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A Record of the Cottid Fish, *Icelus stenosomus* from Southern Sea of Japan

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During an ecological survey of demersal fishes in the southern part of the Sea of Japan, many specimens of a rare cottid fish, *Icelus stenosomus*, were collected by otter trawl. The species was first described by Andriashev (1937) as a subspecies of *Icelus uncinalis*, based on 27 specimens from Peter the Great Bay to Tartar Strait, Sea of Japan. Honma (1957) later recorded the subspecies from off Sado Island, Japan, but did not describe it in detail. Subsequently, Nelson (1984) recognized *I. stenosomus* as a distinct species, following examination of the two specimens from the northern part of the Sea of Japan and Tartar Strait, including it in his *I. bicornis* species-group (encompassing *I. bicornis*, *I. spatula*, *I. ochotensis*, *I. uncinalis* and *I. stenosomus*), which is characterized by having the roughly circular, enlarged scales of the dorsal row with an oblique ridge of spinules on the lateral surface, the lateral line scales with many spinules along a weakly-developed dorsal ridge and posterior margin, except for lateral line pores, and the suborbital stay without a spine. Because *I. stenosomus* has been poorly described, it is here described in detail, including sexual differences and individual variations, on the basis of 73 specimens from the southern part of the Sea of Japan, and compared with the descriptions of Andriashev (1937) and Nelson (1984).

Counting and measuring methods followed Nelson (1984). Counts and proportional measurements are given in Table 1. Vertebrae were counted from soft X-ray negatives.

Table 1. Proportional measurements and counts of *Icelus stenosomus* and *I. ochotensis*. Data indicate ranges; averages given in parentheses

Species	*Icelus stenosomus*		*Icelus ochotensis*	
Locality	Southern part of Sea of Japan		Noto Peninsula, Sea of Japan	
Sex	male	female	male	female
Number of specimens	14	20	4	9
Measurements				
Standard length (mm)	67.6–104.0 (91.7)	68.0–123.7 (103.6)	104.2–133.9 (117.4)	93.6–131.1 (116.3)
In % of SL				
Head length	33.4–37.1 (35.8)	33.2–37.2 (35.6)	40.1–41.3 (40.9)	39.1–41.5 (40.7)
Snout length	8.8–11.1 (9.8)	9.2–11.0 (10.1)	11.5–13.0 (12.1)	10.6–14.1 (12.5)
Interorbital width	1.7– 2.9 (2.1)	1.8– 2.6 (2.3)	2.3– 2.6 (2.4)	2.3– 3.6 (2.6)
Orbit diameter	10.1–12.7 (11.6)	9.2–11.9 (10.3)	11.0–11.8 (11.5)	10.0–11.2 (11.0)
Body depth	16.8–23.4 (20.1)	16.5–22.2 (19.4)	24.7–28.1 (26.7)	23.8–26.8 (26.1)
Caudal depth	4.2– 5.6 (4.8)	4.3– 5.5 (4.9)	5.2– 5.7 (5.5)	5.3– 6.1 (5.7)
Upper jaw length	11.9–18.6 (17.0)	16.3–18.8 (17.7)	20.0–21.9 (20.6)	19.6–22.7 (21.2)
Head width	14.5–19.8 (18.3)	16.0–20.5 (18.6)	17.3–21.0 (19.0)	17.3–23.7 (19.5)
Predorsal length	31.1–35.0 (33.3)	30.2–34.2 (32.7)	35.6–38.3 (37.7)	34.8–38.0 (36.6)
Counts				
Dorsal fin spines and rays	VIII–IX+17–20 (usually 18–19)		IX–X (usually IX)+18–20	
Anal fin rays	13–15 (usually 14–15)		13–14 (usually 14)	
Pectoral fin rays	14–18 (usually 17–18)		17–19	
Pelvic fin rays	I+3		I+3	
Scales of dorsal scale row	29–35		33–38 (usually 33–35)	
Lateral line scales	39–42 (usually 40–41)		40–42 (usually 41–42)	
Axillary scales	5–17		8–17	
Upper most row of axillary scales	2–5 (usually 3–4)		2–4	
Vertebral number (AV+CV)	11–12 (usually 11)+25–26 (usually 26)		11–12 (usually 11)+25–27	

