Japanese Journal of Ichthyology
Vol. 25, No. 2 1978

魚類学雑誌
25巻2号 1978年

First Record of the Percichthyid Fish *Howella parini* from Japan

Kunio Amaoka, Kazuhiro Nakaya and Koji Abe

(Received December 17, 1977)

Howella is a genus of deepsea fishes belonging to the family Percichthyidae, and is similar to apogonid fishes in general appearance. Recently, Fedoryako (1976) reported two species, *H. sherborni* and *H. zina* from the southwestern and southern waters of Japan in his taxonomical and distributional study on this group.

On May 5, 1970, one specimen (74 mm in SL) of *Howella parini* Fedoryako, 1976, was collected from a depth of 320～430 m, off Kushiro (42°40′N, 144°10′E) by a beam trawl net for shrimp. Previously only two specimens of the present species from the northwestern waters of the Hawaiian Islands were known. In this paper, the specimen is described as the first record from Japan and the third specimen of this species. The new Japanese name, "Kushi-sumikuiuo" is proposed for this fish.

The specimen was preserved in 10% formalin and deposited in the Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University (HUMZ 59468). Methods used for counting and measuring were chiefly those of Hubbs and Lagler (1958) and partly those used by Mead and De Falla (1965).

Description. Counts and proportional measurements are shown in Table 1.

Body compressed and relatively deep, greatest body depth at origin of dorsal fin, more than 1/3 of standard length. Dorsal contour evenly curved to origin of dorsal fin, slightly decreasing on straight line to origin of second dorsal fin, and then sharply descending to end of second dorsal fin. Ventral contour nearly straight from below center of eye to origin of anal fin, and then sharply rising to end of anal fin. Caudal peduncle slender and elongate, its depth slightly less than half of head length.

Head large, about 1/3 of standard length. Snout blunt and short, its length about half of eye diameter. Eye very large, its dorsal margin in line with dorsal profile of head. Interorbital flattish, its width 1/4 of head length.

Mouth moderate and oblique, tip of both jaws in same vertical line, maxillary extending to below anterior 1/3 of eye. Anterior portions of premaxillary and maxillary covered by preorbital bone. Teeth on both jaws small and conical, in a single row, those on lower jaw somewhat larger than upper ones. Vomer and palatine toothless. A spine on anterior and posterior margins of orbit short and broad basally, anterior spine more indistinct and shorter than the posterior. Preoperculum serrated, with about 20 short feeble spines, some middle ones stronger; all spines slightly projecting beyond its posterior margin. Operculum armed with 4 spines; first spine moderate in size and well separated from others; second and third spines close-set and fused basally, second one largest and strongest; third bifurcate at tip; lowermost smallest. Suboperculum with a group of sharp spines

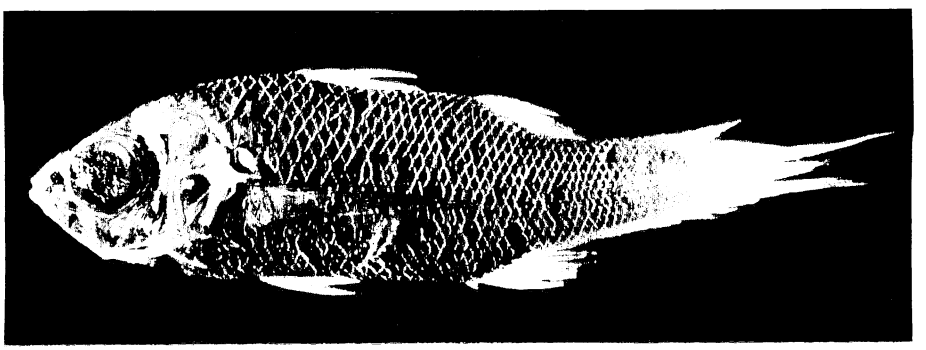

Fig. 1. *Howella parini* Fedoryako from off Kushiro, Hokkaido, Japan, HUMZ 59468, 74 mm in SL.

