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Acentrogobius pellidebilis, a New Species of Gobiid Fish from Korea

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A new species of gobiid fish *Acentrogobius pellidebilis* is described from specimens collected in the southern and western coasts of Korea. The new species is distinguished from its apparant sister species, *A. pflaumi*, by 7~8 predorsal scales and the 5 darker blotches arranged in a lateral line on body.

Introduction

Gobiid fishes are the largest family of marine fishes but the least known groups in Korean waters. There are 33 distinct genera consisting of 54 species in the region (Kim *et al.*, 1986, 1987; Iwata *et al.*, 1987; Kang, 1990; Lee, 1990, 1991).

An undescribed species of the genus *Acentrogobius* Bleeker was discovered among the fish collections from the western and southern coasts of Korea between 1984 and 1990. It is described as a new species in the present paper.

Methods for count and measurement follows those given by Hubbs and Lagler (1964), except that lateral scales are counted in a series from the scales at the posterior end of the upper part of the gill membrane to the middle scale on the base of the caudal fin and transverse scales from the origin of the second dorsal fin to the anal base. The cephalic sensory pore and cutaneous papilla systems were observed after staining by suminol cyanine. Its terminology used is after the Akihito *et al.* (1984). The osteological characters were examined from cleared and stained material by Taylor (1967). The spinous dorsal-fin pterygiophore formula is given according to the annotation of Birdsong *et al.* (1988). Sexual maturity was assessed by making an incision in the side of the abdomen and observing the gonads grossly. Type specimens are deposited at the laboratory of Department of Biology, Chonbuk National University (CUB).

Acentrogobius pellidebilis n. sp.

(New Korean name: Chomjul-mang-dug, 점줄망둑)
(Fig. 1)

Material examined.

Holotype: CUB (Department of Biology, Chonbuk National University) 7038, 62.4 mm SL (male), 34°45′N, 126°30′E, Sŏho-ri, Samho-myŏn, Yŏngam-gun, Chŏllanam-do, Korea, Apr. 10,

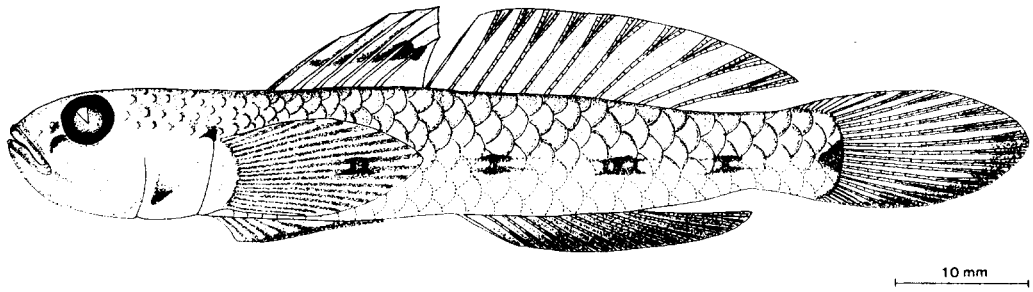

Fig. 1. *Acentrogobius pellidebilis* n. sp. Holotype, adult male, 62.4 mm in standard length, from Sŏho-ri, Samho-myŏn, Yŏngam-gun, Chŏllanam-do, Korea, April 10, 1988 (CUB 7038).

1988.

Paratypes: CUB 8343~8347, 5 specimens, 50.1~64.1 mm, males, Namdang-ri, Sobu-myon, Hongsong-gun, Chungchongnam-do, Sep. 14, 1985; CUB 12001~12005, 5 specimens, 52.5~58.7 mm, females, Pangjukpo, Tolsan-up, Yochon-gun, Chollanam-do, Sep. 26, 1990.

Nontype specimens: CTC (Chonju National Teachers College) 649~650. 2 specimens, 40.6~56.3 mm, Hukwang-ri, Haui-myon, Sinan-gun, Chollanam-do, May, 1984; CUB 8348 1 specimen, 43.9 mm, collecting locality same as in CUB 8343~8347, Sep. 14, 1985; CTC 648, 1 specimen, 62.2 mm, Ungpo-ri, Ungpo-myon, Iksan-gun, Chollabuk-do, Apr. 12, 1985; CTC 660~667, 8 specimens, 41.4~60.7 mm, Kochong-ri, Chupo-myon, Poryong-gun, Chungchongnam-do, June 4, 1987; CUB 7039, 1 specimen, 42.9 mm, Tongjisan-ri, Chongha-myon, Kimje-gun, Chollabuk-do, Apr. 20, 1985; CTC 657~658, 2 specimens, 48.0~52.4 mm, collecting locality same as in CUB 7038, Mar. 29, 1986; CTC 651~659, 9 specimens, 51.1~62.8 mm, collecting locality same as in CUB 7038, Mar. 30, 1988; CTC 659, 1 specimen, 60.3 mm, collecting locality same as in CUB 7038, May 28, 1988; CTC 668~677, 10 specimens, 45.0~62.8 mm, collecting locality same as in CUB 12001~12005, Sep. 26, 1990.

