

6. *Megalognatha sexlineata*.

Cistela 6-lineata, Fab. *loc. cit.* Habitat ——.
Cneorane sexlineata, Fab., Gemm. & Har. Cat.
Megalognatha bohemanni, Baly.

7. *Diabrotica melanocephala*.

Cistela melanocephala, Fab. Syst. Ent. 1775, p. 118. Amer. Septentr.
Crioceris vittata, Fab. *op. cit.* p. 122. Carolina.
Diabrotica vittata, Fab., Gemm. & Har. Cat.

The identity of *Cistela melanocephala* with *Crioceris vittata* is admitted by Fabricius himself in his later works (Ent. Syst. i. 2, 1792, p. 12), and the name *Crioceris melanocephala* is employed for another species (*op. cit.* p. 3). The type of *C. vittata* is said to be in Mus. Dom. Monson.

XXII.—A Revision of the African Cichlid Fishes of the Genus *Tylochromis*. By C. TATE REGAN, M.A., F.R.S.

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TYLOCHROMIS, Regan.

Supra, p. 34.

Body deep, compressed; scales cycloid or feebly denticulate; two lateral lines, upper ending below soft dorsal, lower extending far forward, ending behind in three branches on caudal fin. Mouth rather small, terminal, with the lower jaw not prominent; maxillary sheathed by the deep præorbital, slightly exposed distally; præmaxillary processes rather long, usually reaching frontals. Teeth in jaws small, conical, in two to five series, outer sometimes enlarged. Lower pharyngeals united by interlocking suture to form a triangular plate, with slender, pointed, uni- or bicuspid teeth at least near the posterior angles, and with enlarged, rounded, flat teeth in the middle at least posteriorly. Dorsal XIII–XVI 12–17; spines slender or moderate. Anal III 7–9; spines strong. Pectoral long, pointed. Caudal scaly, truncate or emarginate.

Occipital crest very strong, extending to anterior margin of frontals; parietal crests ending above middle of orbits near the orbital margin; postorbital part of skull short and deep, with lower edge of basioccipital very oblique; pharyngeal apophysis strong, formed by parasphenoid only, ending in a broadly ovate or subtriangular articular surface, narrowed

anteriorly. Vertebrae 29-32 (15-16 + 14-16); inferior apophyses of third united to form a strong median spine; præcaudals with parapophyses from the fourth; ribs, except the first, on parapophyses.

Tanganyika, Congo, and West African rivers from Gambia to Liberia.

Eight species.

In all the gill-rakers are short and broad, and there is a well-developed papillose pad on each side of the roof of the pharynx.

The species differ considerably in the pharyngeal dentition and in the size and form of the lower pharyngeal plate. *T. microdon* (fig. 1, A) and *T. mylodon* (fig. 1, B) are two extremes; in the former the lower pharyngeal is a comparatively small and weak plate (depth about $\frac{1}{2}$ maximum width), with numerous small slender bicuspid teeth and with a group of moderately enlarged, circular, blunt teeth occupying the middle and posterior third of the dentigerous area. In *T. mylodon* the lower pharyngeal is large and massive (depth about $\frac{1}{2}$ maximum width) and is nearly covered with very strong, circular, flat teeth, small bicuspid teeth appearing only near the posterior angles.

The species may be arranged according to the modifications of the pharyngeal dentition as follows:—

- | | |
|--|---------------------------------------|
| I. Enlarged rounded teeth of lower pharyngeal confined to posterior third of dentigerous part of plate | <i>microdon</i> . |
| II. Enlarged rounded teeth of lower pharyngeal confined to posterior half of dentigerous part of plate | <i>lateralis, jentinki</i> . |
| III. Enlarged rounded teeth of lower pharyngeal extending forward on anterior part of plate; small slender teeth at outer edges and near posterior angles. | <i>bangwelensis, intermedius,</i> |
| IV. Enlarged rounded teeth covering nearly the whole plate; small slender teeth only at posterior angles | <i>[labrodon, polylepis. mylodon.</i> |

The enumeration of the number of scales in a longitudinal series and of gill-rakers on the lower part of the anterior arch will assist the identification of the species:—

