The Annals and magazine of natural history; zoology, botany, and geology being a continuation of the Annals combined with Loudon and Charlesworth's Magazine of Natural History.

London,Taylor and Francis, Ltd.
http://www.biodiversitylibrary.org/bibliography/15774

6th ser. v. 17 (1896): http://www.biodiversitylibrary.org/item/54295
Page(s): Title Page, Page 261, Page 262, Page 263, Page 264, Page 265, Page 266, Page 267, Page 268, Page 269, Page 270, Page 271, Page 272, Page 273, Page 274, Page 275, Page 276, Page 277, Page 278, Page 279, Page 280, Page 281, Page 282, Page 283, Page 284, Page 285, Text, Text, Text

Contributed by: Smithsonian Institution Libraries
Sponsored by: Smithsonian

THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY,

INCLUDING

ZOOLOGY, BOTANY, AND GEOLOGY.

(BEING A CONTINUATION OF THE 'ANNALS' COMBINED WITH LOUDON AND CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY.')

CONDUCTED BY

ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.R.S.,
WILLIAM CARRUTHERS, F.R.S., F.L.S., F.G.S.,
AND
WILLIAM FRANCIS, Ph.D., F.L.S.

VOL. XVII.—SIXTH SERIES.

LONDON:
PRINTED AND PUBLISHED BY TAYLOR AND FRANCIS.
SOLD BY SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LD.;
WHITTAKER AND CO.: BAILLIÈRE, PARIS:
MACLACHLAN AND STEWART, EDINBURGH:
HODGES, FIGGIS, AND CO., DUBLIN: AND ASHER, BERLIN.
1896.

THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[SIXTH SERIES.]

No. 100. APRIL 1896.

XXXVII.—*Report on a Collection of Reptiles and Fishes made by Miss M. H. Kingsley during her Travels on the Ogowe River and in Old Calabar.* By Dr. A. Günther, F.R.S.

[Plates XIII.–XV.]

Miss Mary H. Kingsley, on returning from her first visit to the West Coast of Africa in 1894, brought with her a small miscellaneous collection of zoological specimens, sufficiently large to show the interest she took in the fauna of the countries visited by her. Last year she started again from England, with the object of extending her travels in the interior of the Gaboon country; and as she intended to follow during a part of this expedition the course of the Ogowe River, she readily fell in with my view that an opportunity of collecting the fishes of this mighty river should not be lost. The means of preserving and transporting the specimens were naturally limited, as Miss Kingsley travelled alone with a native crew; besides, whilst traversing the region of the rapids, which extends over some hundred of miles, the upsetting of her canoe was a matter of frequent occurrence. Nevertheless she succeeded in bringing home in excellent condition a collection of eighteen species of Reptiles and about sixty-five species of Fishes, which will be enumerated or described in this paper, besides a number of other, especially entomological, specimens.

During a temporary stay at Old Calabar and a visit to the island of Corisco some freshwater fishes were added to the

main collection from the Ogowe River. These will be also embodied in the present paper, whilst the marine species, being all well known, are omitted. A case containing the fishes of Lake Aznigo, which Miss Kingsley visited with the special object of obtaining its fishes, was unfortunately lost by the upsetting of a boat.

Thirty years ago scarcely anything but the name was known of the Ogowe River; but between 1860 and 1870 French officials and traders began to trace its course inland, discovering a long stretch of rapids in its middle course which render navigation dangerous and, at places, impossible to any vessel larger than a boat. Among those earlier explorers an Englishman, the late Mr. R. B. N. Walker, took a prominent part*, making two expeditions in 1866 and 1873, and penetrating to Lopé, in the Okanda country. The survey of the upper parts of the river was completed by Messrs. de Brazza and Balay.

All that was known before the year 1860 of the reptiles and fishes of the Gaboon country has been collected by Aug. Duméril in his memoir "Reptiles et Poissons de l'Afrique occidentale," in Arch. Mus. vol. x. I find that in the list at the end of his memoir he mentions eight freshwater fishes from Gaboon, all being from the littoral portion of the country. In 1867† I described the collection made by Walker on the Ogowe, adding seventeen species to its fauna, ten of which were new. This list was increased by six others found by Buchholz and determined by Peters (MB. Berlin. Akad. 1876, p. 244). Two years later M. Sauvage commenced to publish the results of his examination of the materials that had accumulated in the Paris Museum (Bull. Soc. Philom. 1878, pp. 90–103), giving a complete account of the then knowledge of this fish-fauna in his memoir "Étude sur la Faune ichthyologique de l'Ogôoué," in N. Arch. Mus. iii. 1880. In it he enumerates thirty-seven species, a part of which, however, he knew only from the papers of his predecessors. This number has been increased by him in a last supplementary list to forty-six (Bull. Soc. Zool. France, ix. 1884).

In the present paper I have added to the Gaboon fauna from Miss Kingsley's collection the following sixteen species:—

Gobius æneofuscus, Gthr.
Eleotris senegalensis, Stdchr.

* Bull. Soc. géogr. Paris, 1879, p. 114.

† Ann. & Mag. Nat. Hist. 1867, xx. p. 109. In this paper the name of the river is misspelt Ogome.

Ophiocephalus obscurus, Gthr.
Ctenopoma gabonense, sp. n. (? = *Ct. multispine*, Sauv., nec Ptrs.).
—— *nanum*, sp. n.
—— *Kingsleyæ*, sp. n. (? = *Ct. Petherici*, Sauv., nec Gthr.).
Chromis ogowensis, sp. n. (? = *Ch. microcephalus*, Sauv., nec Blkr.).
Cynoglossus senegalensis, Kaup.
Clarias Walkeri, sp. n.
Eutropius liberiensis, Hubrecht.
Chrysichthys Büttikoferi, Stdchr. (= *Ch. macrops*, Sauv., nec Gthr.).
Barilius bibie, Joannis.
Alestes longipinnis, Gthr.
—— *Kingsleyæ*, sp. n.
Mormyrus amblystoma, sp. n.
Notopterus nigri, Gthr.

Deducting from M. Sauvage's list three species which I consider merely synonyms, and allowing for four others which I believe to figure in my and M. Sauvage's lists under different names, I compute the total number of species known at present from this river to be fifty-one, a number which may be expected to be doubled by future investigations. The fish-fauna of the Nile consists of about ninety species.

The localities which will be mentioned in this report are the following:—

Warri, on the Forcados River (mouth of the Niger).
Azuminé Creek, freshwater, running into the Opobo River, with a swift current, 25 miles from the sea (Niger delta).
Egwanga, on the Opobo River (Niger delta).
Corisco Island, off the Gaboon Coast.
Lambarene, Ogowe River.
Talagouga, about 180 miles from the mouth of the Ogowe.
Kondo-Kondo, an island in the Alemba Rapids of the Ogowe.

