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First Record of Odontobutid fish, *Odontobutis obscura* (Pisces, Gobioidei) from Korea

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Four specimens of the odontobutid fish, *Odontobutis obscura* (Temminck et Schlegel) of the family Odontobutidae were collected for the first time from Koje Island, Kyongsangnam-do, Korea. *Odontobutis obscura* was easily discriminated from congeners in that this species have no sensory canals at preoperculomandibular and supraorbital pit lines on head and the first band on lateral side of body is extending from the middle of the first dorsal fin. This species distributes in western Japan mainly and Koje island which situates southernmostly in Korean Peninsula. So a new Korean name "Nambangdongsari" is proposed.

Key words : *Odontobutis obscura*, Nambangdongsari, Koje island, Korea

Introduction

Genus *Odontobutis* is distributed mainly in far-east Asia and is composed of six species and three subspecies, that is, *O. platycephala, O. obscura potamophila, O. o. interrupta, O. o. obscura* (Iwata *et al.*, 1985), *O. haifengensis* (Chen and Zheng, 1985), *O. yaluensis* (Wu, Wu et Xie, 1993), *O. aurarmus* (Vidthayanon, 1995) and *O. aspro* (Kottelat, 1998). It was revealed by gene analysis that the three subspecies of *O. obscura* were differentiated to distinct species (Sakai *et al.*, 1993). These eight species were easily identified by the combination of the presence of sensory canals on head, the location of the lower gill opening, the number of rays in first dorsal fin and so on. The geographical distribution pattern of those eight species showed very high endemism. They were known to distribute as following: *O. platycephala* and *O. interrupta* in Korean Peninsula, *O. yaluensis* in the Yalu and Liao-ho River, *O. haifengensis* and *O. potamophila* in China, *O. obscura* in Japan, *O. aspro* in Laos, *O. aurarmus* in Thailand (Chen and Zheng, 1985; Iwata *et al.*, 1985; Wu, Wu et Xie, 1993; Vidthayanon, 1995; Jeon, 1996; Kottelat, 1998). In the course of a survey of ichthyofauna in Koje island, however, the author collected four specimens of *O. obscura* which was known as endemic species in Japan. They represent the first record of this species from Korea and from other locality beside Japanese Archipelago.

Materials and Methods

Specimens used in this study were collected at the mid-lower reach of the Sanyang stream which locate in Sanyang-ri, Dongbu-myon, Koje-shi, Kyongsangnam-do, Korea. After fixing with 10% formalin, the specimens were measured and counted following Hubbs and Largler (1964). The specimens were deposited at the Department of Biology Education, Teacher's College, Kyungpook National University (BEKU).

Results and Discussion

Family Odontobutidae Hoese and Gill, 1993
Genus *Odontobutis* Bleeker, 1874
Odontobutis obscura (Temminck et Schlegel, 1848)
(New Korean Name: Nam-bang-Dong-sa-ri)
(Fig. 1)

Material examined: BEKU 15026 (4 specimens), 75.6-88.0 mm SL, Sanyang stream (128° 36′ 56″E, 34° 48′ 92″N), Sanyang-ri, Dongbu-myon, Koje-shi, Kyongsangnam-do, Korea, Aug. 13, 1998.

Description: Dorsal fins VII-I, 9-10; anal fin I, 7-9; pectoral fin 14-15; pelvic fin I, 5; lateral scale rows 34-42; lateral scales with pit organ 20-31; transverse scales 14-18. No sensory canals on head (Fig. 2). Counts and proportional measurements for the present specimens were compared with the data of Iwata *et al.* (1985) on the holo and paratypes of *O. obscura* as shown in Table 1.

