

3. Staurois hainanensis, sp. n. (Plate LXVII. fig. 2.)

Head as long as broad or slightly broader than long; snout short, truncate, projecting; canthus rostralis strong; loreal region nearly vertical, concave; nostril midway between the eye and the end of the snout; interorbital space as broad as the upper eyelid; tympanum distinct, one third or two fifths the diameter of the eye. Fingers slender, first longer than second, with very large disks; toes webbed to the disks, which are a little smaller than those of the fingers; subarticular tubercles feebly prominent; a very indistinct inner metatarsal tubercle. The tibio-tarsal articulation reaches the tip of the snout or a little beyond. Skin smooth above in the adult, warty in the young; lower part

smooth. Olive above, spotted with black, or blackish with pale olive markings; limbs with dark cross-bars; hinder side of thighs with a black reticulation.

From snout to vent 58 millim.

Larva with a large pectoral adhesive disk (see P. Z. S. 1893, p. 526). Beak formed of two pieces, an upper and a lower, feebly denticulate, not ribbed; lower lip not fringed; the horny teeth form 3 uninterrupted and 2 paired series on the upper lip, 2 uninterrupted and 1 narrowly interrupted series on the lower lip, an arrangement that may be expressed by the formula $\frac{2 \quad 2}{1 \quad 1}$.

Closely allied to *Staurois natator* Gthr. Distinguished by the shorter head. The tadpole, on the other hand, stands nearest to that of *Rana latopalmata* Blgr.

Three specimens: a female, a young, and an advanced tadpole.

4. Rhacophorus leucomystax Gravh.

5. Rhacophorus oxycephalus, sp. n. (Plate LXVII. fig. 3.)

Vomerine teeth in two oblique series between the choanæ, the inner front edge of which they nearly touch. Head as long as broad; snout pointed, as long as or a little longer than the diameter of the orbit; canthus rostralis distinct; loreal region concave; nostril a little nearer the tip of the snout than the eye; interorbital space a little narrower than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers with a distinct rudiment of web; toes entirely webbed; disks of fingers nearly as large as the tympanum, of toes a little smaller; a very small inner metatarsal tubercle. The tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth or with small warts above; belly granular. Greyish or brown above, spotted or marbled with darker; a dark transverse band or triangular marking, base forwards, between the eyes; limbs with dark cross-bars; groin and back of thighs marbled black and yellow; lower parts white. Male with an internal vocal sac.

From snout to vent 57 millim.

Four specimens.

6. Bufo melanostictus Schn.

FISHES.

Coreoperca.

Coreoperca, Herzenstein, Ann. Mus. Zool. St. Pétersb. 1896, p. 11.

Body compressed; scales small, cycloid, concentrically striated. Lateral line complete; tubes straight, occupying the greater length of the scale. Mouth large, protractile; maxillary exposed, with

supplemental bone; villiform teeth in jaws and on vomer and palatines; no canines; tongue smooth; head partly naked; præopercle serrated, with a few antrorse spines on the lower border; opercle with two spines. Gill-membranes separate; seven branchiostegals; pseudobranchiæ present. Dorsal fins confluent, XIV–XV 11–14, the spinous portion much longer than the soft; anal short, III 7–11; caudal rounded. Pectoral symmetrical, rounded, rays 16. Ventrals below the pectorals, close together, with a strong spine and five branched rays, the last of which is connected with the belly by a membrane.

The type species of this genus of *Serranidæ*, allied to *Siniperca*, is from the interior of North Corea[1]. It is highly interesting to add a second species from the interior of Hainan.

