

A New Conger-like Eel, *Muraenesox yamaguchiensis*,
from the Inland Sea of Japan

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While engaging in the ecological study of *Muraenesox cinereus* (FORSKAL) taken from the Inland sea of Japan, we found a interesting species closely related to the former. Upon careful examination of this fish, it was found to represent a new species, and described heren as *Muraenesox yamaguchiensis*.

We wish to express our hearty thanks to Prof. Kiyomatsu MATSUBARA for his kindness extended to us in various ways. We are also greatly indebted to Mr. Akira OCHIAI and Mr. Tosio YOSIOKA.

Muraenesox yamaguchiensis sp. nov.

(New Japanese name: Suzuhamo)

Holotype.—Katayama's Fish Coll. No. 1764, 908 mm in total length, at Kudamatsu fish market, Yamaguchi Prefecture, July 1, 1953.

Paratype.—11 specimens, Nos. 1752 to 1756, 1072 to 1412 mm, 1758 to 1763, 940 to 1288 mm, off Kudamatsu, June 4 to 10, 1953.—3 specimens, Nos. 1806 to 1807 and 1811, 789 to 1445 mm and 1011 mm, off Kaminoseki, July 18, 1952.—1 specimen No. 1757, 1743 mm, off Murozumi, July 2, 1953.

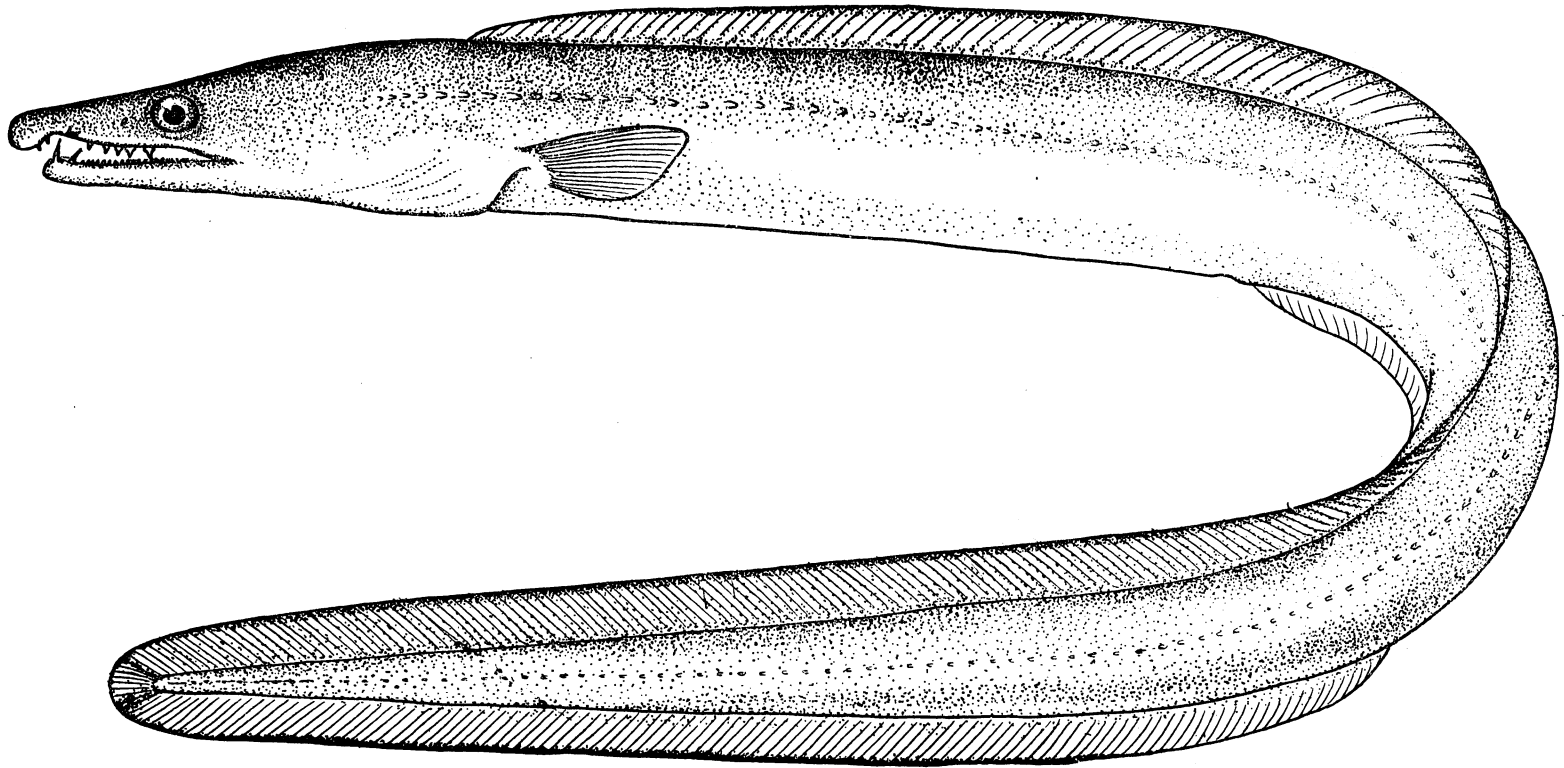
Description.—P. 17. Pores in lateral line 132; 35 before the vent. Head length (snout to gill opening) 6.05 in total length and 1.51 in trunk length. Body depth (behind the tip of pectoral fin) 15.65 in total length and 2.58 in head length. Trunk length 4.00 in total length; tail length 1.74. Snout to anus 2.41 in total length; 1.37 in tail length. Snout length 3.57 in head length; upper jaw length 1.55; eye diameter 9.68; interorbital width 7.87; pectoral fin length 2.83.

