

First Record of a Bothid Flounder, *Japonolaeops dentatus* (Bothidae, Pleuronectiformes) from Jeju Island, Korea

By Maeng Jin Kim, Jung Hwa Choi, Taeg Yun Oh, Jung Nyun Kim and Choon Bok Song^{1,*}

Fisheries Resources Management Division, National Fisheries Research and Development Institute, Busan 619-705, Korea
¹College of Ocean Sciences, Jeju National University, Jeju 690-756, Korea

ABSTRACT This is the first report of *Japonolaeops dentatus* Amaoka, belonging to the family Bothidae, collected in Korea. Four specimens (152.9~174.7 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: 115~120 dorsal fin rays, 96~98 anal fin rays, 105~106 pores in lateral line, upper jaw extending to below anterior margin of lower eye, and teeth presenting on both ocular and blind sides of the jaw. We propose a new Korean name, "Geom-eun-kko-ri-neop-chi-sok" and "Geom-eun-kko-ri-neop-chi" for the genus and species, respectively.

Key words : Bothidae, *Japonolaeops dentatus*, first record, Jeju Island, Korea

INTRODUCTION

There are about 22 genera and 140 species of bothid flounder (Family Bothidae) in the world (Nelson, 2006), and 7 genera and 9 species in Korea (Kim *et al.*, 2005; Lee and Lee, 2007; Kim *et al.*, 2010; Lee and Choi, 2010). Family Bothidae are characterized by having pelvic fin base longer on ocular side than on blind side, whereas other families in the order Pleuronectiformes have the same length of pelvic fin base on both sides (Amaoka, 1969; Nelson, 2006).

Recently, four specimens of *Japonolaeops dentatus*, belonging to the family Bothidae, were collected from the bottom trawl in the coastal waters of Jeju Island, Korea. Here, we describe the morphological characters of *J. dentatus* as an addition to the list of Korean fishes.

Counts and measurements followed the method of Hubbs and Lagler (1964). Three specimens were deposited at the Fish Genetics and Breeding Laboratory, Jeju National University (JNU), and one specimen at National Fisheries Research and Development Institute (NFRDI), Korea.

Genus *Japonolaeops* Amaoka, 1969

(New Korean name: Geom-eun-kko-ri-neop-chi-sok)

Japonolaeops Amaoka, 1969: 138 (type species : *Japono-*

laeops dentatus Amaoka)

The genus *Japonolaeops* comprises a single species (On-line Catalog of Fishes: www.calacademy.org), with the following morphological characters. Body elongate, elliptical and strongly compressed; caudal peduncle very narrow in depth; dorsal fin originating above nostrils on blind side; posterior end of lower jaw extending to slightly in rear of anterior margin of lower eye; teeth small, well developed on both sides, uniserial on upper jaw, and uniserial and biserial on lower jaw (Amaoka, 1969).

Japonolaeops dentatus Amaoka, 1969

(New Korean name: Geom-eun-kko-ri-neop-chi)

(Fig. 1; Table 1)

Japonolaeops dentatus Amaoka, 1969: 138 (type locality : Miya, Aichi Pref.); Shao *et al.* 1993: 117 (Taiwan); Randall and Lim, 2000: 645 (South China Sea); Hensley and Amaoka, 2001: 3806 (Western Central Pacific).

Material examined. JNU 304-1~3, three specimens, 152.9~174.1 mm in standard length (SL), Jeju Island, Korea, Apr. 28, 2011; NFRDI 20110327, one specimen, 174.7 mm in SL, 32°46'43"N, 126°49'67"E, off Jeju Island, Korea, March 27, 2011.

Description. Counts and measurements for the present specimen are shown in Table 1.

Body elliptical, elongate, its depth about one-third of SL; dorsal and anal contours evenly arched; dorsal fin

*Corresponding author: Choon Bok Song Tel: 82-64-754-3471, Fax: 82-64-756-3493, E-mail: cbsong@jejunu.ac.kr

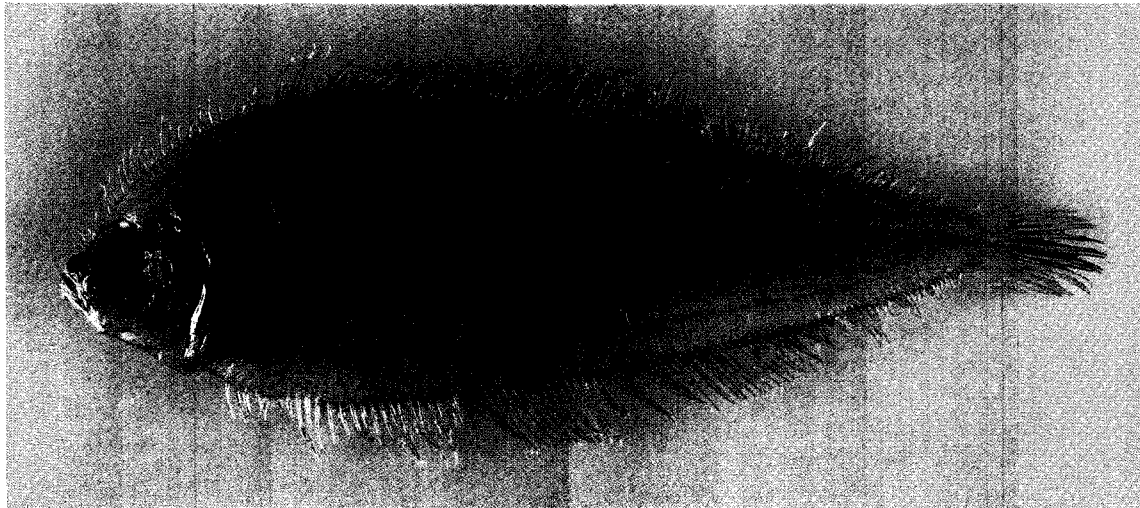


Fig. 1. *Japonolaeops dentatus* Amaoka, JNU 304-1, 152.9 mm SL, Jeju Island, Korea.