1. Coreoperca whiteheadi, sp. n. (Plate LXVIII.)

Depth of body equal to length of head, 3 times in total length. Snout $1\frac{1}{3}$ diameter of eye, which equals interorbital width, $\frac{1}{4}$ length of head; lower jaw projecting beyond the snout; maxillary extending a little beyond vertical of posterior border of eye, the width of its distal extremity a little less than diameter of eye; præorbital entire; cheeks and opercles scaly, rest of head naked; præopercle finely serrated, without enlarged spines at the angle; opercular spines strong. Dorsal XV 14, originating above base of pectoral; spinous portion twice as long as the soft; spines strong, short, increasing in length to the sixth, which equals $\frac{1}{4}$ length of head; longest soft rays nearly $\frac{1}{2}$ length of head. Pectoral $\frac{1}{2}$ length of head. Anal III 11; second spine longest, a little shorter than longest dorsal spines. Caudal rounded, subtruncate. Sq. 80 $\frac{14}{31}$; l. l. 63. Brown, with dark marblings and whitish dots; a dark streak from below the eye to the angle of the præopercle and another from the eye to a large, black, white-edged ocellar spot

[1] Having had the privilege of examining the type specimens of *Coreoperca herzi*, Herzenst. l. c., preserved in the St. Petersburg Museum, I add a description of them for comparison with *C. whiteheadi*:—

Greatest depth at origin of dorsal fin, 3 to $3\frac{1}{3}$ times in total length, length of head $2\frac{3}{4}$ to 3 times. Snout as long as diameter of eye, $\frac{1}{4}$ length of head, and twice width of interorbital region; lower jaw not projecting; maxillary extending to below posterior third of eye, the width of its distal extremity about half diameter of eye; præorbital entire; cheeks and opercles scaly, rest of head naked; præopercle with two strong bifid spines at the angle and two or three antrorse spines on the lower border; opercular spines strong. Dorsal XIV 11–12; originating above base of pectoral, spinous portion twice as long as the soft; spines strong, increasing in length to the fifth, which equals $\frac{2}{3}$ length of head, but is considerably shorter than the longest soft rays. Pectoral $\frac{2}{3}$ length of head. Anal III 7, spines very strong, third a little longer than first, second longest and a little longer than longest dorsal spine. Caudal rounded. Sq. 76–82 $\frac{14\text{–}15}{35}$; l. l. 51–56. Brown; a dark streak from below the eye to the angle of the præopercle; a black spot, edged with white anteriorly, between the opercular spines; body with some dark brown spots intermixed with whitish dots; a regular series of dark spots along the base of the dorsal.

Total length 85 millim.

Pung Tung, Corea.

between the opercular spines; some light dots on the soft dorsal and anal and on the membrane between the ventral rays.

Total length 155 millim.

A single specimen.

2. Discognathus imberbis Vincig.

A species described from the Karen Hills, Burma.

3. Gymnostomus lepturus, sp. n. (Plate LXIX. fig. 1.)

Depth of body 4 times in total length, length of head 5 times. Head $1\frac{2}{3}$ as long as broad; snout broad, rounded; width of mouth nearly half length of head; lower jaw with a sharp, horny edge; diameter of eye equal to length of snout, $3\frac{1}{2}$ times in length of head, $1\frac{1}{2}$ in interorbital width. Dorsal III 8, midway between end of snout and base of caudal; first branched ray longest, a little shorter than the head, last ray longer than those preceding it, $\frac{2}{3}$ length of head. Pectoral as long as head. Ventrals below middle of dorsal. Anal III 6, as deep as dorsal. Caudal deeply bifurcate, $1\frac{1}{2}$ length of head. Caudal peduncle thrice as long as deep. Sq. $49\frac{7}{6}$; 4 scales between the lateral line and the ventral. Olive above, silvery beneath; an ill-defined dark lateral streak.

Total length 165 millim.

A single specimen.

4. Barilius hainanensis, sp. n. (Plate LXIX. fig. 2.)

Depth of body equal to length of head, $4\frac{2}{3}$ times in total length. Head twice as long as broad; snout pointed, not projecting beyond the mouth, as long as diameter of eye, which is $3\frac{1}{2}$ times in length of head and equals interorbital width; mouth extending hardly to below anterior border of eye; suborbitals entirely covering the cheek. Dorsal II 7, originating just behind ventral and situated at equal distance from the eye and the root of the caudal; first branched ray $\frac{2}{3}$ length of head. Pectoral a little shorter than head, not reaching ventral. Anal II 14. Caudal deeply bifurcate, as long as head. Caudal peduncle nearly thrice as long as deep. Sq. $46\frac{6}{3}$. Silvery, darker on the back; scales above the lateral line black at the base.

