



PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

NEW GENERA OF ELEOTRIDAE AND GOBIIDAE
AND ONE NEW SPECIES FROM WEST AFRICA

BY ALBERT W. C. T. HERRE

The fishes of West Africa are but little known. Any material from there is particularly welcome for the light it throws on geographical distribution, and for the help it affords in the better elucidation of the genera and species occurring in that region.

The Rev. A. I. Good, stationed in Cameroon, has earned the thanks of all who are interested in the study of fishes. From the considerable collection of marine and fresh-water fishes obtained by the Rev. Good, the eleotrids and gobies have been turned over to me for study.

Boulenger placed all eleotrids in the genus *Eleotris*, and nearly all gobies in the genus *Gobius*. This is an easy and simple method of disposing of troublesome fishes, but it results finally in having a hodgepodge of divergent and unrelated species spilled into a catch-all genus. In the present paper several genera are proposed and defined, in order to free the genera *Eleotris* and *Gobius* from species that cannot fit into them.

ELEOTRIDAE

Batanga Herre, new genus

Head and body laterally compressed, strongly so posteriorly. Scales ctenoid, except part of those on head; under a compound microscope the opercular scales and part of those before the dorsal are ctenoid; the preopercular scales and those on top of the head are cycloid. Head much deeper than broad. Mouth moderate, teeth in both jaws in villiform bands; the teeth in the outer row in both the upper and lower jaws are longer, very slender, and movable, becoming conspicuous in large old specimens. No canines, no palatal teeth, and no preopercular spine. The free tip of the tongue is truncate to emarginate.

Scales in longitudinal series 28 to 32, extending before the first dorsal through the interorbital space. Dorsals close together, VII—VIII—I—8 or 9; anal I—9. The second dorsal and anal both high, longer than the head, and extending on the caudal when depressed. The rounded caudal is also longer than the head.

Anal papilla large, flat, elliptical or somewhat pointed; a few large

old specimens (males?) have it very broad and relatively short, the wide free end fimbriate.

Batanga is distinguished by its shape, scalation, dentition, and vertical fins.

Type, *Batanga lebretoni* (Steindachner). Only known on the west coast of Africa.

Bataanga lebretoni (Steindachner)

Dorsal VII—VIII—I—8 or 9; anal I—9; scales in longitudinal series 28-32, plus 4 small ones on the caudal base; transverse series 10 or 9; predorsal scales 18-22.

Depth 3.9 to 4.3 in the length; the head and rounded caudal are equal or nearly so, 3.2 to 3.4 in the length; the eye is lateral, 4 to 4.33 in the head. The mouth is moderate, the lower jaw slightly or not at all projecting, the maxillary not reaching the eye. The first dorsal extends upon the second dorsal when depressed; the three posterior second dorsal rays are much elongated, extending to or upon the caudal base; the ultimate and penultimate anal rays are elongate, reaching or nearly reaching the caudal.

The color is brown, with a longitudinal band of black vertical bars along the side; some specimens have one, two, or three rows of black spots above this; behind and above the upper angle of the gill opening, and extending downward on the pectoral base, is a large black spot; four dusky stripes radiate backward from the eye; a series of blackish bands across the back, often much obscured; dorsals and caudal with numerous transverse rows of dark brown spots, the anal uniform brown; ventral more or less brown with the central rays more or less black; pectoral colorless. Juvenile specimens have the anal nearly colorless, with 3 brown longitudinal streaks; the ventral and pectorals colorless.

10 specimens, 37-44 mm. in length, from the Nkao, a very small brackish stream flowing into the sea at Batanga.

15 specimens, 36-62 mm. in length, from a small stream flowing into the ocean at Kribi.

A specimen, 37 mm. long, from a small stream at Moode.

Eleotris monteiri O'Shaughnessy

2 specimens, 74 and 83 mm. in length, from a small brackish stream, Mbode, on coast 10 miles south of Batanga.

3 specimens, 36-44 mm. in length, from the Nkao, a very small brackish stream emptying into the sea at Batanga.

1 specimen, 62 mm. in length, from a small stream emptying into the sea north of Kribi.

Eleotris vittata Dumeril

3 specimens, 40-115 in length, from the Nkao, a very small brackish stream emptying into the sea at Batanga.

2 specimens, 39 and 42 mm. in length, Dihane, on the Edea-Kribi road, 20 miles from Kribi, and 15 miles from the sea.

1 specimen, 43 mm. long, from Ebunga, on the coast 6 miles south of Batanga.

6 specimens, 65-93 mm. in length, from a small stream at Kribi.

4 specimens, 57 to 87 mm. in length, from the Bivusé, a small stream flowing into the sea, between Kribi and Lobé rivers.

Hanno Herre, new genus

The stout, somewhat elongate body is little compressed, low, the dorsal profile horizontal, the head broad with depressed snout, the caudal peduncle strongly compressed.

