

First Record of the Bluefin Travelly, *Caranx melampygus* (Perciformes: Carangidae) from Korea

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ABSTRACT A single specimen of *Caranx melampygus* (113 mm standard length), belonging to the family Carangidae, was firstly collected by a set net from the coastal waters of Jeju Island, Korea. This species is morphologically similar to *C. sexfasciatus* except for the posterior end of maxilla not reaching the posterior margin of eye (vs. reaching in *C. sexfasciatus*) and no black blotch on the upper part of opercle (vs. black blotch). We newly add this species to the Korean fish fauna and propose its new Korean name “Jag-eun-ip-jul-jeon-gaeng-i” for the species because it has relatively smaller upper jaw when compared with *C. sexfasciatus*.

Key words: Carangidae, *Caranx melampygus*, first record, Jeju Island, Korea

INTRODUCTION

The family Carangidae comprises 30 genera with about 146 species worldwide (Nelson *et al.*, 2016). It is characterized by having two dorsal fins, anal fin with two anterior spines, scutes present and prominent, or reduced in some species and absent in some genera (Smith-Vaniz, 1999; Nelson *et al.*, 2016). Fifty-nine species in 24 genera have been reported from Japan (Senou, 2013) and 34 species in 18 genera from Korea (MABIK, 2017).

The genus *Caranx* Lacepède, 1801 is characterized by body generally deep, dorsal profile more convex than ventral one, gill rakers 20~31, dorsal and anal rays never produced as filaments and two to four canines anteriorly in each jaw (Gunn, 1990; Smith-Vaniz, 1999). Six species from Japan (Senou, 2013) and two species (*C. sexfasciatus* Quoy and Gaimard, 1825, and *C. bucculentus* Alleyen and Macleay, 1877) from Korea have been reported so far (Kim *et al.*, 2005), but Mori (1952) firstly reported and add *C. bucculentus* to Korean fish fauna with the specimen collected at the coastal waters of Tongyeong,

southern Sea of Korea. However, as *C. bucculentus* is known to be distributed in Australia and New Guinea, the correctness of species identification needs to be reviewed in the future. The genus *Caranx* is very similar to *Carangoides* Bleeker, 1851, but is easily distinguished from the latter by having upper jaw with an outer series of moderate to strong canines and an inner band of fine teen and lower jaw with a single row of teeth (vs. both with a band of teeth for latter) (Smith-Vaniz, 1986).

During the survey of fisheries resources conducted in the southern coastal waters of Jeju Island, Korea, we collected a single specimen that was morphologically similar to *C. sexfasciatus* by a set net. The specimen was identified as *C. melampygus*, based on its mouth size, the number of rays and shape on fins, etc (Senou, 2013). We here report the morphological characters of *C. melampygus* in order to be added to the list of Korean fish fauna.

Counts and measurements are followed by the methods of Hubbs and Lagler (1964) and Gushiken (1983). The examined specimen is deposited at the Fish Genetics and Breeding Laboratory, Jeju National University (JNU), Korea.

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***Caranx melampygus* Cuvier, 1833**

(New Korean name: Jag-eun-ip-jul-jeon-gaeng-i)

(Fig. 1; Table 1)

Caranx melampygus Cuvier in Cuvier and Valenciennes, 1883: 116 (type locality: New Guinea); Kyushin *et al.*, 1977: 256 (Indian Ocean); Dor, 1984: 127 (Red Sea); Gushiken, 1984: 155 (Japan); Smith-Vaniz, 1986: 647 (South Africa); Allen and Swainston, 1988: 72 (north-western Australia); Francis, 1993: 161 (south-west Pacific Ocean); Allen and Robertson, 1994: 126 (eastern Pacific); Randall, 1995: 181 (Oman); Lin and Shao, 1999: 55 (Taiwan); Myers, 1999: 139 (Micronesia); Randall, 2007: 230 (Hawaii); Kottelat, 2013: 333 (southeast Asia).

Material examined. JNU-0004, one specimen, 113 mm standard length (SL), Daepo, Jejudo Island, Korea, set net, 18 October, 2010.