Total length 130 millim.

A single specimen.

5. Opsariichthys platypus Schleg.

A species known from Japan and Formosa.

EXPLANATION OF THE PLATES.

Plate LXVI.

Fig. 1. *Draco whiteheadi*, p. 956, with side-view of head.
2. *Acanthosaura hainanensis*, p. 957.

PLATE LXVII.

Fig. 1. *Rana graminea*, p. 958.
1 *a*. „ „ Side view of head.
2. *Staurois hainanensis*, p. 958.
2 *a*. „ „ larva, lower view of body.
3. *Rhacophorus oxycephalus*, p. 959.

PLATE LXVIII.

Coreoperca whiteheadi, p. 960.

PLATE LXIX.

Fig. 1. *Gymnostomus lepturus*, p. 961, ⅔ nat. size.
2. *Barilius hainanensis*, p. 961.

5. On a Collection of Butterflies made by Mr. Richard Crawshay in British East Africa. By ARTHUR G. BUTLER, Ph.D., F.L.S., F.Z.S., &c., Senior Assistant-Keeper, Zoological Department, British Museum.

[Received September 20, 1899.]

(Plate LXX.)

During the past summer I received from Mr. Crawshay a box of Lepidoptera and a letter dated February 8th, 1899, addressed from Neugia, as follows :—

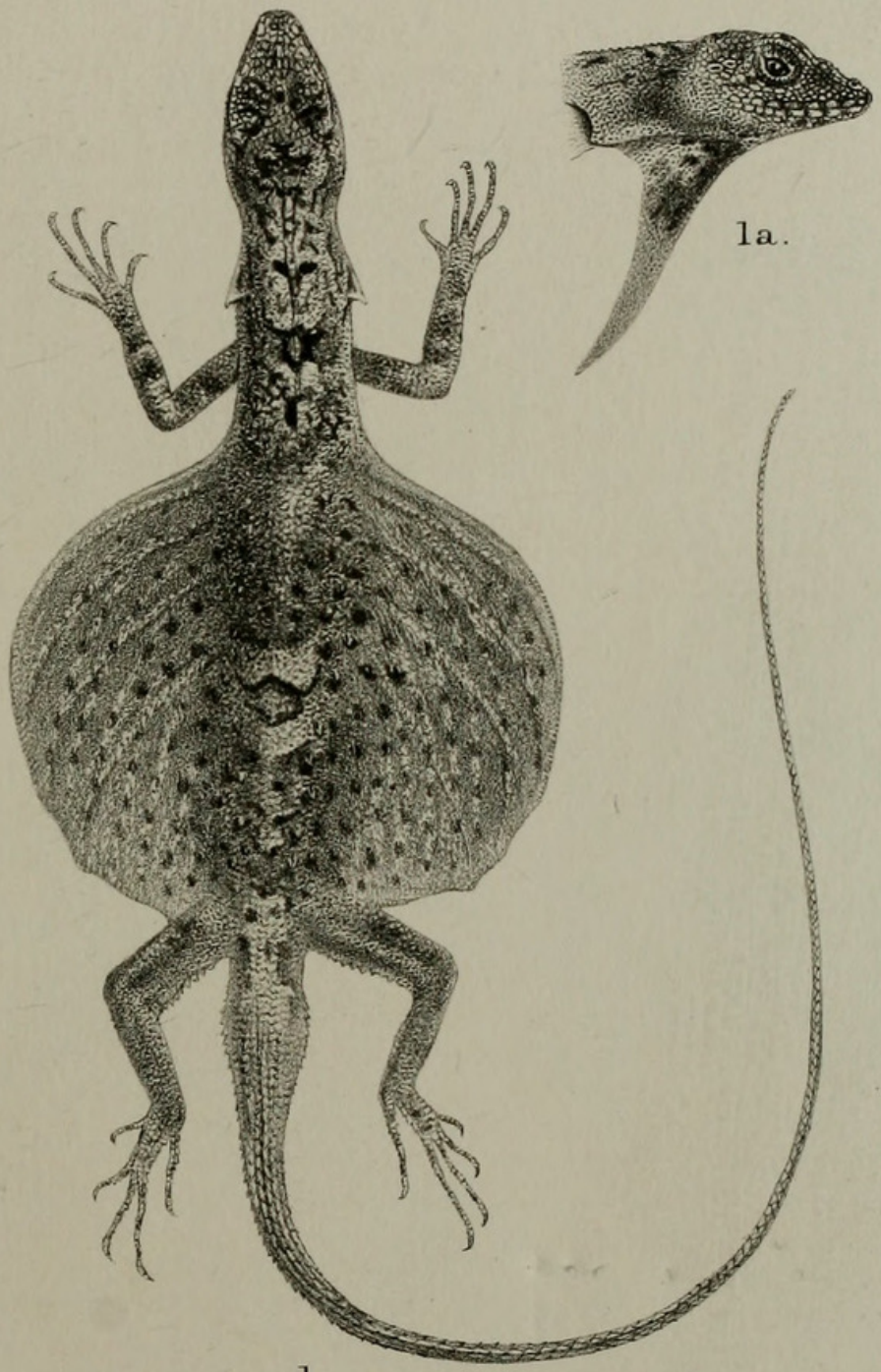
"A few lines to let you know that I have lately returned from a journey into Maranga, the S. and S.W. slopes of Mt. Kenya; and that I was able to take some Butterflies, which, I think, will please you.