Reptiles and Batrachians.

The Reptiles were collected at Lambarene, and belong to the following species:—

1. *Cycloderma Aubryi*, D. B.—A young specimen well agreeing with one figured by Peters (MB. Berl. Akad. 1876, p. 117).

2. *Monitor niloticus*, L.
3. *Poromera Fordii*, Hallow.
4. *Mabouia Raddonii*, Gray.
5. *Gymnodactylus fasciatus*, D. B.
6. *Polemon Barthii*, Jan.
7. *Coronella fuliginoides*, Gthr.
8. *Grayia Smythii*, Leach.
9. *Hydræthiops melanogaster*, Gthr.
10. *Hapsidophrys lineatus*, Fisch.
11. *Philothamnus nitidus*, Gthr.
12. *Lycophidium irroratum*, Leach.
13. *Dipsadoboa assimilis*, Matschie.
14. *Naja melanoleuca*, Hallow.
15. *Vipera nasicornis*, Shaw.
16. *Atheris anisolepis*, Mocq.
17. *Cornufer Johnstonii*, Blgr.
18. *Rana crassipes*, Ptrs.

Before passing on to the Fishes I offer remarks on a few of these species.

Poromera.

Poromera, Boul. Liz. iii. p. 6.

Nostril between two nasals and the suture between rostral and first labial. Lower eyelid scaly. Collar present. Back covered with scales larger than those of the tail, and strongly keeled, the keels forming continuous longitudinal ridges; sides with much smaller scales; ventral scales rather large, imbricate, keeled, the keels again forming continuous series. Fingers and toes slender, with a double series of smooth, very small scutes beneath. Femoral pores; no inguinal pores. Tail long, cylindrical.

Poromera Fordii.

Tachydromus Fordii, Hallow. Proc. Ac. Nat. Sci. Philad. 1857, p. 48.
Poromera Fordii, Boul. *l. c.*

General aspect of a *Tachydromus*.

The scutes on the upperside of the head show longitudinal ridges either along the middle or concentric with their margins. The anterior nasal meets its fellow in the median line behind the rostral. Anterior frontal longer than broad; an unpaired small scute between the posterior frontals. Vertical bell-shaped, twice as long as broad; a pair of anterior occipitals, half the size of the posterior, between which a

central occipital. The posterior occipitals are fringed by some smaller marginal scutes. Two large supraoculars on each side. Seven or eight narrow upper labials, of which the penultimate is the largest. Four chin-shields on one side, five on the other. Temporal scales small, strongly keeled.

Ear very open, vertically long. Collar more distinct in front of the shoulder-joint, and nearly obsolete across the chest. Dorsal scales in eight, ventral in ten, longitudinal series. Præanal region covered by keeled scales, in size and shape scarcely differing from those preceding them. About twelve femoral pores. All the caudal scales strongly keeled.

The fore limb pressed backwards does not reach the groin; the hind limb carried forwards extends to the ear. Thigh finely granular behind.

The upper parts are brown, or, after the removal of the epidermis, green iridescent. Back anteriorly with a black longitudinal band on each side of the median line, the two bands coalescent further behind. An indistinct greenish band along each side of the neck. Lower parts whitish.

	millim.
Distance of snout from vent	45
Length of tail	110
Distance of snout from ear	12
Length of fore limb	20
Length of hind limb	30
Length of fourth toe (measured from its junction with the fifth)	12

I have given a full description of this lizard, as the specimen found by Miss Kingsley at Lambarene seems to be only the second known to exist in collections. Its specific identity with *Tachydromus Fordii* of Hallowell might be questioned, as this author has described the specimen in the museum of the Philadelphia Academy as possessing only six rows of ventral scales; also the scutellation of the præanal region is differently described. However, as there is a great agreement in other respects between the two specimens, and the locality (Gaboon) as given by Hallowell points likewise to a specific identity, I adopt the name given by the latter author.

Dipsadoboa assimilis.

Dipsadoboa assimilis, Matschie, SB. Ges. naturf. Fr. Berl. 1893, p. 173 (Togoland); Bocage, Jorn. Sc. Lisb. iv. 1895, p. 17.

The specimen obtained at Lambarene agrees better with *D. assimilis* than with *D. unicolor* with regard to the number and disposition of the labial shields.

Professor Bocage refers his specimens from Fernando Po also to *D. assimilis*, whilst, singularly enough, I have now some evidence that the type of *D. unicolor* came from the same island, as I received some years ago a specimen from Fernando Po which is identical with *D. unicolor*. Therefore, as far as our present experience goes, both *D. unicolor* and *assimilis* (if they are really distinct) would seem to occur in Fernando Po, while the former does not extend on to the mainland.

Atheris anisolepis.

Atheris anisolepis, Mocquard, Bull. Soc. Philom. 1887, p. 90.
Atheris læviceps, Boettger, Zool. Anz. x. p. 651; Ber. Senckenb. Ges. 1888, p. 92, tab. ii. fig. 7 (head).

An adult specimen from Lambarene. The specimens from which Boettger took his description came from Banana (Congo delta). The principal distinctive characters of this species are, in my opinion, the number and size of scales and the two series of suboculars, rather than the degree of carination of some of the scales on the crown of the head, which depends on age.

Thanks to the kindness of Professor L. Vaillant and Dr. Jentink I have been able, by a re-examination of the typical specimens described by Schlegel and Mocquard, to form a definite opinion as to the species of *Atheris* which deserve recognition. They are the following:—

1. *A. squamigera*, Hallowell, = *A. subocularis*, Fisch., probably = *A. Burtonii*, Gthr. With 17 (in *A. Burtonii* with 19) series of scales; only one row of minute subocular scales (exceptionally partly confluent with upper labials).
2. *A. anisolepis*, Mocquard (1887), = *A. læviceps*, Boettger (1887), = *A. chloroechis*, Boettg., part. With 22–25 series of scales; two rows of minute suboculars, the lower row sometimes incomplete, but always indicated by several scales.
3. *A. chloroechis*, Schleg., = *A. polylepis*, Ptrs. With 31–36 series of scales and with a double row of suboculars.
4. *A. ceratophora*, Werner.

Rana crassipes, Buchh. & Ptrs.

One young specimen from Glass, Gaboon estuary.

This specimen, as well as an adult in the British Museum, has no vomerine teeth, whilst two short groups are present in the second of the British Museum specimens, which is intermediate in size between the two former.

Freshwater Fishes.

Gobius æneofuscus.

Gobius æneofuscus, Peters, MB. Berl. Akad. 1852, p. 681, and Reise n. Mossamb., Flussf. p. 18, Taf. iii. fig. 1; Günth. Fish. iii. p. 61.
Gobius æneofuscus, var. *guineensis*, Peters, MB. Berlin. Akad. 1876, p. 248.
Gobius tajasica, Steind. Not. Leyd. Mus. xvi. p. 25 (not synon.).

