

# First Record of Largescale Mullet, *Chelon macrolepis* (Mugiliformes: Mugilidae) from Jeju Island, Korea

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**ABSTRACT** Two specimens of *Chelon macrolepis* were collected from southern coastal waters of Jeju Island and Busan in February 2007 and October 2010, and it, herein, described as an unrecorded species from Korea. *Chelon macrolepis* is characterized by posterior tip of maxilla exposed when mouth closed, having 31 ~ 32 lateral line scales, and 23 ~ 24 vertebrae. The new Korean name is proposed as "Keun-bi-neul-sung-eo" for *Chelon macrolepis*.

**Key words** : First record, *Chelon macrolepis*, Mugilidae, Jeju Island

## INTRODUCTION

A total of 72 species in 17 genera have been recognized in the family Mugilidae in the order Mugiliformes (Nelson, 2006). In Korea, three species in two genera have been reported so far, and among them, two species, *Chelon haematocheilus* (Temminck and Schlegel, 1845) and *C. affinis* (Günther, 1861), are reported in the genus *Chelon* Röse, 1793 (Lee and Joo, 1994; Kim and Kim, 1998; Kim *et al.*, 2005).

The genus *Chelon* is characterized by having pectoral fin with small axillary scale or absent, posterior tip of the maxilla beyond posterior tip of mouth angle and exposed when mouth closed, and adipose eyelid developed slightly or absent (Smith and Smith, 1986; Senou, 2002).

In the present study, two specimens of *C. macrolepis* (Smith, 1846) were collected from Jeju Island, Korea firstly, and we described its morphological characteristics of the species based on the specimens. Counts and measurements followed Thomson (1997), the vertical fin rays and vertebrae were counted from a radiograph (SOFTEX HA-100, Japan), and lateral line scales were counted using Alizarin red S stained. The specimens are deposited in the National Institute of Biological Resources (NIBR-P) and Kunsan National University (BKNU), Korea.

## *Chelon macrolepis* (Smith, 1846)

(New Korean name: Keun-bi-neul-sung-eo)

(Fig. 1; Table 1)

*Mugil macrolepis* Smith, 1846: pl. 28, fig. 2 (type locality: South Africa).

*Liza macrolepis*: Smith and Smith, 1986: 716; Thomson, 1997: 524; Shen, 2001: 439.

*Chelon macrolepis*: Randall and Lim, 2000: 625; Senou, 2002: 540.

**Materials examined.** NIBR-P 16326, 44.2 mm in standard length (SL), Seogwipo, Jeju Island, Korea, hand net, 16 October 2010 (Fig. 1A); BKNU 2414, 190.6 mm SL, Busan, Korea, 3 February 2007 (Fig. 1B).

**Description.** Counts are shown in Table 1. Proportion as % standard length (SL): body depth 27.2 ~ 28.1; head length 21.9 ~ 28.5; head width 17.9 ~ 19.2; snout length 5.0 ~ 7.0; interorbital width 11.4 ~ 13.1; eye diameter 6.1 ~ 7.5; upper lip height 1.4 ~ 2.3; pectoral fin length 15.8 ~ 16.7; caudal peduncle depth 10.4 ~ 12.0.

Head depressed dorsally, body tapering to compress posteriorly. Mouth small, posterior tip of maxilla not reaching anterior margin of eye. Upper lip slightly thick, its ventral region smooth. Posterior tip of maxilla beyond posterior tip of mouth angle and exposed when mouth closed. Adipose eyelid slightly developed. Interorbital region slightly convex. A single pair of nostrils present between anterior tip of snout and anterior margin of eye. Keel absent in front of dorsal fins. Two dorsal fins com-

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Fig. 1. *Chelon macrolepis* (A) NIBR-P 16326, 44.2 mm SL; (B) BKNU 2414, 190.6 mm SL.

pletely separated, pelvic fin located in front of middle of body. Posterior tip of pectoral fin not reaching a vertical at origin of 1st dorsal fin. Pectoral fin with small axillary scale. Caudal fin emarginate. Head and body covered ctenoid scales. 5 pyloric caeca present.

**Coloration.** When fresh, the head and body silver white to darkish dorsally and yellowish ventrally. All fins yellowish and semitransparent. Pectoral fin base is yellow. After alcohol fixation, body is silver white and whitish brown dorsally. All fins semitransparent. First ray base of pectoral fin and posterior margin of caudal fin are slightly darkish. Tiny melanophores on membrane of dorsal and anal fins.

**Distribution.** *Chelon macrolepis* distributes in the Indo-Pacific: Taiwan (Shen, 2001), South China Sea (Randall and Lim, 2000) and Japan (Senou, 2002), except Australia (Thomson, 1997). In Korea, the species occurs in the South Sea, including Jeju Sea (Busan and Seogwipo, present study).

**Remarks.** The present specimens, collected from the South Sea, Korea, belong to the mullet genus *Chelon* based on having pectoral fin with a small axillary scale, and posterior tip of maxilla exposed when mouth closed (Smith and Smith, 1986; Senou, 2002). It was identified as *C. macrolepis* by its adipose eyelid slightly developed, having ctenoid scales on middle of body, and 31~32 lateral line scales (Senou, 2002; Table 1). When compared *C. macrolepis* with three Mugilidae species reported in Korea, the species differs from *Mugil cephalus* Linnaeus,

Table 1. Comparison of meristic characters of *Chelon macrolepis*

	Present study	Thomson (1997)	Senou (2002)
Number of specimens	2	113	—
Standard length (mm)	44.2~190.7	45.0~303.0	—
Dorsal fin rays	IV-9	IV-i, 8	IV-8~9
Anal fin rays	III, 9	III, 9	III, 8~10
Pectoral fin rays	15~16	16	15~18
Vertebrae	23~24	—	—
Lateral line scales	31~32	33~34	30~34
Transverse scales	11~13	13	—
Pyloric caeca	5	4~6	4~5

1758 by the location of posterior tip of maxilla (reaching far beyond posterior tip of mouth angle in *C. macrolepis* vs. reaching near posterior tip of mouth angle in *M. cephalus*). The species is distinguishable from congeneric species, *C. affinis* by keel on body (absent in *C. macrolepis* vs. present in *C. affinis*), and *C. haematocheilus* by the number of lateral line scales (30~34 in *C. macrolepis* vs. 38~44 in *C. haematocheilus*) (Lee and Joo, 1994; Kim and Kim, 1998; Senou, 2002). We propose a new Korean name “Keun-bi-neul-sung-eo” for *C. macrolepis*.

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## 한국 송어과(Mugilidae) 어류 1 미기록종, *Chelon macrolepis*

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**요 약** : 2007년 2월과 2010년 10월 제주도 남부연안 및 부산에서 *Chelon macrolepis* 2개체가 채집되었기에 한국미기록종으로 보고한다. 본 종은 입을 닫았을 때 주상악골 뒤쪽 끝부분이 노출되며, 측선비늘은 31~32개, 척추골은 23~24개 가진다. *Chelon macrolepis*의 국명으로 “큰비늘송어”를 제안한다.

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**찾아보기 낱말** : 한국 미기록종, *Chelon macrolepis*, 송어과, 제주도