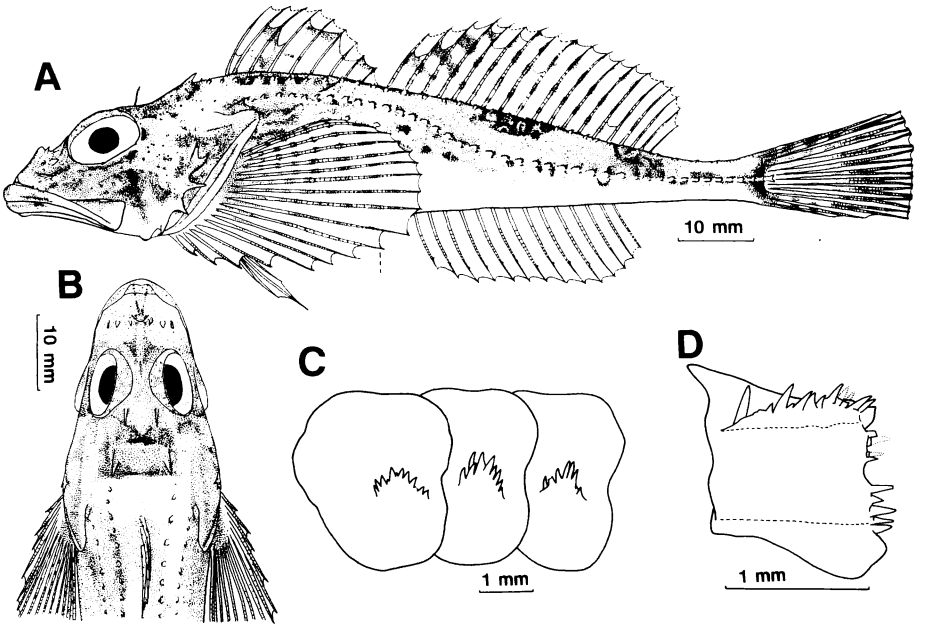

Fig. 1. *Icelus stenosomus* Andriashev from the southern part of the Sea of Japan. A) Lateral view of female, FAKU 58920, 99.8 mm SL; B) dorsal view of head, FAKU 58920; C) scales of dorsal scale row (13th–15th) of FAKU 58389, male, 87.3 mm SL; D) lateral line scale (22th) of FAKU 58389.

Icelus stenosomus Andriashev (1937)
(Japanese name: Yase-korikajika)
(Fig. 1)

Icelus uncinalis (in part, not of Gilbert and Burke, 1912): Schmidt, 1927: 3 (northern Sea of Japan); Soldatov and Lindberg, 1930: 176 (Peter the Great Bay).

Icelus uncinalis stenosomus Andriashev, 1937: 266, pl. 5, fig. 3, (no type-specimens designated; from Peter the Great Bay to northern Tartar Strait, 50°22′N, northern Sea of Japan); Taranetz, 1937: 107, 108, fig. 60 (keys); Matsubara, 1955: 1138 (keys); Honma, 1957: 111 (off Sado Island, Sea of Japan); Lindberg and Krasyukova, 1987: 194, fig. 120.

Icelus stenosomus: Nelson, 1984: 53, fig. 44, (Tartar Str., 48°08′30″N, 140°08′30″E, 115 m depth; Sea of Japan, 42°51′N, 133°56′E); Nakabo, 1993: 554, figs. (keys).

Icelus ochotensis (not of Schmidt): Suzuki and Uno, 1992: 4, fig. 5, (Oki Is. to off Hyogo Pref., Sea of Japan).

