

**NOTES ON GOBIOID FISHES**  
**7. ON THE INDO-AUSTRALIAN SPECIES OF**  
**OXYELEOTRIS BLEEKER**

by

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**Oxyeleotris** Bleeker

*Oxyeleotris* Bleeker, Arch. neerl. sc. ex. et nat. IX, 1874, p. 302 (*Eleotris marmorata* Blkr.).

Body elongate, anteriorly cylindrical, posteriorly compressed. Head pointed, depressed, scaled above and on the sides. Only in *O. urophthalmoides* the first branchiostegal ray ends anteriorly in a spine, in the other species this spine is absent. Scales of body ctenoid, 45—100 in a longitudinal series. Teeth in several rows, in upper jaw outer row enlarged, in lower jaw in front outer row enlarged, laterally inner row enlarged; no true canines. Lower jaw prominent, mouth oblique. Gillopenings a little continued forward below, isthmus moderate.

D. 1 VI; D. 2 I. 9—12; A. I. 7—10.

The Indo-Australian species of *Oxyeleotris* are distinguished by the following characters:

- |  |                                     |
|--|-------------------------------------|
| 1a. D. 2 I. 9; A. I. 7—9   | 2                                   |
| 1b. D. 2 I. 10—12; A. I. 7—10  | 5                                   |
| 2a. 80—102 scales in a longitudinal series   | 3                                   |
| 2b. 60—70 scales in a longitudinal series  | 4                                   |
| 3a. Body with irregular blotches. Upper part of caudal peduncle without ocellus                              |                                     |
|  | <i>O. marmorata</i> (Blkr.)         |
| 3b. Body without blotches. Upper part of caudal peduncle with ocellus  |                                     |
|  | <i>O. urophthalmus</i> (Blkr.)      |
| 4a. First branchiostegal ray ends anteriorly in a spine. L.l. 60—70, L.tr. 15—16, 45—50 predorsal scales     | <i>O. urophthalmoides</i> (Blkr.)   |
| 4b. First branchiostegal ray ends anteriorly not in a spine. L.l. 62—65, L.tr. 19—20, 40—48 predorsal scales | <i>O. heterodon</i> M. Weber        |
| 5a. L.l. 45—77, L.tr. 14—24, 26—36 predorsal scales  | <i>O. fimbriatus</i> (M. Weber)     |
| 5b. L.l. 85—102, L.tr. 25—28, 55—60 predorsal scales   | <i>O. urophthalmus</i> (Blkr.)      |
|  | var. <i>novae guineae</i> nov. var. |

**Oxyeleotris marmorata** (Blkr.)

*Eleotris marmorata* Bleeker, Nat. Tijdschr. Ned. Ind. III, 1852, p. 424.

*Oxyeleotris marmorata* Bleeker, Versl. Ak. Amsterdam (2) XI, 1877, p. 22.

D. 1 VI; D. 2 I. 9; A. I. 7—8; P. 17—19; L.l. 80—90; L.tr.  $\pm$  25; Predorsal scales 60—65 (+ 9—11).

Body elongate, anteriorly cylindrical, posteriorly compressed; height  $4\frac{1}{2}$ —5 in length,  $5\frac{1}{2}$ —6 in total length. Head pointed, depressed,  $2\frac{3}{4}$ —3 in length,  $3\frac{1}{3}$ —4 in total length; profile concave. Eyes 7—9 in head, interorbital  $1\frac{1}{2}$ — $2\frac{1}{2}$  eye-diameter. Snout pointed, tip before upper part of eye. Lower jaw prominent; maxillary extends to below posterior margin of eye or not so far. Teeth in many rows; in upper jaw outer enlarged, behind symphysis 2—4 caninoid teeth in middle rows; in lower jaw outer row enlarged, unequal, some teeth caninoid, lateral teeth of inner row enlarged. Mucous canals: 2—3 from eye running obliquely downwards and backwards, 2 longitudinal ones over cheeks, crossed by 2 vertical ones. Supraopercular groove distinct. Scales of body ctenoid; on head, nape and breast cycloid. Head scaled on snout, between and above behind the eyes, on cheeks and opercles. D. 1 obtuse, half as high as body, 2nd and 3rd rays are the longest. D. 2 a little higher than D. 1. A. shorter than D. 2. P. obtuse, about as long as postocular part of head. V. much shorter. C. obtusely rounded, shorter than head.

