New Record of the Yellowfin Scorpionfish, *Scorpaenopsis neglecta* (Scorpaeniformes: Scorpaenidae) from the Coastal Waters of Jeju Island, Korea

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ABSTRACT

Based on three scorpionfish specimens (131.8 ~ 163.4 mm SL) collected from the coastal waters of Jeju Island, we described *Scorpaenopsis neglecta* as the first record from Korea. They were characterized by having 12 dorsal fin spines, lacking of palatal teeth and of black pigment between the first and third dorsal fin spines, wider interorbital region than orbital diameter, no median interorbital ridge, uppermost opercular spine with multicusps, and a broad blackish band distally and numerous various sized black spots on inner side of pectoral fin. We proposed a new Korean name, “Ssol-chi-u-reug” for the species.

Key words: *Scorpaenopsis neglecta*, new Korean record, Jeju Island, description

INTRODUCTION

The Indo-Pacific scorpionfish genus *Scorpaenopsis* Heckel, 1839, now comprising 27 species, is characterized by having 12 dorsal spines, lacking of palatal teeth and of black pigment between the first and third dorsal fin spines, and a strongly compressed head (Randall and Eschmeyer, 2002; Motomura, 2004). From the Korean waters, only two species of *S. cirrosa* (Thunberg, 1793) and *S. diabolus* (Cuvier, 1829) have been recognized from the South Sea including the adjacent waters of Jeju Island to date (Kim and Lee, 1993; Kim et al., 2005; Kim et al., 2009; Kweon, 2013), whereas 12 species have been known from the Japanese waters (Motomura et al., 2004). Motomura et al. (2004) have divided the Japanese *Scorpaenopsis* fishes into three species groups. Of them, their group ‘B’ is characterized by having wider interorbital region than orbital diameter, no median interorbital ridge and uppermost opercular spine with multicusps, and composed three species as follows: *S. diabolus*, *S. macrochir* Ogilby, 1910 and *S. neglecta* Heckel, 1837.

Recently two specimens belong to the Motomura et al. (2004)’s species group ‘B’ of the genus *Scorpaenopsis* were obtained from the local fish markets of Jeju Island, Korea in addition to a single specimen from the fish collection deposited in the National Institute of Biological Resources (NIBR), Korea, being transferred from the Marine and Environmental Research Institute, Jeju National University, Korea (MRIC). These three *Scorpaenopsis* specimens were revealed to be a new Korean record, *Scorpaenopsis neglecta* that has been widely known from the Indo-West Pacific, however not yet in the Korean waters. We, therefore, describe *S. neglecta* as the first record from Korea.

Counts, measurements, and terminology of head spines follow those of Randall and Eschmeyer (2002). Voucher specimens are deposited in the fish collection of NIBR.

*Scorpaenopsis neglecta* Heckel, 1837

(New Korean name: Ssol-chi-u-reug)

(Figs. 1-3; Table 1)

http://www.fishkorea.or.kr
Sea of East Indies).

*Scorpenopsis diabolus* (non Cuvier): Kim et al., 2009: 16 (Jeju Island, Korea); Kweon, 2013: 83 (Jeju Island, Korea).

**Materials examined.** NIBR-P19763, 161.1 mm in standard length (SL), 3 July 2012, Moseulpo fish market, Daejeong-eup, Seogwipo-si, Jeju-do, Korea, purchased by B.J. Kim, S.H. Choi and H.G. Cho; NIBR-P19839, 163.4 mm SL, 28 February 2013, Seogwipo fish market, Seogwipo-si, Jeju-do, Korea, purchased by B.J. Kim and J.H. An; NIBR-P30064 (formerly MRIC 1251), 131.8 mm SL, 1 April 2003, Dongmun fish market, Jeju-si, Jeju-do, Korea, purchased by B.J. Kim.

**Description.** Dorsal fin rays XII, 8~9; anal fin rays III, 5; pectoral fin rays 17, upper six rays branched except uppermost one; pelvic fin rays I, 5; principal caudal fin rays 13~14; longitudinal scale rows 43~45; pored lateral line scales 21; scales above lateral line 7~9; scales below lateral line 13~15; scales above lateral line at midbody 7~8; predorsal scale rows 5; gill rakers on upper limb 4~5, on lower limb (including a raker at angle) 9~10; vertebrae 24. Proportion measurements in SL: Body depth 40.5~42.8 (mean 41.7); body width 28.3~32.0 (29.7); head length 45.2~47.3 (46.6); snout length 14.6~16.3 (15.3); orbit diameter 7.9~8.5 (8.2); interorbital width 10.6~11.2 (10.9); upper jaw length 23.0~23.9 (23.6); postorbital length 24.7~25.8 (25.3); predorsal fin length 38.4~41.0 (40.0); preanal fin length 74.9~76.6 (75.6); prepelvic fin length 40.7~43.1 (41.6); first dorsal spine length 7.1~8.8 (8.0); second dorsal spine length 12.1~12.4 (12.2); longest dorsal spine length (fourth) 14.8~16.0 (15.3); eleventh dorsal spine length 10.4~12.1 (11.0); twelfth dorsal spine length 12.5~15.3 (13.6); long-
First Record of Scorpaenopsis neglecta from Korea

