

Surface covered with low conuli 1-2 mm. apart and 0.2-0.4 mm. in height.

Oscula (?) minute, inconspicuous near the tips of the lobes.

The skeleton consists of a network of very thin fibres, which are not distinguishable into main and secondary, and are uniformly areniferous. They form for the most part square meshes about 0.64 mm. in breadth.

Fibres 0.03-0.06 mm. thick.

The ectosome is a thin layer of cystenchyma, thickest at the tips of the lobes. Only in this layer are spongioblasts obvious.

Spermatozoa are present in various stages and in great abundance.

The ciliated chambers measure 0.07×0.04 mm. on an average.

The whole choanosome is permeated by a filamentous alga (? *Oscillaria spongelicæ*).

Great Redang.

EXPLANATION OF THE PLATES.

PLATE XIV.

- Fig. 1. One of the digitiform processes of *Ciocalypta melichlora*, p. 214. Nat. size.
 2. *Cinachya malaccensis* (p. 219), slightly larger than nat. size.
 3. *Spirastrella inconstans* (p. 216), attached to a fragment of stone. Nat. size.
 4. *Spongelia digitata* (p. 220), attached to a branch of dead coral. Nat. size.
 5. *Reniera* sp. 1 (p. 210), growing on a crab. $\times 2$.
 6. A section of *Pseudosuberites cava* (p. 217). $\times 15$.
 7. *Ciocalypta rutila* (p. 215), almost the entire specimen. $\times \frac{3}{4}$.
 8. *Esperella suleroidea* (p. 213), in section. $\times 20$.
 9. *E. suleroidea* (p. 213), entire specimen. $\times \frac{1}{2}$.

PLATE XV.

- Fig. 1. Microcalthrops and spined microxea of *Dercitus pauper*, p. 218.
 2. One complete mesh of the skeleton of *Spongelia digitata*, p. 220.
 3. *Reniera* sp. 5 (p. 211). *a*, node of the skeletal network; *b*, egg; *c*, ciliated chamber; *d*, isolated spicule; *e*, piece of fibre with chaplet-cells; *f*, isolated chaplet-cell; *f'*, its segment of fibre.
 4. Spicules of *Suberites laxosuberites*, p. 217.
 5. Megasccleres of *Cinachya malaccensis*, p. 219.
 6. Sigmata and centrangulate sigmata of *Gellius centrangulatus*, p. 212.
 7. Sigmata, toxa, and centrangulate sigmata of *Gellius sagittarius*, p. 212.
 8. Spicules of *Ciocalypta melichlora*, p. 214.
 9. Spicules of *Biemma democratica*, p. 213.
 10. Spicules of *Esperella suleroidea*, p. 213.
 11. Spicules of *Reniera* sp. 2, p. 210.

8. On the Fishes collected by Mr. S. L. Hinde in the Kenya District, East Africa, with Descriptions of Four new Species. By G. A. BOULENGER, F.R.S.

[Received May 30, 1902.]

(Plates XVI. & XVII.¹)

The zoological collection recently made by Mr. S. L. Hinde in British East Africa contains a series of Fishes from the Mathoiya River, in the Kenya district, which usefully supplement our

¹ For explanation of the Plates, see p. 224.

knowledge of the fauna of the Tana system, for the first information on which we are indebted to Dr. J. W. Gregory.¹

A striking feature in the composition of this fauna is the presence of several species of the Cyprinid genus *Barbus*, agreeing in the large scales and the position and structure of the dorsal fin, the last simple ray of which is very large, osseous, and non-serrated, yet differing strikingly in the buccal characters. Two of these species had been described by Dr. Günther as *Barbus tanensis* and *B. intermedius* (Rüppell); three are here added, and although evidently nearly related they would have to be referred to as many genera, viz.: *Barbus*, *Labeobarbus*, and *Capoëta*. *Labeobarbus* has already been relegated to the synonymy of *Barbus* by Günther², and I now feel compelled to do the same with *Capoëta*, with all the more confidence, since new forms recently discovered in Morocco support the same conclusion³.

CYPRINIDÆ.

1. LABEO FORSKALII Rüpp.
2. LABEO (TYLOGNATHUS) MONTANUS Gthr.
3. BARBUS TANENSIS Gthr.
4. BARBUS HINDII, sp. n. (Plate XVI. fig. 1.)