Colour: darkish green above, lighter below. Head below with pale reddish spots. Body anteriorly clouded, posteriorly with 3 irregular reddish transverse bands. D. 1 anteriorly dark. Other fins reddish with darker parts, rays spotted.

Length 460 mm.

Habitat: Sumatra, Borneo, Celebes, Ternate, Philippines, Siam, Fiji Islands, in rivers and estuaries.

Types of Bleeker seen by me.

**Oxyeleotris urophthalmus** (Blkr.)

*Eleotris urophthalmus* Bleeker, Nat. Tijdschr. Ned. Ind. II, 1851, p. 202.

*Oxyeleotris urophthalmus* Bleeker, Versl. Ak. Amsterdam (2) XI, 1877, p. 23.

*Eleotris siamensis* Günther, Cat. Fishes III, 1861, p. 129.

D. 1 VI; D. 2 I. 9—12; A. I. 8—10; P. 15—18; L.l. 85—102; L.tr. 24—29; Predorsal scales 55—60 (+ 8—12).

Body elongate, anteriorly cylindrical, posteriorly compressed; height about  $5\frac{1}{2}$  in length, 7—8 in total length. Head pointed, depressed, about  $3\frac{1}{2}$  in length,  $4-4\frac{1}{4}$  in total length; profile concave. Eyes 6—7 in head, interorbital  $1\frac{3}{4}-2\frac{3}{4}$  eye-diameter. Snout pointed, tip before middle of eye. Nostrils in short tubes near margin of snout. Teeth small in many rows; in upper jaw outer row a little enlarged; in lower jaw outer row enlarged, unequal, one of the middle rows of teeth laterally enlarged. Two longitudinal mucous canals over cheeks, crossed by transversal ones, radiating from the eyes. Supraopercular groove distinct. Some open pores round the eyes and along posterior margin of preoperculum. Scales posteriorly ctenoid, anteriorly cycloid. Head scaled above on snout, between and behind the eyes on cheeks and opercles. D. 1 obtuse, less than  $\frac{1}{2}$  of height of body, 3rd and 4th ray are the longest. D. 2 higher than D. 1. A. shorter than D. 2. P. obtuse, shorter than head without snout. V. a little shorter. C. obtusely rounded, shorter than head.

Colour: dark green above, orange-green below. Fins violet to dark, rays orange. Rays of dorsal and caudal fins spotted. Base of C. above with black ocellus, bordered by red.

Habitat: Borneo, Celebes, New Guinea, Siam, in rivers and estuaries.

Types of Bleeker and types of *E. siamensis* Gthr. seen by me.

In the specimens of *Oxyeleotris urophthalmus* from Borneo, Celebes and Siam, which I have seen, the number of rays of D. 2 was I. 9; that of A. was I. 8; the number of scales in L.l. varied from 85—92; in L.tr. from 24—26. Before the first dorsal fin these specimens showed 56—58 large scales, which extend to a little behind the eyes, before these large scales there are in interorbital space 9—12 smaller scales.

In 8 specimens from New Guinea (Lorentz river) in the Zoological Museum at Amsterdam I found that the number of rays of D. 2 varied between I. 10—12; that of A. from I. 9—10; the number of scales in L.l. varied from 85—102; in L.tr. from 27—29. Before D. 1. I found 56—59 large scales and before these 8—12 smaller ones. In other respects these specimens agree with the types of *O. urophthalmus*. So I do not separate these specimens as a distinct species, but regard them provisionally as a variety of *O. urophthalmus*, to which I propose to give the name **novae guineae** nov. var.