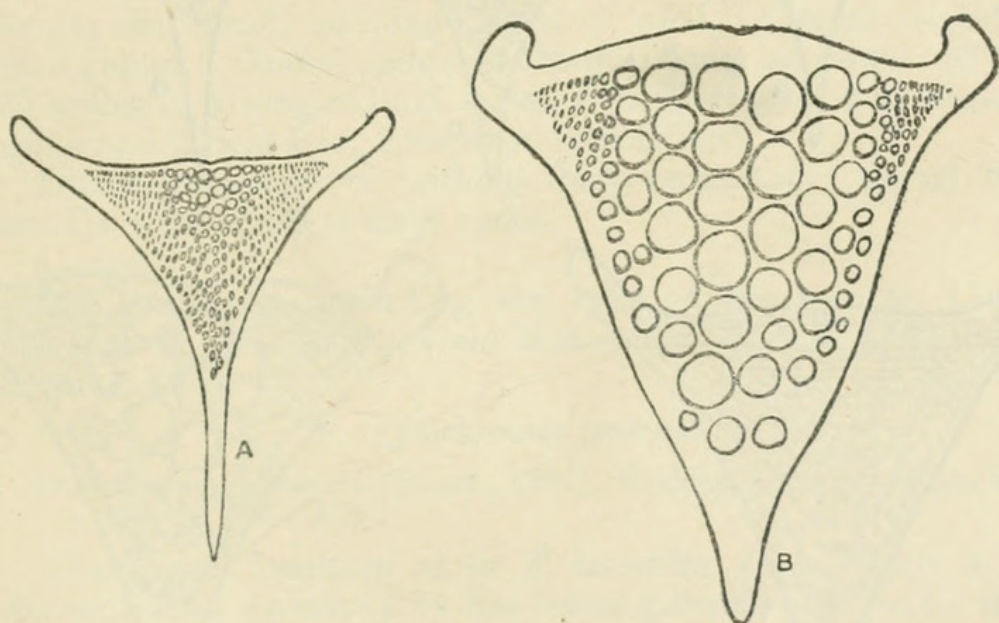
- | | |
|---|--------------------------|
| 33 to 35 scales; 15 or 16 gill-rakers | 1. <i>microdon</i> . |
| 32 to 35 scales; 17 or 18 gill-rakers | 2. <i>lateralis</i> . |
| 40 to 45 scales; 13 to 15 gill-rakers | 3. <i>jentinki</i> . |
| 37 or 38 scales; 14 or 15 gill-rakers | 4. <i>bangwelensis</i> . |
| 39 or 40 scales; 12 or 13 gill-rakers | 5. <i>intermedius</i> . |
| 33 or 34 scales; 18 or 19 gill-rakers | 6. <i>labrodon</i> . |
| 55 to 60 scales; 12 to 15 gill-rakers | 7. <i>polylepis</i> . |
| 40 or 41 scales; 17 or 18 gill-rakers | 8. <i>mylodon</i> . |

1. *Tylochromis microdon*, sp. n.

Pelmatochromis lateralis (part.), Bouleng. Cat. Afr. Fish. iii. p. 385 (1915).

Depth of body $2\frac{1}{5}$ to $2\frac{2}{5}$ in the length, length of head 3. Snout from a little longer than to nearly twice diameter of eye, which is $3\frac{1}{2}$ to nearly 5 in length of head, equal to or less than interorbital width or præorbital depth. Maxillary not extending to below eye; teeth small; 3 series of scales on cheek; 15 or 16 gill-rakers on lower part of anterior arch; lower pharyngeal teeth mostly slender, compressed, hooked; a triangular area on the posterior third of the plate with

Fig. 1.