Material examined. (34 specimens measured and counted; 67.6–123.7 mm SL): FAKU (Faculty of Agriculture, Kyoto University) 57385–57386 (2♀, 103–113 mm SL) 35°32.5′N, 132°00.2′E, 181 m, 6 July 1990; FAKU 57719–57729 (3♂7♀, 83–119 mm SL) 35°27.7′N, 130°27.1′E, 200 m, 19 July 1990; FAKU 58339–58345 (7♂, 68–98 mm SL) 35°28.6′N, 130°11.4′E, 186 m, 20 July 1990; FAKU 58389–58393 (3♂2♀, 87–124 mm SL) 35°36.1′N, 130°59.7′E, 193 m, 10 July 1990; FAKU 58398–58404, (7♀, 68–108 mm SL) 35°39.3′N, 131°34.7′E, 163 m, 9 July 1990; FAKU 58410 (1♂, 104 mm SL) 35°27.6′N, 130°09.9′E, 163 m, 20 July 1990; FAKU 58920–58921 (2♀, 99–100 mm SL) 35°26.0′N, 130°29.1′E, 173 m, 18 July 1991. 39 specimens not measured or counted, males 72–104 mm SL, females 88–131 mm SL; FAKU 58808–58811 (3♂1♀) 35°32.5′N, 132°00.3′E, 180 m, 8 July 1991; FAKU 58823–58825 (1♂2♀) and HUMZ (Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University) 133164–133165 (1♂1♀) 35°35.3′N, 130°59.9′E, 184 m, 6 July 1991; FAKU 58831–58837 (4♂3♀) and NSMT-P (National Science Museum, Tokyo) 46379 (2♂2♀) 35°39.0′N, 131°34.1′E, 163 m, 14 July 1991; FAKU 58890–58904 (6♂9♀) and HUMZ 133166–133167 (1♂1♀) 35°28.3′N, 130°27.9′E, 200 m, 18 July 1991; FAKU 58917 (1♀) 35°35.1′N, 131°27.8′E, 144 m, 14 July 1991; FAKU 58918 (1♂) 35°27.2′N, 130°11.0′E, 161 m, 5 July 1991.

Capture sites and literature records are shown in Figure 2.

Diagnosis. *Icelus stenosomus* differs from other species of the *I. bicornis* group of Nelson (1984) in the following characters. General body shape and head more slender. Lateral line scales extending past posterior edge of hypural plate, one lateral line scale on caudal fin. A pair of caudal peduncle scales present. Reticulate white vermiculate lines on lateral body surface. Small scales bearing a minute prickle scattered sparsely on dorsal surface of the head.

Description. Body elongated, slightly compressed. Head large, compressed. Eye large. Inter-

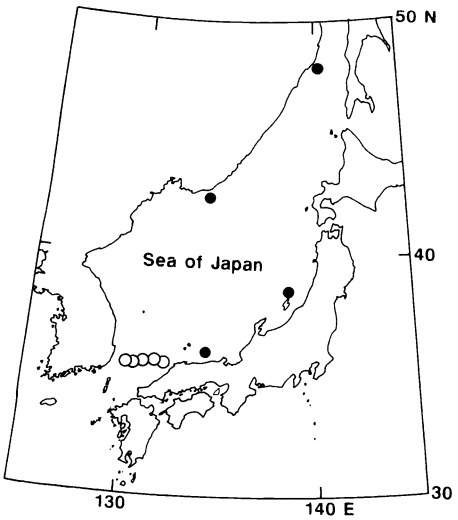

Fig. 2. Distribution of *Icelus stenosomus*. Capture sites of present material (○); literature records (●).

orbital space narrow, slightly concave. Mouth large. Upper jaw protractile, its posterior end nearly reaching below posterior margin of orbit. Parietal spines usually absent, but distinct in 11 specimens and minute in 9 (1 specimen damaged). Nuchal spines short, sharp, posteriorly or dorsally directed. Supraocular spine usually absent (present in 1 specimen). Preopercle with 4 spines; uppermost bifurcated, trifurcated or (rarely) tetrafurcated. Nasal spine small, sharp, dorsally directed. Other head spines absent. A pair of slender supraocular cirri. Other cirri absent. Five to 17 axillary scales bearing small spinules directed posteriorly. Anterior scales of dorsal scale row bearing a ridge of small spinules, posterior scales bearing a single spine directed posteriorly. Row of platelike scales below lateral line absent. Ventral surface behind pelvic fin without scales. Small scales bearing a minute prickle scattered sparsely on dorsally and laterally on head and between dorsal fin and dorsal scale row. Caudal peduncle slender, elongated. A pair of caudal peduncle scales present, one above lateral line and the other below in most specimens; upper or lower scale absent in some specimens, others with 2 scales either above or below lateral line; such scales with one or more spinules directed posteriorly on lateral surface. First dorsal fin with soft spines; 1st and 2nd spines closely placed. Second dorsal fin larger than 1st dorsal fin; no branched soft rays. Pectoral fin rounded, reaching to above 1st anal ray; no soft rays branched. Pelvic fin slender, not reaching 1st anal ray. Anal rays unbranched. Caudal fin truncate. Each fin membrane thin, easily torn.