A Goby which seems to be very common in the freshwaters of Liberia and the Cameroon River, and is abundant in the Ogowe River, where numerous examples were obtained by Miss Kingsley at Kondo-Kondo, is identical with the species discovered by Peters in the Zambeze, but not, as Dr. Steindachner thinks, with the West-Indian *G. banana*, which has considerably smaller scales on the tail. *G. æneofuscus*, therefore, belongs to the freshwater fauna of Tropical Africa, extending right across the continent.

Gobius lateristriga, A. Dum. Arch. Mus. x. p. 247, pl. xxi. fig. 1, if not identical with this species, is, at any rate, closely allied to it; unfortunately the author has omitted to describe the scales, dentition, and other important characters.

Periophthalmus Koelreuteri, var. *papilio*, Bl. Schn.

Common on the West Coast, and attracting the notice of every traveller by its semiterrestrial habits and by the astonishing rapidity with which it leaps, frog-like, over the mud-flats of the littoral.

Island of Corisco (Steindachner, SB. Wien. Akad. 1869, lx. p. 945).

Eleotris senegalensis.

Eleotris (*Culius*) *senegalensis*, Steind. SB. Wien. Akad. 1869, lx. p. 949, Taf. ii. figs. 1, 2.

Ascends the Ogowe River, specimens having been obtained at Kondo-Kondo.

Mastacembelus cryptacanthus.

Mastacembelus cryptacanthus, Günth. P. Z. S. 1867, p. 102; Ann. & Mag. Nat. Hist. 1867, xx. p. 110.
Mastacembelus Marchei, Sauv. Bull. Soc. Philom. 1876, p. 94, and N.

Arch. Mus. iii. 1880, p. 36, pl. i. fig. 1; Steind. Not. Leyd. Mus. xvi. p. 31; Denkschr. Wien. Ak. 1879, xli., "Ueber einige neue . . . Fisch.," p. 16.

Lambarene.

Mugil falcipinnis, C. V.

Warri (Niger delta).

Ophiocephalus obscurus, Gthr.

Lambarene and Kondo-Kondo.
Figured in Petherick's 'Travels,' 1869, ii. pl. ii. fig. B.

Ctenopoma, Ptrs.

From an examination of a much greater number of specimens than were at my disposal some years ago I have come to the conclusion that the variation in the characters of the species is of a limited extent, and that a greater number of species exist than I was formerly inclined to admit. Neither is the distinction of this genus from *Spirobranchus* so sharp as was supposed, the armature of the opercles not being equally developed in all species, and very young Ctenopomas apparently lacking it. At present I divide the specimens before me under the following specific names:—

I. A very distinct space between anal and caudal fins.
  A. Large scales on the back, above the lateral line.
    1. Maxillary extending beyond the centre of the eye.
      D. $\frac{17-18}{9}$. A. $\frac{9}{9}$. Subopercular armature strong ..... 1. *multispine*, Ptrs.
    2. Maxillary extending to below the centre of the eye.
      D. $\frac{20}{9-10}$. A. $\frac{9-11}{9}$. Subopercular armature strong ..... 2. *gabonense*, sp. n.
    3. Maxillary not extending to below centre of the eye.
      a. D. $\frac{15-16}{9}$. A. $\frac{8}{9-10}$. Suboperculum not serrated ..... 3. *nanum*, sp. n.
      b. D. $\frac{17}{8}$. A. $\frac{11}{10}$. Suboperculum serrated ..... 4. *congicum*, Blgr.*
  B. Small scales on the back, above the lateral line ..... 5. *microlepidotum*, Gthr.

* Ann. & Mag. Nat. Hist. 1887, xix. p. 148.

II. Anal and caudal fins nearly continuous.

A. D. $\frac{15—17\ (18)}{7—10}$. A. $\frac{10\ (9)}{9—11}$. Depth of body $\frac{2}{5}$ of length in adult, $\frac{1}{3}$ in young..... 6. *Petherici*, Gthr.

B. D. $\frac{16—17}{9}$. A. $\frac{9—10}{9—10}$. Depth of body $\frac{1}{2}$ of length in adult, $\frac{2}{7}$ in young ..... 7. *Kingsleyæ*, Gthr.

Ctenopoma gabonense, sp. n. (Pl. XIII. fig. C.)

Ctenopoma multispine, var., Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 110.

D. $\frac{20}{9—10}$. A. $\frac{9—11}{9}$. L. lat. 32. L. transv. $2\frac{1}{2}/9$.

Body almost as oblong as in *Ct. multispine*, to which this species is closely allied. The height of the body is two sevenths, or less than one third, of the total length (without caudal), the length of the head two sevenths or rather more than two sevenths. The snout equals the diameter of the eye, which is one fifth of the length of the head; interorbital space nearly flat, much wider than the orbit. Mouth moderately wide, the maxillary not extending beyond the vertical from the centre of the eye. The entire margin of the suboperculum is armed with prominent spines; also part of the interopercular margin is spiny. The space between anal and caudal fins is equal to, or even longer than, the diameter of the eye. Ventral fin not reaching the vent. Pores on the head rather small, inconspicuous. Coloration uniform.

Of this species there are two specimens in the British Museum, 140 and 153 millim. long, both from the Gaboon. One was obtained by the late Mr. R. B. N. Walker, and therefore most probably came from the Ogowe River. Both have twenty dorsal spines, which number does not seem to have been ever observed in *Ct. multispine*; from the latter species the present differs besides in a rather smaller mouth and much stronger subopercular armature. Vomerine and palatine teeth present.

Ctenopoma nanum, sp. n. (Pl. XIII. fig. B.)

D. $\frac{15—16}{9}$. A. $\frac{8}{9—10}$. L. lat. 27. L. transv. $2\frac{1}{2}/9$.

Body stouter than in *Ct. multispine* or *Ct. gabonense*, its greatest depth being contained $2\frac{3}{4}$ in the total length (without caudal) and nearly equal to the length of the head. The snout equals the diameter of the eye, which is contained $4\frac{3}{4}$ in the length of the head; interorbital space rather convex, not wider than the orbit. Mouth rather narrow, the maxillary not extending to the vertical from the centre of the eye.

Opercular armature weak; there are only a few spinous teeth above and below the opercular notch, and none at all on the sub- and interoperculum. The space between anal and caudal fins is equal to a diameter of the eye. Pores on the head entirely covered by scales. Five series of scales on the cheek, the lowermost covering the præopercular margin. Ventral fins reaching beyond the origin of the anal, the two outer rays being prolonged into filaments. Body with darker cross-bands; an indistinct oblique irregular dark band from the eye towards the root of the pectoral.

Two specimens from the Gaboon, 67 millim. long, are in the British Museum; they were collected with specimens of *Ct. Petherici*.