The pattern of colour on body of these specimens shows a number of indistinct bent transverse bands, with the top headwards, and a very indistinct ocellus at the upper part of the base of C. So, in general appearance, they are alike to *O. fimbriatus* (M. Weber). They differ from this species,

however, in several respects. The number of scales in L.l., L.tr. and predorsal scales is much higher than in *O. fimbriatus*. Even specimens of *O. fimbriatus* of about 300 mm show less scales in L.l., L.tr. and before D. 1 than a specimen of 160 mm of *O. urophthalmus* var. *novae guineae*.

***Oxyeleotris urophthalmoides* (Blkr.)**

*Eleotris urophthalmoides* Bleeker, Nat. Tijdschr. Ned. Ind. IV, 1853, p. 273.

*Oxyeleotris urophthalmoides* Bleeker, Versl. Ak. Amsterdam (2) XI, 1877, p. 23.

D. 1 VI; D. 2 I. 9; A. I. 8; P. 17—18; L.l. 60—70; L.tr. 15—16; Predorsal scales 45—50 (+ 9—12).

Body elongate, anteriorly cylindrical, posteriorly compressed; height  $5\frac{1}{2}$ —6 in length,  $6\frac{1}{4}$ —7 in total length. Head pointed, depressed,  $3$ — $3\frac{1}{2}$  in length,  $3\frac{2}{3}$ — $4\frac{1}{4}$  in total length; profile convex, over eye a little concave. Eyes 6—7 in head; interorbital  $1\frac{1}{2}$ —2 eye-diameters. Snout pointed, about as long as eye, tip before middle of eye. Anterior nostrils near margin of snout, in short tubes. Lower jaw a little prominent; maxillary extends to posterior half of eye. Teeth in many rows, outer only a little enlarged, subequal; in lower jaw inner row laterally enlarged. Two or more longitudinal mucous canals over cheeks, crossed by transversal ones. Supraopercular groove well developed. First branchiostegal ray ends anteriorly in a short blunt spine. Scales of body ctenoid posteriorly, cycloid anteriorly. Head scaled on snout, above behind eye and on cheeks and opercles with small scales. D. 1 obtuse, half as high as body, 2nd, 3rd and 4th rays the longest. D. 2 a little higher than D. 1. A. much shorter than D. 2. P. rounded, as long as head without snout, base scaled. V. a little shorter than P. C. obtuse, shorter than head.

Colour: reddish above, orange-green below. On back and sides dark longitudinal stripes, following the rows of the scales. Finmembranes light violet, finrays yellowish to red, they are, except those of ventrals, spotted. Membrane of anal fin with pearl like spots. Base of C. above with black ocellus, bordered by orange-red.

Length: 198 mm.

Habitat: Sumatra, Borneo, in rivers.

Types of Bleeker seen by me.

*Oxyeleotris urophthalmoides* is distinguished from the other species of *Oxyeleotris* by the first branchiostegal ray, which ends anteriorly in a short blunt spine, about in the same way as in *Belobranchus*. From *Belobranchus* it

differs, however, in several important characters, so that it has nothing to do with this genus. In all characters it is a typical *Oxyeleotris*, so that it is not necessary to regard it as the type of a new genus.

### ***Oxyeleotris heterodon* M. Weber**

- ? *Eleotris lineolatus* Steindachner, Sitz. ber. Ak. Wiss. Wien LV, I, 1867, p. 13.  
 ? *Eleotris planiceps* Macleay, Proc. Linn. Soc. N. S. Wales VII, I, 1882, p. 69.  
 ? *Eleotris immaculatus* Macleay, id. VIII, 2, 1883, p. 268.  
 ? *Eleotris selheimi* Macleay, id. IX, I, 1884, p. 33 (substitute name for *E. planiceps*, preocc.).  
 ? *Eleotris crescens* De Vis, Proc. Roy. Soc. Queensland II, 1886, p. 33.  
*Eleotris (Oxyeleotris) heterodon* M. Weber, Nova Guinea V, Zool., Livr. II, 1908, p. 255, tab. 13, fig. 7.