Depth of body $2\frac{1}{2}$ to $3\frac{1}{2}$ times in total length, length of head 4 to $4\frac{1}{3}$ times. Snout rounded, feebly projecting beyond the mouth, $1\frac{1}{4}$ to $1\frac{1}{2}$ times as long as the eye, the diameter of which is 4 to $4\frac{1}{2}$ times in the length of the head and $1\frac{1}{3}$ to twice in the interocular width; width of the mouth about half that of the head; lips feebly developed; two pairs of barbels, the first as long as the eye or a little longer, the second a little longer than the first but not more than $1\frac{1}{2}$ the diameter of the eye. Dorsal IV 9-10, fourth ray very strong, straight, bony, not serrated, as long as the head or longer; the fin is notched and originates above the first rays of the ventral, at equal distance from the end of the snout and the root of the caudal or a little nearer the former. Anal III 5; longest ray $\frac{3}{4}$ to $\frac{4}{5}$ the length of the head and narrowly separated from the root of the caudal. Pectoral pointed, nearly as long as the head, not reaching the ventral. Caudal deeply forked. Caudal peduncle $1\frac{1}{3}$ to $1\frac{2}{3}$ as long as deep. Scales 25-29 $\frac{4\frac{1}{2}-5\frac{1}{2}}{4\frac{1}{2}}$, 2 between the lateral line and the root of the ventral. Olive-brown above, silvery below; fins greyish.

Total length 240 millim.

Several specimens.

Distinguished from *B. tanensis* by the shorter barbels.

¹ Cf. Günther, "Report on the Collection of Reptiles and Fishes made by Dr. J. W. Gregory during his Expedition to Mount Kenya," P. Z. S. 1894, pp. 84-91, pls. viii.-xi.

² Cat. Fish. vii. p. 84.

³ Cf. Boulenger, Ann. & Mag. N. H. (7) ix. 1902, p. 124.

5. BARBUS (CAPOËTA) PERPLEXICANS, sp. n. (Plate XVI. fig. 2.)

Depth of body 3 times in total length, length of head 4 times. Snout rounded, slightly concave in front of the nostrils, feebly projecting beyond the mouth, $1\frac{1}{2}$ as long as the eye, the diameter of which is 4 times in the length of the head and $1\frac{2}{3}$ in the interocular width; width of mouth about half that of the head; lips feebly developed; lower jaw with a strong, transverse, horny cutting-edge; two pairs of barbels, subequal, and as long as the eye. Dorsal IV 10, fourth ray very strong, straight, bony, not serrated, as long as the head; the fin is notched and originates slightly in advance of the vertical of the first ray of the ventral, a little nearer the end of the snout than the root of the caudal. Anal III 5; longest ray $\frac{4}{5}$ the length of the head and narrowly separated from the root of the caudal. Pectoral pointed, nearly as long as the head, narrowly separated from the ventral. Caudal deeply forked. Caudal peduncle $1\frac{1}{2}$ as long as deep. Scales 26-30 $\frac{4\frac{1}{2}}{4\frac{1}{2}}$, 2 between the lateral line and the root of the ventral. Olive-brown above, silvery below; fins whitish.

Total length 175 millim.

Two specimens.

Although unquestionably referable to the genus *Capoëta* as defined by Günther, this species is so closely related to the preceding that I have felt some hesitation in separating it. However it differs, in addition to having a cutting horny edge on the lower jaw, in the shape of the snout, the shorter posterior barbel, and the origin of the dorsal fin slightly more anterior.

6. BARBUS (LABEOBARBUS) LABIATUS, sp. n. (Plate XVII. fig. 1.)

Depth of body a little greater than length of head, $3\frac{1}{3}$ times in total length. Snout obtusely pointed, not projecting beyond the mouth, twice as long as the eye, the diameter of which is $5\frac{1}{2}$ times in the length of the head and twice in the interocular width; width of the mouth about half that of the head; lips extremely developed, each produced into a long triangular flap; two pairs of barbels, the first as long as the eye, the second slightly longer. Dorsal IV 9; fourth ray very strong, curved, bony, not serrated, $\frac{3}{4}$ the length of the head; the fin is notched and originates above the first rays of the ventral, at equal distance from the nostrils and the root of the caudal. Anal III 5; longest ray $\frac{2}{3}$ the length of the head and narrowly separated from the root of the caudal. Pectoral pointed, nearly as long as the head, reaching the base of the ventral. Caudal deeply forked. Caudal peduncle $1\frac{1}{2}$ as long as deep. Scales 28-29 $\frac{4\frac{1}{2}-5\frac{1}{2}}{4\frac{1}{2}}$, 2 between the lateral line and the root of the ventral. Dark olive-brown above, whitish beneath; fins grey.

Total length 270 millim.

A single specimen.

The larger scales and the longer pectoral fin distinguish this fish from the one referred by Günther to *B. intermedius* of Rüppell,

and which has 8 or 9 branched rays to the dorsal fin and three series of scales between the lateral line and the ventral fin.

