

First Records of Five Cottid Fishes and a Psychrolutid Fish from Japan

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Recently, groundfishes in shallow waters off the Okhotsk coast of Hokkaido were surveyed by the Hokkaido Fisheries Experimental Station at Abashiri, and deep sea resources of Japanese waters were surveyed by the Fishery Agency, the Japan Marine Fishery Resource Research Center and the T/S Hokusei Maru of Hokkaido University. During these surveys, six rare cottoid fishes representing the first records for Japanese waters were captured: *Icelus gilberti*, *Icelus perminovi*, *Icelus canaliculatus*, *Microcottus sellaris*, *Nautichthys pribilovius* and *Psychrolutes phrictus*. The former two species are the first records since the original descriptions made by Taranetz (1936). This paper describes and illustrates these specimens and provides comparative notes on related forms.

The specimens examined here were deposited in the Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University (HUMZ and HUMZ-L) and in the Hokkaido Fisheries Experimental Station at Abashiri (AFES). Measurements were made in accordance with those of Hubbs and Lagler (1958) except that depth of body was measured between origin of the first dorsal fin and origin of pelvic fin. All fin ray elements were counted except for the

caudal fin in which only branched rays were counted. The vertebrae were counted from radiographs. The caudal vertebrae were counted starting with the first vertebra having a haemal spine and ending with the urostylar vertebra.

Icelus gilberti Taranetz

(Japanese name: Daruma-koori-kajika)

(Fig. 1)

Icelus gilberti Taranetz, 1936: 149~150, fig. 1
(type locality: Japan Sea at the Vladimir and Olga Bays, Southern Cape).

Materials. HUMZ 87726, a male (50.5 mm SL, 20.1 mm HL), off Shokotsu, depth 60 m (Okhotsk coast of Hokkaido, Japan), on July 6, 1979; AFES 514, a male (73.3 mm SL, 29.9 mm HL), off Lake Saroma, depth 100 m (Okhotsk coast of Hokkaido), on June 27, 1980.

Description. Counts: D. IX-17~18; A. 13; P₁. 16; P₂. I, 3; C. 9; lateral line scales 36~38+1 beyond caudal base; dorsal scale row 35~41; vertebrae 11+25; branchiostegal rays 6.

Proportional measurements: Head length in SL 2.5~2.6, body depth 3.4~3.6, predorsal length 2.7~2.8, length of D₁ base 4.1~4.5, length of D₂ base 2.7~2.8, length of longest P₁ ray 3.3 (8th), P₂ length 4.9~5.2, preanal length 2.0~2.3, length of A base 3.3~3.4, length of caudal peduncle 4.7~5.0, depth of caudal peduncle 14.4. Snout length in HL 2.5, orbit diameter 3.4~3.8. Interorbital width in orbit diameter 2.9~3.0.

Body and head robust and slightly compressed. Interorbital space narrow and concave. Nasal

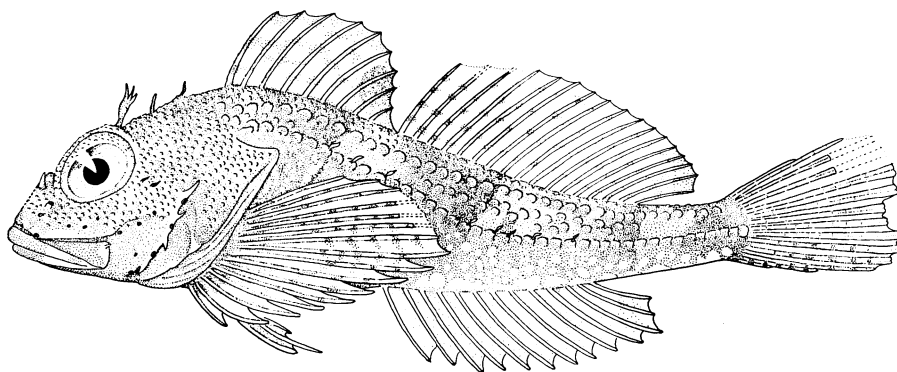


Fig. 1. *Icelus gilberti*, 50.5 mm SL (male), off Shokotsu, Hokkaido, HUMZ 87726.