est dorsal ray length (third) 18.5~20.6 (19.6); first anal spine length 7.3~10.5 (8.8); second anal spine length 13.8~17.3 (15.3); third anal spine length 12.8~15.1 (14.0); longest anal ray length (second) 20.0~21.9 (21.2); pectoral fin length 34.8~38.2 (36.6); pelvic spine length 10.1~16.4 (13.6); longest pelvic ray length (second) 22.9~24.7 (24.0); caudal fin length 24.9~28.1 (26.1); caudal peduncle length 13.9~17.3 (15.6); caudal peduncle depth 11.8~12.2 (12.1).

Body rather compressed anteriorly, more compressed posteriorly and slightly humpbacked at dorsal fin origin. Mouth oblique, hind margin of maxilla extending a vertical at posterior edge of pupil, and reaching a straight line between posterior margin of orbit and posteroventral tip of retroarticular; lower jaw slightly projecting; upper and lower jaws with a dense band of small, slender, conical teeth in about 5 to 6 rows, narrowing 2 or 3 rows posteriorly; lower jaw with a similar band of teeth in about 4 to 5 rows anteriorly, narrowing 1 to 2 posteriorly. Vomer with a narrow band of villiform teeth. No palatal teeth.

Lacrimal ridge serrate with 5~6 spinous points, tip of anterior spine embedded beneath skin and directed forward; anterior lacrimal spine with small spinous points; posterior lacrimal spines simple without any projections distally, directed downward, its tip not reaching dorsal margin of upper lip and associated with a short fimbriate flap, linked posteriorly to head by fringed skin. Suborbital ridge well developed with several spinous points in two rows along its base. Suborbital pit roughly triangular and deeply concaved, without central ridge. Preopercle with 5 spines with a short fimbriate flap, uppermost spine largest and bearing 1~3 minute spines on its base, lower 4 spines simple, lowermost spine blunt; upper opercular spine with 4~9 spinous points, no median ridge; lower opercular spine simple with a median ridge. Posterior margin of opercular membrane nearly reaching a vertical at fourth dorsal fin spine. Nasal spine serrated with 6~10 spinous points; posterior end of a bulge of snout not exceed a line at between both posterior nostrils; anterior nostril with a tentacle, its length greater than anterior nostril diameter. No median interorbital ridge; interorbital space rather broad and deeply concaved, its width greater than orbit diameter; preocular with 3~5 spinous points, supraocularal 3~7 spinous points and postocular spines with 5~11 spinous points, joined to tympanic spine (1~6 spinous point) at base. Postorbital spine with 2~5 spinous points. Sphenotic with 3~6 spinous points and fused to supraorbital base. Pterotic with 2~8 small spines. Occipital pit rather deep, anterior edge prominent, sometimes developed to spines and curved posteriorly; posterior edge well developed. Parietal and nuchal joined each other and bearing 2~8 and 4~6 spinous points, respectively. Upper posttemporal with 3~5 small spines larger than lower posttemporal with 3~6 small spines. Supracleithral bearing 5~8 small spinous points on medial surface. Several small tentacles on posterior part of lower jaw and on lower part of preopercle.

Dorsal fin continuous and notched; its origin just above origin of supraclithral spine and abruptly elevated at near to dorsal origin, base of spinous dorsal fin broad, third dorsal spine longest. Pectoral fin well developed and round, its posterior tip reaching a vertical at first soft ray of dorsal fin. Pelvic fin moderate, its posterior tip not reaching anus when depressed. Anal fin opposite to second dorsal fin, second spine longer than third spine. Caudal fin moderate and round.

Lateral line scales present, complete and forming complete tubes. Head region naked, except for upper and postero-ventral parts of uppermost opercular spine. No scales between upper and lower opercular spines. Body fully scaled with ctenoid including basal regions of pectoral and caudal fins.

Color when fresh. Head and body reddish with many irregular yellowish, dark brown, orange or pale yellow blotches laterally. Dorsal and anal fins reddish with several irregular pale yellowish blotches and small blackish

Fig. 2. Fresh coloration of inner surface of the left pectoral fin in Scorpaenopsis neglecta, NIBR-P19839 (163.4 mm SL) collected from Jeju Island, Korea.
dots scattered. Outer side of pectoral fin reddish distally with several yellowish, orange or brownish irregular blotches and dark spots scattered; inner side of pectoral fin yellowish orange with a broad black band marginally; axial of pectoral fin pale yellowish with small black spots. Pelvic fin reddish black. Anal fin mottled reddish, pale yellowish or dark brown. Caudal fin with a dark reddish bar at base and a broader mottled reddish bar submarginally; pale yellowish bar between reddish bars and distally.