Description. Counts and measures for the present specimen are shown in Table 1. Measurements are revealed as a percentage against SL: Body depth, 42.4; body width,

13.7; head length, 28.5; upper jaw length, 11.2; snout length, 8.4; eye diameter, 7.6; interorbital width, 8.9; pre-dorsal fin, 38.1; prepectoral fin length, 30.0; preanal fin length, 60.6; length of longest dorsal fin ray, 16.4; pectoral fin length, 29.2; length of longest anal fin ray, 14.3; caudal peduncle length, 7.3; caudal peduncle depth, 4.2.

Body oblong, compressed and covered with ctenoid scales; dorsal profile more convex than ventral one, convex to second dorsal fin; snout slightly pointed, posterior margin of upper jaw not reaching posterior margin of eye; lower jaw slightly prominent; orbit diameter smaller than snout length, adipose eyelid weakly developed; upper jaw with outer row of strong canines, and an inner band of small villiform teeth; curved lateral line short than straight part, reached to below fifth ray of second dorsal fin; straight lateral line with three anterior scales followed by 37 strong scutes; breast completely scaly; two separate dorsal fins characterizing with the height of second dorsal fin slightly longer than that of first dorsal fin; anterior of soft dorsal and soft anal fins slightly falcate about equal in length and last one elongated; pectoral fin



Fig. 1. *Caranx melampygus*, JNU-0004, 113.0 mm, Jejudo Island, Korea. A: when fresh, B: after preservation.

Table 1. Morphological traits compared between present and previous studies on *C. melampygyus* and *C. sexfasciatus*

Meristic characters	<i>C. melampygyus</i>				<i>C. sexfasciatus</i>
	Present study	Cuvier (1833)	Gushiken (1983)	Lin and Shao (1999)	Present study
No. of specimens	1	1	6	2	1
Fork length (mm)	—	—	—	327~355	128
Standard length (mm)	113	—	125~207	—	123
Counts					
Dorsal fin rays	VIII + I, 23	VIII + I, 23~24	VIII + I, 22~23	VIII + I, 22~24	VIII + I, 20
Pectoral fin rays	i, 21	—	i, 19~20	i, 20	23
Pelvic fin rays	I, 5	—	—	—	I, 5
Anal fin rays	II + I, 19	II + I, 19	II + I, 18~20	II + I, 19~20	II + I, 16
Gill rakers	7 + 18	—	7~8 + 18~19	7~8 + 18~20	7 + 15
Scutes	37	—	36~42	36~42	32

positioned in front of the pelvic fin and falcated, its end reached at second scutes on straight line; anal fin with two detached spines followed by a single spine with 19 soft rays; and deeply fork caudal fin.

Coloration. When the fresh, Head and body grey-blue above and silver white below; dorsal spine and soft fin dark black; anal soft fin yellowish with dusky black; pectoral fin yellow; ventral fin white; upper and lower lobe of caudal fin dark black, but light pink on both sides of caudal fin; no horizontal stripe on body; no distinct black blotch on upper part of opercle. After fixation in formalin, dark brown above and pale brown below; faint half-bands above the lateral line of young fish; all fins brown; lower part of the preopercle and opercle white.

Distribution. Known from tropical and subtropical waters of Indo-Pacific Ocean: South Africa Sea, Red Sea to Australia, India, Malaysia, Taiwan, China, Japan to Hawaiian Islands (Smith-Vaniz, 1999) and it occurs in Jeju Island (present study). Also it distributes in eastern central Pacific Ocean: Mexico to Panama (Smith-Vaniz, 1995).

Remarks. The present specimen, belonging to the family Carangidae, is characterized by having body oblong, dorsal profile more convex than ventral one, dorsal and anal soft ray not produced as filament, posterior end of maxilla not reaching posterior margin of eye and upper part of opercle with no distinct black blotch and gill rakers 20~31. The morphological characters of the present specimen were compared with those in the previous reports on *C. melampygyus* (Cuvier, 1833; Smith-Vaniz, 1999; Senou, 2013), which revealed that all morphological traits examined were well matched with each other (Table 1). Thus, we identified our specimen to be *C. melampygyus* based on morphological characters.