Body nearly cylindrical anteriorly, compressed posteriorly. Snout long, rather pointed, projecting in front of tip of lower jaw by a distance equal to half the diameter of eye. Eye rather small; the upper margin of eye near the the upper profile of head. Interorbital space slightly convex, a little wider than diameter of eye.

Mouth large, the gape extending considerably beyond eye. Teeth in premaxillary-ethmo-vomer set in three long series, the middle of which is formed by large compressed, and tricuspid teeth, the central cusp much the largest, and the lateral series by small teeth; tip of the bone and mandible with several strong and large canines; maxillary teeth small and set irregularly in three or four series; mandibular teeth small and set in three series, the middle of which is formed by rather large tricuspid teeth.

Anterior nostril tubular, on the side of snout, slightly behind the notch of upper jaw; posterior nostril in front of the middle of the eye; it is large, rounded and with entire rim.

Gill openings wide, longer than eye diameter, the width 1.61 in snout length the



50
mm

Fig. 1. *Muraenesox yamaguchiensis*, new species. After holotype.

openings well separated, the distance between them on lower side of body, about equal to 1.7 in eye diameter. Gill 4; gill rakers absent.

Lateral line well developed, the insertion half way between snout and base of pectoral fin.

Dorsal inserted a little before the vertical through the gill opening; caudal originating immediately behind the anal opening; pectoral large and pointed, the base of pectoral equal to eye diameter.

In formalin, head and body uniformly dark grayish brown, but the lower side of them whitish; pectoral fin pale; posterior marginal portions of dorsal and anal fins dark; dorsal fin gray; anal fin pale.

Frontal bones not swollen extraordinarily at any stage of growth. Opercle thick; the inner surface concave; the upper margin generally shallowly concave. Interorbital opening long and rather narrow (Fig. 2). Otlith ovoid, the upper margin denticulated in adult. Vertebrae 130-135.