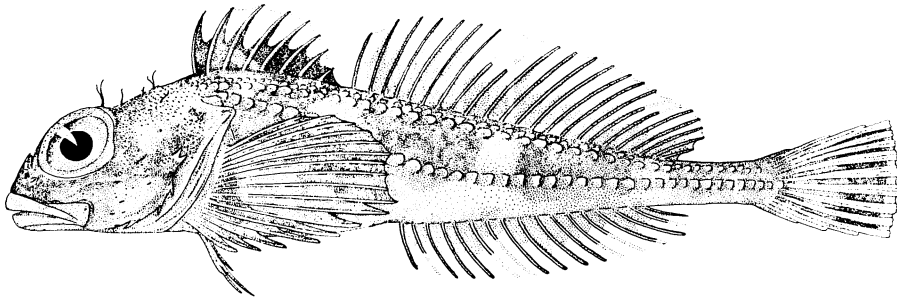


Fig. 2. *Icelus perminovi*, 106.9 mm SL (female), off Hiroo, Hokkaido, HUMZ 52686.

spine stout. Occipital spine covered with skin. Four preopercular spines; uppermost one simple and straight, lower three small but sharp. Maxillary reaching vertical behind pupil. Anterior pores of mandibular series opening separately on either side of symphysis. Teeth on jaw, vomer and palatines. Branchiostegal membranes united and forming a fold over isthmus. No slit behind last gill arch. Large ctenoid scale row extending along lateral line and dorsal fin base. Many small ctenoid scales covering above dorsal scale row, and some on dorsal fin rays. Moderate scales scattered between dorsal and lateral scale rows. Numerous small scales scattered on head above suborbital stay. Both jaws and ventral surface of head naked. Three pairs of cirri on top of head. Anterior pair divided at top into several sprouts. A simple cirrus present on suborbital stay, bases of preopercular spines, posterior end of maxillary and some scales on lateral line.

Color in alcohol: Body covered with numerous dark reticulations and light spots, except for pectoral axilla and ventral surface. Four dark saddles across back. Head darkish, especially darker in occipital and cheek regions. Noticeable dark spots present in posterior part of first dorsal fin. A large dark spot present on pectoral base. Faint dark reticulations covering dorsal, pectoral and caudal fins. Pelvic pale. Anal fin pale or dark.

Notes. The present specimens fit well with the original description of *Icelus gilberti* made by Taranetz (1936). *Icelus gilberti* is distinguishable from all other species of this genus by having a short and thick body, and a simple uppermost spine on the preopercle. This species resembles *Stelgistrum stejnegeri* Jordan et

Gilbert, 1899, rather than any species of this genus in the proportions of the body, meristic counts, distributional pattern of scales and cirri, and color pattern. But this species is clearly different from *S. stejnegeri* by having palatine teeth.

Taranetz (1936) reported *I. gilberti* from the Sea of Japan (coastal region of Primorskij), and the Okhotsk Sea (off Aniwa cape, Sakhalin). Since then, no documented record of this species exists. The present specimens from the Okhotsk coast of Hokkaido are the second record of this species.

***Icelus perminovi* Taranetz**

(Japanese name: Fusa-koori-kajika)

(Figs. 2, 3)

Icelus perminovi Taranetz, 1936: 151 (type-locality: Okhotsk Sea at 56°12'N, 143°49'E).

Material. HUMZ 52686, a female (106.9 mm SL, 35.0 mm HL), 42°01.9'N, 143°44.4'E, depth 360 m (off Hiroo, Pacific coast of Hokkaido, Japan) on March 24, 1976.

Description. Counts: D. VIII-23; A. 17; P₁. 17; P₂. 1, 3 (I, 2 on right side); C. 9; lateral line scales 43+1; dorsal scale row 42; vertebrae 11+31; branchiostegal rays 6.

Proportional measurements: Head length in SL 3.1, body depth 5.4, predorsal length 3.4, length of D₁ base 6.4, length of D₂ base 2.3, length of longest P₁ ray 3.8 (10th), P₂ length 7.7, preanal length 2.0, length of A base 3.0, length of caudal peduncle 5.8, depth of caudal peduncle 18.8. Snout length in HL 4.1, orbit diameter 2.8. Interorbital width in orbit diameter 5.3.