D. 1. VI; D. 2 I. 9; A. I. 8—9; P. 18; L.l. 62—65; L.tr. 19—20; Predorsal scales 40—48 (+ 13—16).

Body elongate, anteriorly cylindrical, posteriorly compressed; height  $4\frac{1}{2}$  in length,  $5\frac{1}{2}$ —6 in total length. Head depressed,  $2\frac{3}{4}$  in length,  $3\frac{1}{3}$  in total length; profile concave. Eyes 6—12 in head; interorbital  $1\frac{1}{2}$ — $2\frac{1}{2}$  eye-diameter. Snout a little longer than eye, tip before middle of eye. Lower jaw prominent; maxillary extends to posterior part of eye. Teeth small, in several rows; in upper jaw outer row a little enlarged; in lower jaw outer row in front a little enlarged, laterally inner row enlarged. Head scaled above from between the nostrils, cheeks and opercles scaled. Scales of head, nape, breast and belly cycloid, of body ctenoid. D. 1 half of height of body, 2nd ray the longest. D. 2 a little higher than D. 1. P. shorter than postorbital part of head. V. half of length of head. C. rounded, as long as postorbital part of head.

Colour: blackish, belly lighter, indistinctly clouded. Fins darkish or lighter with indistinct darker blotches.

Length: 425 mm.

Habitat: New Guinea, ? Australia, in fresh water.

Types of the species seen by me.

*Oxyeleotris heterodon* is closely allied to *O. urophthalmoides*, but is distinguished by the first branchiostegal ray, which does not end in a spine anteriorly and in a larger number of scales in L.tr.

I am not certain that *Eleotris lineolatus* Steind., *immaculatus* Macleay, *selheimi* Macleay and *crescens* De Vis belong to this species. Mc Culloch

& Ogilby, Rec. Austr. Mus. XII, 1929, p. 265 regard these as synonyms of *Eleotris (Oxyeleotris) heterodon* M. Weber, but they do not give the number of predorsal scales, so I am not certain that these species are synonyms of *O. heterodon*.

### **Oxyeleotris fimbriatus** (M. Weber)

*Eleotris fimbriatus* M. Weber, Nova Guinea V, Zool., Livr. II, 1908, p. 254 and id.

IX, Zool., Livr. IV, 1913, p. 594, tab. 13, fig. 1.

*Eleotris (Oxyeleotris) aruensis* M. Weber, Abh. Senck. Ges. XXXIV, 1911, p. 23, tab. 1, fig. 5.

*Eleotris (Oxyeleotris) mertoni* M. Weber, id. p. 23, tab. 2, fig. 3.

D. 1 VI; D. 2 I. 10—12; A. I. 7—10; P. 14—16; L.l. 45—77; L.tr. 14—24; Predorsal scales 26—36 (+ 8—12).

Body elongate, anteriorly depressed, posteriorly compressed; height  $4\frac{1}{2}$ — $5\frac{1}{2}$  in length,  $5\frac{1}{2}$ — $6\frac{1}{2}$  in total length. Head depressed, profile straight,  $2\frac{3}{4}$ — $3\frac{1}{5}$  in length,  $3\frac{1}{2}$ —4 in total length. Eyes  $4\frac{1}{2}$ —6 in head, interorbital 1—2 eye-diameter. Snout a little shorter than eye to as long as eye, tip before lower margin of eye. Anterior nostrils in short tubes. Lower jaw prominent, mouth oblique; maxillary extends to anterior part of eye or to middle of eye. Teeth in several rows; in upper jaw outer row a little enlarged; in lower jaw in front outer row enlarged, laterally some teeth of inner row enlarged. A number of mucous canals radiate under eye, 2 canals run longitudinally over cheeks.

Some open pores round the eyes and along posterior margin of preoperculum. Head scaled above from before the eyes and on cheeks and opercles with cycloid scales. Scales of nape, breast and belly cycloid; of body ctenoid. D. 1 much lower than body. Height of D. 2 is about  $\frac{2}{3}$  of height of body. P. rounded, as long as head without snout. V. a little shorter. C. rounded, as long as P.