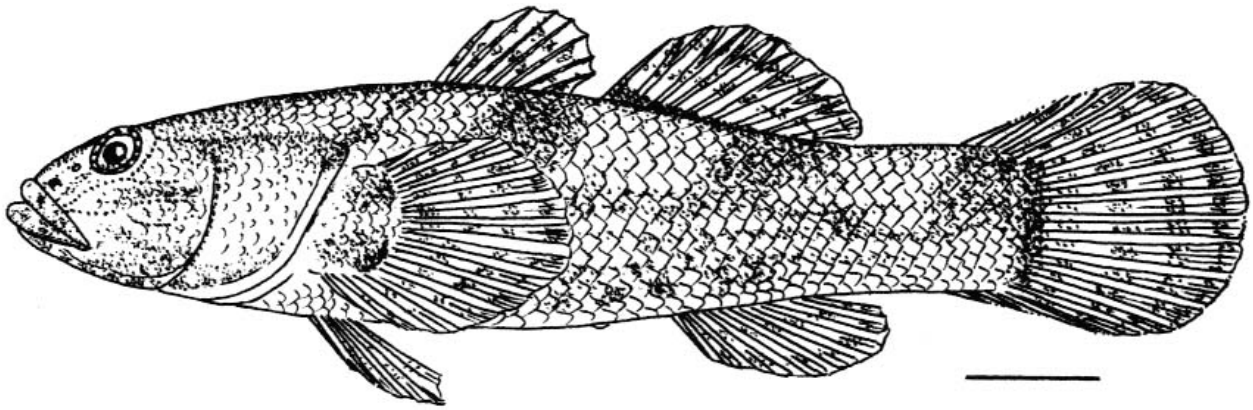

Fig. 1. *Odontobutis obscura*, BEKU 15026, 75.6 mm SL, male, Sanyang stream, Dongbu-myon, Koje-shi, Kyongsangnam-do, Korea, 13 August 1998. Scale bar indicates 10 mm.

