

First Record of a Jawfish, *Opistognathus hongkongiensis* (Opistognathidae: Perciformes) from Korea

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ABSTRACT Three juvenile specimens (38.8~51.5 mm SL) of the opistognathid fish, *Opistognathus hongkongiensis* Chan were collected off the Jeju Island, southern Korea. *O. hongkongiensis* is characterized by having a large mouth, dark brown vertical bands on sides, and yellow dorsal fin without a black blotch. We described it as the first record to Korean fish fauna, and proposed the new Korean name, "Jul-hu-ak-chi" for this species.

Key words : *Opistognathus hongkongiensis*, Opistognathidae, first record

The jawfishes comprise three genera and about 78 species in west-central Atlantic, Indian, and west-eastern Pacific Oceans (Nelson, 2006). The Indo-Pacific family Opistognathidae has been subdivided into two genera, *Opistognathus* Cuvier and *Stalix* Jordan and Snyder, based on shape of dorsal fin spines (Smith-Vaniz and Yoshino, 1985; Aizawa, 2002). The genus Indo-Pacific *Opistognathus* was reviewed not only by Smith-Vaniz and Yoshino (1985), recognizing six species with two additional new species in Japan, but also by Smith-Vaniz (2004), describing six endemic new species with provision of keys for all Australian jawfishes. Five species of *Opistognathus* are known from Taiwan (Shen *et al.*, 1993), however, only one species, *O. iyonis* (Jordan and Thompson, 1913), has been reported from Korea at present (Myoung *et al.*, 1999).

They have unique ecological characteristics, i.e. they are obligatory burrow-dwellers and orally incubate their eggs in male (Smith-Vaniz and Yoshino, 1985; Nelson, 2006). Jawfishes are the potentially ideal animals for biogeographic studies, because of limited dispersal capabilities as well as a high level of regional endemism (Smith-Vaniz, 1997).

During a bottom trawl survey off the Jeju Island, Korea, we collected three specimens of *Opistognathus hongkongiensis* Chan, 1968 (Fig. 1). They are herein described as the first record to Korean fish fauna based

on the specimens.

Measurement methods followed those of Nakabo (2002). The number of vertebrae and branched caudal fin rays were counted from radiographs. The examined specimens were deposited at the collection room in the National Fisheries Research and Development Institute (NFRDI) of Korea.

Opistognathus hongkongiensis Chan, 1968

(New Korean name: Jul-hu-ak-chi)

(Fig. 2; Table 1)

Opistognathus hongkongiensis Chan, 1968: 198 (Hong Kong, China).

Opistognathus hongkongiensis: Shen *et al.*, 1993: 479, pls. 161-168 (Taiwan).

Opistognathus fasciatus Chan, 1966: 9, fig. 1 (Hong Kong, China).

Opistognathus fasciatus: Shen *et al.*, 1986: 72, fig. 12 (Taiwan).

Material examined. NFRDI 20071029-01, 1 specimen, 38.8 mm in standard length (SL), 126° 13'E, 32° 47'N, off Jeju Island, Korea, 110 m depth, 14 October 2007, R/V Tamgu-1, bottom trawl, collected by J.K. Kim; NFRDI 20071029-02~03, 2 specimens, 49.7~51.5 mm SL, 126° 22'E, 33° 01'N, off Jeju Island, Korea, 105 m depth, 15 October 2007, R/V Tamgu-1, bottom trawl, collected by J.H. Park.