This species does not possess palatine teeth, and I am unable to see any teeth on the vomer, the head of which, however, is visible and not covered by the mucous membrane. Of course the possibility of these specimens being the young of one of the other species has been considered; but beside agreeing among themselves and differing from the other species in the number of spines, the comparative size of the eye and width of the interorbital space clearly point to their being either mature or not far removed from maturity.

Ctenopoma Petherici.

Ctenopoma Petherici, Günth. Ann. & Mag. Nat. Hist. 1864, xiii. p. 211, and 1867, xx. p. 110 (part.); and in Petherick's Travels, ii. 1869, p. 208, pl. i. fig. A.

The British Museum contains a specimen the exact habitat of which is not known, but which was bought with other West-African fishes. Although this specimen differs from typical *Ct. Petherici* in the fin-formula, which is D. $\frac{18}{10}$, A. $\frac{9}{11}$, I refer it for the present to the Nilotic species.

In young specimens, 60 millim. long, the opercular armature and the vomerine and palatine teeth are well developed; but these specimens have the body still lower than the adult, viz. one third of the total (without caudal); in the adult it is a little less than two fifths. The ornamental colours are prettier than in the adult, the diffuse blackish spot on the tail of the latter being a complete white-edged ocellus in the young.

Ctenopoma Kingsleyæ, sp. n. (Pl. XIII. fig. A.)

Ctenopoma Petherici, part., Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 110 (part.).

This species is allied to *Ct. Petherici*, but has a deeper

body, and especially the young differs much from that of the Nilotic species.

D. $\frac{16-17}{9}$. A. $\frac{9-10}{9-10}$. L. lat. 25. L. transv. $2\frac{1}{2}/9$.

The depth of the body is scarcely less than one half of the total length (without caudal), the length of the head a little less than one third. The snout is nearly equal to the diameter of the eye, which is two ninths of the length of the head; interorbital space rather convex, wider than the orbit. Mouth narrow, the maxillary extending somewhat beyond the front margin of the orbit. Vomerine teeth; palatine teeth in a very narrow linear band. A series of short spinous teeth above and below the opercular notch; subopercular and part of the interopercular margin finely and equally serrated. Tail very short, the anal terminating immediately before, or subcontinuous with, the caudal. Pores on the head entirely covered by scales. Five or six rows of scales on the cheek, the scales near the eye being much smaller than the others. Ventral fins not prolonged, reaching the vent. Soft parts of the vertical fins scaly. Blackish, a diffuse large black spot on the end of the tail, in front of the root of the caudal.

This diagnosis is taken from an adult specimen 150 millim. long; two young ones, 60 millim. long, differ in the following points:—

Their body is somewhat less elevated (though much more than in young *Ct. Petherici*), its depth being contained $2\frac{1}{3}$ times in the total length (without caudal). Interorbital space as wide as the diameter of the eye, which is one fourth of the length of the head. Two or three spines above and one below the opercular notch; suboperculum partly and indistinctly, interoperculum not serrated. Vomerine teeth developed, only traces of palatine teeth in front of the bone. Coloration as in the adult.

All three specimens from Kondo-Kondo.

Chromis latus, Gthr.

Warri.

The typical specimen was most likely from the same locality, the late Mr. Fraser being known to have collected in, or to have received collections from, the Niger delta.

Chromis ogowensis, sp. n.

? *Chromis microcephalus*, Sauvage, Bull. Soc. Zool. France, ix. 1884, p. 196 (nec Bleek.).

D. $\frac{15}{11}$. A. $\frac{3}{9}$. P. 13. L. lat. 27. L. transv. 3/11.

Scales on the cheek in three series. Twenty-eight notched

teeth on each side of the upper jaw. The maxillary terminates some distance in advance of the vertical from the eye. The depth of the body is a little less than one half of the total length (without caudal), the length of the head a little less than one third. Eye two ninths of the length of the head, much less than the length of the snout and than the width of the interorbital space. Pectoral fin with the third and fourth rays produced and extending to the first anal spine. Caudal fin truncated, scaly. Body with indistinct cross-bands. Vertical fins blackish, the dorsal with black longitudinal stripes, longitudinal on the spinous portion, oblique on the soft; a large oval black spot behind the last dorsal spine. Ventrals black. A black opercular spot.

	millim.
Total length	170
„ „ without caudal	143
Length of the head	47
Diameter of the eye	10
Length of the eighth dorsal spine	19

Ogowe River (Lambarene).

Hemichromis fasciatus, Ptrs.

Azuminé Creek; Ogowe River.

Hemichromis bimaculatus.

Hemichromis bimaculatus, Gill, Proc. Philad. Ac. 1862, p. 137; Steind. Notes Leyd. Mus. xvi. p. 49.
Hemichromis auritus, Gill, *l. c.* p. 135.

Allied to *H. guttatus* and *H. subocellatus*, but with the body deeper and the spinous dorsal higher.

D. $\frac{14}{10}$. A. $\frac{3}{8}$. L. lat. 24. L. transv. 3/10.

The height of the body is contained $2\frac{1}{2}$ in the total length (without caudal), the length of the head $2\frac{3}{4}$. Length of the snout equal to the diameter of the eye, which is one fourth of the length of the head and equal to the width of the interorbital space. Teeth conical, brown, equal in size. Four series of scales on the cheek. Cleft of the mouth rather narrow, slightly oblique, with the lower jaw slightly projecting and with the maxillary not quite reaching the vertical from the front margin of the orbit. The length of the eighth dorsal spine is two fifths of that of the head. In the adult the soft dorsal and anal and the ventral fin are produced into points. Brownish above, a deep black spot on the end of the operculum and another in the middle of the body; three or

four series of round bluish spots on the cheek and gill-cover. Fins without spots.

	millim.
Total length	78
" " without caudal	60
Depth of the body	25
Length of the head	22
Diameter of the eye	6

From the middle course of the Ogowe River.

Hemichromis Schwebischi.

? *Hemichromis Schwebischi*, Sauvage, Bull. Soc. Zool. France, ix. 1884, p. 198, pl. v. fig. 2.

D. $\frac{15-16}{11}$. A. $\frac{3}{8}$. L. lat. 28. L. transv. 3/10.

The height of the body is contained $2\frac{3}{5}$ times in the total length (without caudal), the length of the head $2\frac{2}{3}$ times. Snout produced, with the upper jaw slightly the longer, longer than the postorbital portion of the head. Mouth of moderate width, very slightly oblique, the maxillary reaching but little beyond the vertical from the nostril. Teeth small, subequal, with brown pointed tips. The eye is a little less than one half of the length of the snout and contained $4\frac{2}{3}$ times in that of the head; its diameter does not equal the width of the interorbital space in the largest specimen. Præorbital as wide as the eye. Præoperculum with a broad scaleless inferior limb, but its width is much narrower than the cheek, on which the scales are arranged in four series. The dorsal fin commences above the root of the pectoral fin; its spines are of moderate strength, the middle ones being much longer than the eye. Caudal fin slightly emarginate.