The *Barbus* described by Rüppell from Lake Tsana, under the names of *Barbus intermedius*, *B. affinis*, *B. elongatus*, and *Labeobarbus nedgia*, the type-specimens of which have been kindly entrusted to me by the Directors of the Senckenberg Museum, agree with the Tana species in the large scales and the very strong fourth dorsal ray. All have 8 branched rays in the dorsal fin and 3 series of scales between the lateral line and the ventral fin.

SILURIDÆ.

7. *CHILOGLANIS BREVIBARBIS*, sp. n. (Plate XVII. fig. 2.)

Body slightly depressed, its depth 6 times in total length. Head strongly depressed, $1\frac{1}{3}$ as long as broad, its length 3 times in total length. Eye directed upwards, in the second half of the head, its diameter $5\frac{1}{2}$ times in length of head and $1\frac{1}{3}$ in interorbital width; anterior nostril equally distinct from the end of the snout and the eye, posterior separated from the eye by a space equal to the diameter of the latter; premaxillary teeth wide apart, in two large oval groups, forming 4 or 5 transverse series; 6 rather strong mandibular teeth; maxillary barbel scarcely longer than the eye, lower labials shorter than the eye. Dorsal I 5; spine not serrated, half the length of the head. Adipose fin half as long as its distance from the rayed dorsal. Anal III 7. Pectoral spine $\frac{2}{3}$ the length of the head. Ventral extending to the origin of the anal. Caudal forked. Caudal peduncle nearly twice as long as deep. Pale brownish above, with four irregular dark cross-bands connected by a dark lateral stripe, whitish beneath; two dark bars across the anal; a dark bar at the base of the caudal, another across each lobe of the fin, and a dark streak along the lower lobe.

Total length 55 millim.

A single specimen.

This species differs from *C. deckeni* Pts. and *C. niloticus* Blgr. in the shorter barbels and the stronger mandibular teeth.

ANGUILLIDÆ.

8. *ANGUILLA BENGALENSIS* Gray.

Anguilla labiata Pts. is not separable from this species.

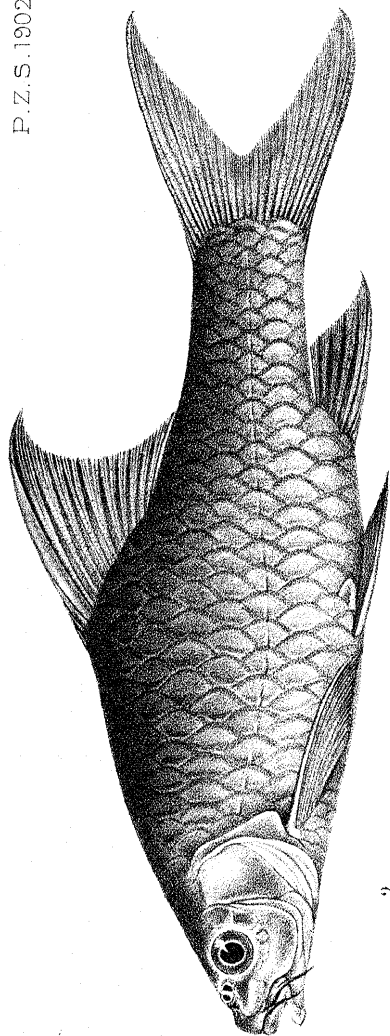
EXPLANATION OF THE PLATES.

PLATE XVI.

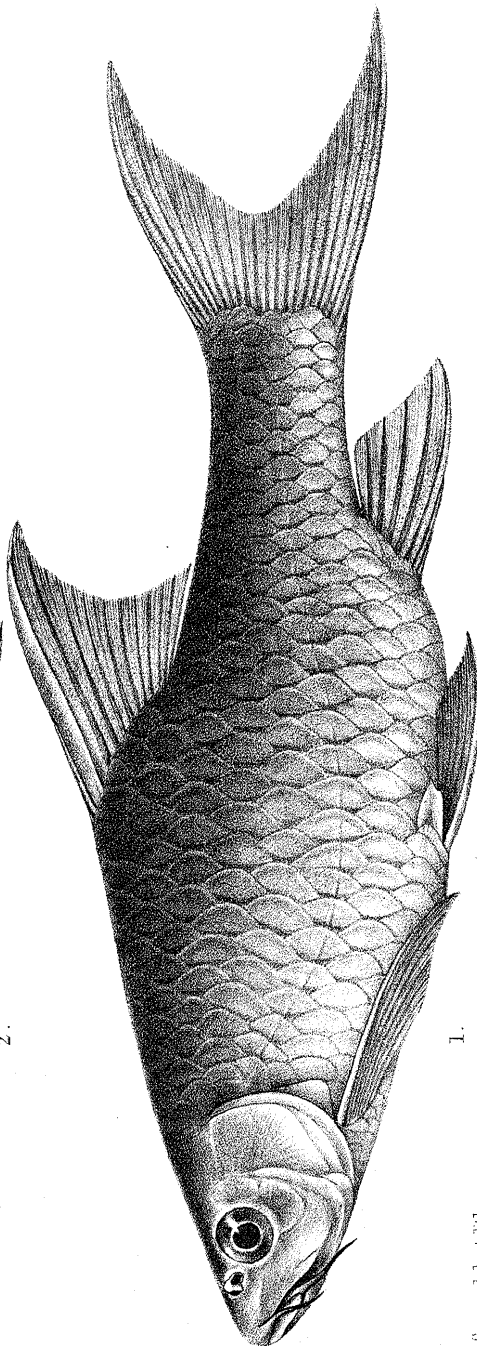
- Fig. 1. *Barbus hindii*, p. 222, reduced $\frac{2}{3}$.
2. " *perplexicans*, p. 223, reduced $\frac{2}{3}$.