Color in 70% ethanol.—Body light brown above, white below; three dark brown bands on dorsal surface, 1st below 1st dorsal fin, 2nd below middle of 2nd dorsal fin and 3rd below posterior part of 2nd dorsal fin; 1st band usually obscure. Light brown areas and dark brown bands with reticulate white vermiculate lines on lateral surface of body. A dark triangular mark on caudal peduncle. Head dark brown dorsally and laterally, white ventrally. A small, darker mark on cheek. Anterior margin of upper jaw darkly pigmented. Nostril tube lightly pigmented. Supraocular cirri lightly or darkly pigmented. First dorsal fin margin dark; large dark mark between 3rd and 4th spines. Second dorsal fin and pectoral fin with many small marks on soft rays. A large, dark mark on pectoral fin base. Pelvic and anal fins white; each soft ray of anal fin with a small black spot. Caudal fin with many dark spots. When fresh, pectoral and caudal fin bases yellowish.

Sexual dimorphism.—Urogenital papilla present in males, being cylindrical with a short, curved terminal appendage. Body size greater in females. Orbit diameter greater in males. Second dorsal fin, pectoral fin and caudal fin markings generally larger and darker in females.

Remarks. The specimens examined here were in general agreement with the descriptions of Andriashev (1937) and Nelson (1984), but differed in the following characters; parietal spine present in some specimens (absent in the earlier descriptions), supraocular spine rarely present (not described), nuchal spine posteriorly or dorsally directed (posteriorly directed only), uppermost spines of preopercle bifurcated, trifurcated or (rarely) tetrafurcated (bifurcated only), number of axillary scales 5–17 (8–10). These differences are most likely due to the low number and small size of specimens examined by Andriashev (1937) and Nelson (1984). As for the snout length of this species, the value (60–65 in thousands SL) given by Nelson (1984) were apparently erroneous, being too low.

Icelus stenosomus is more similar to *I. ochotensis* Schmidt (1927) in having a pair of caudal peduncle scales, and the posteriormost lateral line scale on the caudal fin rays, than to the other 3 species of the *I. bicornis* group, but differs from the former in having

a slender body shape, reticulate white vermiculate lines on the body (such lines absent in *I. ochotensis*) and small prickled scales scattered sparsely on the head (dense in *I. ochotensis*).

The present records include the southernmost known distribution of *I. stenosomus*. The specimens were collected from sandy-muddy bottoms between ca. 150–200 m depth in water temperatures from 2.3–5.5°C. On the other hand, *I. ochotensis* presently maintained in the Kanazawa Aquarium were collected deeper than 200 m and are reared in ca. 1°C (K. Sakai, pers. comm.). Thus *I. stenosomus* appears to inhabit shallower and warmer water than *I. ochotensis*.

Comparative Material Examined

Icelus ochotensis; KA (Kanazawa Aquarium) 1179–1190 (4♂8♀, 94–134 mm SL) off Togi, Ishikawa Pref., Japan (west coast of Noto Peninsula, Sea of Japan), >200 m, 9 Feb. 1989. HUMZ 65664 (1♀, 111 mm SL) off Ishikawa, Sea of Japan, 37°14′N, 136°27′E, 169–210 m, 7 June 1977.

Acknowledgments

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日本海南部におけるヤセコオリカジカの記録

村井貴史・中坊徹次・木下貴裕

日本海南部において行われた底曳き網による底生生物相調査により，北緯35°26′–35°40′，東経130°08′–132°02′，水深161–200 mの海域からヤセコオリカジカ *Icelus stenosomus* の多くの標本が得られた．本種はこれまで日本海における記録はあるが，十分な記載がなされていないため，ここで詳しく記載した．今回得られた標本は，頭頂棘がしばしば存在すること，前鰓蓋棘の最上棘がしばしば3叉，まれに4叉すること，胸鰭腋部鱗数が多いこと，などの点で従来の日本海北部の個体による記載と異なるが，他の形質ではよく一致した．

本種は *I. bicornis* グループに属し，尾柄鱗をもち，最後端の1側線鱗が尾鰭上にあることから，グループ内では *I. ochotensis* に最もよく似る．しかし，体高が低い，体側部に虫食い状の斑紋がある，頭部に散布される微小棘がより疎，などの点で近縁の *I. ochotensis* から区別される．

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