Specimens from Azuminé Creek have sixteen dorsal spines and the pectoral fin reaches nearly the vent. Two faint broad longitudinal bands on the upper half of the body are crossed by five or six transverse bands, equally faint, the parts crossed being of a darker tint. These markings are more distinct in young examples than in the adult. An opercular spot.

Specimens from Kondo-Kondo have fifteen dorsal spines and a rather shorter pectoral. None of the markings are present beside the opercular spot.

	millim.
Total length	148
" " without caudal	125
Length of the head	45
Diameter of the eye	10
Length of the ninth dorsal spine	15

The specimen described by Sauvage was considerably larger than ours; to this circumstance I am inclined to ascribe the discrepancies between the two descriptions.

Cynoglossus senegalensis, Kaup.

Lambarene.

Clarias Walkeri, sp. n. (Pl. XIV. fig. B.)

D. 77. A. 56. P. 1/8.

Vomerine teeth villiform, forming a rather narrow band, without posterior projection, and as broad as the intermaxillary band; each half of the latter is twice as wide as broad, and both the intermaxillary and vomerine bands have the same lateral extent. Head covered above with smooth thin skin, scarcely any granulation being visible. The occipital process projects as an isosceles triangle, the hind margin of the head forming an open crescent on each side of the process. The fontanelle is elongate, slightly encroaching upon the base of the triangular process. The length of the head (measured to the end of the process) is two ninths of the total (without caudal); the width of the interorbital space is one half of the length of the head. Barbels moderately long, that of the nostril not reaching the gill-opening, and that of the maxillary extending to the origin of the dorsal fin, which is opposite to the end of the pectoral. Anal fin not low. Vertical fins separated from each other by a small interspace. Coloration uniform blackish brown.

	millim.
Total length	171
" " without caudal	150
Length of upperside of head	35
Width of interorbital space	18
Diameter of the eye	2·7

Ogowe River.

Clarias gabonensis.

Clarias gabonensis, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 110.

D. 76–78. A. 56–60. P. 1/10.

Vomerine teeth villiform, forming a band which is a little broader than the intermaxillary band, without posterior projection; each half of the intermaxillary band is twice as wide as it is broad, and laterally scarcely extends so far as

the vomerine band. Head naked above, finely granular and striated. The occipital process triangular, with rounded end, its base being a little longer than its sides. The fontanelle is ovate, and does not encroach upon the base of the triangular process. Length of the head one fourth of the total (without caudal); snout contracted, the width of the interorbital space being less than one half of the length of the head. Barbels moderately long, that of the nostril reaching to the root of the pectoral fin and that of the maxillary to the origin of the dorsal, which is nearly opposite to the end of the pectoral. Anal fin not low. Vertical fins separated from each other by a small interspace. Coloration uniform blackish brown.

	millim.
Total length	168
„ „ without caudal	148
Length of upperside of the head	38
Width of interorbital space	15
Diameter of the eye	3

This species inhabits also the Ogowe River. To facilitate comparison with the other species here described, I have given a fuller diagnosis than my former one.

Clarias buthupogon.

? *Clarias læviceps*, Gill, Proc. Ac. Nat. Sci. Philad. 1862, p. 139.
Clarias buthupogon, Sauvage, Bull. Soc. Philom. 1878, p. 96.
Clarias gabonensis (*Clarias megapogon*), Sauvage, N. Arch. Mus. iii. 1880, p. 39, pl. i. fig. 2 (not Günth.).

D. 84–87. A. 65–67. P. 1/8.

Vomerine teeth villiform, forming a rather broad band, without posterior projection, and as broad as the intermaxillary band; each half of the latter is twice as wide as broad, and both the intermaxillary and vomerine bands have the same lateral extent. Head covered above with a very thin skin and finely and rather sparsely granular. The occipital process projects as an isosceles triangle, the hind margin of the head being deeply notched on each side of the process. The fontanelle is of an oval shape, its greater portion lying in advance of the base of the process. The length of the head (measured to the end of the process) is two sevenths or one fourth of the total (without caudal); the width of the interobital space is somewhat less than one half of the length of the head. All the barbels very long, the nasal reaching beyond the head and the maxillary beyond the origin of the anal. Pectoral fin extending to the vertical from the first dorsal ray. Anal fin low; both the dorsal and anal extend

to the root of the caudal. Sides of the head and neck with whitish specks.

	millim.
Total length	225
" " without caudal	195
Length of upperside of head	48
Width of interorbital space	21
Diameter of the eye	4·5

The specimens were obtained at Kondo-Kondo and in Corisco Island. The original description of *C. læviceps* runs as follows:—"Height at anus a tenth of length; head (laterally) a sixth, its breadth an eighth; the surface smooth; maxillary barbels twice as long as head. D. 86, A. 61,"—and is quite insufficient for exact determination of specimens. The typical specimen came probably from Liberia.

Schilbe mystus, Cuv. Val.

Old Calabar.

Schilbe dispila, Gthr.

Azuminé Creek (Opobo River).

I believe that the specimens so named should be reunited with *Schilbe mystus*.

Eutropius liberiensis.

Eutropius liberiensis, Hubrecht, Notes Leyd. Mus. iii. p. 69; Steind. ibid. xvi. p. 59.

D. 47–50.

Lambarene.

Eutropius congensis, Gthr.

Warri.

Chrysichthys Büttikoferi.

Chrysichthys Büttikoferi, Steindachner, Notes Leyd. Mus. xvi. p. 60.

This is a species clearly distinct from *Ch. macrops*, having the adipose fin much shorter and further distant from the dorsal fin. In this respect it agrees with *Ch. nigrodigitatus*, which, as a rule, has a more contracted snout and narrower mouth. However, I have examined large specimens which it is difficult to refer to either of these two species with certainty. And the difficulty is increased, as I find that there are specimens with eleven and with thirteen anal rays in both the narrow-snouted form (*Ch. nigrodigitatus*) and the

broad-snouted (*Ch. Büttikoferi*). Possibly more than these two species should be distinguished. Miss Kingsley found *Ch. Büttikoferi* at Kondo-Kondo and in Corisco Island.

Synodontis serratus, Rüpp.

Old Calabar.

Malapterurus beninensis, Murr.

Old Calabar; Ogowe River.

Labeo coubie, Rüpp.

Old Calabar.

Barbus Kessleri, Steind.

Specimens from the Ogowe River have the barbels rather longer and the base of the dorsal fin at a steeper slope than specimens from Angola.

Barilius bibie. (Pl. XV. fig. C.)