Our specimen morphologically resembles *C. sexfasciatus* Quoy and Gaimard, 1825, inhabiting the Korean water, but it is distinguishable from the latter by having the

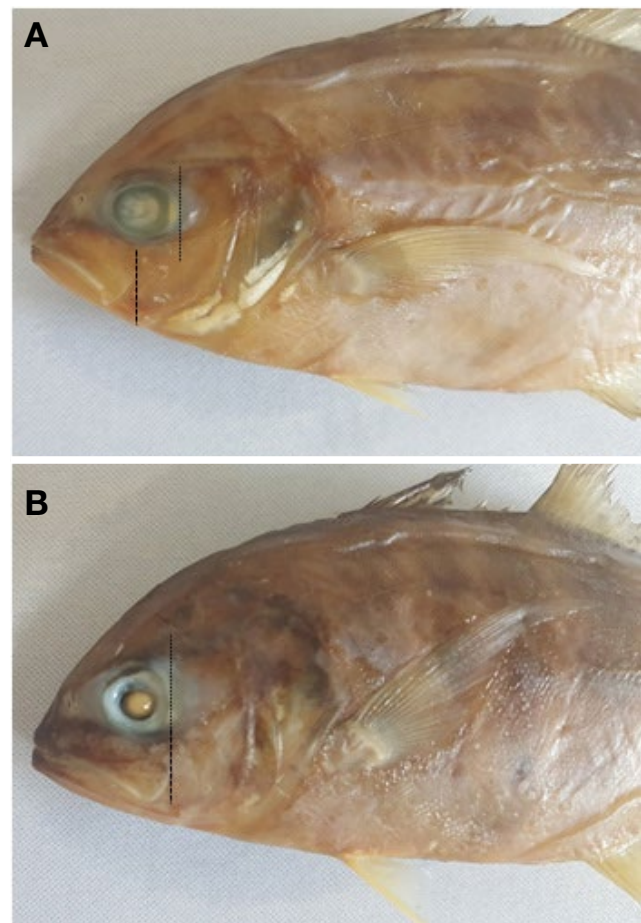


Fig. 2. Comparison of the distance between the posterior end of maxilla and the posterior margin of eye. A: *Caranx melampygyus*, B: *C. sexfasciatus*.

posterior end of maxilla not reaching posterior margin of eye (reaching in *C. sexfasciatus*) (Fig. 2), upper part of opercle with no distinct black blotch (vs. black blotch), soft dorsal fin rays 21~24 (vs. 19~22), soft anal fin rays 17~20 (vs. 14~17) and lower gill raker 17~21 (vs.

15~19) (Senou, 2013) (Table 1). We suggest its new Korean name “Jag-eun-ip-jul-jeon-gaeng-i” for *C. melampygus* because it has relatively smaller upper jaw when compared with *C. sexfasciatus* which is named “Jul-jeon-gaeng-i.”

Comparative material. JNU-0003, one specimen, 123 mm standard length (SL), Daepo, Jejudo Island, Korea, set net, 18 October, 2010.

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한국산 전갱이과 어류 1 미기록종, *Caranx melampygyus*

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요 약 : 농어목 전갱이과에 속하는 *Caranx melampygyus* 1개체(표준체장 113 mm)가 2010년 8월 13일 제주도 서귀포시 대포동의 정치망에서 처음으로 채집되었다. 이 종은 형태적으로 우리나라에 서식하고 있는 줄전갱이(*C. sexfasciatus*)와 유사하지만 주둥이 끝이 눈의 말단을 이르지 않는 점과 주새개골의 상단에 검은 반점이 없는 것이 특징이다. 이 미기록종의 종명은 줄전갱이와 비교할 때 상대적으로 작은 입을 가지고 있어서 “작은입줄전갱이”로 제안한다.

찾아보기 낱말 : 전갱이과, *Caranx melampygyus*, 미기록종, 작은입줄전갱이, 제주도