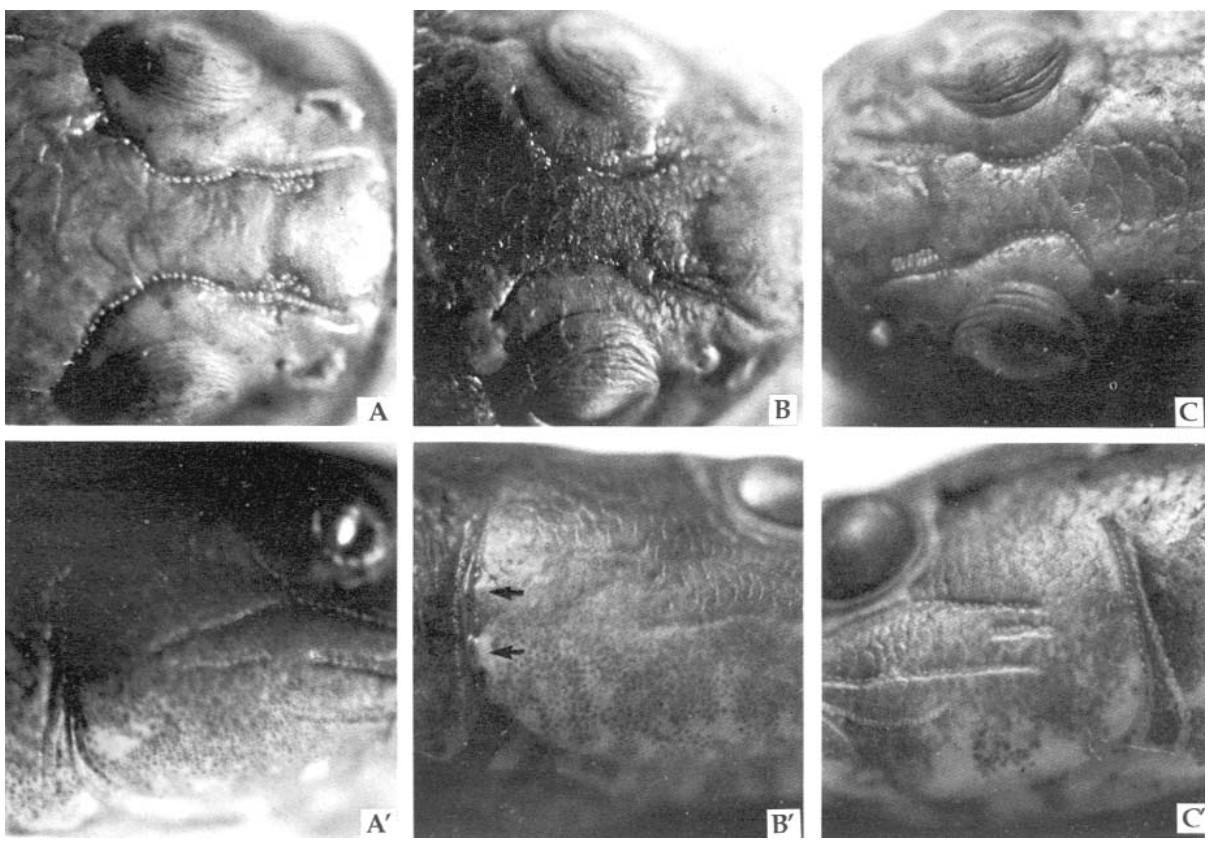

Fig. 2. Photographs showing the head of three odontobutid fishes. A and A′ are those of *Odontobutis obscura*, B and B′ are *O. platycephala* and C and C′ are *O. interrupta*. Arrows indicate sensory canals. A, B, and C: dorsal head, A′, B′ and C′: lateral head.

Table 1. Proportional measurements in hundredths of standard length and counts of *Odontobutis obscura*. Data show the mean values and their ranges (in parenthesis)

Character	Present specimens	Iwata *et al.* (1985)
Number of individuals	4	22
Standard length (mm)	75.6~88.0	59.0~134.8
Morphometric		
Head length	35.5 (34.5~36.4)	35.7 (31.8~38.4)
Body depth	25.2 (24.7~25.9)	22.3 (18.9~25.0)
Preanal length	66.3 (65.0~68.5)	63.7 (59.4~67.8)
Snout length	9.8 (9.3~10.9)	9.6 (7.8~11.6)
Head width	27.1 (26.3~27.9)	25.5 (21.4~28.3)
Body width	23.8 (23.3~24.3)	22.3 (17.3~28.1)
Eye diameter	5.7 (5.2~ 6.3)	5.6 (3.8~ 6.9)
Interorbital width	9.0 (8.8~ 9.4)	8.2 (5.9~12.0)
Caudal peduncle length	22.6 (21.9~23.5)	20.7 (20.0~24.7)
Caudal peduncle depth	13.5 (13.4~13.8)	12.3 (10.8~13.9)
Head depth	20.4 (20.0~20.8)	16.4 (14.7~18.3)
Longest pelvic ray	15.5 (15.2~15.6)	14.5 (11.4~18.3)
Longest pectoral ray	23.4 (21.9~24.7)	18.6 (14.5~25.4)
Longest dorsal spine	11.1 (10.7~11.7)	11.7 (9.8~13.7)
Longest dorsal ray	13.8 (12.8~14.5)	14.8 (12.6~18.5)
Longest anal ray	14.1 (13.6~14.5)	14.4 (11.8~16.2)
First dorsal base	13.9 (12.8~15.2)	13.9 (9.2~16.6)
Second dorsal base	15.8 (15.4~16.1)	16.1 (13.8~17.7)
Anal base	11.2 (10.6~11.9)	11.5 (9.8~13.2)
Snout to 1st dorsal origin	43.1 (42.6~43.3)	44.3 (42.0~45.8)
Snout to 1st dorsal end	56.4 (55.5~57.3)	57.6 (53.8~62.7)
Snout to 2nd dorsal origin	60.1 (58.9~60.8)	62.1 (58.0~63.7)
Snout to 2nd dorsal end	75.9 (75.5~76.3)	77.5 (72.6~79.7)
Snout to anal origin	66.5 (65.0~68.9)	69.4 (68.0~73.0)
Snout to anal end	77.4 (75.7~79.4)	80.6 (78.4~83.0)
Meristic		
Dorsal spines	7 (7)	7.0 (6~ 8)
Dorsal rays	9.5 (9~10)	8.1 (7~10)
Anal rays	7.5 (7~ 9)	6.9 (6~ 9)
Pectoral rays	14.8 (14~15)	15.8 (14~17)
Lateral scale rows	37.0 (34~42)	36.7 (31~41)
Lateral scales with pit	30.0 (20~31)	28.4 (26~30)
Transverse scales	15.5 (14~18)	14.4 (12~17)

Body cylindrical anteriorly, compressed posteriorly. Head large, depressed, underside flat. Cheek and opercle scaled. Eye small, Snout long. Mouth large, oblique downward, lower jaw prominant than upper one, posterior part of maxilla reaching below anterior margin of eye. Both jaws toothed, no teeth on vomer and palatine. Tongue round, free. Lower gill openings continued forward below eyes.

