

# First Record of Two Species from the South Sea of Korea

Chung Lyul Lee and Jong Ryol Kim

Department of Biology, College of Natural Science, Kunsan National University, Kunsan 573-701, Korea

From the South Sea in 1995, two species, *Chaunax abei* and *Bembrops curvatura*, were collected for the first time in Korea. *C. abei* and *B. curvatura* were closely similar to *C. fimbriatus* and *B. caudimacula* in exomorphological characters, respectively. *C. abei* sharply differed from *C. fimbriatus* in having the round green spots, no fossa in front of dorsal fin and without tentacles around illicium groove. *B. curvatura* was well divided from *B. caudimacula* in having 15 anal fin rays, 41~50 lateral line scales, deep curved lateral line and black color on the first dorsal fin membrane. New Korean name "Jom-ssinbengi" was proposed for the *Chaunax abei*, and "Jool-gupun-noontungi", *B. curvatura*, respectively.

**Key words :** *Chaunax abei*, *Bembrops curvatura*, South Sea, Korea

## Introduction

The South Sea of Korea was characterized by having a large number of islands and flowing the Tsushima warm current comprising many kinds of fishes (Yamada *et al.*, 1986; Kim and Choi, 1998). The fish fauna of the southwestern coast of Korea was recorded into about 190 species by Kim and Choi (1998).

In process of studying the fish fauna from the South Sea, unrecorded two species were collected for the first time in Korea. Purpose of this study is to describe their morphological features and taxonomic position with their morphometric characters.

Meristic and morphometric of specimens followed Hubbs and Lagler (1964). The numbers of fin rays and vertebrae were taken from radiograph. The examined specimens are deposited in the Department of Biology, Kunsan National University (BKNU).

### Order Lophiiformes Family Chaunacidae

(New Korean name: Jom-ssinbengi-kwa)

#### Genus *Chaunax* Lowe, 1846

(New Korean name: Jom-ssinbengi-sok)

*Chaunax* Lowe, 1846: 339. Type species: *Chaunax poctus* Lowe; Eschmeyer, 1998: 1888.

#### *Chaunax abei* Le Danois, 1978

(New Korean name: Jom-ssinbengi) (Fig. 2)

*Chaunax abei* Le Danois, 1978: 87, Figs. 1-2, Toba, Nagoya, Japan.

**Material examined:** BKNU 1610, one specimen, 114.6 mm standard length (SL), off Kojedo Island, Koje-myon, Koje-gun, Kyongsangnam-do, 128° 35' E, 34° 36' N (Fig. 1), March 28, 1995.

**Description:** Dorsal fin rays III-11; anal fin rays 7; pectoral fin rays 12; caudal fin rays 8; vertebrae 19. Percentages to the standard length, head length 64.5, body depth 30.9, snout length 10.0, eye diameter 8.1, interorbital width, 10.5, caudal peduncle length, 14.6, caudal peduncle depth, 8.1, length of predorsal 50.7, length of prepectoral 59.2, length of preanal 75.0.

Head large and slightly compressed. The shape of body round and club type. Eye small and interorbital width very broad. Body depth high and globular. Esca of illicium small, thin and oval in shape, its fossa shallow, without tentacles around illicium groove. and its posterior end of fossa exceeds the line of front both eyes. Lateral lines simple, that is, head part and 2 rows of dorsal and ventral canal, and mandibular sensory

