

First Record of the Goby, *Suruga fundicola* (Perciformes: Gobiidae) from Tongyeong, Korea

By Youn Choi* and Heung-Heon Lee¹

Department of Marine Biotechnology, College of Ocean Science and Technology, Kunsan National University, Gunsan 54150, Republic of Korea

¹Environment and Ecology Research Cooperative, Jeonju 55021, Republic of Korea

ABSTRACT Fifteen gobiids specimens first collected from the southern coastal waters of Tongyeong, Gyeongsangnam-do, were identified as the *Suruga fundicola* from Korea. The species, representing a new Korean record, is characterized by having VII-I, 16~17 dorsal fin rays, I, 15~16 anal fin rays, 37~42 lateral line scales, notably large eye and narrow interorbital space, scaleless cheek and opercle, no babel, teeth rather strong, and 6~7 dusky spots on sides. A new Korean name, “Keun-nun-mang-duk-sok” and “Keun-nun-mang-duk” is proposed for the genus and species, respectively.

Key words: Gobiidae, *Suruga fundicola*, new record, Korea

INTRODUCTION

The family Gobiidae distributes about 212 genera and roughly 1,875 species in the worldwide (Nelson *et al.*, 2016) and recorded 34 genera and 66 species in Korea. The genus *Suruga* Jordan and Snyder, 1901 includes only 1 species, *Suruga fundicola* Jordan and Snyder, 1901, and distributes in the East China sea and northwest Pacific region, Japan (Jordan and Snyder, 1901; Akihito *et al.*, 2002). The 15 specimens of *S. fundicola* was collected by bottom trawl net from off Tongyeong, Korea in 20 August and 19 November, 2009. Which have not been recorded as inhabiting Korean waters. Therefore, We described its morphological description of this species based on the specimens and newly added it to the Korean fish fauna. Terminology and counting methods followed Akihito and Meguro (1988). The voucher specimen is deposited in the Department of Marine Biotechnology, Kunsan National University (KNUM), Korea.

Genus *Suruga* Jordan and Snyder, 1901

(New Korean name: Keun-nun-mang-duk-sok)

Suruga Jordan and Snyder 1901: 96 (type species: *Suruga*

fundicola Jordan and Snyder 1901).

Body moderately elongate; head large, not depressed; the interorbital space very narrow; eye very large, longer than the short, blunt snout; cheeks scaleless mouth rather large, very oblique; the chin prominent teeth rather strong; tongue not notched; isthmus broad. The gill openings not continued forward below; dorsal of eight spines and 17 to 20 ray; pectorals moderate, without silk-like rays (Jordan and Snyder, 1901).

Suruga fundicola Jordan and Snyder, 1901

(New Korean name: Keun-nun-mang-duk)

(Fig. 1, Table 1)

Suruga fundicola Jordan and Snyder, 1901: 96 (Japan); Akihito, 1984: 279 (Japan); Akihito *et al.*, 2002: 1207 (Japan).

Material examined. KNUM 5051-5056, 6 specimens. 47.8~51.4 mm in SL, Tongyeong-si, Gyeongsangnam-do, Korea, bottom trawl net, 19 November 2009; KNUM 5057-5065, 9 specimens. 44.3~51.8 mm in SL, Tongyeong-si, Gyeongsangnam-do, Korea, bottom trawl net, 20 August 2009.

Description. Count are shown in Table 1. Measurements are presented as a percentage against SL: head length

*Corresponding author: Youn Choi Tel: 82-63-469-4596,
Fax: 82-63-469-4591, E-mail: choi@kunsan.ac.kr



Fig. 1. *Suruga fundicola* after preservation, KNUM 5055, 51.9 mm SL, from southern coastal waters of Tongyeong, Korea.

Table 1. Comparison of meristic characters of *Suruga fundicola*

Morphological characters	Present study	Jordan and Snyder (1901)
Number of specimens	15	4
Standard length (mm)	44.3~51.8	50~36
Counts		
Dorsal fin rays	VII-I, 16~17 (usually 17)	VII, 17~19
Anal fin rays	I, 15~16 (usually 16)	16~18
Pectoral fin rays	20~22	
Lateral line scales	37~42	38~44
Transverse scales	10~11	10~12
Predorsal scales	8~11	
Vertebral number	14 + 21~22 (usually 21)	

25.9~29.7 (mean 27.8), head depth 14.6~17.6 (16.1), head width 15.1~18.3 (16.8), snout length 5.4~7.8 (6.4), eye diameter 9.2~11.4 (10.0), interorbital width 0.7~2.1 (1.5), jaw length 8.6~11.9 (10.5), body width 10.9~14.7 (12.6), body depth at origin of first dorsal fin 15.3~19.0 (16.9), body depth at origin of anal fin 12.1~15.1 (13.4), snout to origin of first dorsal fin 28.6~36.0 (33.4), snout to origin of second dorsal fin 51.4~55.7 (53.7), snout to origin of anal fin 53.0~58.6 (55.9), caudal peduncle depth 6.7~9.1 (8.2), pectoral fin length 17.7~20.9 (19.0), base of dorsal fin 13.4~16.3 (14.7), base of second dorsal fin 30.8~38.3 (35.6), base of anal fin 30.6~37.0 (32.4), caudal fin length 18.6~27.2 (22.3).