? *Leuciscus bibie*, De Joannis, Guérin, Mag. Zool. 1835, Pisc. pl. iv.; Günth. Fish. vii. p. 293.

D. 10. A. 18. V. 9. L. lat. 54. L. transv. 8/4.

Body compressed, its depth being two ninths, the length of the head one fourth, of the total length (without caudal). Head oblong, with pointed snout, which is equal to the diameter of the eye or two sevenths of the length of the head. Width of the interorbital space equal to the diameter of the eye. Mouth wide, oblique, the narrow maxillary extending to below the middle of the eye, its extremity being hidden below the suborbital, when the mouth is shut. Præorbital about half the area of the orbit; the first suborbital is narrow, much narrower than the second and third, which nearly entirely cover the cheek, leaving only a space uncovered about equal to the size of the first suborbital. The origin of the dorsal fin is rather nearer to the caudal than to the occiput; origin of the anal fin below the middle of the dorsal. Caudal fin deeply forked. Pectoral fin shorter than the head, not reaching the much shorter ventral. Scales thin, with very distinct radiating striæ; lateral line sweeping down in a curve towards the abdomen, and, following the lower profile, terminates below the centre of the caudal fin. Silvery, with twelve bluish vertical bars along the middle of the side, and with a large blackish spot at the root of the caudal.

	millim.
Total length	110
,, ,, without caudal	95
Length of the head	22
Diameter of the eye	6

Ogowe River.

This is one of the most interesting fishes in the collection. Originally described and figured in a very rude manner from a small specimen from the Nile, *L. bibie* has remained undiscovered in that river up to the present time. De Joannis does not mention the bluish cross-bars, which, however, are very faint. It is most desirable that specimens from the Nile should be directly compared with West-African ones.

I am unable to arrive at a definite conclusion as to whether *Barilius senegalensis*, Steindachner (SB. Wien. Akad. 1870, lxi. p. 564, Taf. v. fig. 2), from the Senegal, should be referred to this species. Lat. l. 59–63; maxillary extending to behind the centre of the eye.

I am equally uncertain with regard to *Opsaridium Buchholzi*, Peters (MB. Berl. Akad. 1876, p. 251, fig. 4). It also comes from the Ogowe River; but, to judge from the diagnosis and figure, Peters's fish has fewer scales in the lateral line (46), a smaller eye and longer snout (the specimens are of about the same size), and a longer maxillary, which reaches behind the middle of the eye. Peters represents his fish without any colour-markings.

Assuming that there are two distinct species of *Barilius* in West Africa, from a geographical point of view *B. senegalensis* would probably prove to be identical with the Nile fish, whilst the Ogowe specimens described by Peters and myself might prove to be the second species; but this assumption is not confirmed by the description of the various authors. Thus, as not one of the descriptions extant fully agrees with our specimen, I apply at present the oldest name to it.

Alestes macrophthalmus.

Alestes macrophthalmus, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 112.

Talagouga.

Alestes macrolepidotus, C. V.

Old Calabar.

Alestes leuciscus.

Alestes leuciscus, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 113.

Egwanga, on the Opobo River.

Alestes longipinnis.

Brachyalestes longipinnis, Günth. Fish. v. p. 315.

Azuminé Creek and Ogowe River.

Alestes Kingsleyæ, sp. n. (Pl. XV. fig. B.)

D. 10. A. 15–16. L. lat. 23–24. L. transv. $4/3\frac{1}{2}$.

The height of the body is one third of the total length (without caudal), the length of the head one fourth. Eye two sevenths of the length of the head, equal to that of the snout, but less than the width of the interorbital space. Origin of the dorsal fin a little behind that of the ventrals. None of the fin-rays elongate. A deep black band commences abruptly in the middle of the tail, opposite to the origin of the anal fin, and runs to the end of the central caudal rays; it is broader at its commencement than at its end. A more or less distinct dark spot above the commencement of the lateral line.

	millim.
Total length	115
" " without caudal	95
Length of the head	26
Diameter of the eye	8

Ogowe River.

Sarcodaces odoë, Bl.

Old Calabar; Ogowe River.

Distichodus notospilus.

Distichodus notospilus, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 114.

Lambarene.

Xenocharax spilurus.

Xenocharax spilurus, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 113, pl. iii. fig. B.

Talagouga.

Mormyrus zanclirostris.

Mormyrus zanclirostris, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 114, pl. ii. fig. B.

Common at Talagouga.

Mormyrus microcephalus.

Mormyrus microcephalus, Günth. Ann. & Mag. Nat. Hist. 1867, xx. p. 114.

Common at Talagouga.

Mormyrus lepturus.

Mormyrus lepturus, Günth. P. Z. S. 1871, p. 670, pl. lxix. fig. B.
? *Mormyrus grandisquamis*, Peters, MB. Berl. Akad. 1876, p. 250.

I described this species from two young specimens 3 inches long. Miss Kingsley has rediscovered it at Talagouga, and collected specimens apparently adult and up to 190 millim. in length. Thus I am enabled to amend my original diagnosis in several points.

D. 20–24. A. 25–29. L. lat. 42–44.

Snout obtuse, with the mouth terminal and, with age, with the lower lip thickened into a short adipose protuberance. The upper profile is somewhat more curved than the lower. Eye small, shorter than (in adult specimens only half as long as) the snout, situated in the anterior half of the head. Teeth of moderate size, notched, few in number. The height of the body is two sevenths of the total length (without caudal), the length of the head two ninths. The caudal peduncle is slender, about as long as the head, its depth being one third of its length. Origin of the dorsal fin a little behind that of the anal, midway between the root of the caudal and the head. Pectoral a little shorter than the head, extending to the middle of the ventral, which is only half as long and terminates a long way from the vent. The scales on the anterior part of the trunk are of moderate size; they gradually increase in size towards behind, and are largest on the hinder part of the tail and on the caudal peduncle, on the side of which they stand in three series. Brownish or silvery, darker on the head. Two black vertical bands descend from the anterior and hindmost dorsal rays to the anal, spreading more or less over that fin.

Mormyrus sphecodes.

Mormyrops sphekodes, Sauvage, Bull. Soc. Philom. 1878, p. 101; N. Arch. Mus. iii. 1880, p. 55, pl. ii. fig. 4.

D. 22. A. 26. L. lat. 65.

The teeth on the palate and tongue are well developed. Sauvage's description is fairly applicable to a specimen from

Talagouga, 138 millim. long, but I count only 65 transverse series of scales, whilst Sauvage states 82. The diameter of the eye is only one eighth of the length of the head in our specimen. These differences could be accounted for by a somewhat less perfect state of preservation of Sauvage's specimen.

Mormyrus Kingsleyæ, sp. n. (Pl. XV. fig. A.)

