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First Record of *Stichaeus nozawai* (Perciformes: Stichaeidae) from Korea

*By Myeong-Hun Ko, Hyeong-Soo Kim 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 (218.3~234.5 mm SL) of the family Stichaeidae were collected from the coastal water of Kangwon-do, in the middle East Sea of Korea. They are identified as *Stichaeus nozawai* Jordan and Snyder based on the following characters: posterior end of mouth not reaching posterior margin of eye, lateral line reaching posterior part of the caudal base; 10~13 dorsal spines behind end of lateral line, dorsal fin with oblique dark lines, I, 36~37 anal fin rays. We proposed a new Korean name, 'Keun-nun-jang-gaeng-i', for the species.

Key words : *Stichaeus nozawai*, blennoid fish, new Korean record

INTRODUCTION

The fishes of the family Stichaeidae (prinklebacks) are known to be a diverse group composing of about 76 species, 37 genera in 6 subfamilies from primarily in the North Pacific, a few in the North Atlantic; marine, intertidal zone to 250 meter in depth (Mecklenburg and Sheiko, 2004; Nelson, 2006). In Korean waters, 14 genera 20 species has been known (Kim *et al.*, 2005). Among the genera, the genus *Stichaeus* (Reinhardt, 1837) includes about 12 species in the world (Mecklenburg and Sheiko, 2004), and one species, *Stichaeus grigorjewi* Herzenstein, in Korea (Kim and Kang, 1991). Recently, we collected four specimens of *Stichaeus nozawai* Jordan and Snyder, from the East Sea of Korea. In this study, we described *S. nozawai* as a first record from Korea based on the specimens.

MATERIALS AND METHODS

The four specimens were collected from the Kangwon-do, middle East Sea in 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.

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

RESULTS AND DISCUSSION

***Stichaeus nozawai* Jordan and Snyder, 1902**
(New Korean name : Keun-nun-jang-gaeng-i)
(Fig. 1; Table 1)

Stichaeus nozawai Jordan and snyder, 1902: 496, fig. 26 (Otaru, Hokkaido); Sodatove and Lindberg, 1930: 468; Amaoka and Miki, 1984: 302, fig. pl. 271; Linberg and Krasyukova, 1987: 63, fig. 42; Nakabo, 2002: 1048.

Material examined. CNUC 37770~37771, 218.3~222.5 mm SL, 38°26′47″N, 128°27′33″E, Geojin-ri, Geojin-eup, Goseong-gun, Kangwon-do, Korea, Nov. 19, 2008; CNUC 37772, 219.4 mm in SL, 38°12′33″N, 128°34′46″E, Jungang-dong, Sokcho-si, Kangwon-do, Korea, Jan. 10, 2009; CNUC 37773, 234.5 mm SL, 37°53′35″N, 128°49′53″E, Jangseong-ri, Jumunjin-eup, Gangneung-si, Kangwon-do, Korea, Jan. 10, 2009, collected by M.H. Ko, H.S. Kim and J.Y. Park.

Description. Counts for the present specimens are shown in Table 1. Measurements in % of standard length: head length 22.1±0.96 (21.0~23.3); body depth 16.9±1.08 (16.2~18.5); predorsal length 20.2±1.15 (19.1~21.7); preanal length 38.6±1.52 (37.0~40.6); caudal depth 10.5±0.92 (9.5~11.4). Measurements in % of

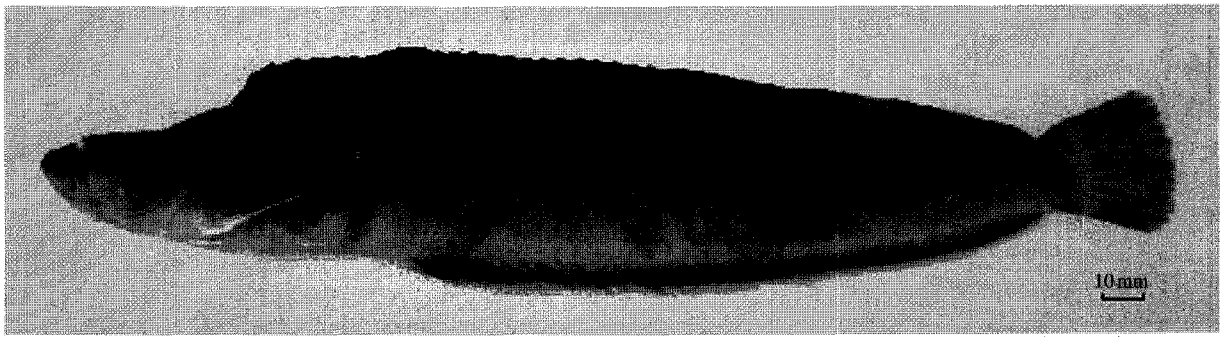

Fig. 1. *Stichaeus nozawai* Jordan and Snyder, CNUC 37772, 219.4 mm SL.

