

A REVIEW OF THE CEPOLIDÆ OR BAND-FISHES OF JAPAN.

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In this paper is given a review of the species of Band-fishes or *Cepolidæ* known to inhabit the shores of Japan. The material studied is in the museum of Leland Stanford Junior University and in the United States National Museum. It was chiefly collected by Messrs. Jordan and Snyder during the summer of 1900.

Family CEPOLIDÆ.

BAND-FISHES.

Body very elongate, compressed, band-like, covered with small cycloid scales, lateral line obscure. Head obtuse; cleft of the mouth wide and oblique; teeth moderate on jaws only; eyes large, lateral; gill-openings wide, the membranes not united, free from the isthmus; gills 4; pseudobranchiæ present; branchiostegals 6; air-bladder large; pyloric cœca few. Skull well ossified. Dorsal and anal fins each very long, composed of slender rays, which are either simple or branched and more or less distinctly articulated; both fins more or less joined to the caudal; ventral fins thoracic, their rays 1, 5.

Coasts of tropical Europe and Asia; shore fishes of a deep red color; a peculiar group, having something in common with the *Ophidiidæ*, but with the normal ventrals thoracic, in position of the ordinary percoid fishes. Its relations are perhaps nearer the *Latilidæ* than any other of the better known groups.

- a. Preopercle unarmed; dorsal rays more or less distinctly articulate, usually branched. *Cepola*, 1.
aa. Preopercle with 4 to 8 blunt spinous teeth; dorsal rays indistinctly articulated, not branched. *Acanthocephala*, 2.

1. CEPOLA Linnæus.

Cepola LINNÆUS, Syst. Nat., 12th ed., I, 1769, p. 445 (*tænia*).

This genus includes the *Cepolidæ* which have the preopercle unarmed; dorsal rays rather distinctly articulate, and in typical species also distinctly branched.

(*cepola*, a name unexplained, probably of Italian origin.)

I. CEPOLA SCHLEGELI Bleeker.

AKADASHI (RED WEASEL).

Cepola krusensterii SCHLEGEL, Fauna Japonica, Poiss., 1845, pl. LXXI. fig. 1; Nagasaki, not description.—NYSTROM, Svensk, Ak. Handl., 1887, p. 39; Nagasaki.
Cepola schlegeli BLEEKER, Nat. Tijds. Ned. Ind., 1854, Japan, p. 412; Kaminoseki; Verh. Bat. Gen., XXVI, 1854, Japan, p. 110; Act. Soc. Sci. Ind. Neerl., VI, 1859, p. 256.—GÜNTHER, Cat. Fish., III, 1861, p. 488.—STEINDACHNER and DÜDERLEIN, Fische Japans, IV, 1887, p. 12; Tokyo, Kochi, Tango.—ISHIKAWA, Prel. Cat., 1897, p. 32; Bingo.—JORDAN and SNYDER, Check List, Fish, Japan, 1901, p. 111.

Head 10 in length; depth 12; D. more than 70; A. more than 60; P. 18; V. I-5; scales more than 300; eye 3 in head; width of head $1\frac{2}{3}$ in height. Pectoral $1\frac{2}{3}$ to $1\frac{1}{4}$ in head. Body elongate, strongly compressed. Head obtusely convex, longer than high; snout half the length of the eye, profile convex; maxillary reaching below posterior part of eye, oblique; teeth in jaws uniserial, curved and conic; preopercle without spines; opercle a little over 3 in head. Scales very small, present on opercles. Lateral line concurrent with back. Dorsal, anal, and caudal continuous; pectoral rounded.

Color, body and fins rosy; the membrane between premaxillary and maxillary with a black spot.

Length 212 mm. Kaminoseki, in the sea. (Bleeker.) In young examples, the spines on the lower margin of the preoperculum are sharp and pointed, and the body is much shorter and deeper in comparison with the length of the head. In most all of the specimens the dark spot hidden between the maxillary and intermaxillary is evident.

No specimens were taken by us, although the species is said to be not rare in southern Japan. Our description is condensed from that of Dr. Bleeker, made from a specimen from Kaminoseki on the inland sea.

2. ACANTHOCEPOLA Bleeker.

Acanthocepola BLEEKER, Versl. Ak. Amsterd., VIII, 1874, p. 369 (*krusensterii*).

This genus includes those *Cepolidæ* in which the preopercle is armed with 4 to 8 blunt spines. The dorsal rays are simple and indistinctly articulate. Color bright red.

(ἄκανθα, spine; *cepola*.)

- Scales small, about 150 in a longitudinal series; D. 80, A. 76; no black dorsal spot, so far as known; preopercle with about 5 blunt spines; dorsal and anal fins margined with blackish.....*krusensterni*, 2.
 a. Scales minute, about 300 in a longitudinal series. Preopercle with about 7 blunt spines. D. 104; A. 105; a black spot in front of dorsal; dorsal not conspicuously margined with blackish; anal brown-edged.....*limbata*, 3.

2. ACANTHOCEPOLA KRUSENSTERNI (Schlegel).

SAKENOUWO (WINE-FISH); AKATACHIWO (RED BLENNY);
 RINGUROTAIMATSU.

Cepola krusensterni SCHLEGEL, Fauna Japonica, Poiss., 1845,^a p. 130 (not figure); Nagasaki.—BLEEKER, Verh. Bat. Gen., Ichth. Japan, XXV (1854), p. 39; Natursk. Tijds. Nederl. Ind., VI, 1854; p. 411; Verh. Bat. Gen., XXVI, Japan, 1854, p. 108; Act. Soc. Sc. Indo. Neerl., III, Japan, 1859, pl. II, fig. 1.—GÜNTHER, Cat. Fish., III, 1861, p. 488, Japan.—STEINDACHNER and DÖDERLEIN, Fische Japans, IV, 1887, p. 32; Tokyo.—ISHIKAWA, Prel. Cat., 1897, p. 32; Wakayama, Nagasaki.