D. 17. A. 22. L. lat. 56.

Snout short, rounded, parabolic, with the small mouth antero-inferior. Five notched teeth above and six below. The eye is small, half the length of the snout and scarcely one seventh of that of the head. Body rather elongate, its greatest depth being contained $4\frac{1}{3}$ times, the length of the head $4\frac{4}{5}$ times in the total (without caudal). Caudal peduncle compressed, moderately long, shorter than the head, its depth being one half of its length. Origin of the dorsal fin behind that of the anal and twice as distant from the end of the snout as from the root of the caudal. The length of the base of the anal equals that of the head. Pectoral fin shorter than the head, nearly reaching the ventral. Ventral fin more than half as long as the pectoral, and half as long as the distance of its root from the vent. Scales rather small; there are eight in an oblique series running from the first anal ray to the lateral line, and five longitudinal series on the side of the caudal peduncle. Uniform brown.

	millim.
Total length	106
" " without caudal	93
Length of the head	19
Diameter of the eye	2·4
Height of the body	20
Length of the caudal peduncle	15

A single specimen was obtained in Old Calabar. This species is nearest to *M. liberiensis* (Steind.), but readily distinguished by a shorter anal fin, with a smaller number of rays.

Mormyrus amblystoma, sp. n. (Pl. XIV. fig. A.)

D. 24. A. 30. L. lat. 40.

Snout short, obtuse, as long as the eye, with the mouth at the lower side. The mouth is very broad, twice as broad as the eye, armed above with twenty-two and below with thirty

notched teeth; its corner is beyond the vertical from the front margin of the eye. The upper profile of the head is somewhat more curved than the lower and steadily ascends to the dorsal fin. Eye small, one fifth of the length of the head. The height of the body is contained $2\frac{3}{5}$ times in the total length (without caudal), the length of the head $3\frac{3}{4}$ times; the caudal peduncle is slender, much shorter than the head, its depth being two fifths of its length. The origin of the dorsal fin is behind that of the anal and nearer to the root of the caudal than to the head. The anal extends also further backwards than the dorsal. Pectoral shorter than the head, reaching to the middle of the ventral. Ventral very short, only half as long as the pectoral or as the distance of its root from the vent. Scales rather large; there are eight in an oblique series running from the first anal ray to the lateral line, and three and two half longitudinal series on the side of the peduncle of the tail. Silvery brownish above; a deep black spot on the root of the caudal, and another high up on the side below the origin of the dorsal fin.

	millim.
Total length	155
„ „ without caudal	133
Length of the head	35
Diameter of the eye	7
Width of the mouth	14
Length of the pectoral fin	25
„ „ ventral fin	12
„ „ caudal peduncle	23
Height of the body	49

One specimen from Talagouga.

Mormyrus simus.

Mormyrus (*Petrocephalus*) *simus*, Sauvage, Bull. Soc. Philom. 1878, p. 100; Nouv. Arch. Mus. iii. 1880, p. 51, pl. ii. fig. 3 (fig. mediocr.).
Mormyrus tenuicauda, Steind. Notes Leyd. Mus. xvi. 1894, p. 69, pl. iv. fig. 1.

D. 26–28. A. 31–33. L. lat. 48 *.

Snout short, obtuse, a little shorter than the eye, with the mouth at its lower side. The mouth is narrow, not wider than the eye, armed above with twelve and below with twenty-two teeth; its corner lies beyond the vertical from the front margin of the eye. The upper profile of the head is a little more curved than the lower, and steadily ascends to

* This is the number of transverse series above the lateral line, which is composed of larger scales, only forty in number.

the origin of the dorsal fin. Eye one fourth of the length of the head. The height of the body is contained $2\frac{3}{5}$ times in the total length (without caudal), the length of the head four times. Caudal peduncle slender, much shorter than the head (measured from the last anal ray), its depth being contained $2\frac{2}{3}$ times in its length. The origin of the dorsal fin is behind that of the anal and midway between the root of the caudal and end of the opercle. The anal extends also further backwards than the dorsal. Pectoral fin shorter than the head, reaching rather beyond the middle of the ventral. Ventral fin only half as long as the pectoral or as the distance of its root from the vent. Scales of moderate size; there are twelve or thirteen in an oblique series running from the first anal ray to the lateral line, and three and two half longitudinal series on the side of the caudal peduncle. Silvery, brownish above; anterior part of the dorsal blackish.

	millim.
Total length	130
" " without caudal	106
Length of the head	25
Diameter of the eye	6
Width of the mouth	5·5
Height of the body	41
Length of the caudal peduncle	20

There are some slight discrepancies between this and Sauvage's descriptions, which are quite within the limits of individual variation. Besides, our specimens from Talagouga belong to the same district as Sauvage's, which came from Doumé (Ogowe). Steindachner's description is more precise and his figure more accurate; he compared the species with *M. Sauvagii* (Blgr.), which, however, has a much wider mouth. The specimens described by Steindachner came from Liberia. Thanks to Dr. Jentink's kindness I have been able to compare the latter with those collected by Miss Kingsley.

Mormyrus Sauvagii.

Mormyrus (*Petrocephalus*) *Sauvagii*, Boulenger, Ann. & Mag. Nat. Hist. 1887, xix. p. 149.

Warri.

Mormyrus affinis.

Petrocephalus affinis, Sauvage, Bull. Soc. Philom. 1878, p. 101.
Mormyrus (*Petrocephalus*) *affinis*, Sauvage, N. Arch. Mus. iii. 1880, p. 52, pl. ii. fig. 2.

I refer a young specimen, 86 millim. long, from Talagouga

to this species, although it shows some discrepancies from the typical specimen (from Doumé); it has D. 20, A. 25, L. lat. 58; there are eight notched teeth in the upper as well as lower jaw. Five longitudinal series of scales along each side of the caudal peduncle.

Mormyrus Marchei.

? *Petrocephalus Marchei*, Sauvage, Bull. Soc. Philom. 1878, p. 100.
? *Mormyrus* (*Petrocephalus*) *Marchei*, Sauvage, N. Arch. Mus. iii. 1880, p. 50, pl. ii. fig. 5.

D. 22. A. 30. L. lat. 63.

Snout short, obtuse, but rather longer than the eye, with the mouth at its lower side. Mouth narrow, a little wider than the eye, armed above and below with six notched teeth; its corner lies a little in advance of the vertical from the front margin of the orbit. The upper profile of the head is somewhat more convex than the lower and ascends slightly towards the origin of the dorsal. Eye one fifth of the length of the head. The height of the body is contained $3\frac{3}{4}$ times in the total length (without caudal), the length of the head $5\frac{1}{2}$ times. Caudal peduncle extremely slender, longer than the head (measured from the last anal ray), its depth being only two ninths of its length. The origin of the dorsal fin is behind that of the anal and midway between the root of the caudal and the end of the opercle. The anal extends also further backwards than the dorsal. Pectoral fin as long as the head, reaching beyond the middle of the ventral; ventral fin half as long as the pectoral or as the distance of its root from the vent. Abdomen behind the ventral fin compressed into a ridge. Scales of moderate size; there are nine in an oblique series running from the vent to the lateral line and three and two half longitudinal series cover the side of the caudal peduncle. Silvery, light brownish above.

	millim.
Total length	175
" " without caudal	150
Length of the head	27
Diameter of the eye	5
Width of the mouth	5·5
Height of the body	38
Length of caudal peduncle	33

One specimen from Talagouga.

