

First Record of the Trachichthyid Fish, *Aulotrachichthys prosthemi* (Beryciformes: Trachichthyidae) from Korea

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ABSTRACT This is the first report of *Aulotrachichthys prosthemi* (Jordan and Fowler), belonging to the family Trachichthyidae, collected in Korea. One specimens (74.8 mm in standard length) were caught in the coastal waters of Jeju Island by using the bottom trawl. This species was characterized by the following morphological traits: V, 13 dorsal fins; III, 9 anal fins; the striated area along the ventral side of the body reaches to the tip of last anal rays and the post-temporal spine is sharp, pointed and with serrated edge. We propose a new Korean name, "Eeun-jool-geum-nun-dom-sok" and "Eeun-jool-geum-nun-dom" for the genus and species, respectively.

Key words : Trachichthyidae, *Aulotrachichthys prosthemi*, first record, Jeju Island, Korea

INTRODUCTION

The roughies (Family Trachichthyidae), comprising 6 genera and 39 species in the world, are characterized by having distinct spine at angle preopercle, 4~7 precurrent spines on each lobe of caudal fin and abdomen with median ridge of scutes (Nelson, 2006). In Korea, one roughies species, *Gephyroberyx darwinii* (Johnson) 1866, have been collected and reported from the coastal waters of Jeju Island so far (Kim *et al.*, 2004).

The genus *Aulotrachichthys*, belonging to family Trachichthyidae, comparing 9 species and is morphologically characterized by having the striated areas on side of isthmus (Gomon and Kuitert, 1987).

During a survey of the fisheries resources in Korean waters, single specimen of *Aulotrachichthys prosthemi* was collected from the bottom trawl in the coastal waters of Jeju Island, Korea. Here, we describe the morphological characters of *A. prosthemi* as an addition to the list of Korean fishes.

Counts and measurements followed the method of Hubbs and Lagler (1964). The present specimens was deposited at National Fisheries Research and Development Institute (NFRDI), Korea.

Genus *Aulotrachichthys* Fowler, 1938

(New Korean name: Eeun-jool-geum-nun-dom-sok)

Aulotrachichthys Fowler, 1938: 40 (type species: *Aulotrachichthys latus*, Fowler, 1938).

Aulotrachichthys prosthemi (Jordan and Fowler, 1902)

(New Korean name: Eeun-jool-geum-nun-dom)
(Fig. 1; Table 1)

Paratrachichthys prosthemi Jordan and Fowler 1902: 9 (Suruga Bay, Japan).

Aulotrachichthys prosthemi: Yamakawa, 1984: 109 (Japan); Gon, 1987: 100 (Hawaii); Randall and Lim, 2000: 601 (South China Sea).

Material examined. NFRDI 2011122, one specimen, 72.1 mm in SL, 33° 48' 31" N, 125° 44' 06" E, off Jeju Island, Korea, November 22, 2011.

Description. Counts and measurements for the present specimen are shown in Table 1. Body oblong, compressed, its depth about two fifth of SL. Body covered with rough ctenoid scales; dorsal profile more convex than ventral profile; dorsal ridges on head posteriorly, curving outward behind the eyes; post-temporal spine long and strong (Fig. 2); nostrils in front eye and above center of orbit, posterior nostril larger than anterior nostril; interorbital space is slightly bumpy; opercular spine prominent extending beyond the opercular membrane, but preopercular spine shorter, not reaching beyond the membrane; anus between pelvic bases; eight large ventral scutes between anus and anal fin origin; striated areas on side of isthmus, under pectoral base along ventral side of body to the point of least depth of the caudal preduncle (Fig. 3); 4-7 precurrent spines on each lobe of caudal fin; teeth in both jaws small, conical, arranged in a board patch symphysis.

Color when fresh. Body silver-brown; black ring around anus; all fins pale reddish. Ventral area from

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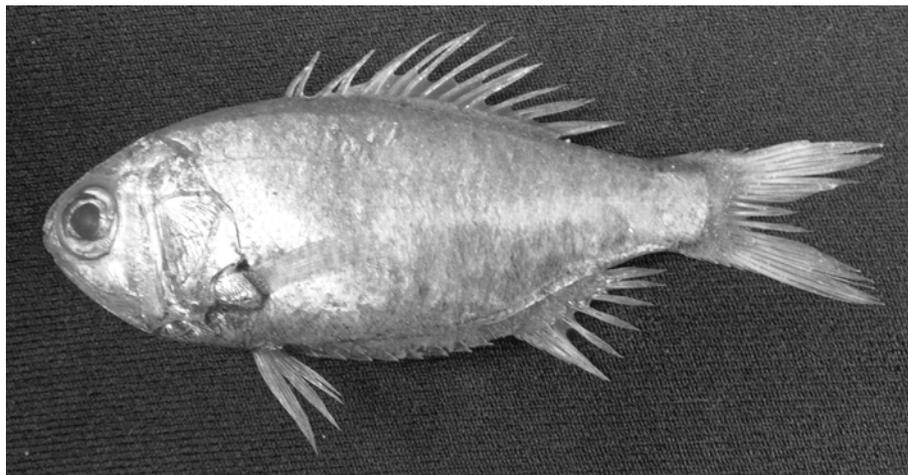


Fig. 1. *Aulotrachichthys prosthemi*: NFRDI 20111122, 74.8 mm SL, Jeju Island, Korea.

