

First Record of *Icelus stenosomus* (Perciformes: Cottidae) from Korea

By Myeong-Hun Ko and Jong-Young Park*

Faculty of Biological Science and Institute for Biodiversity Research,
College of Natural Science, Chonbuk National University, Jeonju 561-756, Korea

ABSTRACT Four specimens (114.2~134.2 mm SL) of *Icelus stenosomus* Andriashev, family Cottidae, were collected from Goseong-gun, Gangwon-do, East Sea of Korea. They were identified based on the following characters : a pair of strong spines on occipital region, distinct row of scales on both dorsal and ventral sides of body, vermiculate white lines on dorsal side of body, and small prickled scales scattered sparsely on the head. We propose a new Korean name for the species as a new Korean name : 'Mu-nui-jul-ga-si-hoet-dae'.

Key words : *Icelus stenosomus*, cottid fish, new Korean record

INTRODUCTION

Sculpins (family Cottidae) live in both marine and freshwater in Northern and Southwestern Hemisphere. This family comprises 70 genera and about 320 species in the world (Bond, 1979; Nelson, 2006). In Korean waters, 18 genera and 33 species are known (Kim *et al.*, 2005). Recently, we collected 4 specimens of cottid fish *Icellus stenosomus* in East Sea of Korea. The species was first described by Andriashev (1937) as a subspecies of *Icelus uncinalis*, *I. uncinalis stenosomus*, from Peter the Great Bay to Tartar Strait and East Sea. Nelson (1984) put *I. u. stenosomus* to a distinct species *I. stenosomus*, comparing two specimens collected from the same regions with its related *I. bicornis* species-group. Also, Murai *et al.* (1994) described *I. stenosomus* (34 specimens) from southern part of the East Sea, which is different from its closely related species, *I. ochotensis*. Therefore, we are going to describe this species as the first record from Korea based on the specimens.

MATERIALS AND METHODS

Four specimens were collected from the Goseong-gun, Gangwon-do, East Sea of Korea. They were depo-

sited at the Department of Biology, Chonbuk National University (CNUC), Korea. Counts and measurements followed Nelson (1984), and the number of fin rays and vertebrae were counted by soft X-ray photograph.

RESULT AND DISCUSSION

Icelus stenosomus Andriashev, 1937

(New Korean name : Mu-nui-jul-ga-si-hoet-dae)
(Fig. 1; Table 1)

Icelus uncinalis: Schmidt, 1927: 3; Soldatov and Lindberg, 1930: 176.

Icelus uncinalis stenosomus Andriashev, 1937: 266, pl. 5, fig. 3, (Peter the Great Bay to northern Tartar Strait); Taranetz, 1937: 107, 108, fig. 60 (keys); Matsubara, 1955: 1138 (keys); Honma, 1957: 111 (off Sado Island, East Sea); Lindberg and Krasnyukova, 1987: 194, fig. 120.

Icelus stenosomus: Nelson, 1984: 53, fig. 44 (Tartar Str., East Sea); Nakabo, 1993: 554, fig. (keys); Murai *et al.* 1994: 343, fig. 1. (southern part of the East Sea)

Material examined. CNUC 37486~37489, 4 specimens (1 female, 3 males), 114.2~134.2 mm in standard length, 38° 26'47"N, 128° 27'33"E, Geojin-ri, Geojin-eup, Goseong-gun, Gangwon-do, East Sea, Korea, Nov. 19, 2007, collecting method: gill net, collected by M.H. Ko and J.Y. Park.

Description. Measurements and counts are shown in Table 1.