Table 1. Counts and proportional measurements of *Japonolaeops dentatus*

Counts and measurements	Present study	Amaoka (1969)	Okamura <i>et al.</i> (1985)
Standard length (mm)	152.9 ~ 174.7 (n=4)	176.2 (holotype)	155 (n=1)
Counts			
Dorsal fin rays	115 ~ 120	118	115
Pectoral fin rays (ocular side)	14 ~ 15	15	13
Pectoral fin rays (blind side)	14	14	11
Pelvic fin rays	6	—	6
Anal fin rays	96 ~ 98	97	93
Caudal fin rays	19	—	—
Gill rakers	6+8	6+8	6+8
Scales in lateral line	105 ~ 106	106	103
Vertebrae	11+40 ~ 41	—	11+41
In % of standard length			
Body width	4.8 ~ 5.3		
Body depth	33.1 ~ 35.7	32.4	37.3
Head length	17.7 ~ 18.2	17.6	17.9
Predorsal fin length	3.5 ~ 3.8	—	—
Prepectoral fin length	18.0 ~ 19.1	—	—
Prepelvic fin length	10.1 ~ 14.1	—	—
Preanal fin length	16.7 ~ 19.6	—	—
Curved lateral line	10.0 ~ 11.2	—	—
Straight lateral line	73.4 ~ 75.3	—	—
In % of head length			
Snout length	16.5 ~ 18.8	18.3	19.1
Lower eye diameter	29.2 ~ 31.9	31.1	32.1
Upper eye diameter	29.7 ~ 32.6	31.3	32.1
Upper jaw (ocular side)	24.3 ~ 28.1	—	21.3
Longest dorsal ray	38.9 (damaged) ~ 51.3	56.2	50.5
Longest anal ray	47.5 (damaged) ~ 51.0	51.5	49.5
Pectoral fin length (ocular side)	61.3 ~ 63.7	67.1	62.5
Pectoral fin length (blind side)	34.5 ~ 38.5	44.1	37.5
Depth of caudal peduncle	36.7 ~ 38.7	39.7	38.6

starting on blind side, its origin in front of lower eye; anal fin starting below pectoral base; pectoral fin smaller on blind side than on ocular side; pelvic fin base longer on

ocular side than on blind side; lateral line on ocular side gently arched above pectoral fin, but no lateral line on blind side; caudal peduncle narrow in depth, much less

than half length of head; head small, its depth about half of body; mouth very small; snout protruded and short, its length longer than eye diameter; upper jaw extending to below anterior margin of lower eye; eyes rather large, upper and lower eye were separated by a narrow and high ridge; teeth in both jaws uniserial; two nostrils existed on ocular side in front of upper margin of lower eye and the other two were on blind side below origin of dorsal fin; anterior nostril on ocular side tubular with short flap and posterior one somewhat tubular without flap; scales very small and deciduous; both sides covered with ctenoid scales; part of dorsal and anal fin covered with scales.

Color when fresh. Body uniformly light greenish brown on ocular side; blackish at the middle portion of caudal fin; body white on blind side.

Color in formalin. Body uniformly blackish on ocular side; all fins pale greyish, caudal fin blackish on some rays at middle portion.

Distribution. Korea (Jeju Island, present study), Japan (Nakabo, 2002), Taiwan (Shao *et al.*, 1993), South China Sea (Randall and Lim, 2000).

Remarks. The present specimens were characterized by having upper jaw extending to posterior margin of lower eye, body depth about one-third of standard length, caudal peduncle depth narrow much less than half length of head and teeth on jaws present on both sides. The morphological characters of the specimens matched with *Japonolaeops dentatus* description given by the previous studies (see Table 1). *J. dentatus* is similar to *Neolaeops microphthalmus* in morphological characters such as body form (Hensley and Amaoka *et al.*, 2001). However, the former can be distinguished by having 90~101 anal fin rays (vs. 83~87 for *N. microphthalmus*), dorsal contour of head with shallow concavity (vs. deep concavity), and upper jaw length smaller than lower eye diameter (vs. larger) (Nakabo, 2002). *J. dentatus* is also similar to *Laeops kitaharae* inhabiting the coastal waters of Korea, but the former is easily distinguishable from the latter by having teeth present on both ocular and blind sides of jaw (vs. on blind side only for *L. kitaharae*), and first 2 dorsal fin rays not detached from others (vs. detached). We suggest a new Korean name, "Geom-eun-kko-ri-neop-chi" for *J. dentatus*.

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한국산 등글넙치과 어류 1미기록종, *Japonolaeops dentatus*

김맹진 · 최정화 · 오택윤 · 김정년 · 송춘복^{1,*}

국립수산과학원 자원관리과, ¹제주대학교 해양과학대학

요 약 : 등글넙치과에 속하는 *Japonolaeops dentatus* 4개체 (표준 체장 152.9~174.1 mm)가 제주도 주변 해역에서 처음으로 채집되었다. 이 종은 등지느러미 115~120개, 뒷지느러미 96~98개, 측선 비늘수 105~106개를 가지며, 윗턱이 눈앞까지 도달하고, 양턱에 이빨이 존재하는 점에서 *J. dentatus*로 확인되었다. 이 미기록종의 속명과 국명은 “검은꼬리넙치속”, “검은꼬리넙치”로 각각 제안하였다.

찾아보기 낱말 : 등글넙치과, 검은꼬리넙치, 미기록종, 제주도