Body elongate, subcylindrical immediately behind head, slender and slightly compressed posteriorly. Head rather small slightly de-

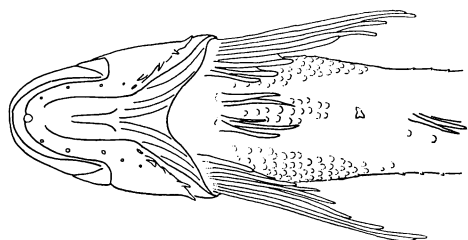


Fig. 3. Distributional pattern of scales on ventral surface of *Icelus perminovi*.

pressed. Snout short and blunt. Nasal spine sharp. Interorbital space narrow and flat. Occipital region slightly concave. Occipital spine short but sharp. Maxillary reaching vertical nearly behind pupil. Teeth on jaws, vomer and palatines. Three enlarged pores of infraorbital sensory canal present along lower margin of lachrymal. Two moderate pores along suborbital stay. Numerous small pores scattered along infraorbital sensory canal. Anterior pores of mandibular series opening in a common median pit. Preopercular spines four; uppermost spine large, bifid on left side and trifold on right side. Lower three spines of preopercle short and sharp, directed downward. Branchiostegal membranes united and forming a fold over isthmus. No slit behind last gill arch. Large ctenoid scale row extending along lateral line and dorsal fin base. Numerous moderate scales present on pectoral axilla, and several on ventral midline of belly. Small ctenoid scales scattered above dorsal scale row, and on anterior part of anal base. Minute ctenoid scales scattered on interorbital space, posteroventral margin of orbit, opercle, base of uppermost preopercular spine and upper margin of eye ball. Snout, ventrolateral face of head, jaws and nape naked. Four pairs of cirri present on occipital region, anteriormost cirrus large and bifid, other three slender. A small cirrus present on nasal base, suborbital stay, opercle and posterior end of maxillary.

Color in alcohol: General ground color dark brown, especially darker on snout, occipital and opercular regions. Four white saddles across back. Posterior region of maxillary and ventral face of lower jaw pale. Each fin except for pectoral and caudal fins uniformly dark. Large pale spots on pectoral and caudal fins. Nostril tube and all cirri on head black except for cirrus

on end of maxillary.

Notes. This specimen fits well Taranetz's (1936) original description of *Icelus perminovi*, except for the number of pelvic fin rays and condition of the uppermost spine of the preopercle. In this specimen, the pelvic fins have one spine and three soft rays on one side and one spine and two soft rays on another side (one spine and three soft rays in original description), and the uppermost spine of the preopercle is bifid on one side and trifold on another side (bifid in original description). Such conditions as two soft rays of the pelvic fin and trifold preopercular spine may be deformities.

Icelus perminovi resembles the dark-colored species of this genus, i.e. *I. euryops* Bean, 1890, *I. vicinalis* Gilbert, 1895, and *I. canaliculatus* Gilbert, 1895, in their meristic counts, proportion of the body and distributional pattern of scales. However, *I. perminovi* is different from *I. euryops* and *I. vicinalis* by the absence of scales between dorsal and lateral line scale rows, and having blackish nostril tubes, and from *I. canaliculatus* by having scales on the ventral midline of the belly (Fig. 3), and no spine on the suborbital stay.

No record of *I. perminovi* exists since the original description by Taranetz (1936) based on one specimen from the Okhotsk Sea (near Iona Island). The present specimen from the Pacific coast of Hokkaido is the second specimen of this species.

***Icelus canaliculatus* Gilbert**

(New Japanese name: Kuro-koori-kajika)

(Fig. 4)

Icelus canaliculatus Gilbert, 1895: 412~413, pl. 24 (type-locality: north of Unalaska, depth 399 fathoms).

Materials. HUMZ 70918, a female (195.9 mm SL, 65.4 mm HL), 44°12'N, 144°54'E, depth 750 m (off Shari, Okhotsk coast of Hokkaido, Japan), on Oct. 23 1977; HUMZ 77570, a male (140 mm SL, 42.6 mm HL), 44°20.6'N, 144°56.5'E, depth 1005 m (off Shari), on Oct. 12, 1978.

Description. Counts: D. VIII-24; A. 20~21; P₁. 17~18; P₂. I, 3; C. 9; lateral line scales 42+1; scales on dorsal row 39; scales on anal row 7~15; vertebrae 11+31~32, branchiostegal rays 6.