Cepola hungta RICHARDSON, Ichth. China, 1846, p. 277; Canton.

Head $11\frac{2}{5}$ in length; depth $13\frac{2}{5}$; D. 80; A. 76; P. I-17; V. I-5; scales 164, 28 in a vertical series in front. Body very elongate, compressed, and covered with cycloid scales, which are very small on the anterior part of the body. Head longer than deep, compressed; eye larger than the snout, in the front of the head above, $3\frac{1}{3}$ in the head and $1\frac{1}{2}$ in the maxillary; snout very bluntly rounded, with the lower jaw produced; mouth very oblique, superior, and the jaws each with a single series of strong teeth; lips moderately fleshy; maxillary extending to below the middle of the eye; interorbital space flattened, $1\frac{1}{2}$ in the eye. Gill-opening large; the gill-rakers numerous, long, and slender; lower margin of the preoperculum armed with five blunt and rather broad spines. Dorsal, caudal, and anal confluent, the origin of the former a little in advance of the posterior margin of the gill-opening; dorsal low, more or less equal in height; caudal produced into a filamentous point; the origin of the anal at the tips of the pectorals, and, like the dorsal, the fin low; pectorals in the lower half of the body behind the gill-opening and about $1\frac{1}{3}$ in the head; ventrals below, a trifle behind pectorals and nearly equal in length, but produced into a point.

Color in spirits, almost uniform pale brown, the anal and caudal narrowly margined with blackish, with some spots a little deeper in color; no black spot on dorsal. In life bright cherry-red, with spots of rather deeper shade.

^a According to Mr. Edgar R. Waite (in lit.), the dates of publication of the different parts of the volume on Fishes of the Fauna Japonica are as follows:

- Decade I, pp. 1-20, 1842.
 Decades II-IV, pp. 21-72, 1843.
 Decades V-VI, pp. 73-112, 1844.
 Decades VII-IX, pp. 173-269, 1845.
 Decades X-XIV, pp. 173-269, 1846.
 Decade XV, pp. 270-324, 1850.

Length $20\frac{5}{16}$ inches. Here described from Nagasaki specimens.

This species is common through Southern Japan, being far more abundant than *Cepola schlegeli*. Our specimens are from Tokyo, Misaki, Wakanoura, Onomichi, Nagasaki, Mogi, and Obama.

(Named for the traveler, Krusenstern.)

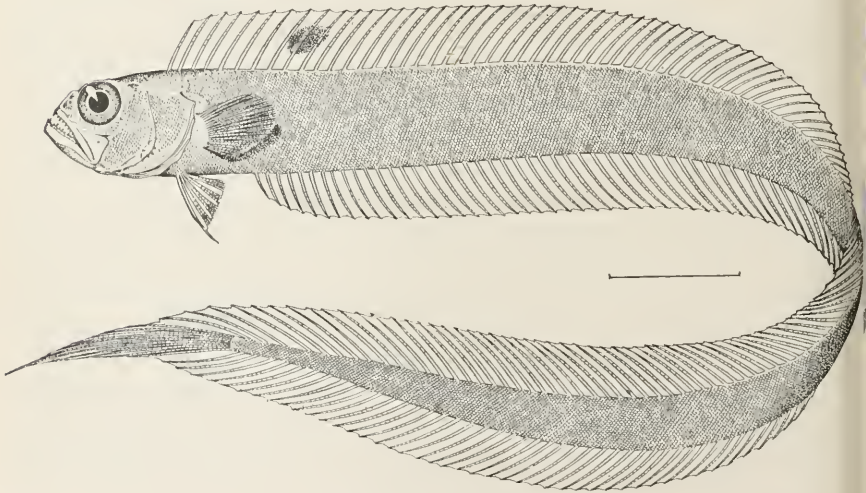
3. ACANTHOCEPOLA LIMBATA (Cuvier and Valenciennes).

Cepola limbata CUVIER and VALENCIENNES, Hist. Nat. Poiss., X, 1835, p. 402; Japan, after Krusenstern, pl. LX, fig. 2 (dorsal and anal bordered with deep red; a small black spot on front of dorsal; sides of body with red points).—GÜNTHER, Cat. Fish, III, 1861, p. 489, copied.—NYSTROM, Svensk, Vet. Handl., 1887, p. 39; Nagasaki. (D. more than 80; head 9 in body.)

Cepola marginata CUVIER and VALENCIENNES, Hist. Nat. Poiss., X, 1835, p. 402; Japan, after Krusenstern, pl. LX, fig. 1 (brick red, dusted with dark points, fins bordered with brick red; dorsal spot black, smaller than in the preceding).—GÜNTHER, Cat. Fish, III, 1861, p. 489. Copied.

Cepola mesoprion BLEEKER, Verh. Bat. Gen., XXVI, Japan, 1854, p. 109; Nagasaki.—GÜNTHER, Cat. Fish, III, 1861, p. 488.

Acanthocephala mesoprion JORDAN and EVERMANN, Proc. U. S. Nat. Mus., XXV, 1902, p. 363; Giran, Formosa.



ACANTHOCEPOLA LIMBATA.

Of this species, distinguished by the very small size of the scales and the very large number of the fin rays, we have examined one specimen from Giran, Formosa. This specimen is certainly typical of *Acanthocephala mesoprion* and *A. limbata* is probably the same.

A description and good figure (see above) of this specimen has been published Jordan and Evermann.^a

^aProc. U. S. Nat. Mus., XXV, 1902, p. 363.