Body moderately elongate; head deeper and body; eye notably large, directed obliquely upward; interorbital space very narrow; snout short; mouth large, oblique; maxillary concealed except at its posterior end, extending to a vertical through pupil; jaw equal; teeth in narrow bands on both jaw, not close-set, simple, outer series of upper jaw much enlarged; tongue thick, rather broad, round anteriorly; gill openings broad but not extending far forward; no barbels

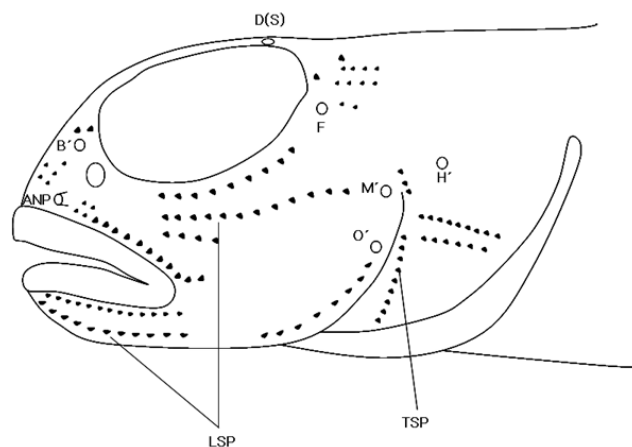


Fig. 2. Diagram of *Suruga fundicola* sensory canals and sensory papillae. B' to O', sensory canal pore; a prime mark, terminal pore; (S), a single pore; dot, sensory papillae ANP, anterior nasal pore; LSP, longitudinal sensory papillae; TSP, transverse sensory papillae.

on jaw; head naked; body except part of nape, region anterior to pectorals, and breast covered with tiny ctenoid scales; the scales are easily displaced; spines of dorsal long, slender, filamentous at tips; rays shorter than the spines; anal extending posteriorly as far as the dorsal, both reaching base of pectorals rounded, the upper edge without filaments; caudal pointed; sensory canal pores existed on the head; longitudinal sensory papillae (LSP) open on lower jaw and eye, transverse sensory papillae (TSP) open on posterior opercle and several rows of cutaneous papillae on head (Fig. 2).

Color after preservation. Head and body grayish brown, darker above than below; darker on snout; 6~7 dusky spots on body sides; upper part posterior rim of caudal fin blackish.

Distribution. Northwest Pacific; off Pacific coasts of Hon-

shu, Shikoku and Kyushu of Japan, and East China Sea (Akihito *et al.*, 2002), Southern Sea of Korea (Present study).

Remark. The present specimen agrees well with the morphological characters of the *Suruga fundicola* as follows; Body moderately elongate; head large, not depressed; the interorbital space very narrow; eye very large, longer than the short, blunt snout; cheeks scaleless mouth rather large, very oblique; the chin prominent teeth rather strong; tongue not notched; isthmus broad. The gill openings not continued forward below; pectorals moderate, without silk-like rays (Jordan and Snyder, 1901). Some counts, such as the numbers of dorsal and anal fin rays differ from the original description of *S. fundicola*. We think it because of the numbers of specimens in original description are very few. *Suruga fundicola* is presently encountered along the southern Japan coasts and in the East China Sea. The 7 genera of gobioids (*Acanthogobius*, *Amblychaeturichthys*, *Chaeturichthys*, *Lophiogobius*, *Pterogobius*, *Sagamia*, *Suruga*) share a unique dominant pattern of the dorsal-ptyerygiophore formula 3/1221110 [= 3/I II II I I I 0/11 in Akihito's system in Akihito (1984)]. Among them, the genus *Suruga* is distinguished from the other 6 genera having eye large, its diameter greater than snout length (27.5~34.4% of head length); usually 16~17 segmented rays of second

dorsal fin; typically P-V 3/I II II I I I 0 i/12; each cephalic sensory papilla modified into minute skin flap (Shibukawa and Iwata, 2013). This species including only 1 genus is well distinguished from the other species of gobies by narrow interorbital space and notably large eye. By these characters, new Korean name, "Keun-nun-mang-duk-sok" and "Keun-nun-mang-duk" is proposed for the genus and species, respectively.

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한국산 망둑어과 어류 1미기록종, *Suruga fundicola*

최 윤 · 이흥현¹

군산대학교 해양과학대학 해양생물공학과, ¹연구협동조합 이엔이

요 약 : 경상남도 통영의 남쪽 근해에서 채집된 망둑어과 어류 15개체가 한국미기록어종인 *Suruga fundicola*로 동정되었다. 이 종은 등지느러미 기조수가 VII-I, 16~17, 뒷지느러미 기조수가 I, 15~16, 측선비늘수 37~42, 등지느러미 앞 비늘수 8~11이다. 눈이 크고 양안간격이 좁은점, 뺨과 아가미뚜껑에 비늘이 없고, 날카로운 이빨을 가지고 있으며, 체측에 6~7개의 검은 무늬가 있는 것이 특징이다. 본 종은 단 1속으로 위의 형태적 특징들에 의해서 망둑어과의 다른 종들과 잘 구분된다. 본 종의 속명과 국명은 “큰눈망둑속”, “큰눈망둑”으로 제안한다.

찾아보기 낱말 : 망둑어과, *Suruga fundicola*, 한국미기록종