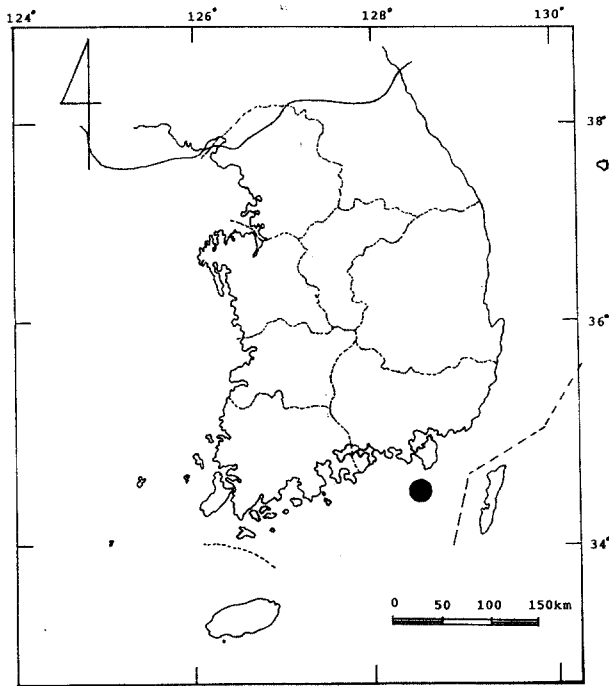


Fig. 1. Collection site of *Chaunax abei* and *Bembrops curvatura*.

canal roundish, connected with ventral one. Mouth large and almost vertical. Teeth of maxilla and mandible small and sharp. All surface of body very densely covered with numerous minute spines. Dorsal, anal and pectoral fin rays unbranched soft ray, but caudal fin branched (Fig. 2).

**Color of body:** When specimen was fresh, surface of body light red, with round greenish spots in light reddish ground. But in 10% for-

Fig. 2. Dorsal view of *Chaunax abei* Le Danois. BKNU 1610, 114.6 mm SL.

malin solution, body uniformly reddish, with round green spots which smaller than eye diameter, and belly pale.

**Distribution:** The South Sea of Korea, southern sea of Japan and East China sea.

**Remarks:** *Chaunax abei* was very similar to *C. fimbriatus* in morphological features, but the former was characterized in having round green spots in opposition to round or irregular yellow spots on the body surface in the latter. Okamura (1984) described that *C. abei* differed from *C. fimbriatus* in having the characters of absent of tentacle around illicium groove and no fossa in front of first dorsal fin, and green spots of body surface (Table 1). Also Abe (1987) and Yamada (1993) distinguished between *C. abei* and *C. fimbriatus* by the existence of a fossa in front of dorsal fin. Okamura (1984) mentioned that *C. abei* was distinguished from *C. tosaensis* by the shape and color of spots on body surface, the shape of illicium groove, and absent of tentacles around illicium groove (Table 1). According to

Table 1. Comparison of morphological characters of the genus *Chaunax*

Characters	Present study	Okamura (1984) and Masuda <i>et al.</i> (1988)*		
		<i>C. tosaensis</i>	<i>C. abei</i>	<i>C. fimbriatus</i>
Shape of spots	round	reticulation	round	round or irregular*
Fossa of dorsum	absent	absent	absent	present
Tentacles around illicium groove	absent	present	absent	present
Color of body surface	light reddish	yellow	light reddish	dark reddish*
Color of spots	green	yellow	green	yellow
Size of spots	pupil	fine	pupil	small*
Shape of illicium groove	oval	triangular	oval	oval
Saddle-like bands on dorsum	absent	present	absent	absent
Shape of illicium	plumelet-like	massive	plumelet-like	plumelet-like

Masuda *et al.* (1988), Yamada *et al.* (1986) and Yamada (1993), it was described that *C. fimbriatus* was widely distributed in the Indo-Pacific Ocean, but *C. abei* represented only the South Sea of Korea, the East China Sea and the southern sea of Japan until now.

## Order Perciformes Family Percophidae

### Genus *Bembrops* Steindachner, 1876

(Korean name: Kkorijom-noontungi-sok)

*Bembrops* Steindachner, 1876: 211. Type species:

*Bembrops caudimacula* Steindachner.

### *Bembrops curvatura* Okada et Suzuki, 1952

(New Korean name: Jool-gupun-noontungi)

(Fig. 3)

*Bembrops curvatura* Okada and Suzuki, 1952: 68, Owashi, Japan; Eschmeyer, 1998: 438.