Diagnosis: For diagnostic characters of the *Acentrogobius pellidebilis* see Table 1. The most important characteristic for distinguishing this species from others of the genus is 7 to 8 predorsal scales and 5 darker blotches arranged in a lateral line on body.

Description: Body elongate and slightly compressed laterally. Scales cycloid on nape, opercle, breast and ventrally, becoming ctenoid posterolaterally on body at point posterior to vertical from tip of appresed pectoral fin; scales irregular in size and position, becoming larger posteriorly. Scales on dorsal side extending above posterior margin of preoperculum. Cheek without scales and posterior part of operculum with scales.

No dorsal spine prolonged, second through forth subequal in length. First element in second dorsal and anal fins a spine, and last ray in each fin split to its base. Soft dorsal, anal and pelvic fin rays branched; first dorsal fin with six spines, not widely separated from second dorsal fin; posterior extremity of depressed second dorsal fin just fails to reach caudal fin base, depressed and slightly shorter; caudal fin pointed; pectoral fin more or less bluntly pointed, reach slightly beyond tip of pelvic disk; pelvic fin rays multibranched, not reaching anal opening, inner rays

Table 1. Counts and proportional measurements of *Acentrogobius pellidebilis* n. sp. Data show ranges

	Holotye	Paratypes	
Sex	male	males	females
No. of specimens	1	5	5
Dorsal fin rays	VI-I,10	VI-I,10	VI-I,10
Pectoral fin rays	18	17-19	17-18
Anal fin rays	I,10	I,10	I,10
Lateral scales	27	27-29	25-27
Transverse scales	7	7-8	7-9
Predorsal scales	8	9-10	7-11
Standard length (mm)	62.4	50.1-64.1	52.5-58.7
In % of standard length			
Head length	27.2	27.4-29.8	27.1-28.1
Body depth	17.8	17.9-19.3	15.2-17.9
Caudal peduncle length	18.7	16.5-19.0	19.0-21.6
Predorsal distance	32.0	33.1-36.0	33.3-34.8
Prepectoral distance	27.9	28.1-29.9	27.6-29.1
Preventral distance	31.7	30.9-31.8	31.5-32.5
Preanal distance	57.5	56.1-59.3	55.5-59.9
Length of pectoral fin	23.4	24.5-27.3	24.0-27.3
Length of pelvic fin	21.1	20.7-21.3	19.8-22.5
Length of caudal fin	29.0	29.3-32.5	26.3-27.4
In % of head length			
Snout length	29.4	27.4-30.7	25.0-26.7
Eye diameter	26.5	24.3-27.9	25.6-28.3
Interdorsal length	4.7	4.2- 6.8	3.7- 4.8
In % of caudal peduncle length			
Caudal peduncle depth	56.4	56.0-61.3	46.2-52.6

joined at tips, frenum well developed, tube-like; dorsal procurrent caudal-fin rays 8; ventral procurrent caudal-fin rays 7; total procurrent caudal-fin rays 15.

Dorsal pterygiophore formula (DF), 3-22110; number of precaudal and caudal vetebra, 10+16=26; number of anal-fin pterygiophores anterior to first heamal spine, 2; epural number, 1 (Fig. 2).

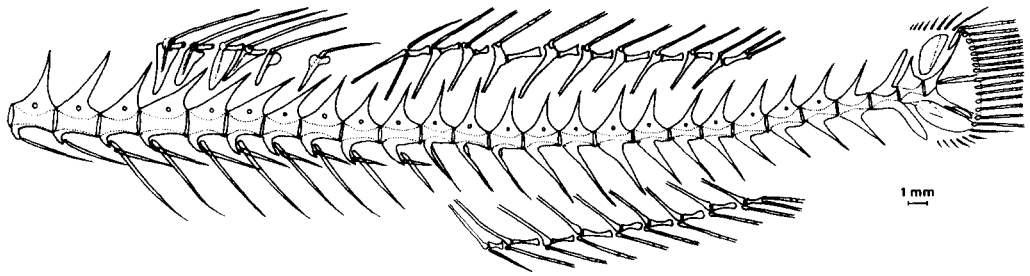

Fig. 2. Vertebrae and associated pterygiophore in *Acentrogobius pellidebilis* illustrating the pterygiophore formula (DF).