Colour: yellowish gray, lighter below. Body with a number of narrow bent transverse bands with the top directed headwards. From below the eye 3 dark lines radiate to operculum; before the eye a triangular dark blotch. On upper part of base of C. an indistinct ocellus. D. 2 and C. spotted. A. and V. with light border.

Length: 300 mm.

Habitat: Waigeu, Aru Islands, New Guinea, in fresh water.

Types of *E. (O.) aruensis* M. Weber, *E. (O.) mertoni* M. Weber and type of *E. fimbriatus* M. Weber seen by me.

This species, in general appearance, is very alike to *O. urophthalmus* (Blkr.) var. *nova guineae*, but differs, as is already given above, in the number of scales in L.l., L.tr. and predorsal region.

*Oxyeleotris fimbriatus* is a very interesting species, as the number of scales in small and large specimens differs strongly. It seems that the number of scales increases during growth (cf. F. P. Koumans, A case of increase of the number of scales during growth in fishes, *Temminckia* I, 1936, p. 267—276).

The specimens described by Prof. M. Weber as *Eleotris (Oxyeleotris) mertoni* in *Abh. Senck. Ges.* XXXIV, 1911, p. 33, tab. 2, fig. 3, I regard as a variety of *Oxyeleotris fimbriatus*. They differ from specimens of *O. fimbriatus* of the same length in a lower number of scales in L.l., L. tr. and predorsal region. But, as this number falls between those of *O. fimbriatus*, and as I have not found differences beside the number of scales, I regard these specimens as a variety of *O. fimbriatus*.

From the 2 specimens, which I studied, one is preserved now in the Zoological Museum at Amsterdam, the other in the Senckenberg Museum, Frankfurt a. M. From these specimens I made the following description:

D. 1 VI; D. 2 I. 10—11; A. I. 9—10; P. 16; L.l. 56—61; L.tr. 18—20; Predorsal scales 29 (+ 9).

Body elongate, anteriorly cylindrical, posteriorly compressed; height  $4\frac{1}{2}$ —5 in length,  $5\frac{1}{2}$ —6 in total length. Head depressed, profile straight, 3 in length,  $3\frac{2}{3}$  in total length. Eyes  $6\frac{1}{2}$ —7 in head, interorbital 2 eye-diameters. Snout 2 eye-diameters, tip before inferior half of eye. Anterior nostrils in short tubes. Lower jaw prominent, mouth oblique; maxillary extends to posterior half of eye. Teeth in bands; in upper jaw outer row a little enlarged; in lower jaw in front outer row a little enlarged, laterally inner row enlarged. Mucous canals and open pores as in *O. fimbriatus*. Head scaled above from between eyes and on cheeks and opercles. Scales of head, nape, breast and belly cycloid; on body ctenoid. D. 1 much lower than body, 3rd ray the longest. D. 2 a little higher than D. 1, about  $\frac{1}{2}$  of height of body. P. rounded, as long as postorbital part of head. V. a little shorter. C. rounded, as long as P.

Colour: dark brown, lighter below. D. 2 and C. with indistinct spots. C., A. and V. with a light border. In the specimen of the Senckenberg Museum very indistinct bent transverse bands and an indistinct ocellus on caudal peduncle.

In order to compare the number of scales and finrays I give these numbers of the two specimens of the var. *mertoni* and of two specimens of *fimbriatus* of about the same length.

	<i>Oxyeleotris fimbriatus</i> var. <i>mertoni</i>		<i>Oxyeleotris fimbriatus</i>	
Length (without caudal fin). . .	116	188	120	186
L. l. . . . .	56	61	65	72
L. tr. . . . .	18	18	21	21
D. 2 . . . . .	I. 11	I. 10	I. 11	I. 11
A. . . . .	I. 10	I. 9	I. 8	I. 9
Predorsal scales . . . . .	29 + 9	29 + 9	35 + 9	34 + 11