**Materials examined:** BKNU 217~226, 10 specimens, 87.1~133.6 mm standard length, off Kojedo Island, Koje-myon, Koje-gun, Kyongsangnam-do, 128° 35' E, 34° 36' N (Fig. 1), March 28, 1995.

**Description:** Dorsal fin rays VI-14; anal fin rays 15; pectoral fin rays 22~25; gill rakers 2+1+10; vertebrae 27~28. Percentages to the standard length, head length 35.8~39.3 (37.5±1.06), body depth 11.9~13.2 (12.7±0.47), snout length

10.5~11.6 (11.1±0.37), eye diameter 8.0~8.9 (8.5±0.31), interorbital width 1.2~1.6 (1.4±0.16), predorsal distance 34.1~37.9 (36.5±1.29), prepectoral distance 33.6~36.7 (35.5±0.97), preventral distance 22.2~23.8 (23.1±0.59), preanal distance 52.4~55.8 (54.5±1.00), caudal peduncle length 10.3~12.5 (11.2±0.69), caudal peduncle depth 5.6~6.4 (6.1±0.27). Percentages to the head length, snout length 29.0~30.7 (29.7±0.57), eye diameter 21.7~24.1 (22.7±0.79), interorbital width 2.9~4.2 (3.7±0.46).

Body elongated and head strongly depressed, but caudal compressed. Snout long and scoop shape. Mouth large, and lower jaw protruded than upper one. Teeth band of both jaws with sharp and small. Maxillary with a fleshy flap at the posterior end. Scales rather large, weak ctenoid. Lateral line abruptly descending behind pectoral base. The origins of 2nd dorsal fin and anal fin base started at almost equal position.

**Color of body:** Surface of body light grey or light brownish yellow, with many yellow spots scattered on body. Caudal fin with a black ocular spot and 2 to 4 yellow-grayish oblique bands. Male with a yellow band in front of eye. Fin membrane between 1st and 2nd dorsal spines black.

**Distribution:** The South Sea of Korea, Japan and China.

**Remarks:** *B. curvatura* was similar to *B. caudimacula* in their morphology, but the former was differed from the latter in characters of curvature of lateral line, numbers of pectoral and anal fin rays and lateral line scales and the color of first dorsal fin membrane (Alcock, 1899; Matsubara, 1979). Alcock (1899), Matsubara (1979) and Okamura (1985) described that *B. curvatura* differed from *B. caudimacula* and *B.*

**Fig. 3.** Lateral view of *Bembrops curvatura* Okada et Suzuki. BKNU 219, 129.4 mm SL.

**Table 2.** Comparison of several characters between present study and their related species of the genus *Bembrops*

Characters	Present study	Matsubara	Okamura	Alcock
		(1979)	(1985)	(1899)
		<i>B. curvatura</i>	<i>B. filifer</i>	<i>B. caudimacula</i>
Anal fin rays	15	15	17	16~17
Pectoral fin rays	22~25	22	27~28	25
Lateral line scales	41~50	47	60~64	50
Predorsal scales	6~8	6~8	10~12*	7~9*
Gill rakers	2+1+10	3~4+1+10~13*	4+15~16	3~5+1+12~14*
Size of scales	large	large	small	large
Shape of lateral line	deep	deep	smooth	weak recurved
Shape of first dorsal spine	short	short	long	short*

\* Masuda *et al.*, 1988.

*filifer* by the shape of lateral line and first dorsal spine (Table 2). Also Masuda *et al.* (1988) described that *B. curvatura* was characterized by having the deeply curved lateral line, 14 to 16 anal fin rays and 6 to 8 predorsal scales.