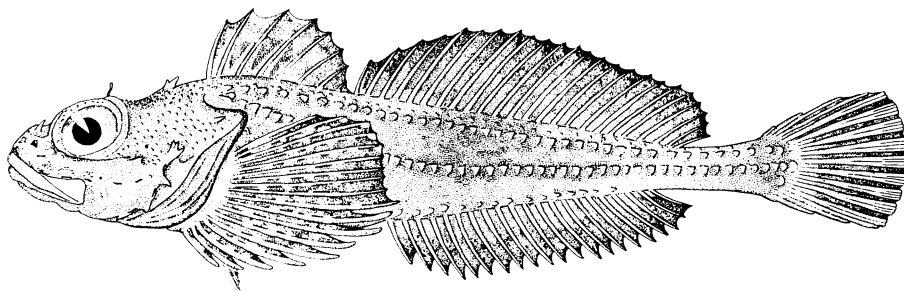


Fig. 4. *Icelus canaliculatus*, 195.9 mm SL (female), off Shari, Hokkaido, HUMZ 70918.

Proportional measurements: Head length in SL 3.0~3.3, body depth 5.1~6.0, predorsal length 3.6, length of D_1 base 5.9~6.3, length of D_2 base 2.2, length of longest P_1 ray 4.0~4.1 (10th), P_2 length 9.0~9.5, preanal length 2.1~2.2, length of A base 2.5~2.8, length of caudal peduncle 5.8~5.9, depth of caudal peduncle 18.3~21.3. Snout length in HL 4.2~4.5, orbit diameter 3.0~3.4. Interorbital width in orbit diameter 3.5~3.9.

Body elongate, subcylindrical anteriorly and slightly compressed posteriorly. Head large, rather depressed. Interorbital space narrow and concave. Occipital region slightly concave. Teeth on jaws, vomer and palatines. Five enlarged pores of infraorbital sensory canal present along lower margin of suborbital stay; anterior three well developed. An additional enlarged pore beneath nostril tube. Anterior pores of mandibular sensory canal opening in a common median pit. Branchiostegal membranes united and forming a fold over isthmus. A small pore behind last gill arch. Occipital spines strong and directed backward. Four preopercular spines; uppermost spine large, bifid and directed upward; other three spines small but sharp, directed downward. A prominent spine on lateral surface of suborbital stay. A simple and rather stout cirrus on posterodorsal margin of orbit; a pair of thin cirri on the occipital region; a fine cirrus on posterior end of maxillary. Small ctenoid scales scattered on dorsal face of head, lateral face above suborbital stay and opercle. Snout and small area just before of dorsal origin naked. Distinct ctenoid scale rows extending along lateral line and bases of dorsal and anal fins. Small ctenoid scales scattered above dorsal scale row.

Many ctenoid scales on pectoral axilla. Belly naked.

Color of fresh specimen: Body dark brown generally, partly purplish. Four faintly white bars present on back. Opercular and belly regions black. Posterior end of maxillary white. Pectoral fin dark brown with numerous light blue spots. Caudal fin black with a large distinct white spot basally. Second dorsal, pelvic and anal fins uniformly black. Peritoneum black.

Notes. *Icelus canaliculatus* is distinguishable from all other species of this genus by having the following features: 1) all scales of the body possessing serrated margins, 2) only a few scales between dorsal and lateral scale rows, 3) no scale on the pelvic axilla, 4) a spine on the lateral face of the suborbital stay, 5) black nostril tube, 6) blackish body color (Gilbert, 1895; Taranetz, 1936).

The present specimens are different from the original description of *I. canaliculatus* made by Gilbert (1895) in having a large number of scales on the anal base (7 or 15 in the present specimens as against 2 or 3 in the original description). With regard to the number of scales on the anal base in this species, there is no available data except for that of the original description. But the comparative materials of this species collected from the eastern Bering Sea have 0~7 scales on the anal base. Therefore, it is considered that the number of scales on the anal base is very variable in this species, and that the present specimens from Japan show the maximum number of scales on the anal base.

Almost all records of *I. canaliculatus* were from the Bering Sea (Gilbert, 1895; Jordan and Evermann, 1898; Jordan and Gilbert, 1899;