*Corresponding author: Jong-Young Park Tel: 82-63-270-3344,
Fax: 82-63-270-3362, E-mail: Park7877@chonbuk.ac.kr

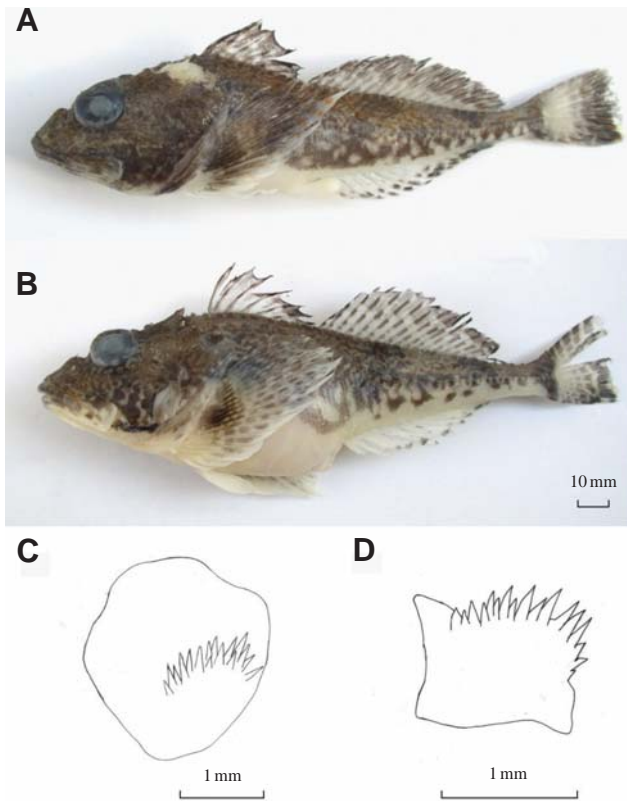


Fig. 1. *Icelus stenosomus* Andriashev from the East Sea of Korea. A. male, CNUC 37487, 127.8 mm SL; B. female, CNUC 37486, 134.2 mm SL; C. scale of dorsal row (15th) of CNUC 37488, male, 125.3 mm SL; D. lateral line scale (22th) of CNUC 37488.

Body elongated and compressed. Greatest body depth at spinous dorsal fin. Caudal peduncle slender and elongated. Head large and compressed. Mouth large and upper jaw posterior end nearly reaching below posterior margin of orbit. Eye large and slightly oval. Interorbital space narrow and slightly concave. Nasal spine small and sharp. A pair of strong spines on occipital region. Preopercle with 4 spines; uppermost bifurcated. Dorsal scale row begins from occipital spines back and arrives in caudal fin. Scale form irregular oval and middle-right part with several spines (Fig. 1C). Lateral line scales very small, irregular square and upper-right with several spines (Fig. 1D). 8 to 13 axillary scales bearing small spinules directed posteriorly. Ventral surface behind pelvic fin without scales. A pair of caudal peduncle scales present. Second dorsal fin larger than 1st dorsal fin; no branched soft rays. Pectoral fin rounded, reaching above 1st anal ray. Pelvic fin small. Anal fin length similar the second dorsal fin; no branched soft rays. Caudal fin truncate.

Color in formalin. Overall body color light brown. Three dark brown bands on the dorsal surface. Light brown areas and dark brown bands with reticulated white vermiculate lines on lateral surface of body. Body below white. First dorsal fin margin dark. Second dorsal fin and pectoral fin with many small marks on soft rays. A large dark mark on pectoral fin base. Pelvic fin white. Anal fin generally white; margin with small dark spots. Caudal fin with many black spots.

Sexual dimorphism. Cylindrical urogenital papilla

Table 1. Counts and proportional measurements of *Icelus stenosomus*. Data indicate ranges and averages given in parentheses