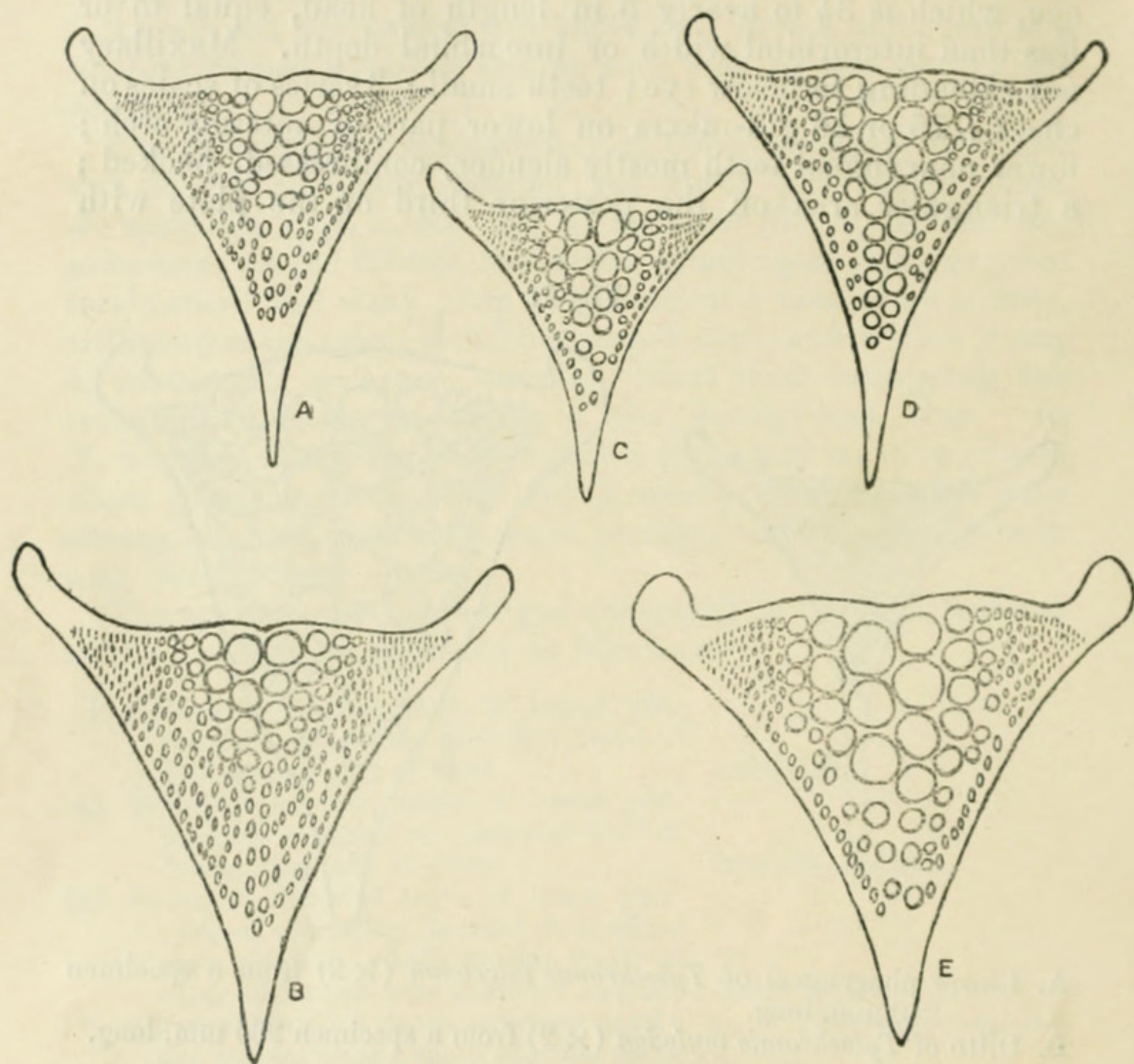
A. Lower pharyngeal of *Tylochromis microdon* ($\times 2$) from a specimen 240 mm. long.

B. Ditto of *Tylochromis mylodon* ($\times 2$) from a specimen 235 mm. long.

moderately enlarged, rounded, blunt teeth. Dorsal XIV–XVI 12–15; spines rapidly increasing to fifth or sixth, which is $\frac{2}{5}$ or a little more than $\frac{2}{5}$ length of head, thence decreasing or subequal. Anal III 7–8; third spine strong, about $\frac{1}{2}$ length of head. Pectoral longer than head and reaching anal in the young, but not in the adult. Caudal scaly, truncate or slightly emarginate. Caudal peduncle longer than deep. Scales 33 to 35 in a longitudinal series, 6 between origin of dorsal and lateral line, 22 to 26 in upper lateral line, 22 to 24 in lower, 2 between lateral lines.

Olive; scales with dark edges; dark longitudinal stripes between the series of scales; a dark bar above the operculum; sides of head with a dark network (adult); fins greyish; dorsal sometimes with pale and dark spots.

Fig. 2.