"From this—I mean the mention of mighty Kenya and its 18,600 feet—you must not infer that these insects have been collected at any great altitude. Maranga is not so high as other parts of Kikuyu to the westward,—for instance the neighbourhood of Fort Smith, which is 6400 feet. As a matter of fact it does not average, I suppose, more than 5600 feet; rising to the N. and N.E. gradually into the mighty belt of forest surrounding the mountain for many thousands of feet, and falling away to the W. and S.W. of the Tana River, which, where we crossed it, is 3850–3900 feet.

"In all the thousands of miles I have travelled in Africa, I have never seen a more lovely and more *possible* country than Maranga; nor more splendid specimens of its peoples than are the Wakikuyu—though they are at present suspicious of and hostile to everyone from the outer world. The Wakamba are the most veritable *worms* in comparison with them.

"However, you want to know something more of the surprises which I hope are in store for you in the shape of the Butterflies.

"The most promising of these are Skippers and Blues—one a very large and powerful Blue with almost black wings on the inside, which show a Purple-Emperor-like glow, though with a



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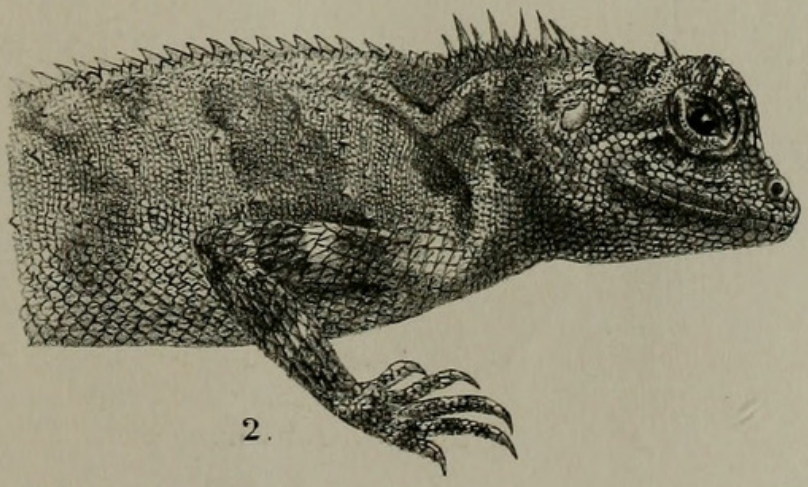
1.