Interorbital width wider than eye diameter. Predorsal scales imbricated and extended forward in front of the eyes. Two dorsal fins separated widely. Pectoral fin reaching below posterior border of first dorsal fin. Pelvic fin short, never reaching anus. Outer margin of pectoral and caudal fin round.

Color in life: Head and body dark brown, somewhat opaque. Ventral part of body yellowish. Three distinct blackish bands on lateral side of body; first band extending from the middle of the first dorsal fin, the second from about the posterior half of second dorsal, the third on basicaudal; the first and second bands slightly tapering upward. Lower half of the body side mottled with irregular dusky blotches. Single dark dot on upper margin of gill opening. Several light dots on ventral side of head.

Dark stripes extend from eye to snout and to lower and to posterior angle of preopercle. Two dark dots on base of pectoral. Several irregular

rows of dark blotches on all fins. Iris mottled with small dark spots. No marked change of color in formalin.

Habitat: This species is found at stream edge of which water flowing moderately, water weeds or streamside-plants colonized and bottom covered with graveles.

Distribution: Koje island in Korea and western parts of Japan.

Remark: Eight species of the genus *Odontobutis* are very similar in the exomorphology, but differs from each other in the following characteristics: presence of sensory canals on head, the location of the lower gill opening, the number of rays in first dorsal fin and distance between the first and second dorsal fin (Chen and Zheng, 1985; Iwata *et al.*, 1985; Wu, Wu et Xie, 1993; Vidthayanon, 1995; Kottelat, 1998). It was known that the formation of sensory canals on head was completed in about 50 mm SL in *O. platycephala* and about 70 mm SL in *O. interrupta*, but not formed at all until adult stage in *O. obscura* (Iwata *et al.*, 1988). According to this data, present specimens (about 70~80 mm SL) are in adult stage which have completed sensory canals but they have no sensory canals. So present specimens agree well with the previous description in that they have no sensory canals at preoperculomandibular and supraorbital pit lines on head (Iwata *et al.*, 1985). There are, however, differences in mean values of few morphometric characters between Korean and Japanese *O. obscura*. Korean specimens had more deeper body, more longer preanal length and more wider head width than Japanese one (Table 1). I regard these differences as intraspecific variation because their ranges overlap largely.

In Japanese archipelago distribution pattern of *O. obscura* is similar to that of *Coreoperca kawamebari*. Both species distributes in the western part of Japan. It was known that *C. kawamebari* also inhabits in the Tamjin River and Koje Island in Korea (Jeon, 1986; Kim, 1997). It seems, therefore, that *O. obscura* may be distributed in the streams of south coast of Korea including Koje Island. So a survey on the presence of *O. obscura* in those streams is needed.

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한국산 동사리과 어류의 1 미기록종, *Odontobutis obscura* (Pisces, Gobioidei)

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경상남도 거제도의 산양천에서 채집된 동사리과 어류 4개체를 조사한 결과 지금까지 한반도에서는 서식이 확인되지 않은 *Odontobutis obscura* (Temminck et Schlegel)로 동정되었다. 본 종은 두부측선감각계의 공기열 중 전새개하악열과 안상열에 감각관이 없으며 체측의 제1반점이 제1등지느러미 기저의 중앙에서 시작한다는 점에서 같은 속의 다른 종들과 쉽게 구분된다. 본 종은 주로 일본의 서부에 분포하며 한반도에서는 거제도에서만 발견되어 한반도산 동사리속 어류 중에서는 가장 남쪽에 서식하고 있다고 추정되므로 본 종의 한국명은 "남방동사리"로 명명하였다.