Head depressed, without barbels. Mouth small, slightly inclined and protractile. Tongue broaded, weakly emarginate. Gill opening originate above insertion of uppermost pectoral ray terminate at ventral midline of head. Anterior nostril tubular; posterior nostril without raised rim, located slightly anterior to orbit. Maxilla reaches to a point under anterior part of pupil. Snout long, than eye diameter; not exceeding upper lip, nearly round in dorsal view. Interorbital narrow, less than eye diameter.

Teeth in both upper and lower jaws unicuspid. Upper-jaw teeth: outer row of about 10 to 13 enlarged and distally recurved canines on each side, largest anteriorly, decreasing gradually in size posteriorly until smallest canine is less than half size of largest; on to three irregular inner rows of much smaller and slightly recurved teeth behind outer row. low-jaw teeth: outer row of about 4 enlarged and distally recurved canines anteriorly on each side, similar in size to those of upper jaw; one to three irregular inner rows of slender, smaller and slightly recurved teeth behind outer row.

Cephalic sensory canal pores present: anterior oculoscapular canal with pores B′, C (S), D (S), E, F, G and H′; posterior oculoscapular canal with pores K′ and L′; preopercular canal with pores M′, N and O′. several rows of cutaneous papillae on head; lines of pit organs mostly in single rows (Fig. 3).

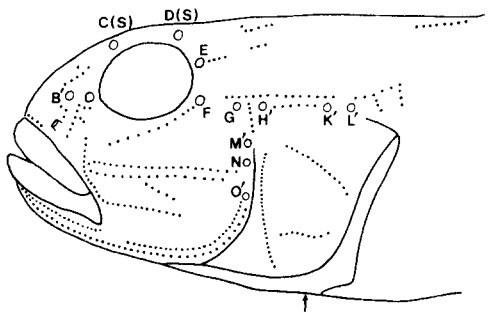

Fig. 3. Schematic diagram of the sensory canal pore and pit organs of *Acentrogobius pellidebilis*. B′ to H′; anterior oculoscapular canal, K′L′; posterior oculoscapular canal, M′ to O′; prepercular canal, (S); single canal pore. Letters with an apostrophe indicate pores at the canal. Arrow indicates anterior end of gill opening.

Color in formalin: Ground color slightly brown, darker dorsally and laterally, paler ventrally; the melanophores concentrated near scale margins; small dark brown spots above upper angle of opercle; margin of opercular membrane pale. A dark blotch on opercle. A dark line from eye to maxilla. Body with 5 blotches of black pigments on the midline. Fin dusky; Ist dorsal fin with a line of dark spots on uper; pelvic, anal and caudal fin grayish brown; pectoral fin lightly brown; pelvic disk pale.

Color in life: Body and head sides with small blotches of silvery pigments.

Sexual dimorphism: This species are all nearly matured in the period of May to June. Although more extensive investigation is necessary to reach the conclusice results, it can be

supposed for the present that their spawning season is early summer. Secondary sexual characters are distinct in urogenital papilla; pointed in male, truncated in female. Shape and length of fins not different in sexes. Pelvic, anal and caudal fin of male is darker than female in spawning season.

Distribution and Habit: *Acentrogobius pellidebilis* were collected from the western and southern coasts of Korean Peninsular. This species inhabits tide pool of muddy bottom, where it was taken with other gobiid fishes; *Acanthogobius elongata, A. luridus, Chaenogobius mororanus, Luciogobius guttatus, Synechogobius hasta, Tridentiger barbatus, Tridentiger trigonocephalus.*

Etymology: The specific name *pellidebilis* derived from the Latin "pellis" meaning skin and the Latin "debilis", feeble; alluding to the feeble skin.

Remark: *Acentrogobius pellidebius* have been most frequently misassigned in recent times to *A. pflaumi* in Korean water. *A. pellidebilis* exhibits numerous differences from *A. pflumi*; most notably, it has 7~8 predorsal scales, feeble skin, silvery blotches on head and body side in life.

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韓國產 망둑어科 魚類 I 新種, *Acentrogobius pellidebilis*

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우리나라 西海와 南海의 沿岸에서 1984年부터 1990年 사이에 採集된 망둑어科(Gobiidae) 魚類의 標本을 調査한 結果 *Acentrogobius*屬에 속하는 1 新種이 확인되어 *Acentrogobius pellidebilis*로 命名 記載하고 國名으로는 「점줄망둑」으로 한다.

本 新種은 *Acentrogobius*屬의 韓國 出現種인 *A. pflaumi*와 비슷하지만 등지느러미 前方 비늘數가 7~8個이고, 體側에 5個의 斑文이 있는 점 等에서 뚜렷이 區別된다.