Description. Meristic characters are shown in Table 1. Measurements in percentage of SL: Body depth 24.0

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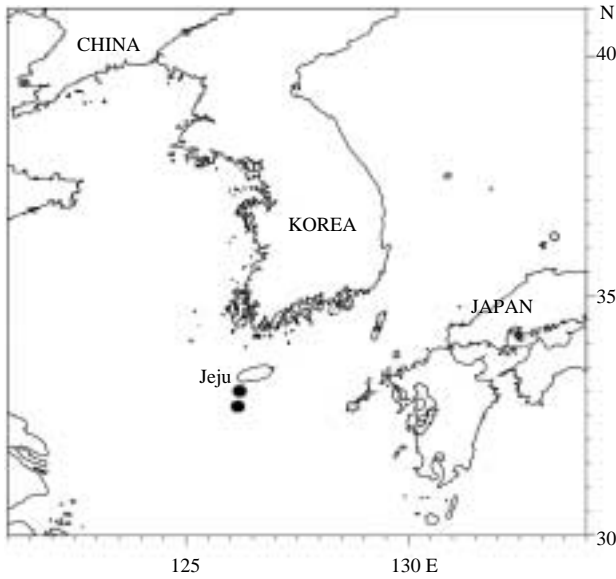


Fig. 1. Map showing the sampling area of *Opistognathus hongkongiensis* off Jeju Island, southern Korea.

~25.4; head length 30.9~33.2; postorbital length 17.0~19.5; snout length 2.7~5.4; eye diameter 7.2~10.5; upper jaw length 16.0~22.9; interorbital width 2.1~2.6; suborbital width 2.1~2.6; predorsal length 32.0~32.2; prepectoral length 33.4~36.3; prepelvic length 28.9~29.2; preanal length 61.9~64.4; pectoral fin length 14.8~19.9; pelvic fin length 17.9~18.3; dorsal fin base length 59.4~59.8; anal fin base length 22.1~27.6; length of longest dorsal fin spine 9.1~10.1; length of longest dorsal fin ray 14.7~17.5; length of longest anal fin ray 15.5~18.1; caudal fin length 23.1~27.1; caudal peduncle length 11.7~15.1; caudal peduncle depth 11.3~12.6.

Body elongated, cylindrical, and compressed posteriorly; snout short and blunt; eye large and located dorsally; interorbital space very narrow; mouth very large and oblique, upper jaw slightly protruding; posterior margin of upper jaw extending far beyond the posterior of eye, its posterior margin broad and rounded; anterior

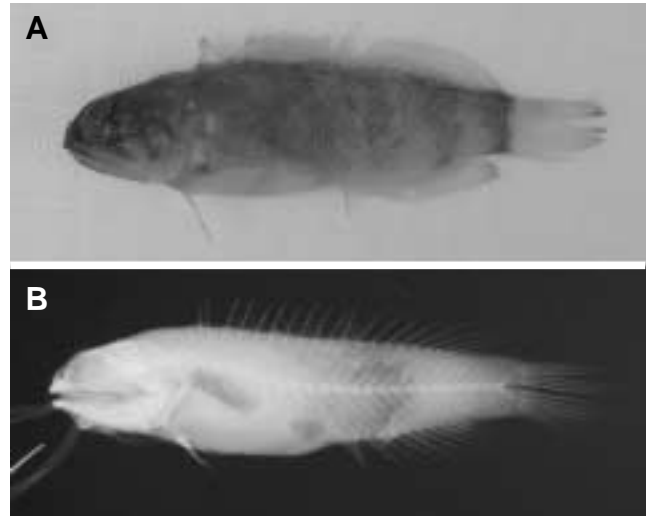


Fig. 2. *Opistognathus hongkongiensis* Chan, NFRDI 20071029-02, 51.5 mm SL, 126° 22'E, 33° 01'N, off Jeju Island, Korea. (A) Lateral view; (B) X-ray photograph.

nostril tube-type; small canine-like teeth, forming four rows on front and a single row on lateral aspect of jaws; cephalic sensory pores well-developed; tips of dorsal fin spines needle-shaped; dorsal fin continuous, its base long; pelvic fin inserted anterior to pectoral fin; all rays of dorsal and anal fins branched, except for outer two rays on pelvic fin unbranched; pectoral and caudal fins rounded; lateral line located dorsally and terminated below of the 10th dorsal fin spine. Scales cycloid, but scaleless on head, nape, breast, upper part of lateral line, and pectoral fin base.

Color of fresh specimens. Body overall light brown, head brown, abdomen white; faint brown bands on body, the last band darker; dorsal, anal and caudal fins yellow; base of dorsal fin brown; posterior margin of anal and caudal fins brown; pectoral and pelvic fins light yellow.