Pellonula vorax, Gthr.

Old Calabar.

Notopterus afer, Gthr.

Old Calabar.

Notopterus nigri, Gthr.

Kondo-Kondo.

Tetrodon pustulatus, Murr.

Old Calabar.

EXPLANATION OF THE PLATES.

Plate XIII.

Fig. A. *Ctenopoma Kingsleyæ.*
Fig. B. —— *nanum.*
Fig. C. —— *gabonense.*

Plate XIV.

Fig. A. *Mormyrus amblystoma.*
Fig. B. *Clarias Walkeri.*

Plate XV.

Fig. A. *Mormyrus Kingsleyæ.*
Fig. B. *Alestes Kingsleyæ.*
Fig. C. *Barilius bibie.*

XXXVIII.—*Descriptions of some East-African* Lycænidæ.

By Hamilton H. Druce, F.Z.S., F.E.S.

Colonel Swinhoe has lately received a collection of Lepidoptera from Dar-es-Salaam, and has placed the Lycænidæ in my hands for examination. Amongst them are specimens of *Chrysorychia amanga*, Westw., and also of *C. punicea*, Grose Smith, with which the recently described *C. cruenta*, Trimen (P. Z. S. 1894, p. 55, pl. vi. fig. 13, ♂), is identical. This figure is a very bad one, and the conspicuous white marking which is really on the fore wing below the first median nervule is here shown on the costal margin of the hind wing.

There is also a male *Hypolycæna Buxtoni*, Hew., which is much larger and deeper in colour on the upperside than the typical form.

Col. Swinhoe has kindly presented us with the types.

Epamera mermis, sp. n.

♂. Upperside allied to *E. iasis*, Hew., the blue paler in

C

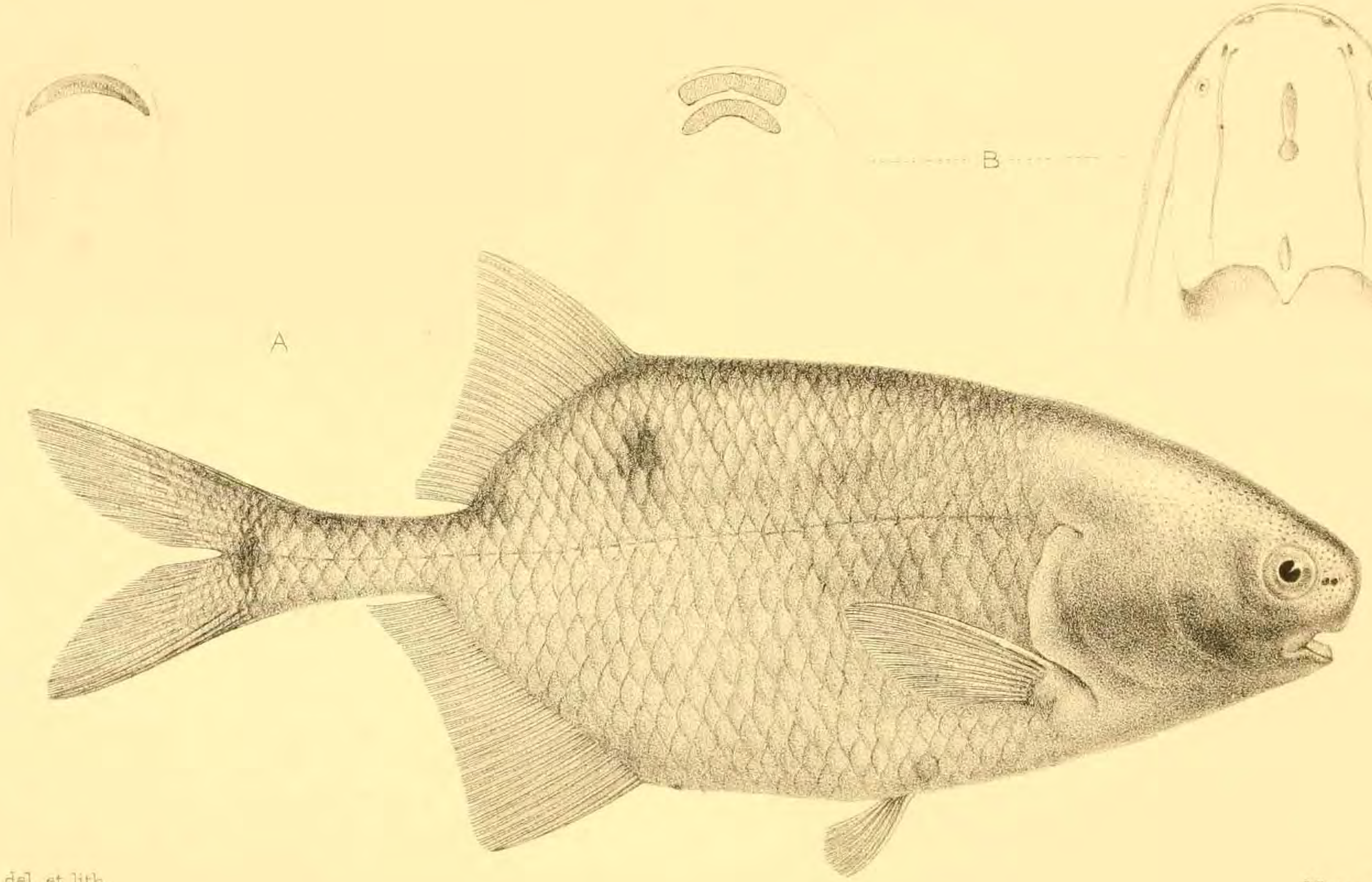
B

A.

J. Green del. et lith.

Mintern Bros. imp.

A. CTENOPOMA KINGSLEYÆ. B. CT. NANUM. C. CT. GABONENSE.



J. Green del. et lith.

Mintern Bros. imp.

A. MORMYRUS AMBLYSTOMA. B. CLARIAS WALKERI.

Ann. & Mag. Nat. Hist., S. 6. Vol. XVII. Pl. XIV.

J. Green del. et lith.

Mintern Bros. imp.

A. MORMYRUS KINGSLEYÆ. B. ALESTES KINGSLEYÆ.
C. BARILIUS BIBIE.