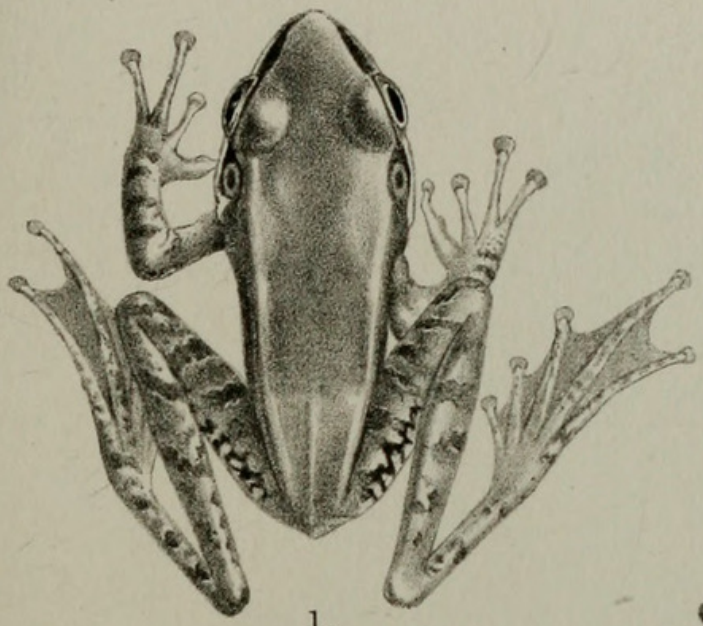


2.

P.J.Smit del. et lith.

Mintern Bros. imp.

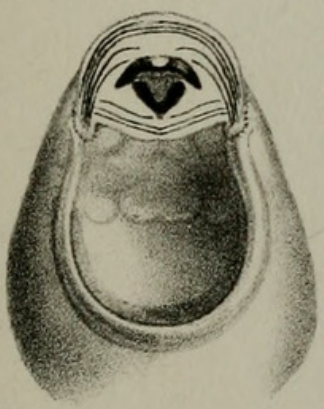
1.DRACO WHITEHEADI. 2.ACANTHOSAURA HAINANENSIS.



1.

1a.

3.