PLATE XVII.

- Fig. 1. *Barbus labiatus*, p. 223, reduced $\frac{1}{2}$.
2. *Chiloglanis brevibarbis*, p. 224, nat. size.
2 a. " " upper view of head, $\times 2$.
2 b. " " mouth, $\times 3$.



2.



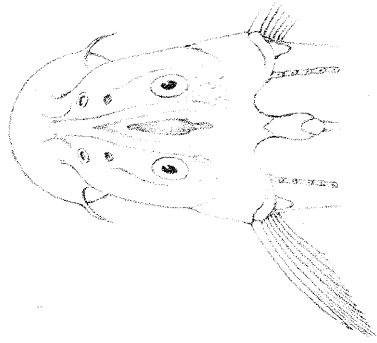
1.

J. Green del. et lith.

1. BARBUS HINDII.

2. BARBUS PERPLEXICANS.

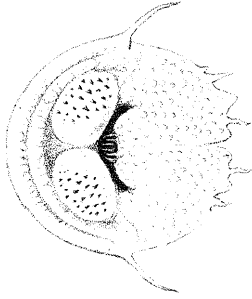
Ministry of Agriculture.



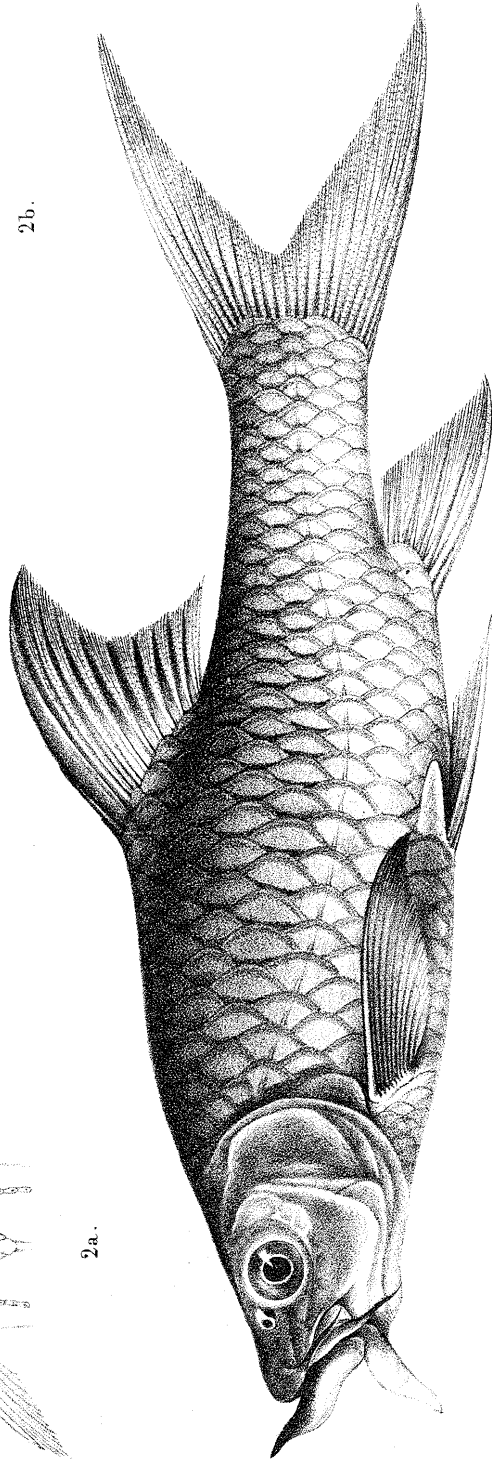
2a.



2.



2b.



1.

J. Green del et lith.

1. *EARBUS LABIATUS*.

2. *CHILOGLANIS BREVIBARBIS*.

Macleay Bros. lith.