

## A New Record of an Emmelichthyid Fish, *Emmelichthys struhsakeri* Heemstra and Randall (Perciformes, Pisces) from Korea

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One specimen of *Emmelichthys struhsakeri* Heemstra and Randall belonging to the family Emmelichthyidae was collected for the first time from Cheju island, Korea. *E. struhsakeri* is similar to *Erythrocles schlegelii*, but differs in some morphological characters: the presence of the keel on the caudal peduncle region, the presence of the three isolated short spines between spinous and soft dorsal fins.

Key words: Emmelichthyidae, *Emmelichthys struhsakeri*, Korean fauna

### Introduction

Since Schultz (1945) had studied the family Emmelichthyidae for the first time, Heemstra and Randall (1977) recognized three genera and ten species in the revision of the Emmelichthyidae, in which they described four species including two new species in the genus *Emmelichthys*. Kotlyar (1982) added a new species, *Emmelichthys elongatus* from the southeastern part of the Pacific Ocean, thus five species are known in the genus *Emmelichthys* in the world.

To date, only one species, *Erythrocles schlegelii* (Richardson), of the family Emmelichthyidae has been recorded from Korea (Mori, 1952; Chyung, 1977; Kim and Kim, 1997), and its morphological ecological descriptions were presented briefly by Kim et al. (1994). For the first time, Lee et al. (1999) provided the *Emmelichthys* species collected from New Zealand with the Korean genus name in the fishes of the Pacific Ocean.

The purpose of the study is to describe *E. struhsakeri* as new to Korean fish fauna and to provide the taxonomic information for the family Emmelichthyidae.

### Material and Method

The specimen was caught by fishermen in the southern coastal area of Cheju Island, and obtained at a fish market in Sögwipo, Cheju Island, Korea on the 9th of February in 1998. Measurements and counts were made as defined by Heemstra and Randall (1977). The specimen was deposited in Ichthyological Laboratory, the Department of Marine Biology, Pukyong National University (PKNU).

### Results and Discussion

#### Family Emmelichthyidae

Genus *Emmelichthys* Richardson, 1845

(Korean Name : Yang-cho-sön-hong-ch'i-sog)

*Emmelichthys* Richardson, 1845, p. 47 (type species *Emmelichthys nitidus* Richardson, 1845, by monotype)

Body elongate, subcylindrical; spinous dorsal fin separated from soft dorsal fin by a distinct gap containing 2~4 short isolated or buried spines; spinous dorsal fin base usually longer than head; minute teeth usually present at front of lower jaw, and sometimes a few at front of upper jaw; no teeth on vomer, palatines or tongue; five species in the world (Heemstra and Randall, 1977; Kotlyar, 1982).

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*Emmelichthys struhsakeri* Heemstra and  
Randall, 1977

(Fig. 1)

(New Korean Name : Yang-cho-sŏn-hong-ch'i)

*Emmelichthys struhsakeri* Heemstra and Randall, 1977 : p. 382, fig. 5a (type locality : Kealaikahiki channel, Hawaii); Masuda et al., 1984, p. 161, pl. 145-G (descr.; range); Yamakawa, 1985, p. 499, pl. 278 (descr.; range); Hatooka, 1993, p. 715 (descr.; in key; range).



Fig. 1. *Emmelichthys struhsakeri* Heemstra and Randall, 123.0 mm SL.

**Material examined :** PKNU9804118, 9th, Feb., 1998. 123.0 mm SL, Cheju Island, Korea.

**Description :** D. XI-I, 10; P. 20; A. III, 10; LLs. 72; TR. 7/15; GR. 9+1+26=36.

Body slender, body depth 4.8 in standard length (SL). Head profile slightly curved. Mouth terminal, oblique, very protractile. Jaws with one row of minute teeth at front; no teeth on vomer and palatine. Eye very large, eye diameter 3.0 in head length (HL). Nostrils two, small, anterior one larger than posterior one; anterior nostril with broad based flap posteriorly. Opercle with two flat spines; posterior margin of preopercle weakly serrated. Maxillary reaching vertical at front edge of pupil;

maxillary broad posteriorly, scaled, with well developed supramaxillary (Fig. 2A). Dorsal fin clearly separated into two parts; spinous dorsal fin separated from soft dorsal fin by a distinct gap of short three isolated spines. Pectoral fin long, extending below to seventh dorsal spine; pectoral fin rays branched except upper-most 1st and 2nd pectoral fin rays; pectoral fin length 1.3 in HL. Pelvic fin short, origin slightly posterior to base of pectoral fin; pelvic fin length 1.8 in HL. Anal fin origin slightly posterior to vertical at first soft dorsal fin ray. Head and body completely covered with ctenoid scales except for lips; scaly basal sheath to anal and second dorsal fin. Anus well in advance of anal fin origin; preanus length 1.7 in SL. Caudal fin deeply forked; its base scaly. Mid-lateral region of caudal peduncle without a keel; caudal peduncle length long, 1.1 in HL; caudal peduncle depth moderate, 3.2 in HL. Gill rakers long and numerous; longest gill raker longer than longest gill filament (Fig. 2B).