Color of preserved specimens. Body pale beige, head dark brown, bands brown; interorbital space black; all fins translucent; posterior margin of caudal fin dark.

Table 1. Comparison of meristic characters of *Opistognathus hongkongiensis*

	Present study	Chan (1966)	Shen <i>et al.</i> (1986)
Number of specimens	3	1	3
Total length (mm)	50.0~64.0	—	—
Standard length (mm)	38.8~51.5	148.5	44.4~58.3
Counts			
Dorsal fin rays	XI, 11	XI, 11	XI, 11
Pectoral fin rays	19~20	19	19~20
Anal fin rays	II, 10~11	II, 11	II, 10
Pelvic fin rays	I, 5	I, 5	I, 5
Branched caudal fin rays	12	12	12
Gill rakers	10~11+19~21	9+1+19	12+22
Vertebrae	10+16	—	10+16

Distribution. Western Pacific: Korea (off Jeju Island, present study), China (Chan, 1966), and Taiwan (Shen *et al.*, 1993). Because this species is undescribed in Japan until now, its occurrence may be confined to the South China Sea and western East China Sea.

Remarks. Chan (1966) originally described *Opistognathus fasciatus*, as a new species based on one specimen (148.5 mm SL) collected in Hong Kong. However, its scientific name has already been preoccupied by Atlantic *O. fasciatus* Longley and Hildebrand, eventually *O. fasciatus* was replaced by *O. hongkongiensis* (Chan, 1968).

Meristic characters of the present specimens corresponded well with the previous descriptions of *O. hongkongiensis*. However, the gill rakers of our specimens were slightly different from those of Taiwanese specimens (10~11+19~21 vs. 9+1+19 or 12+22), may be due to geographic or intraspecific variations (Table 1). A photograph of our juvenile specimens agreed with that of Shen *et al.* (1986), however, adults have the obvious vertical bands (see Shen *et al.*, 1993).

This species is easily distinguished from *O. iyonis* in Korean waters by a black blotch on spinous dorsal fin (absent in the former vs. present in the latter), several brown band on body (present vs. absent), the fewer dorsal fin rays (11 vs. 13~14) and anal fin rays (10~11 vs. 12~14) (Myoung *et al.*, 1999; Aizawa, 2002). *O. hongkongiensis* is distinguished from Japanese congeners in the following combination of characters: 11 dorsal and 10~11 anal fin rays; caudal fin without dark markings. Especially, *O. hongkongiensis* differs from *O. decorus* Smith-Vaniz and Yoshino, 1985, in having the vertical bands on body (vs. stripe bands in *O. decorus*) (Aizawa, 2002).

Most jawfishes are known to occur in relatively shallow waters from 0.3 to 30 m depths on sandy bottom, but some species are reported in 100~375 m depths (Smith-Vaniz, 1997). This species has been recorded from ca. 55 m near Hongkong (Chan, 1966) and 105~110 m depths near the Jeju Island (present study), indicating its preference to inhabit deeper depths.

The new Korean name of this species reflects the banded markings on body.

ACKNOWLEDGMENTS

This work was funded by the National Fisheries Research and Development Institute (NFRDI) of Korea.

We express our thanks to the captain and crews of R/V Tamgu-1.

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한국산 농어목 후악치과 어류 1 미기록종, *Opistognathus hongkongiensis*

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요 약 : 농어목 후악치과에 속하는 *Opistognathus hongkongiensis* 유어 3개체 (체장 38.8~51.5 mm)가 제주도 주변해역에서 채집되었다. *O. hongkongiensis*는 입이 크고 체측에 흑갈색 가로띠가 있으며, 등지느러미가 노랑고 검은 반점이 없는 것이 특징이다. 본 종은 국내에서 처음으로 보고되는 종으로서, 신한국명을 “줄후악치”로 제안한다.

찾아보기 낱말 : 후악치과, 줄후악치, 미기록종