| Counts and measurements | Present study | | Murai <i>et al.</i> (1994) | |
|-----------------------------------|-------------------------|-----------------|---|----------------------|
| | Male (n=3) | Female (n=1) | Male (n=14) | Female (n=20) |
| Counts | | | | |
| Dorsal fin rays | VIII ~ IX+19 ~ 20 | | VIII ~ IX+17 ~ 20 (usually 18 ~ 19) | |
| Anal fin rays | 14 ~ 15 | | 13 ~ 15 (usually 14 ~ 15) | |
| Pectoral fin rays | 18 | | 14 ~ 18 (usually 17 ~ 18) | |
| Scales of dorsal row | I+3 | | I+3 | |
| Lateral line scales | 39 ~ 42 | | 29 ~ 42 (usually 40 ~ 41) | |
| Axillary scales | 8 ~ 13 | | 5 ~ 17 | |
| Upper most row of axillary scales | 3 ~ 4 | | 2 ~ 5 (usually 3 ~ 4) | |
| Vertebral number (AV+CV) | 11+28 ~ 29 (usually 28) | | 11 ~ 12 (usually 11)+25 ~ 26 (usually 26) | |
| Measurements | | | | |
| Standard length (mm) | 114.2 ~ 127.8 (122.6) | 134.2 | 67.6 ~ 104.0 (91.7) | 68.0 ~ 123.7 (103.6) |
| In % of SL | | | | |
| Head length | 37.2 ~ 39.7 (38.3) | 37.3 | 33.4 ~ 37.1 (35.8) | 33.2 ~ 37.2 (35.6) |
| Snout length | 10.1 ~ 11.4 (10.7) | 11.5 | 8.8 ~ 11.1 (9.8) | 9.2 ~ 11.0 (10.1) |
| Interorbital width | 2.5 ~ 2.7 (2.6) | 2.6 | 1.7 ~ 2.9 (2.1) | 1.8 ~ 2.6 (2.3) |
| Orbit diameter | 8.7 ~ 10.0 (9.3) | 9.0 | 10.1 ~ 12.7 (11.6) | 9.2 ~ 11.9 (10.3) |
| Body depth | 22.8 ~ 25.7 (23.9) | 27.3 | 16.8 ~ 23.4 (20.1) | 16.5 ~ 22.2 (19.4) |
| Caudal peduncle depth | 5.8 ~ 5.9 (5.8) | 5.8 | 4.2 ~ 5.6 (4.8) | 4.3 ~ 5.5 (4.9) |
| Upper jaw length | 19.3 ~ 19.7 (19.5) | 18.4 | 11.9 ~ 18.6 (17.0) | 16.3 ~ 18.8 (17.7) |
| Head width | 18.6 ~ 20.9 (19.8) | 20.6 | 14.5 ~ 19.8 (18.3) | 16.0 ~ 20.5 (18.6) |
| Predorsal length | 32.7 ~ 33.3 (33.0) | 32.6 | 31.1 ~ 35.0 (33.3) | 30.2 ~ 34.2 (32.7) |

present in males. Body size and body depth greater in females.

Distribution. Peter the Great Bay to Northern Tartar Strait (East Sea) (Soldatov and Linberg, 1930; Andriashev, 1937; Nelson, 1984), Sado Island (East Sea) (Honma, 1957), southern part of the East Sea (Murai *et al.*, 1994) and Goseong-gun of Korea (present study).

Remarks. *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 other 3 species of the *I. bicornis* group. But it differs from *I. ochotensis* by owning reticulate white vermiculate lines on the body (absent in *I. ochotensis*) and small sprinkled scales scattered sparsely on the head (dense in *I. ochotensis*) (Murai *et al.*, 1994). According to Murai *et al.* (1994), *I. stenosomus* was known to be distributed in shallower and warmer water than *I. ochotensis*.

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동해안에서 채집된 독중개과 한국미기록종, *Icelus stenosomus*

고명훈 · 박종영

전북대학교 자연과학대학 생물과학부, 전북대학교 생물다양성연구소

요 약 : 우리나라의 강원도 동해 주변해역에서 독중개과 *Icelus*속에 속하는 한국미기록종 어류 4개체 (표준체장 114.2~134.2 mm)를 채집하였다. 본 종은 후두부에 한 쌍의 강한 가시와 몸의 등쪽과 배쪽에 구별되는 비늘열을 가지고 있고, 체측에 흰색의 벌레먹은 무늬가 나타나며, 두부 뒤쪽에 작은 비늘이 산재하는 특징을 보였다. 이러한 특징을 바탕으로 이 종을 *Icelus stenosomus* Andriashev로 동정하였으며 국명을 ‘무늬줄가시횃대’라고 명명하였다.

찾아보기 낱말 : *Icelus stenosomus*, 무늬줄가시횃대, 독중개과, 한국미기록종