Dorsals—VI—I—9, close together; anal I—8; vertical fins low; caudal rounded, shorter than the head. Scales cycloid, small, becoming very small anteriorly, 75-90 in longitudinal series and 33-35 in a transverse series; predorsal scales 52-55, extending to snout; scales on opercle and preopercle, and extending well out on caudal and pectoral fins. Mouth large, maxillary extending beneath middle of the eye or beyond; lips thick, with double row of fimbriate papillae concealing the outer teeth; upper jaw with 5, the lower with 4 rows of teeth, those of the outer and inner rows in both jaws slightly enlarged; no palatal teeth, no canines, and no preopercular spine. Under the lower jaw is a groove containing a series of groups of papillae, a feature not observed in any other eleotrid or gobioid fishes. Numerous transverse and longitudinal rows of sensory papillae on the preopercle and opercle. Ventrals rather narrow, well separated, shorter than the broad, rounded pectorals. A black ocellus above on the basal part of the caudal fin.

The type is *Hanno africanus* (Steindachner). This fish, described as an *Eleotris* and listed as such by various authors following Steindachner, is manifestly not a member of the genus *Eleotris*.

Hanno, in honor of the great Carthaginian who circumnavigated Africa more than 2,500 years ago.

Hanno africanus (Steindachner)

2 specimens, 68 and 84 mm. in length, from a small stream flowing into the sea at Kribi.

1 specimen 132 mm. long, from Londji.

Kribia Herre, new genus

Body cylindrical to slightly compressed, the head broad, with projecting lower jaw. The maxillary extends beneath the anterior part or middle of eye, the large mouth strongly oblique; bands of very small teeth in both jaws; no canines and no palatal teeth. The free tip of the tongue is broad and rounded. No preopercular spine.

32 to 35 ctenoid scales in longitudinal, 12 in transverse series; predorsal scales cycloid. The opercles covered with very small cycloid scales, the rest of the head naked. Ridges of sensory papillae on the cheeks and top of the head.

Dorsals VI—I—8 (9), close together; anal I—7, opposite second dorsal; vertical fins of moderate height; caudal rounded, shorter than head. Ventrals narrow, wide apart. The thin flat anal papillae has the tip broadly rounded. The gill opening is moderate, extending forward beneath the posterior part of the preopercle.

The type of the genus is *Kribia kribensis* (Boulenger), first collected from the Kribi River. Only known from Cameroon.

Kribia kribensis (Boulanger)

Dorsal VI—I—8; anal I—7; 32-35 ctenoid scales in longitudinal, 12 in transverse series; 10-14 cycloid predorsal scales, extending to a point above the opercles.

The dorsal and ventral profiles are very slightly curved, the depth 4.7 to 5, the broad head 3. to 3.2, the rounded caudal about 4 times in the length. The broad rounded snout equals the eye; the interorbital is noticeably wider than the eye. The breadth of the head is two-thirds of its length. The second dorsal and anal do not reach the caudal when depressed. The broad pectoral $\frac{3}{4}$ to $\frac{5}{6}$ of the length of the head, or 3.65 to 3.73 times in the length, and longer than the narrow, widely separated ventrals.

The color in alcohol is dusky brown; some specimens with narrow transverse pale lines which separate 5 or 6 poorly defined dark crossbands; a black crossband on the caudal base. Vertical fins black or blackish, and more or less white-edged. Caudal dark brown, with traces of pale crossbands. Pectorals and ventrals more or less suffused with pale brown and specked with darker.

Described from 4 male specimens, 33 to 37 mm. in length, from the Lobé river, Mabenanga, Batanga. A juvenile specimen, 27 mm. long, was taken from the Mvas river, a tributary of the Ntem river, Campo.

GOBIIDAE

Ebomegobius-Herre, new genus

Body naked, moderately plump, compressed posteriorly. The head moderate, the oblique mouth large with projecting lower jaw, the maxillary extending to beneath the middle of the eye, or below its hind margin; teeth small, uniform, in bands in both jaws. Eyes small, very close together, dorso-lateral, equal to the rather broad snout. Tongue narrow, its free tip more or less emarginate or bilobed. Gill openings very wide, extending forward to beneath the hind margin of the eye.

Dorsal VI—I—11-14; anal I—11-14. Pectorals broad, rather short; ventrals long, with delicate and easily torn frenum; the round pointed caudal much shorter than the head.

Type *Ebomegobius goodi* Herre, new species. Name derived from a small stream, the Ebomé, where the specimen was caught.

Ebomegobius goodi Herre, new species

Dorsal VI—1-12; anal I—13. Body with protuberant belly, the posterior half of the body laterally compressed. The depth equals the caudal, 4.37, the head 3.18 times in the length. The eyes are high up, their inner margins touching, equal to the snout in length, 7.33 times in the head. The mouth is large, oblique, the prominent maxillary extending beneath the hind margin of the eye, 2.29 times in the head. The upper jaw has 4 rows, the lower jaw 3 rows of small uniform teeth. The vertical fins are low and do not touch the caudal base when depressed, nor does the first dorsal extend to the second dorsal. The first dorsal and anal are about equal in height, 3.14 times, the second dorsal 2.75 times in the head. Pectorals rather short, 5.8, the large ventrals 4.1 times in the length. The anal papilla is tongue-like in shape.