**Color after preservation.** Head and body pale brown to dark brown dorsally, whitish ventrally. Dorsal fin with scattered blackish irregular dots. Pectoral fin pale with a broad faint blackish band basally; axil of pectoral fin whitish with a broad blackish band distally and numerous various sized black spots. Pelvic fin blackish. Anal fin dusky. Caudal fin whitish with a dark band, its width nearly same as eye diameter near base and with a broader
and paler blackish band distally.

**Distribution.** Known from the East India (India to west coast of Australia) to West Pacific (Southeast Asia except New Zealand and East Asia, Randall and Eschmeyer, 2002; Motomura *et al.*, 2004). In Korea, the species distributes in the southern coastal waters of Jeju Island only to date (present study) and also observed at 7.8 m depth on the rocky shore of Beomseom of Jeju Province (Pers. Obser.).

**Remarks.** The present specimens collected from Jeju Island were readily assigned to a member of the genus *Scorpaenopsis* Heckel by having wider interorbital region (10.9% in SL) than orbital diameter (8.2%), no median interorbital ridge and uppermost opercular spine with multicusps (*i.e.*, 4~9 spinous points). According to Motomura *et al.* (2004), three species (*S. neglecta*, *S. diabolus*, and *S. macrochir*) have been recognized to date from the Northwest Pacific, and the present specimens collected from the Korean waters were well agreed to the former species in the characteristic coloration on the inside of pectoral fin, *i.e.*, having wide blackish margin on the inner side of pectoral as mentioned in the original description of the *S. neglecta* Heckel (Fig. 2). These Korean specimens were also agreed well with the results of the previous works (Randall and Eschmeyer, 2002; Motomura *et al.*, 2004; Table 1). Kim *et al.* (2009) and Kweon (2013) have listed up *S. diabolus* (Cuvier, 1829) in fishes of Jeju Island based on a single specimen (MRIC 1251 = NIBR-P30064), the specimen, however, was proved not as *S. diabolus* but as *S. neglecta* in the present study.

From the Korean waters, only two species (*S. diabolus* and *S. cirrosoa*) have been reported from the South Sea including the adjacent waters of Jeju Island (Kim *et al.*, 2005; Choi *et al.*, 2013) in the genus *Scorpaenopsis*. *S. neglecta*, discovered from the coastal waters of Jeju Island in this study, is the third *Scorpaenopsis* fish from Korea. The species is readily differentiated from the Weedy stingfish (*S. cirrosoa*) by having muticusps in the uppermost opercular spine (*vs. simple in S. cirrosoa*). Although it resembles the False stonefish (*S. diabolus*) in having humpbacked body at dorsal fin origin and small blackish spots scattered on the inner base of pectoral fin, *S. neglecta* is easily distinguished from the former by having a broad blackish inner band on the pectoral fin (*vs. black spot*). We proposed a new Korean name, ‘Ssol-chi­u-reog’ which means a venomous scorpionfish called in the local market of Jeju Island, for the species.

**ACKNOWLEDGMENTS**

We also thank to Mr. Hyun-Geun Cho (Korea National Park Research Institute) and Ms. Ye-Seul Lee (NIBR) for their kind assistance to take radiograph of the specimen. This work was supported by a grant from the National Institute of Biological Resources funded by the Ministry of Environment (MOE) of the Republic of Korea (NIBR No. 2013-01-50).

**REFERENCES**

제주도 연안 해역에서 채집된 양볼락과 쑥감펭속 한국미기록종, Scorpaenopsis neglecta

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요 약 : 제주도 연안 해역에서 채집된 쑥铩이목 양볼락과(Scorpaenidae) 쑥감펭속(Scorpaenopsis)에 속하는 연안성 해산어류 3개체(표준체장 131.8~163.4 mm)에 근거해 Scorpaenopsis neglecta를 한국미기록종으로 보고한다. 이들은 등지느러미 극조수가 12개인 점, 구개골치가 없는 점, 등지느러미 첫 번째와 세 번째 극조 사이에 흑색 반점이 없는 점, 그리고 투부가 축편하는 점에서 쑥감펭속의 특징을 잘 나타내고 있다. 또한 양안간격이 안경보다 넓고, 양안 중앙융기연이 없으며, 최상부 세개골극이 다분지하고, 가슴지느러미 내측 기부에 흑색 반점이 산재하고, 지느러미 가장자리에 검은 피가 있는 특성에서 동속 타종과 구별된다. 본 종의 신한국명으로 산지인 서귀포어시장에서 불리는 방언인 '쏠치.dec'을 제안한다.

 찾아보기 낱말 : 쑥감펭속, 한국미기록종, Scorpaenopsis neglecta, 제주도, 기재