Table 1. *Howella parini*: proportional measurements (percent of standard length) and counts of the present specimen (HUMZ 59468), and comparison between the specimen and the type specimens described by Fedoryako (1976). Parenthesized data and those with asterisks show proportional dimensions in head length and in standard length respectively.

Character	Present specimen	Fedoryako (1976)	
		Holotype	Paratype
Total length (mm)	96.6	—	—
Standard length (mm)	74.0	97.2	76.4
Depth of body	29.7(3.4)*	30.2(3.3)*	31.5(3.2)*
Width of body	15.5(2.3)	16.5	14.7
Head length	35.7(2.8)*	34.5(2.9)*	36.4(2.7)*
Depth of caudal peduncle	13.0(2.8)	12.7(2.8)	11.8(3.1)
Snout	7.4(4.8)	7.7	8.9
Upper jaw	13.5(2.6)	13.5	13.6
Interorbital width	8.9(4.0)	9.5	9.6
Eye diameter	13.1(2.7)	13.1	12.9
Longest spine of 1st dorsal	16.4(2.2)	13.9	12.6
Longest ray of 2nd dorsal	14.7(2.4)	11.5	12.6
Longest anal ray	13.5(2.6)	11.9	11.9
Pectoral fin	33.2(1.1)	37.0	36.0
Pelvic fin	18.9(1.9)	19.0	20.1
Base of 1st dorsal	14.2(2.5)	—	—
Base of 2nd dorsal	10.8(3.3)	—	—
Base of anal	10.2(3.5)	—	—
Between dorsals	12.0(3.0)	—	—
Between dorsal origins	27.0(1.3)	28.4	27.6
Pelvic origin to anus	30.4(1.2)	32.2	30.5
Anal origin to anus	3.5(10.2)	3.0	2.6
Preanal	65.0(1.5)*	66.2	68.4
Predorsal	41.2(1.8)*	40.1	41.3
Prepelvic	34.6(2.1)*	35.1	37.1
Prepectoral	35.1(2.1)*	35.1	37.1
First dorsal	VIII	VIII	VIII
Second dorsal	I, 9	I, 9	I, 9
Anal	III, 7	III, 7	III, 7
Pectoral	16	14	16
Pelvic	I, 5	I, 5	I, 5
Scales on lateral line	51	52, 53	50
Scales on transverse row	17	16～17	16～17
Gillrakers	8+1+20=29	8+1+22=31	8+1+20=29
Pseudobranchiae	16	17～18	—
Vertebrae	10+16=26	—	—

on lower angle and a feeble spine above it, uppermost of grouped spines longest and strongest. Interoperculum with 3 spines on its angle, uppermost largest and strongest, decreasing in size anteriorly. Posttemporal having 3 short indistinct spines, and supracleithrum with a small spine on upper part (Fig. 2A). Gillrakers on first arch long, flattish, lanceolate and close-set; anterior and posterior surfaces of each gillraker arranged with a row of short feeble spines (Fig. 2C, D).

Two dorsals well separated by a distance slightly longer than eye diameter; first dorsal originating slightly behind pelvic base, first spine shortest and fourth longest; first spine of second dorsal rather long, longer than last ray. Anal nearly opposite second dorsal, first spine about equal to first spine of first dorsal. Pectoral fin elongate, its tip extending beyond origin of anal fin. Pelvic fin inserted below pectoral base. Caudal fin forked and slender, procurrent fin rays stiff and spiny, their tips free.

Scales on body small and adherent, fins largely naked. All scales strongly ctenoid, arranged with 2 irregular rows of cteni along

apical margin; grooves small in number, extending to near focus placed extremely forward (Fig. 2B). Lateral line with a gentle curve above pectoral fin, extending to base of caudal fin, and its pores interrupted on some scales in curved portion.

Color in formalin: Body uniformly chocolate brown with abdominal portion darker, all fins translucent.