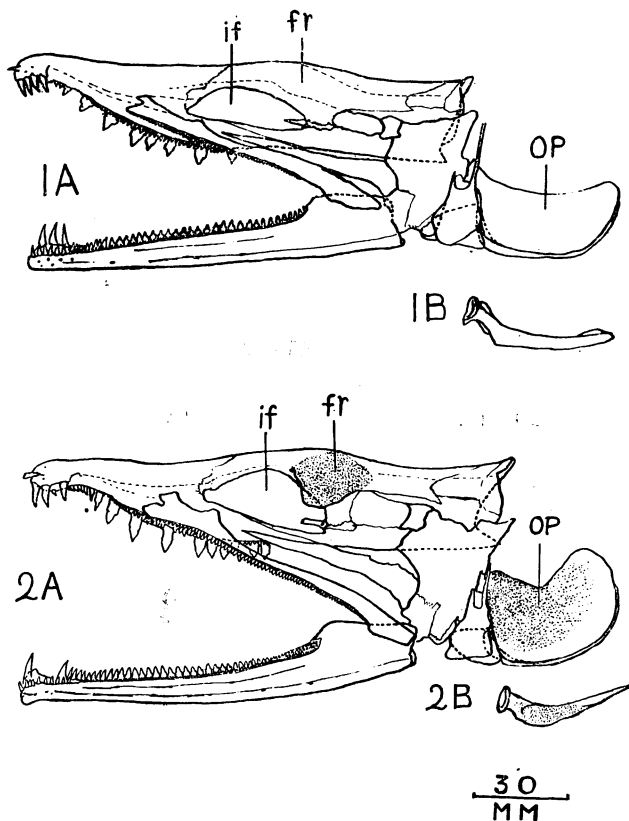


Fig. 2. Lateral view of head skeleton (A) and ventral view of opercle (B) in *Muraenesox yamaguchiensis* (144.5 cm in total length) (1) and *M. cinereus* (132.5 cm) (2). if, interorbital opening; fr, frontal bone; op, opercle.

The above description of the external characters is based on the holotype and the internal characters are given from the examinations of paratypes. The counts and

proportional measurements of the paratypes vary rather extensively except for the number of pectoral rays as shown in Table 1, which are based upon 5 males and 10 females.

Table 1. Counts and proportional measurements in paratypes of *Muraenesox yamaguchiensis*, new species.

Items	Male				Female			
	No.	Range	Average	Standard deviation	No.	Range	Average	Standard deviation
Total length	5	94 cm-117 cm	107.8 cm	10.44	10	78.9cm-174.3cm	122.0cm	26.29
Pores in lateral line	5	129-135	131.4	2.06	9	126-134	127.7	2.33
Pores in lateral line before the vent	5	36-37	36.6	0.47	10	35-38	36.6	0.83
Pectoral rays	5	17			10	17		
Vertebrae	5	130-134	131.8	1.33	10	131-135	133.0	1.10
In total length								
Head length	5	6.21-7.04	6.36	0.32	10	5.45-7.29	6.18	0.45
Body depth	5	15.68-18.08	16.20	0.98	10	13.83-19.44	15.40	1.74
Trunk length	5	3.60-3.85	3.70	0.09	10	3.06-3.74	3.47	0.20
Tail length	5	1.76-1.87	1.79	0.05	10	1.79-2.09	1.70	0.06
Snout to anus	5	2.20-2.38	2.32	0.63	10	1.96-2.34	2.19	0.12
In head length								
Snout length	5	3.33-3.64	3.44	0.12	10	3.41-3.98	3.56	0.15
Eye diameter	5	9.47-11.77	10.30	0.87	10	9.72-11.70	10.25	0.84
Interorbital width	5	6.76-9.47	7.80	0.81	10	7.25-9.47	7.85	0.71
Pectoral fin length	5	3.07-3.53	3.22	0.16	10	2.72-3.56	3.01	0.05
In trunk length								
Head length	5	1.59-1.96	1.68	0.13	10	1.61-1.91	1.72	0.09
In tail length								
Snout to anus	5	1.18-1.35	1.28	0.07	10	0.94-1.30	1.21	0.10

Distribution.—The present species living in muddy bottom of Kudamatsu, Murozumi and Kaminoseki, Yamaguchi Prefecture, situated on the coast of the Inland Sea and captured by the Hamo long line especially in the rainy season (June and July).

Remarks:—The present new species closely resembles *Muraenesox cinereus* (FORSKAL.), but these species can be distinguished by the following characteristics:

	<i>Muraenesox cinereus</i>	<i>M. yamaguchiensis</i>
(1) Pores in lateral line	146-154	126-135
before the vent	40-47	35-38
(2) Vertebrae	145-154	130-135
(3) Frontal bones swollen extraordinarily in total length 60-80 cm, forming a thick porous mass on each side of the cranium	not swollen extraordinarily at any stage of growth

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| (4) Posterior half part of opercle thine;
the inner side flat; the upper
margin deeply concave | Opercle thick; the inner side concave;
the upper margin shallowly concave |
| (5) Interorbital opening rather wide |rather narrow |
| (6) The upper margin of otolith wavy
in adult |denticulated |

The Japanese Hamo has been identified with *M. cinereus* of the Red Sea by GÜNTHER (1870), JORDAN and SNYDER (1901) and Japanese ichthyologists. In the anatomical study of *M. cinereus*, GÜNTHER described that the frontal bones are swollen, forming a thick porous mass on each side of the cranium and vertebral formula is $65+87=154$. His species is obviously identical with our species of *M. cinereus*.

It should be mentioned that the present fish grows larger, attains to 2 meters and fiercer than *M. cinereus*.

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