**Colour in fresh :** Body reddish orange dorsally, become silvery pink laterally and ventrally. Lips and iris red. Dorsal fin and pectoral fin pale pinkish yellow; pelvic and anal fin whitish; caudal fin pinkish orange.

**Distribution :** Southern Korea, southern Japan, Okinawa trough, Kyushu-Palau ridge, Hawaiian Islands, New South Wales, in 140~360 m.

**Remarks :** This species was first recorded as *Emmelichthys struhsakeri* by Heemstra and Randall (1977), who detailedly revised the family Emmelichthyidae from the world. *E. struhsakeri* was confused from *E. nitidus*, but differs from the latter in the number of lateral line scales (68~72 in *E. struhsakeri* cf 87~105 in *E. nitidus*)

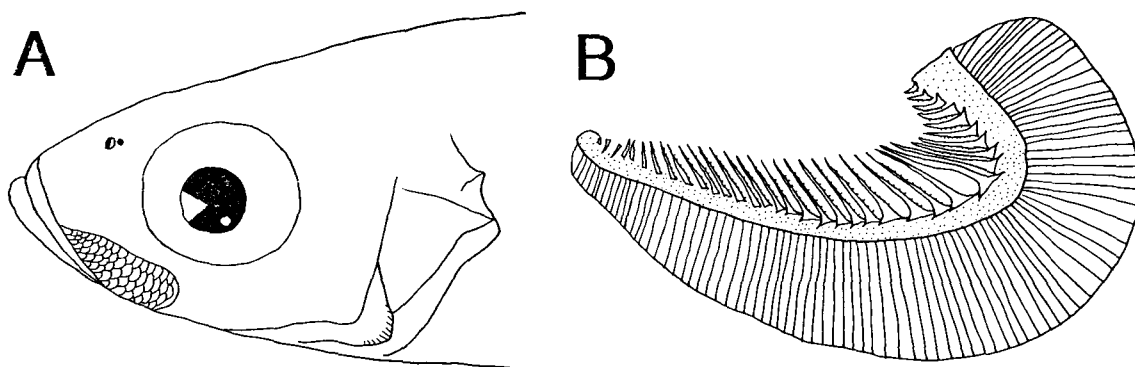


Fig. 2. Magnification of body part of *E. struhsakeri*.

A: Head showing the minute serrate preopercle, two nostrils and scaled broad maxillary;  
B: Gill rakers.

Most characteristics of the present specimen conform well to the original description by Heemstra and Randall (1977) and others as shown in Table 1. However, the number of lateral line scales described by Yamakawa (1985) is slightly different from those of Heemstra and Randall (1977), it seems to be a geographical variation.

Intra-family morphological trends concerning evolution have been provided by Heemstra and Randall (1977), who stated that the genus *Emmelichthys* is the most specialized group among the three genera based on the morphology of the dorsal fin. No phylogenetic relationships of the family Emmelichthyidae within percoid fishes have been proposed to date, because of lack of the confidence in potential outgroup choices (Heemstra and Randall, 1977).

We propose the new Korean name "Yang-cho-sön-hong-ch'i" for *E. struhsakeri*.

#### Key to genera and species of the Family Emmelichthyidae from Korea

- a. Dorsal fin divided to base; spinous dorsal fin base shorter than head ..... genus *Erythrocles* (선홍치속), *Erythrocles schlegelii* (선홍치)
- b. Spinous dorsal fin separated from soft dorsal fin by a distinct gap of short three isolated spines; spinous dorsal fin base longer than head ..... genus *Emmelichthys* (양초선홍치속), *Emmelichthys struhsakeri* (양초선홍치)

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Table 1. Comparison of counts and proportional measurements of *Emmelichthys struhsakeri*

Characters	Present study	Yamakawa (1985)	Heemstra and Randall (1977)
Number of specimens	1	1	-
Standard length (mm)	123.0	157.0	102.0~185.0
In standard length			
Head length	3.9	3.7	3.7~3.9
Body depth	4.8	4.6	4.5~5.1
Predorsal length	2.9	2.7	-
Preanal length	-	2.9	-
Prepelvic length	-	1.5	-
Preanus length	1.7	-	-
In head length			
Snout length	4.0	3.4	-
Eye diaemeter	3.0	3.2	2.7~3.2
Interorbial width	3.5	3.3	-
Upper jaw length	2.4	2.3	-
Longest dorsal spine length	1.7	1.8	-
Pectoral fin length	1.3	1.3	-
Pelvic fin length	1.8	1.8	-
Caudal peduncle length	1.1	1.2	-
Caudal peduncle depth	3.2	3.7	-
Counts			
Dorsal fin rays	XI-I, 10	XI-I, 11	XII, 10~12
Pectoral fin rays	20	19	19~21
Anal fin rays	III, 10	III, 10	III, 9~10
Lateral line scales	72	76	68~72
Transverse above lateral line	7	-	6~8
Transverse below lateral line	15	-	15
Gill rakers	9+1+26	9+26	9~12+26~30

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