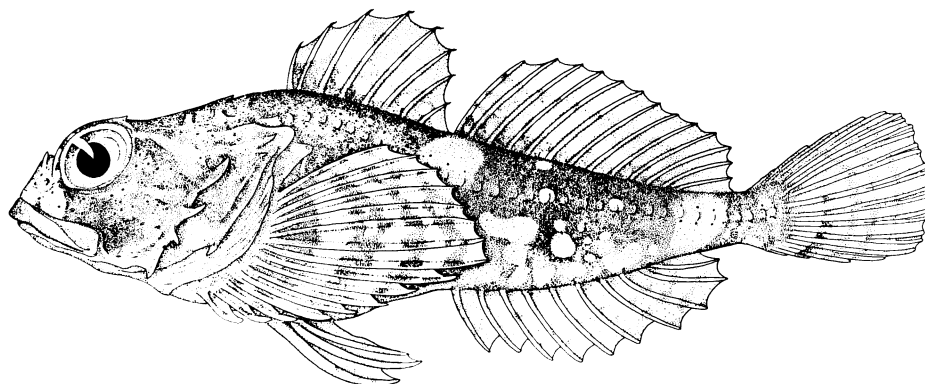


Fig. 5. *Microcottus sellaris*, 44.6 mm SL (female), off Horonai, Hokkaido, HUMZ 77917.

Evermann and Goldsborough, 1907; Andriashev, 1939; Quast and Hall, 1972; Fedorov, 1973). Only one specimen of this species was recorded from the Okhotsk Sea by Schmidt (1950), but without an exact locality. The present specimens came from the southwestern Okhotsk Sea off Hokkaido.

Comparative materials for the number of scales on anal base: 19 specimens (HUMZ 82827 ~ 82829, 82832, 82837, 82888, 83030, 83067, 83141, 83404, 83436, 84102, 84555, 84635, 84645, 84660 and 84726), 92.2 ~ 161.0 mm SL, eastern Bering Sea, depth 460 ~ 800 m.

Microcottus sellaris (Gilbert)

(Japanese name: Ohôtsuku-tsuno-kajika)

(Fig. 5)

Acanthocottus sellaris Gilbert, 1895: 419 ~ 420 (type-locality: Bristol Bay, Alaska, 5 to 17 m).

Materials. HUMZ 77917, a female (44.6 mm SL, 17.6 mm HL), off Horonai depth 30 m (Okhotsk coast of Hokkaido, Japan), on May 24, 1977; HUMZ 87626 ~ 87628, a male and two females (41.8 ~ 47.5 mm SL, 15.7 ~ 18.4 mm HL), near Monbetsu, depth 35 m (Okhotsk coast of Hokkaido, Japan), on July 1, 1979; HUMZ 87629, a male (65.1 mm SL, 25.0 mm HL), off Shokotsu, depth 40 m (Okhotsk coast of Hokkaido, Japan) on July 6, 1979; HUMZ 87630 and 92261, a male and a female (45.5 ~ 83.6 mm SL, 17.7 ~ 34.3 mm HL), off Okkope, depth 25 ~ 40 m (Okhotsk coast of Hokkaido, Japan), on July 9, 1979.

Description. Counts: D. VII ~ IX-12 ~ 15; A. 9 ~ 10; P₁. 15 ~ 16; P₂. 1, 3; C. 7 ~ 9; lateral

line scales 29 ~ 33 + 1 ~ 2; branchiostegal rays 6; vertebrae 10 ~ 11 + 21 ~ 22.

Proportional measurements: Head length in SL 3.4 ~ 3.7, body depth 3.3 ~ 4.0, predorsal length 2.4 ~ 2.7; length of D₁ base 4.3 ~ 5.1, length of D₂ base 2.8 ~ 3.4, length of longest P₁ ray 3.0 ~ 3.4 (6th), P₂ length 4.1 ~ 4.7, preanal length 1.6 ~ 1.8, length of A base 3.0 ~ 3.9, length of caudal peduncle 5.7 ~ 7.6, depth of caudal peduncle 14.4 ~ 16.7. Snout length in HL 3.4 ~ 4.0, orbit diameter 3.3 ~ 4.0. Interorbital width in orbit diameter 1.7 ~ 2.2.

Body robust. Snout short. Interorbital space narrow and slightly concave. Occipital region concave anteriorly, and swelling posteriorly. Anterior pores of mandibular series opening separately on either side of symphysis. Branchiostegal membranes broadly united and forming a fold over isthmus. A small slit present behind last gill arch. Pelvic fins united with belly by means of a wide dermal fold. Occipital spine small but sharp, and directed backward. Four preopercular spines present; uppermost large and simple, hooked upward. Small ctenoid scales present on pectoral axilla. Small spine-like scales below lateral line. Small simple cirri present or absent on posterodorsal margin of orbit and base of occipital spines. A small cirrus on tip of each dorsal spine.