The color in alcohol is uniform reddish brown, sprinkled with minute black dots, which are coarsest on top of the head and about the dorsal fins; all the fins are clear brown, more or less lightly sprinkled with blackish dots; on the first dorsal is a black vertical band between the fourth and fifth spines.

Here described from the type and only specimen, 35 mm. long. It was taken by A. I. Good from the Ebomé, a small brackish stream at Kribi. Type in Natural History Museum of Stanford University.

Named for A. I. Good, missionary and ardent collector of West African fishes.

Bathygobius fuscus (Rüppell)

22 specimens, 29-65 mm. in length, from the Eburnja river in brackish water, at Eburnja, on the coast 6 miles south of Batanga.

2 specimens, 45-48 mm. in length, from the mouth of the Kribi river, Kribi.

8 specimens, 40-75 mm. in length, from the Ebomé, near Kribi.

3 specimens, 39-55 mm. in length, from brackish water, Bwanjo river, Bwanjo.

Chonophorus guineensis (Peters)

11 specimens, 55-75 mm. in length, from the Nkao, a very small brackish stream at Batanga.

7 specimens, 45-116 mm., from the Mbode, 10 miles south of Batanga.

One specimen, 110 mm. long, from the Bilobi, 40 miles from the ocean, Njabilobi (Efulan).

5 specimens, 80-138 mm. in length, Kribi, Kribi river system.

2 specimens, 90 to 110 mm. in length, Kribi, from a small brackish stream, the Ebome, the Kribi river system.

3 specimens, 55 to 96 mm. in length, from brackish water, Eburnja river, Eburnja.

1 specimen, 77 mm. long, Mvase river, a tributary of Campo river, Campo.

A specimen, 19 mm. long from a small brackish stream 10 miles south of Batanga, on the coast at Mbode.

Coronogobius schlegeli (Günther)

Dorsal VI—I—8; anal I—9; scales in longitudinal series 28, plus 3 more on the caudal base; transverse series 8. The body is laterally compressed, the dorsal profile very little curved, the ventral outline gently arched; the depth is 4.95 times in the length; the caudal and pectoral are both pointed, of equal length, 2.85 times in the length. The head is pointed, with prominent chin, 3.17 in the length, the cheeks more or less tumid; the eyes are very high up, 4.25 times in the head, the inter-orbital 3 in the eye; the snout equals the eye; the mouth is oblique, the angle of the maxillary beneath the front margin of the eye; the teeth are typical of the genus, with a well developed posterior canine. A row of sensory pores descends from the posterior nostril to the middle of the maxillary, where it gives off two branches which cross the preopercle to its hind margin; behind the angle of the mouth it turns and crosses the cheek parallel to the lines across the middle of the preopercle; above

it is a much smaller parallel line. Another line of pores runs around the margin of the preopercle and along the lower margin of the jaw to the symphysis. Several small lines of pores cross the opercle transversely and diagonally two small lines of pores extend backward from the eye a short distance; two others are on the snout. The vertical fins are of moderate height, the second spine of the first dorsal 5 times in the length; the longest second dorsal spine is 7.7, the longest anal spine 6.75 times in the length. The ventral is broad and long, with a strong frenum, 4.5 times in the length. The least depth of the caudal peduncle is 1.8 times in its own length.

The color in alcohol is brown, with 8 or 9 faint darker stripes over the back, 8 black transverse lines on the lower third of the trunk, and another one three scales behind; the fins are concolorous; a black spot at the base of the first three rays of the second dorsal, and a black spot on the upper part of the pectoral base; some longitudinal rows of black spots are on the lower part of the caudal fin.

Here described from the following specimens:

1 specimen, 54 mm. long, collected from a small brackish stream, called Nkao, at Batanga, Cameroon, Africa.

3 specimens, 38-50 mm. in length, from a brackish water stream at Eburnja, on the coast 6 miles south of Batanga.

4 specimens, 39-56 mm. in length, from brackish water at the mouth of the Kribi river, Kribi.

4 specimens, 51-60 mm. in length, from the Ebomé, a small brackish stream at Kribi.

2 specimens, 41-46 mm. in length, from brackish water, the Eburnja river, Eburnja.

3 specimens, 34-40 mm. in length, Bwanjo River, in brackish water, Bwanjo.

Ctenogobius bequaerti (Fowler)

2 specimens, 31-36 mm., from a small stream emptying into the sea at Kribi.

Ctenogobius thomasi (Boulanger)

6 specimens, 26-34 mm. in length, from the Nkao, a very small brackish stream flowing into the sea at Batanga.

Nematogobius ansori Boulanger

1 specimen, 37 mm. long, from the Nkao, Batanga.

Oxyurichthys occidentalis (Boulenger)

2 specimens, 46 and 51 mm. long, from the Nkao, Batanga.

Sicydium brevifile Grant

9 specimens, 33-51 mm. in length, from the Lokunje river, Sepindi.

Periophthalmidae

Periophthalmus papilio Bloch and Schn.

13 specimens, 67-126 mm. in length, Londji.

2 specimens, 88-95 mm., from the Nkao, a small brackish stream at Batanga.

1 specimen, 48 mm. long, from the brackish Bwanjo river, at Bwanjo.