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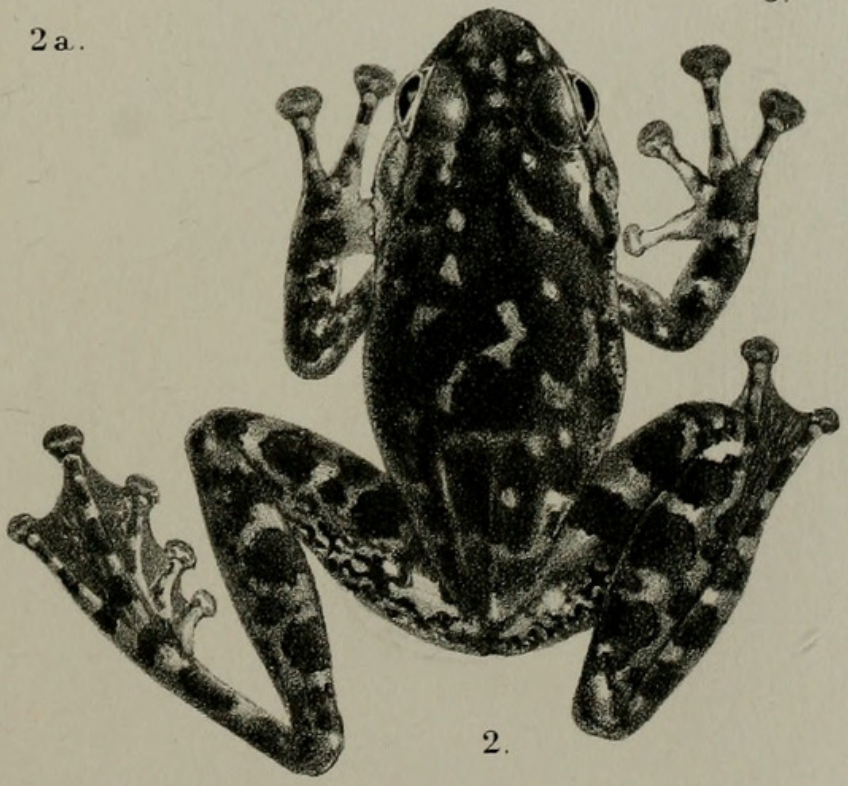
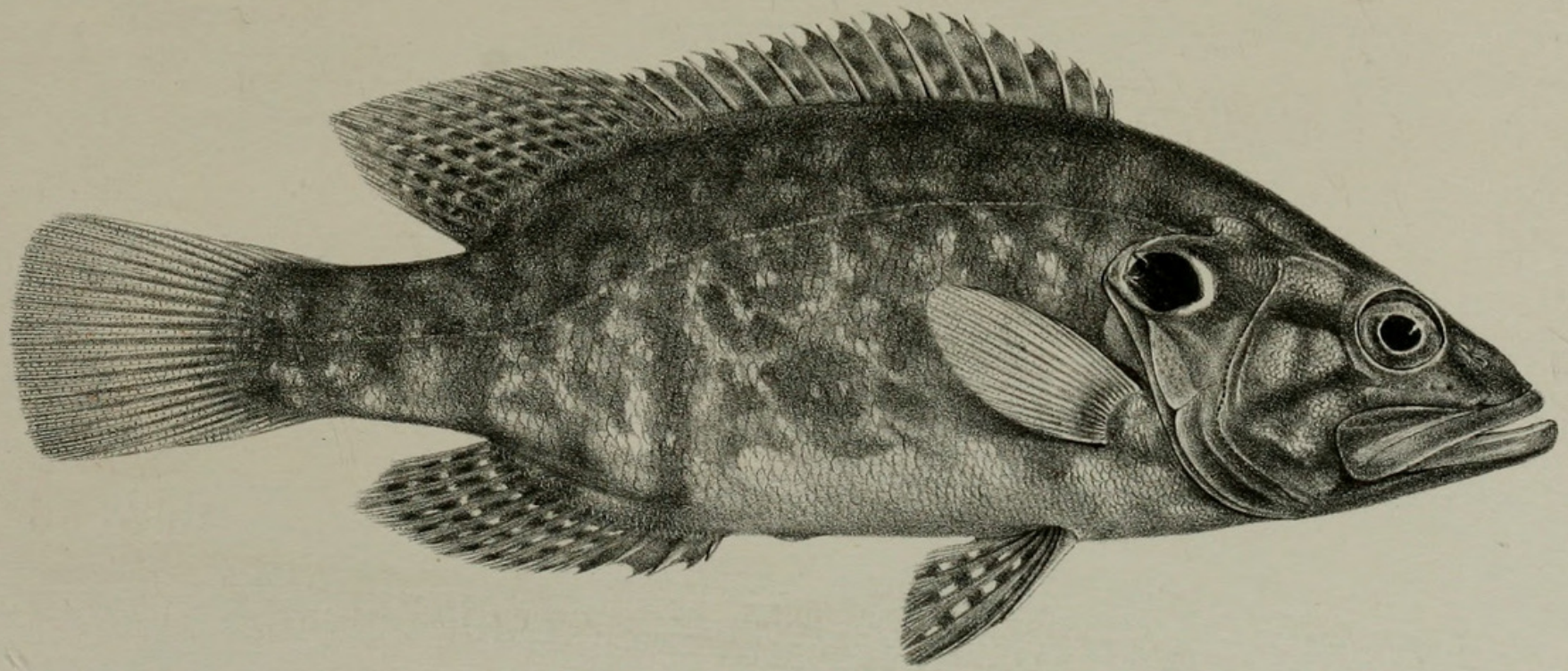


2.

P.J. Smit del. et lith. Mintern Bros. imp.