Color in alcohol: Three dark wide bands across body, separated by narrow pale spaces. Some pale spots on dark bands. Faint dark reticulations covering ventrally. Head uniformly dark or pale bands on snout and post-orbital regions. Indistinct dark bands on each

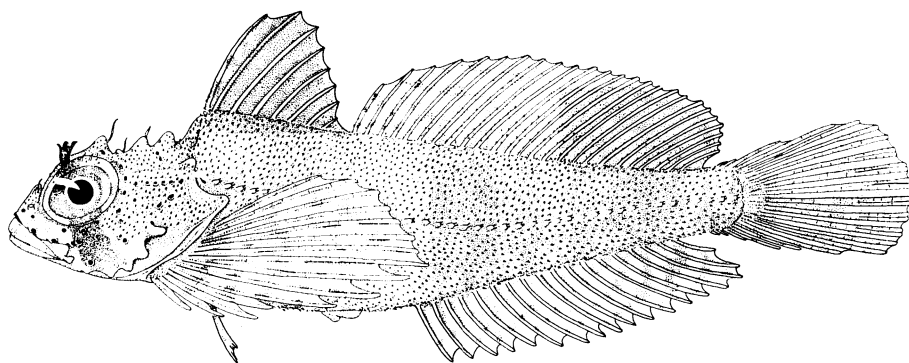


Fig. 6. *Nautichthys pribilovius*, 47.4 mm SL (female), off Akkeshi, Hokkaido, HUMZ 86825.

fin.

Notes. The monotypic genus *Microcottus* is considered to be an intermediate genus between *Myoxocephalus* and *Porocottus* (Schmidt 1940, 1950; Andriashev, 1954; Neylov, 1976). *Microcottus* differs from the latter two genera by having the pelvic fin united with the belly by a wide fold, and differs from *Myoxocephalus* by having the hooked upper preopercular spine (straight or slightly curved spine in *Myoxocephalus*), and from *Porocottus* by having or lacking simple cirri on the head (always having fringed cirri in *Porocottus*) (Neylov, 1976).

This species has been recorded from the Bering Sea, northern Okhotsk Sea, Terpenie Gulf of Sakhalin, western coast of Sakhalin, and northern Japan Sea (Neylov, 1976). The present specimens collected from off the Okhotsk coast of Hokkaido are the first record of this species from Japan.

Nautichthys pribilovius (Jordan et Gilbert)

(Japanese name: Okoze-kajika)

(Fig. 6)

Nautiscus pribilovius Jordan et Gilbert, in Jordan and Evermann, 1898: 2019~2020 (type-locality: St. George Island in the Bering Sea).

Materials. HUMZ 77439~77442, four specimens (22.2~25.9 mm SL, 7.8~8.8 mm HL), off Konbumori, depth 35 m (near Kushiro, Pacific coast of Hokkaido, Japan), on Aug. 10, 1978; HUMZ 86825, a female (47.4 mm SL, 14.6 mm HL), off Akkeshi (Pacific coast of Hokkaido, Japan), on June 26, 1979; HUMZ 92439 and 92445, two males (67.0~67.9 mm SL, 20.6~20.9 mm HL), 45°30'N, 142°41'E, depth

100~115 m (Okhotsk Sea near Soya Cape, Hokkaido, Japan), on Oct. 6, 1981; HUMZ 94111, a female (50.5 mm SL, 18.3 mm HL), Japan Sea off Yobetsu (Shakotan Peninsula, Hokkaido, Japan), on Jan. 22, 1982; HUMZ-L 1208, a juvenile (17.0 mm SL, 5.4 mm HL), off Usujiri (41°58'N, 140°57'E, Pacific coast of Hokkaido, Japan), on May 8, 1978; AFES 513, a male (55.4 mm SL, 17.5 mm HL), off Lake Saroma, depth 100 m, on June 27, 1980.

Description. Counts: D. VIII~IX-22~26; A. 16~19; P₁. 14~16; P₂. I, 3; lateral line scales 37~40; branchiostegal rays 6; vertebrae 12+25~26.

Proportional measurements: Head length in SL 2.8~3.3, body depth 3.7~4.6, predorsal length 3.1~3.5, preanal length 1.8~2.3, length of caudal peduncle 6.3~8.9, depth of caudal peduncle 10.5~12.6. Snout length in HL 3.2~4.9, orbit diameter 3.0~4.0. Interorbital width in orbit diameter 1.0~2.4.