Table 1. Counts and proportional measurements of *Aulotrachichthys prosthemi*

| Counts and Measurements | Present study | Gon (1987) |
|--------------------------------|---------------|-----------------|
| Total length (mm) | 94.1 | — |
| Standard length (mm) | 74.8 (n=1) | 60.0~61.4 (n=3) |
| Counts | | |
| Dorsal fin rays | V, 13 | V, 13 |
| Pectoral fin rays | 11 | 12 |
| Pelvic fin rays | I, 6 | I, 6 |
| Anal fin rays | III, 9 | III, 8 |
| Caudal fin rays | 17 | — |
| Gill rakers | 7+15 | 7+ (15~16) |
| Pored scales in lateral line | 29 | 29~30 |
| Ventral scutes | 9 | 9~10 |
| Vertebrae | 26 | — |
| In % of standard length | | |
| Body width | 19.0 | — |
| Body depth | 38.8 | 35.7~37.0 |
| Head length | 35.8 | 34.5~35.7 |
| Snout length | 5.3 | — |
| Eye diameters | 12.1 | — |
| Upper jaw | 23.3 | — |
| Interorbital length | 11.0 | — |
| Predorsal fin length | 38.1 | — |
| Prepectoral fin length | 35.8 | — |
| Prepelvic fin length | 36.0 | — |
| Preanal fin length | 72.7 | — |
| Caudal peduncle length | 12.8 | 17.9~18.2 |
| Caudal peduncle depth | 13.9 | 13.9~14.7 |
| In % of head length | | |
| Snout length | 14.9 | 17.2~19.6 |
| Eye diameter | 31.8 | 33.3~35.7 |
| Interorbital length | 30.6 | 25.6~27.0 |
| Upper jaw | 64.9 | — |

isthmus to caudal base; under and above anterior half of pectoral fin black.

Color after preservation. Body and head dark-brown; all fins pale yellow; bases of ventral scutes dark but

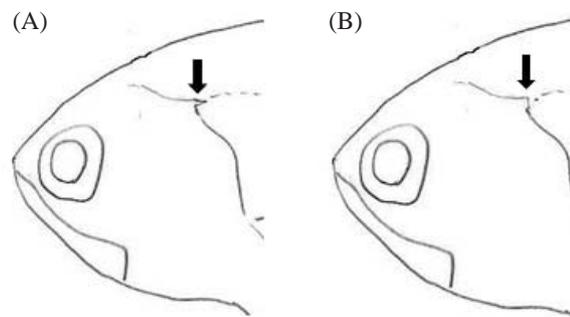


Fig. 2. Comparison of post-temporal spine of in *A. prosthemi* (A) and *A. sajademalensis* (B). The figure for *A. sajademalensis* was cited from Hayashi (2002).

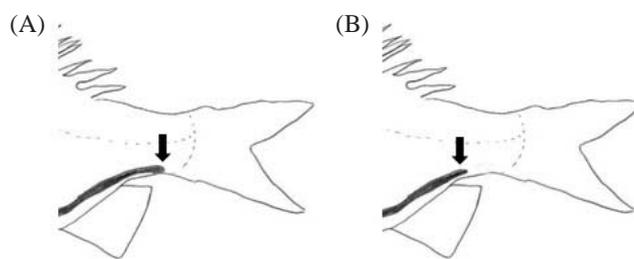


Fig. 3. Comparison of the posterior end of the striated area in *A. prosthemi* (A) and *A. sajademalensis* (B). The figure for *A. sajademalensis* was cited from Hayashi (2002).

ridges pale; striated areas on side of isthmus pale black.

Distribution. Korea (Jeju Island, present study), Japan (Hayashi, 2002), Taiwan (Shen *et al.*, 1993), South China Sea (Randall and Lim, 2000) and Hawaii (Gon, 1987).

Remarks. The present specimen was characterized by having anus between pelvic fin bases, large scutes between anus and origin of anal fin, and the post-temporal

projection ending in short sharp spine and striated areas along the ventral side of the body reaches to the point of least depth of the caudal peduncle. The meristic counts of the present specimen match with previous descriptions of *Aulotrachichthys prosthemi* (see Table 1). Although the gill rakers and pectoral fin rays of our specimen were somewhat different from those of Japanese specimens given by Hayashi (2002), maybe due to geographic or intraspecific variations.

A. prosthemi is similar to *A. sajademalensis* in morphological characters such as body form in far East Asia. However, the former can be distinguished by having post-temporal projection ending in spine (vs. low ridge, not ending in spine for *A. sajademalensis*) (Fig. 2), and striated area along the ventral side of the body reaches to the tip of last anal rays (vs. not reaches) (Fig. 3) (Hayashi, 2002). *A. prosthemi* is also similar to *Genpyroberyx darwinii* (Johnson, 1866) inhabiting the coastal waters of Korea, but the former is easily distinguishable from the latter by having anus between pelvic fin bases (vs. in front of anal fin for *G. darwinii*), and first 5 dorsal fin spines (vs. 8~9 dorsal spines). We suggest a new Korean name, “Eeun-jool-geum-nun-dom” for *A. prosthemi*.

ACKNOWLEDGMENTS

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한국산 납작금눈돔과 어류 1 미기록종, *Aulotrachichthys prosthemi*

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요 약 : 납작금눈돔과에 속하는 *Aulotrachichthys prosthemi* 1개체 (표준 체장 74.8 mm)가 제주도 주변 해역에서 처음으로 채집되었다. 이 종은 등지느러미 기조수 V, 13, 뒷지느러미 기조수 III, 9, 아가미 뚜껑 위쪽에 날카로운 가시를 갖고 있으며 배쪽 줄은 뒷지느러미 끝을 도달하는 점에서 *A. prosthemi*로 확인되었다. 이 미기록종의 속명과 국명은 “은줄금눈돔속”, “은줄금눈돔”으로 각각 제안하였다.

찾아보기 낱말 : 납작금눈돔과, 은줄금눈돔, 미기록종, 제주도