#### Key to the genus *Bembrops* from Korea

- 1a. Lateral line deeply curved at behind pectoral fin base. Lateral line scales 41~50. Anal fin rays 15. .... *B. curvatura*  
 1b. Lateral line smoothly curved. Lateral line scales 50~56. Anal fin rays 16~17 .....  
 ..... *B. caudimaculata*

### References

- Abe, T. 1987. Illustrated Fishes of the World in Colour. Hokuryukan, Tokyo, p. 295.  
 Alcock, A. 1899. A Descriptive Catalogue of the Indian Deep-sea Fishes in the Indian Museum. Daya Publ. House, Calcutta, pp. 48~50.  
 Eschmeyer, W.N. 1998. Catalog of Fishes. California Academy of Sciences, California, Vol. 1 and 3, pp. 438, 1888.  
 Hubbs, C.L. and K.F. Lagler. 1964. Fishes of the Great Lakes Region. Univ. Michigan Press, Michigan, pp. 19~23.  
 Kim, I.S. and S.H. Choi. 1998. Fishes of the southwestern coast of Korea. K. J. Systematic Zool., 14(2): 135~157.  
 Le Danois, Y. 1978. Description de deux nouvelles especes de Chaunacidae (Pisces pediculati). Cybium, 3(4): 87~93.  
 Lowe, R.T. 1846. On a new genus of the family Lophidae discovered in Madeira. Proc. Zool. Soc. Lond., 3: 339~344.  
 Masuda, H., K. Amaoka, C. Araga, T. Uyeno and T. Yoshino. 1988. The Fishes of the Japanese Archipelago. Tokai Univ. Press, Tokyo, pp. 104, 289~290.  
 Matsubara, K. 1979. Fish Morphology and Hierarchy. Iahizaki-Shoten, Tokyo, pp. 693~694, 1345.  
 Okada, Y. and K. Suzuki. 1952. On two new bembroid fishes from the deep sea off Mie Prefecture with special reference in relation to hitherto known species. Rep. Fac. Fish. Prefect. Univ. Mie, 1(1): 75~77.  
 Okamura, O. 1984. Fishes of the Okinawa Trough and the Adjacent Waters I. Japan Fisheries Resource Conservation Association, Tokyo, pp. 272~277.  
 Okamura, O. 1985. Fishes of the Okinawa Trough and the Adjacent Waters II. Japan Fisheries Resource Conservation Association, Tokyo, p. 555.  
 Steindachner, F. 1876. Ichthyologische Beitrage. Sitzungsber. Akad. Wiss. Wien, 74: 49~240, Pls. 1~15.  
 Yamada, U. 1993. Chaunacidae. In: Nakabo, T. (ed.), Fishes of Japan with Pictorial Keys to the Species. Tokai Univ. Press, Tokyo, p. 392.  
 Yamada, U., M. Tagawa, S. Kishida and K. Honjo. 1986. Fishes of the East China Sea and the Yellow Sea. Seikai Regional Fisheries Research Laboratory, Japan, iv~xi, 111, 290.

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### 한국 남해에서 채집된 어류 2 미기록종

#### 이 충렬 · 김 종률

군산대학교 자연대학 생물학과

1995년 남해 거제도 부근에서 채집된 어류를 동정한 결과 지금까지 우리나라에서는 서식이 알려지지 않은 *Chaunax abei*와 *Bembrops curvatura*로 확인되어 이 2종을 한국산 미기록종으로 보고한다. *C. abei*는 외부형태적으로 *C. fimbriatus*와 유사하나 체표의 녹색 무늬 형태가 원형이고 등지느러미의 앞쪽에는 노란 반점과 그 뒤에 약간 패인 곳이 없으며, 유인돌기와의 주변에는 돌기가 없다는 점이, 그리고 *B. curvatura*는 *B. caudimaculata*와 유사하나 뒷지느러미 연조수 및 측선린 수와, 측선이 깊게 내려간 점 그리고 제1 등지느러미의 첫 번째 막이 검다는 점 등이 이들 유사종들과 잘 구별되었다. 이들의 한국명으로는 Chaunacidae “점선벙이과”, *Chaunax* “점선벙이속”, *C. abei*를 “점선벙이”로, 그리고 *B. curvatura*는 “줄굽은눈통이”라고 명명하였다.