Body rather elongate and compressed. Upper margin of orbit projecting well above dorsal profile of head. Interorbital space narrow and deeply concave. Dorsal origin elevated. Branchiostegal membranes fused to isthmus without free fold. A slit behind last gill arch. Teeth on jaws, vomer and palatines. Four preopercular spines, short and broad. Post-orbital and occipital spines large and blunt. Similar spine present between postorbital and occipital spines. A large multifid cirrus and two small cirri present on upper part of each eyeball. Simple cirrus present on nasal base, tips of head spines, lower margin of suborbital stay and posterior end of maxillary. Reduced

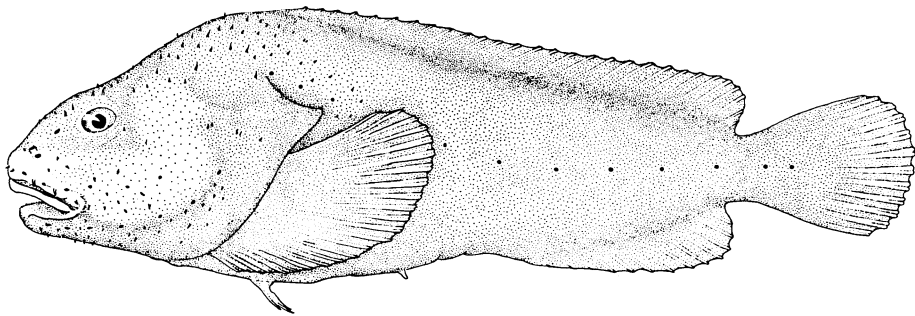


Fig. 7. *Psychrolutes phrictus*, 309 mm SL (female), off Shiretoko Cape, Hokkaido, HUMZ 79715.

ctenoid scales, in form of strong spines embedded in papillae, covering most of body and head, except for pectoral axilla, anterior region of anal origin, jaws and ventral face of head.

Color in alcohol: General ground color pale brown, darker dorsally. Six faint dark bands across back. A distinct dark band through eyes and across cheek. First dorsal fin dark, other fins speckled except for pelvic fin. Dark bands across posterior region of caudal fin and bases of pectoral fins.

Notes. The genus *Nautichthys* is composed of *N. pribilovius* and two eastern Pacific species, *N. oculoasciatus* (Girard, 1857) and *N. robustus* Peden, 1970. *N. pribilovius* is clearly different from *N. oculoasciatus* by having 26 or less rays of the second dorsal fin, and from *N. robustus* by having rounded spines on the occipital region, and having 76 or more total rays of the anal, first and second dorsal and both pectoral fins (Peden, 1970).

This species was recorded from the Bering Sea, Okhotsk Sea and northern Japan Sea. In regions adjacent to Japan, this species has been recorded from Meneron Island (Japan Sea) and Aniwa Bay (Okhotsk Sea) off Sakhalin and from southern Kuril Islands (Schmidt, 1904; Lindberg, 1959). This species is proved here to occur around Hokkaido.

Psychrolutes phrictus Stein et Bond
(New Japanese name: Nyūdō-kajika)
(Fig. 7)

Psychrolutes phrictus Stein et Bond, 1978: 1~9, figs. 1~2 (type-locality: 44°44.3'N, 125°41.3' W, depth 2800 m).

Materials. HUMZ 78192, a female (365 mm

SL, 164 mm HL), 39°28.5'N, 142°35.3'E depth 1170 m (off Kamaishi, Pacific coast of Iwate Prefecture, Japan) on Sep. 22, 1978; HUMZ 78212 and 78213, a male and a female (466~596 mm SL, 206~264 mm HL), off Iwate Prefecture; HUMZ 78293 and 78294, a male and a female (379~508 mm SL, 171~231 mm HL), 41°10.4'N, 142°25.9'E, depth 1400 m (off Shiriya-saki, Pacific coast of Aomori Prefecture, Japan), on Sep. 6, 1978; HUMZ 78313, a female (497 mm SL, 214 mm HL), 41°06.3'N, 142°16.7'E, depth 1290 m (off Shiriya-saki) on Sep. 6, 1978; HUMZ 78358, a male (349 mm SL, 154 mm HL), 41°05.5'N, 141°52.3'E, depth 800 m (off Shiriya-saki), on Sep. 8, 1978; HUMZ 78373, a male (295 mm SL, 137 mm HL), 41°03.4'N, 142°24.9'E, depth 1400 m (off Shiriya-saki), on Sep. 9, 1978; HUMZ 78389, a male (200 mm SL, 95 mm HL), 40°47.6'N, 142°16.7'E, depth 948 m (off Shiriya-saki) on Sep. 11, 1978; HUMZ 79715, a female (309 mm SL, 141 mm HL), 44°33'N, 144°24'E, depth 1330 m (off Abashiri, Okhotsk coast of Hokkaido, Japan), on Sep. 24, 1978; HUMZ 79717, a female (435 mm SL, 202 mm HL), 44°25'N, 145°04'E, depth 1335 m (off Shiretoko Cape, Okhotsk coast of Hokkaido, Japan), on Oct. 11, 1978.

