

First Record of *Zoarces elongatus* (Perciformes: Zoarcidae) from Korea

By Myeong-Hun Ko and Jong-Young Park*

Faculty of Biological Science, College of Natural Science, Chonbuk National University, Jeonju 561-756, Korea

ABSTRACT Eight specimens (330.2~431.3 mm TL) of the family Zoarcidae were collected from the costal waters of the Byeonsanbando, Yellow Sea, Korea. They were identified as a *Zoarces elongatus* Kner based on the following characters: a dorsal fin with 14~16 notch-shaped spinous rays, irregular 13~16 dark spots in a row along the median body and 126~132 vertebrae. We proposed a new Korean name, 'Mu-jeom-deung-ga-si-chi', for the species.

Key words : *Zoarces elongatus*, eelpout, new Korean record

INTRODUCTION

The fishes of the family Zoarcidae (eelpouts) are known to constitute a diverse group composed of about 230 species in 46 genera from continental shelves and slopes of boreal seas (Nelson, 2006). Zoarcidae, the genus *Zoarces* Cuvier, 1829 includes about 5 species such as *Z. adriashevi* Parin, Grigoryev and Karmovskaya, 2005, *Z. americanus* (Bloch and Schneider, 1801), *Z. elongatus* Kner, 1868, *Z. gilli* Jordan and Starks, 1905 and *Z. viviparus* (Linnaeus, 1758) which are distributed primarily in temperate and arctic waters of the northern hemisphere (Anderson, 1994; Parin *et al.*, 2005). Among them, *Z. elongatus* Kner 1868 was distributed over the ranges in northwestern Pacific Ocean (Anderson, 1994). Recently, we collected eight specimens of *Z. elongatus* from the Byeonsanbando, Yellow Sea, Korea. In this study, we described *Z. elongatus* as the first record from Korea based on the specimens.

MATERIALS AND METHODS

The eight samples were collected from the Byeonsanbando, Yellow Sea, Korea. The specimens were deposited at the Department of Biology, Chonbuk National University (CNUC), Korea. Counts and measurements

followed those of Hubbs and Lagler (1964), and the number of fin rays and vertebrae were counted by soft X-ray photograph.

RESULTS AND DISCUSSION

Zoarces elongatus Kner, 1868

(New Korean name: Mu-jeom-deung-ga-si-chi)
(Fig. 1; Table 1)

Zoarces elongatus Kner, 1868: 52, pl. 7, fig. 2 (Tatar Strait, De-Kastri Bay); Shmidt, 1904: 196; Soldatov and Lindberg, 1930: 488; Taranetz, 1937: 161; Lindberg and Krasnyukova, 1975: 158; Anderson, 1994: 120.

Material examined. CNUC 36975~36982, eight specimens, 330.2~431.3 mm in total length, 35° 37' 19" N, 126° 28' 16" E, Gyeokpo-ri, Byeonsan-myeon, Buan-gun, Jeollabuk-do, Korea, 30 September 2006, collected by M.H. Ko and J.Y. Park.

Description. Counts for the present specimens are shown in Table 1. Measurements in % of total length: head length 19.5~21.3 (20.9); body depth 10.7~12.7 (11.9); predorsal length 18.8~21.2 (20.1); preanal length 36.8~41.6 (39.1). Measurements in % of head length: head width 70.9~80.9 (75.0); snout length 33.1~34.6 (33.8); eye diameter 13.2~15.7 (14.2); interorbital width 19.6~23.6 (22.2). Body covered with cycloid scales, long and flat. Lowered gradually body depth toward posterior part. Head relatively large and round,

*Corresponding author: Jong-Young Park Tel: 82-63-270-3344,
Fax: 82-63-270-3362, E-mail: park7877@chonbuk.ac.kr



Fig. 1. *Zoarces elongatus* Kner, CNUC 36976, 431.3 mm TL.

Table 1. Comparisons of counts between *Zoarces elongatus* and *Z. gilli*

	<i>Zoarces elongatus</i>			<i>Zoarces gilli</i>
	Present specimen	Kner (1868)	Lindnerg and Krasnyukova (1975)	Kim and Kang (1991)
Total length (mm)	330.2 ~ 431.3 (n=8)	—	300 (n=12)	184.1 ~ 210.5 (n=5)
Dorsal fin rays	90 ~ 93, XIV ~ XVI, 25 ~ 27	80, XII, 22	82 ~ 92, VII ~ XV, 22 ~ 29	90, XVII ~ XX, 21
Anal fin rays	107 ~ 110	90 ~	93 ~ 103	96 ~
Pectoral fin rays	19 ~ 20	19 ~ 20	—	19 ~ 20
Pelvic fin rays	3	—	—	3
Vertebrate	126 ~ 132	—	122 ~ 127	117
Gill-rakers	4 ~ 5, 13 ~ 15	—	—	—

and without scales. Mouth large, and teeth blunt and strong. Lips fleshy and thick. Dorsal fin originating from the gill opening, and the highest at the anterior part. Pelvic fin very small and pectoral fin round. Anal fin originating from the one-third point of total length, and connected with a caudal fin. Lateral line in the middle of body, and curved-shape in only anterior part.

Color in formalin. Basic color brown to gray, irregular 13 ~ 16 dark spots in a row along the median body.

Distribution. This species was known from the Sea of Okhotsk northern part and coasts of Sakhalin, Russia. (Soldatov and Lindberg, 1930; Ueno, 1971). It was distribution in the Sea of Japan coast northward from Niigata Pref., eastern Hokkaido and Pacific coast of Japan (Ueno, 1971; Lindnerg and Krasnyukova, 1975), Gulf of Bo Hai, China (Wang *et al.*, 2001). In Korea, *Z. elongatus* is distributed around coast of Byeonsanbando of the Yellow Sea.

Remarks. *Zoarces elongatus* is very similar to *Z. gilli* in its distribution area and exomorphology. However, the former was clearly distinguished from the later by the dorsal fin with seven to sixteen short spiny rays (vs 16 to 20 spiny rays for *Z. gilli*) and the anterior part without black spot (vs present black spot) (Lindnerg and Krasnyukova, 1975).

Key to the genus *Zoarces* (Family Zoarcidae) from Korea

1. Dorsal fins with 16 to 20 spiny rays; anterior part of fin with black spot *Zoarce gilli*
2. Dorsal fins with 7 to 16 spiny rays; anterior part of fin without black spot *Z. elongatus*

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변산반도 주변해역에서 채집된 등가시치과 한국미기록종, *Zoarces elongatus*

고명훈 · 박종영

전북대학교 자연과학대학 생물과학부

요 약 : 우리나라의 황해 변산반도 주변해역에서 등가시치과 *Zoarces*속에 속하는 한국미기록종 어류 8개체를 채집하였다. 본 종은 등지느러미 후부에 톱니모양의 14~16개 짧은 극조를 가지고, 몸의 중앙부와 등쪽 사이에 불규칙한 13~16개의 흑갈색 점이 있으며, 척추골수가 126~132개를 가지는 특징으로 *Z. elongatus*로 동정되었다. 본 종의 국명을 '무점등가시치'라고 명명하였다.

찾아보기 낱말 : *Zoarces elongatus*, 무점등가시치, 한국미기록종