Table 1. Comparisons of meristic characters for *Stichaeus nozawai*

Meristic characters	Jordan and Snyder (1902)	Linberg and Krasyukova (1987)	Amaoka and Miki (1984)	Present study
Standard length (Individual number)	255 (n=1)	46~596 (n=83)	–	218.3~134.5 (n=4)
Dorsal fin rays	LI	XLI-LI	XLIX-LII	L
Anal fin rays	I, 37	I, 31~39	I, 34~37	I, 36~37
Pectoral fin rays	–	–	15~16	14
Ventral fin rays	–	–	I, 3	I, 3
Vertebral number	–	–	–	54~55

head length: head width 63.9±1.9 (61.0~65.0); snout length 18.6±0.56 (17.9~19.1); eye diameter 15.4± 0.49 (14.7~15.7); interorbital width 16.4±0.30 (16.2~ 16.7).

Body elongated and comparatively compressed. Head usually small. Eye comparatively large. Interorbital space convex, interorbital region narrow. Teeth in narrow bands in the jaws, lower jaw protrudes slightly forward beyond upper jaw, lips thin, posterior end of mouth not reaching posterior margin of eye. Gill openings V-shaped fold across the isthmus, gill rakers short, 3+9. Nostrils with small tubules. Body covered with minute smooth scales, head naked. Lateral line simple, extends from upper corner of gill opening along dorsal part of body to near the base of caudal; 10~13 dorsal spines behind end of lateral line, the lateral line pores in 2 rows. Pectoral fins rounded. Pelvic fins small; 2nd soft ray longest.

Color in formalin. Overall body color dark brown. Indistinctly clouded with darker along the lateral line. Two dark bands extending below-downward from eye. Body below white. Dorsal fin with 6 large blackish spots; the anterior spot more dark and short. Pectoral fin dark brown. Anal fin generally dark brown, but its margin white. Caudal fin increasingly dark toward edge.

Distribution. The East Sea (present study), west coast of Sakhalin (Jordan and Snyder, 1902), east coast of Sakhalin, Aniva Bay, South Kuril Strait, and Kunashir and Šiaškotan islands (Lindberg and Krasyukova, 1987), and northern Japan to the Okhotsk Sea (Amaoka and Miki, 1984).

Remarks. The genus *Stichaeus* has been known just one species, *Stichaeus grigorjewi* Herzestein from Korea by Kim *et al.* (2005). Through a recent our study, a newly recorded *Stichaeus nozawai* was similar to *S. grigorjewi* in having body with distinct tubular lateral line, covered with minute cycloid scales; head naked and posterior part of anal fin without spiny rays. However, the former was clearly distinguished from the latter by posterior end of mouth not reaching posterior margin of eye (vs extending beyond for *S. grigorjewi*), eye large; diameter of eye 17~20% in head length (vs. eye small; 9~11%) and anal fin with 39 or less elements (vs. 43 or more elements) (Lindberg and Krasyukova, 1987; Nakabo, 2002).

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동해안에서 채집된 장갱이과 어류 1미기록종, *Stichaeus nozawai*

고명훈 · 김형수 · 박종영

전북대학교 자연과학대학 생물과학부 · 생물다양성연구소

요 약 : 우리나라 강원도 동해(주문진과 속초, 거진 연근해)에서 장갱이과에 속하는 어류 4개체(표준체장 218.3~234.5 mm)를 채집하였으며 한국미기록종인 *Stichaeus nozawai* Jordan and Snyder로 동정되었다. 본 종은 턱 뒤 끝이 눈 뒤의 가장자리에 미치지 않고, 측선이 몸의 후반부인 등지느러미 극조 10~13개 부근까지 이어져 있으며, 등지느러미에는 사선의 검은 줄무늬가 있고, 뒷지느러미 기조수는 I, 36~37였다. 본 종의 국명은 '큰눈장갱이'로 명명하였다.

찾아보기 낱말 : *Stichaeus nozawai*, 장갱이과, 한국미기록종