Discussion. The present specimen is referable to the genus *Howella* due to the following characters: operculum with a simple spine on upper part and a cluster of spines on the lower, suboperculum and interoperculum with some sharp spines, finely serrated margin of preoperculum, two small spines on upper margin of orbit, and elongated pectoral fin extending beyond anal origin.

In the genus *Howella*, five species are known, as far as we are aware. These are *H. brodiei* Ogilby, 1898, *H. sherborni* (Norman, 1930), *H. pammelas* (Heller and Snodgrass, 1903), *H. zina* Fedoryako, 1976, and *H. parini* Fedoryako, 1976. Among them, the present specimen agrees well only with *H. parini* in having no teeth on the vomer and palatine, 17 scales in a transverse row, 51 scales on the lateral line, ctenoid scale with irregular 2 rows of cteni, some fine spines on anterior and posterior surfaces of the gillrakers, and in other counts and most of the proportional measurements (Table 1).

Uyeno and Kubota (1970) reported *Howella simplex* (Parr), from Japanese waters, and synonymized *Bathysphyraenops* Parr, 1933 with *Howella* Ogilby, 1898 for the reason that the two characters used for separating these genera, namely, the condition of the lower spine on the operculum and the developmental degree of the second spine on the suboperculum, are variable and generically insignificant. Recently, however, Fedoryako (1976) separated *Bathysphyraenops* from *Howella* on the basis that *Bathysphyraenops* has rather long spines extending beyond the preopercular margin, two simple spines on the operculum, two well separated and about equal spines on the suboperculum, and deciduous scales. We examined some specimens from Sagami Bay used by Uyeno and Kubota, and agree with the above opinion of

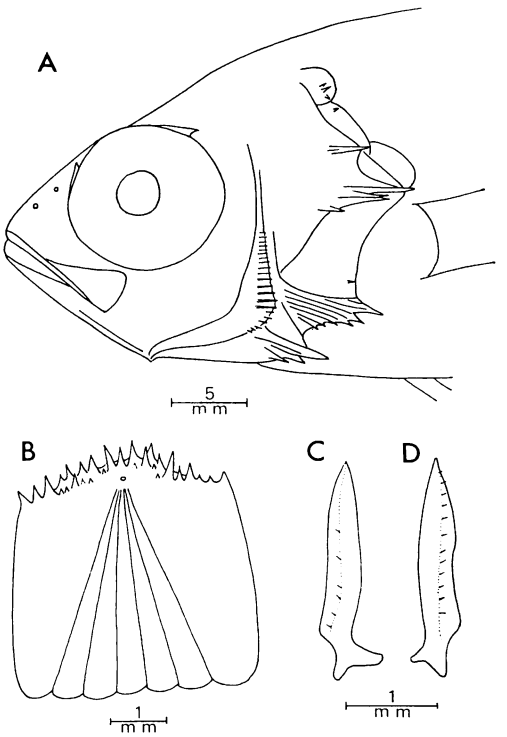

Fig. 2. *Howella parini* Fedoryako. (A) Spines on opercular bones, (B) scales on near center of body, (C) anterior and (D) posterior surfaces of longest gillraker on right side of body.

Fedoryako (1976). Thus, *H. simplex* was regarded as a member of *Bathysphyraenops*.

Various familial names have hitherto been used for the fishes of this group as shown by Uyeno and Kubota (1970) and Fraser and Fourmanoir (1971). Following them, we place the genus *Howella* in the family Percichthyidae used by Gosline (1966).

Acknowledgments

We thank the following persons: Prof. Takao Igarashi of Hokkaido University for kindness extended to us in various way, Dr. Gordon R. Williamson, Inverness, Britain, for the critical reading of our manuscript, Capt. Shigeo Honma and the crew of the fishing boat 8th Myōjin-maru for supplying us with the present specimen, and Dr. Tadashi Kubota of Tokai University for the loan of material for comparison with the specimen.