Description. Counts: D. VIII, 19~20; A. 12~14; P₁. 23~26; P₂. 1, 3; C. 9~12; lateral line pores 12~14; branchiostegal rays 7; vertebrae 34~36; gill rakers 2+9~11.

Proportional measurements: Head length in SL 2.1~2.3, body depth 2.9~4.3, predorsal length 2.1~2.5, distance between snout and anus 1.6~2.0, length of caudal peduncle 9.0~11.5, depth of caudal peduncle 12.1~14.9. Snout length in HL 2.8~3.3, eye diameter 7.7~12.6.

interorbital width (fleshy) 2.1~2.9.

Body tadpole shape. Head large and roundish. Snout slightly protruding, lower jaws distinctly included by upper jaws. Small but stout teeth on jaws. Vomerine and palatine teeth absent. Interorbital space broad, slightly convex. Cephalic sensory canals well developed. Anterior pores of mandibular series opening separately on either side of symphysis. Branchiostegal membranes broadly fused to isthmus, not forming free fold. A slit present behind last gill arch. Pectoral fin broad, well developed; upper 9~13 rays branched except for uppermost one. Pelvic fins short; inner two rays about equal. Anterior portion of dorsal fin deeply buried in loose skin. Small cirri scattered on head and body, more crowded on dorsal face of head and lower jaw. Lateral line pores spaced. In large specimens, some anterior pores with short tubes.

Color in alcohol: Generally uniformly grayish or blackish, paler on snout and ventral face. Indistinct mottling sometime present. Peritoneum pale.

Notes. *Psychrolutes phricus* is different from the other three species of this genus (*P. paradoxus* Günther, 1861; *P. inermis* (Vaillant, 1927); *P. sio* Nelson, 1980) by having a produced upper jaw, palish peritoneum, developed lateral line pores, and 19 or 20 soft rays of dorsal fin (Suzuki and Kimura, 1980; Nelson, 1980).

This species is recorded from the eastern North Pacific and Bering Sea (Stein and Bond, 1978; Matarese and Stein 1980). The present specimens are the first record of this species from Japanese waters, and the most western record for this species.

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日本初記録のカジカ科魚類 5 種およびウラナイカジカ科魚類 1 種

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北海道および東北の沿岸海域より、本邦初記録の 5 種類のカジカ科魚類と 1 種類のウラナイカジカ科魚類が採集された。ダルマコオリカジカ *Icelus gilberti* は北海道渚滑沖およびサロマ湖沖のオホーツク海 (水深 60~100 m) より 2 個体が採集された。また、フサコオリカジカ *Icelus perminovi* は北海道広尾沖の水深 360 m から 1 個体が採集された。これら 2 種は Taranetz (1936) による北部日本海およびオホーツク海北西部の標本に基づく原記載以来、初めての記録である。クロコオリカジカ (新称) *Icelus canaliculatus* は、従来ベーリング海より報告されていたが、北海道斜里沖のオホーツク海 (水深 750~1005 m) から 2 個体が採集された。オホーツクツノカジカ *Microcottus sellaris* およびオコゼカジカ *Nautichthys pribilovius* はベーリング海、オホーツク海および北部日本海より報告されていたが、前者は北海道のオホーツク沿岸の水深 25~60 m から 7 個体が、また後者は北海道周辺の浅海域から 10 個体が採集された。ウラナイカジカ科のニュードウカジカ (新称) *Psychrolutes phrictus* は、東部北太平洋および東部ベーリング海の深海より採集されているが、北海道網走沖のオホーツク海および青森県と岩手県沖の太平洋の水深 800~1400 m から 11 個体が採集され、本種がオホーツク海および西部北太平洋にも分布することが確認された。

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