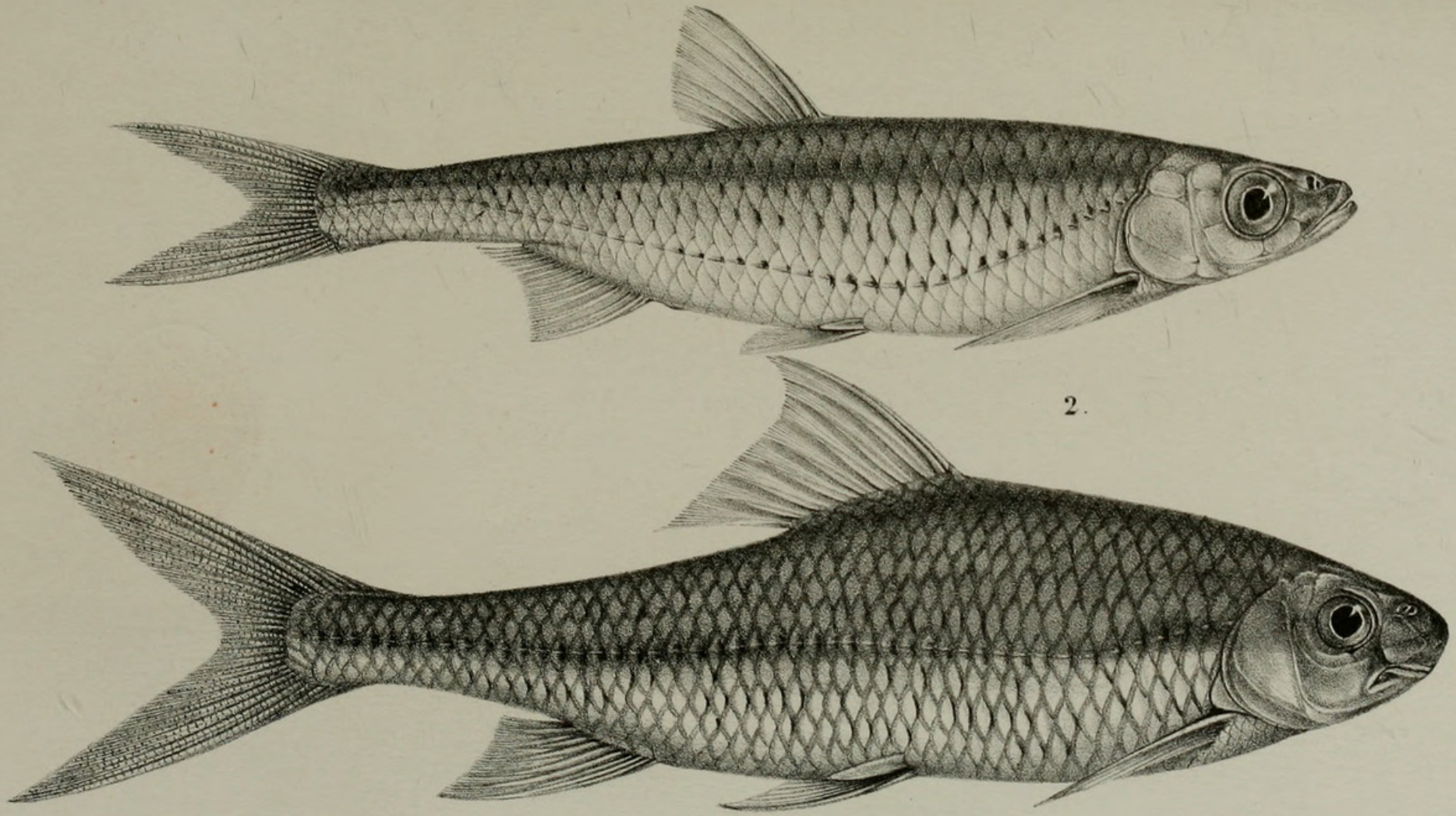
1. RANA GRAMINEA. 2. STAUROIS HAINANENSIS.
3. RHACOPHORUS OXYCEPHALUS.



J. Green del. et lith.

Mintern Bros. imp.

COREOPERCA WHITEHEADI.



2.

1.

J.Green del. et lith.

Mintern Bros. imp.

1. GYMNOSTOMUS LEPTURUS. 2. BARILIUS HAINANENSIS.