Literature cited

Fedoryako, B.I. 1976. Materials on the systematics and distribution of the "oceanic Cheilodipteridae". Trud. Inst. Okeanol., 104: 156～190, figs. 1～17. (In Russian).

Fraser, T.H. and P. Fourmanoir. 1971. The deepwater fish *Scombrosphyraena oceanica* from the Caribbean Sea with comments on its possible relationships. J.L.B. Smith Inst. Ichthyol., Rhodes Univ., Grahamstown, Spec. Publ., (8): 1～7, figs. 1～2.

Heller, E. and R.E. Snodgrass. 1903. Papers from the Hopkins Stanford Galapagos Expedition, 1898-1899. Proc. Washington Acad. Sci., 5: 189～229, 1 fig., pls. 2～20.

Hubbs, C.L. and K.F. Lagler. 1958. The fishes of the Great Lakes region. Bull. Cranbrook Inst. Sci., 26: 1～213, figs. 1～251.

Gosline, W.A. 1966. The limits of the fish family Serranidae, with notes on other lower percoids. Proc. Calif. Acad. Sci., 4th ser., 33 (6): 91～112, figs. 1～10.

Mead, G.W. and J.E. De Falla. 1965. New oceanic cheilodipterid fishes from the Indian Ocean. Bull. Mus. Comp. Zool., 134 (7): 261～274, figs. 1～3.

Norman, J.R. 1930. Oceanic fishes and flatfishes collected in 1925-1927. Discovery Rep., 2: 261～370, figs. 1～47, 1 pl.

Ogilby, J.D. 1898. Additions to the fauna of Lord Howe Island. Proc. Linn. Soc. New South Wales, 23: 730～745.

Parr, A.E. 1933. Scientific results of the third oceanographic expedition of the "Pawnee" 1927. Deepsea Berycomorphi and Percomorphi from the waters around the Bahama and Bermuda Islands. Bull. Bingham Oceanogr. Coll., 3 (6): 1～55, figs. 1～22.

Uyeno, T. and T. Kubota. 1970. On the occurrence of the deep-sea percoid fish *Howella* in Japan. Japan. J. Ichthyol., 17 (3): 117～120, figs. 1～2. (In Japanese).

(KAM and KN: Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University, Hakodate, Hokkaido 041; KAB: Hokkaido Fisheries Experimental Station, Kushiro, Hokkaido 085, Japan)

日本から初記録のクシスミクイウオ（新称）

尼岡　邦夫・仲谷　一宏・阿部　晃治

釧路沖 320～430 m の深みからえびけた網によって採集されたスズキ科 Percichthyidae, クシスミクイウオ属(新称) *Howella* に属する1個体の魚類を調査した.

本個体は鰓蓋諸骨に多くの複雑な棘を有すること, 側線鱗数および横列鱗数が著しく多いこと, 擬鰓が少ないこと, 鋤骨と口蓋骨に歯がないこと, 櫛鱗の棘が不規則に2列に並ぶこと, 鰓耙の前後面に1列の微少棘を有すること, 鱗が脱落しにくいことなどの特徴を持つ. 上記の特徴および体節的形質の一致性から本個体は Fedoryako (1976) によって記載された *H. parini* に同定された. 本種は鰓蓋諸骨に鋭い櫛状の棘をもつことから, 新和名「クシスミクイウオ」を提唱した.

本種はハワイの北西海域からの2個体に基づいて記載され, それ以後報告されていない. 従って, 本個体はこの種の第3番目のものであり, また, 日本からの本種の初記録である.

上野・久保田 (1970) によって駿河湾から報告されたトゲスミクイウオ *Howella simplex* は *Bathysphyranops* 属に移された. 従って, トゲスミクイウオ属は *Bathysphyraenops* 属に対して使用される.

(尼岡・仲谷: 041 北海道函館市港町 3-1-1　北海道大学水産学部水産動物学講座; 阿部: 085 釧路市浜町 2-6　北海道立釧路水産試験場)