- A. Lower pharyngeal of *Tylochromis lateralis* ($\times 2$) from a specimen 220 mm. long.
 B. Ditto of *Tylochromis jentinki* ($\times 2$) from a specimen 270 mm. long.
 C. Ditto of *Tylochromis labrodon* ($\times 2$) from a specimen 140 mm. long.
 D. Ditto of *Tylochromis bangwelensis* ($\times 2$) from a specimen 240 mm. long.
 E. Ditto of *Tylochromis polylepis* ($\times 2$) from a specimen 220 mm. long.

Congo.

Four specimens, 155 to 260 mm. in total length, from Lakes Tumba and Leopold II.

2. *Tylochromis lateralis*.

Pelmatochromis lateralis, Bouleng. Proc. Zool. Soc. 1898, p. 148.

Pelmatochromis lepidurus, Pellegr. Bull. Mus. Paris, 1900, p. 275.

Pelmatochromis lateralis (part.), Bouleng. Cat. Afr. Fish. iii. p. 385, fig. 260 (1915).

Depth of body 2 to $2\frac{1}{2}$ in the length, length of head $2\frac{1}{2}$ to $3\frac{1}{4}$. Diameter of eye 3 to 4 in length of head; interorbital width $3\frac{1}{4}$ to $3\frac{3}{4}$. Teeth small; maxillary not extending to below eye; cheek with 3 or 4 series of scales; 17 or 18 gill-rakers on lower part of anterior arch. Lower pharyngeal with enlarged rounded teeth in a triangular area, the anterior angle of which is in the middle of the length of the denticulous part of the plate. Dorsal XIV-XV 12-15; last spine $\frac{1}{2}$ or a little less than $\frac{1}{2}$ length of head. Anal III 7-8; third spine from nearly $\frac{1}{2}$ to $\frac{3}{5}$ length of head. Pectoral longer than head, reaching origin of anal. Caudal slightly emarginate. Caudal peduncle about as long as deep. 32 to 35 scales in a longitudinal series, 5 or 6 between first dorsal spine and lateral line, 2 between lateral lines.

Olivaceous, with or without dark cross-bars; dorsal fin usually with series of dark spots.

Congo.

Six specimens, including the type of the species, 110-220 mm. in total length, from Monsembe, Bolobo, Dolo, and Stanley Falls.

3. *Tylochromis jentinki*.

Pelmatochromis jentinki (Steind., 1894), Bouleng. Cat. Afr. Fish. iii. p. 383, fig. 259 (1915).

Pharyngeal dentition as in *T. lateralis*, from which it is distinguished especially by the fewer gill-rakers (12-15), the smaller scales (40-45), and by having three series of scales instead of two between the upper lateral line and the anterior part of the lower. Dorsal XIII-XV 16-17. Anal III 8-9.

Total length 290 mm.

Gambia to Liberia.

4. *Tylochromis bangwelensis*, sp. n.

Pelmatochromis lateralis (part.), Bouleng. Cat. Afr. Fish. iii. p. 385 (1915).

Depth of body 2 to $2\frac{1}{2}$ in the length, length of head 3 to $3\frac{1}{4}$. Snout as long as postorbital part of head; diameter of eye 4 to $4\frac{1}{2}$ in length of head, less than præorbital depth; interorbital width 3 to $3\frac{1}{2}$ in length of head; maxillary not extending to below eye; outer teeth moderately strong; three series of scales on cheek; 14 or 15 gill-rakers on lower part

of anterior arch. Lower pharyngeal with slender hooked teeth only at the outer edges and near the posterior angles; area of large rounded teeth extending forward on anterior half of plate. Dorsal XIV 14-15; spines increasing in length to last, which is $\frac{1}{2}$ or a little more or less than $\frac{1}{2}$ length of head. Anal III 7-8; third spine from less than $\frac{1}{2}$ to nearly $\frac{3}{8}$ length of head. Pectoral longer than head, extending to above anterior part or middle of anal. Caudal truncate or slightly emarginate. Caudal peduncle longer than deep. 37 or 38 scales in a longitudinal series, 6 or 7 from first dorsal spine to lateral line, 24 to 29 in lower, 2 between lateral lines.

Olivaceous; often a dark spot on each scale; sometimes six dark cross-bars; vertical fins with or without dark spots.

Lake Bangwelu and Luapula River.

Five specimens, 170 to 240 mm. in total length.

5. *Tylochromis intermedius*.

Pelmatochromis intermedius, Bouleng. Cat. Afr. Fish. iv. p. 332, fig. 193 (1916).

Pharyngeal dentition nearly as in *T. bangwelensis*, from which it is distinguished by the fewer gill-rakers (12 or 13) and the more numerous scales (39-40). Dorsal XIV 15-17. Anal III 7-9.

Total length 110 mm.

Sierra Leone.

6. *Tylochromis labrodon*, sp. n.

Pelmatochromis lateralis (part.), Bouleng. Cat. Afr. Fish. iii. p. 385 (1915).

Depth of body $2\frac{1}{4}$ in the length, length of head $2\frac{4}{5}$ to 3. Snout as long as or a little longer than postorbital part of head; diameter of eye 3 to $3\frac{3}{4}$ in length of head, greater (young) or less than præorbital depth; interorbital width 3 to $3\frac{1}{2}$ in length of head; maxillary not extending to below eye; teeth small; three series of scales on cheek; 18 or 19 gill-rakers on lower part of anterior arch; lower pharyngeal with slender teeth only at the outer edges and near the posterior angles; area of large rounded teeth extending forward on anterior half of plate. Dorsal XV-XVI 13; spines subequal from sixth or increasing to last, which is $\frac{1}{2}$ or a little less than $\frac{1}{2}$ length of head. Anal III 7; third spine as long as last dorsal. Pectoral about as long as head, not or barely reaching origin of anal. Caudal slightly emarginate. Caudal peduncle not longer than deep. 33 or 34 scales in a longitudinal series, 6 or 7 from first dorsal spine to lateral line, 24 to 27 in upper lateral line, 26 to 28 in lower, 2 between lateral lines.

Olivaceous ; dorsal with alternate series of pale and dark spots.

Upper Congo.

Three specimens, 110 to 225 mm. in total length, from New Antwerp and Stanley Pool.

7. *Tylochromis polylepis*.

Pelmatochromis polylepis (Bouleng., 1900), Bouleng. Cat. Afr. Fish. iii. p. 382, fig. 258 (1915).

Well distinguished from its congeners by its smaller scales (55-60). Pharyngeal dentition nearly as in *T. labrodon*, but teeth still larger.

Total length 300 mm.

Tanganyika.

8. *Tylochromis mylodon*, sp. n.

Pelmatochromis lateralis (part.), Bouleng. Cat. Afr. Fish. iii. p. 385 (1915).

Depth of body 2 to $2\frac{1}{2}$ in the length, length of head 3. Diameter of eye $3\frac{1}{4}$ to $4\frac{1}{4}$ in length of head, interorbital width $3\frac{1}{2}$ to $3\frac{3}{4}$. Teeth small; maxillary not extending to below eye; three series of scales on cheek; 17 or 18 gill-rakers on lower part of anterior arch; lower pharyngeal a very strong plate, almost covered with large, rounded, blunt teeth. Dorsal XIV 14; spines subequal from fifth or sixth; last $\frac{2}{5}$ or a little less than $\frac{2}{5}$ length of head. Anal III 7; third spine $\frac{1}{2}$ or a little less than $\frac{1}{2}$ length of head. Pectoral longer than head, reaching anal. Caudal peduncle longer than deep. 40 or 41 scales in a longitudinal series, 7 from first dorsal spine to lateral line, 27 to 29 in upper lateral line, 34 or 35 in lower, 2 between lateral lines.

Olivaceous, with six dark cross-bars; fins unspotted.

Lake Mweru.

Two specimens, 115 and 235 mm. in total length.

XXIII.—Notes on the Asilidæ: Sub-division Asilinæ.

By GERTRUDE RICARDO.

PROMACHUS, Loew.

Linn. Ent. iii. p. 390 (1848).

Trupanea, Macq. Dipt. Exot. i. (2) p. 207 (1838) [præocc. Schrank, Dipt. (1803)].

This large genus is very largely represented in the South African Region, and probably many more new species will



Regan, C. Tate. 1920. "A revision of the African cichlid fishes of the genus *Tylochromis*." *The Annals and magazine of natural history; zoology, botany, and geology* 5, 163–169.

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