

New Record of the Damselfish, *Chromis fumea* (Pisces : Pomacentridae) from Korea

Yong Uk Kim, Jeong-Rak Koh and Jeong-Goo Myoung*

Department of Marine Biology, National Fisheries University of Pusan
Pusan, 608-737, Korea

*Korean Ocean Research and Development Institute,
Ansan, 425-600, Korea

The Damselfish, *Chromis fumea*, was originally described by Tanaka(1917) from Nagasaki, Japan. In the Korean waters, 27 specimens of *Chromis fumea*(Tanaka) were collected from Cheju-do, on April-August, 1993, and described herewith as new to the Korean fish fauna.

Chromis fumea differs from *Chromis notatus* in having serrate preopercle, no distinctive black spot in pectoral base and caudal fin with a broad blackish band in each lobe. *Yeonmoo-ja-ri-dom* is proposed as Korean name of *Chromis fumea*.

Introduction

The damselfish genus *Chromis*, the largest group of the Pomacentridae, distributed in the tropical and subtropical waters of the world. Relatively few species inhabit the temperate waters(Emery, 1973). Their principal habitats are coral reefs or rocky bottoms which provide the fish with shelters from predators and substrata for their demersal ova (Randall, 1988).

The fishes of genus *Chromis* are usually small in size and often vividly colored. All of this species exhibit distinct habitat preferences, varying widely from species to species (Limbaugh, 1964).

The pomacentrid genus *Chromis* was defined by Cuvier(1814), and the genus was on the basis of its dorsal spines XII~XIV, soft portion of dorsal fin 1.7~3.9 in base of spinous portion, lateral line ending beneath soft portion of dorsal fin, head fully scaled except for a narrow region at front of snout and side of snout around each nostril, nearly all species with two or three spiniform procurrent caudal rays and hind edge of preopercle usually entirety(Randall and Swerdloff, 1973 ; Allen, 1975).

Some studies questioned the taxonomic identity of genus *Chromis*. Allen(1975) suggested that *Chromis* is probably separable into several subgenera including *Dorychromis analis*(Fowler and Bean, 1928), *Hoplochromis caerulea*(Fowler, 1918), *Lepicephalochromis chrysur*(Fowler, 1943), *Lepidochromis lepidolepis*(Fowler and Bean, 1928), *Pycnochromis*

vanderbilti (Fowler, 1941), and *Thrissochromis ovalis* (Fowler, 1941).

Chromis fumea was originally described by Tanaka (1917) as *Pomacentrus fumeus* based on the specimens from Nagasaki, Japan.

Twenty-seven specimens of *Chromis fumea* were collected from Cheju-do, and described as new to the Korean fish fauna with illustrative figures.

Materials and Methods

The damselfish were collected by fishermen and using SCUBA at Cheju-do, Korea in April-August, 1993 and identified as *Chromis fumea* (Tanaka).

Measurements and counts were made by the method of Randall and McCarthy (1988). Specimens were measured with a caliper to the nearest 10th of millimeter. Lateral system of head, margin of suborbital and preopercle margin were observed by the staining method of Kawamura and Hosoya (1991).

The present specimens are deposited at the Ichthyological Laboratory, Department of Marine Biology, National Fisheries University of Pusan, NFUP04101~04127.

Table 1. Morphological measurements and counts of *Chromis fumea* collected from Cheju-do, Korea in April-August, 1993

Characters	The present study	Tanaka(1913)	Randall <i>et al.</i> (1981)
Number of specimens	27	-	43
Standard length(SL)	58.7-85.7	-	25.0-96.0
Head length(HL)	16.8-24.3	-	-
% of standard length			
Head length	26.8-32.1	26.3	29.1-31.5
Body depth	39.0-47.0	40.0	40.2-48.8
Eye diameter	10.0-12.6	-	9.8-11.4
Interorbital width	8.6-10.7	-	9.7-10.5
Caudal peduncle depth	12.1-14.0	-	12.9-14.5
Longest dorsal spine	12.2-17.3	-	14.7-19.1
Second anal spine	17.7-21.0	-	16.7-22.9
% of head length			
Eye diameter	34.2-42.9	37.5	-
Interorbital width	28.2-35.7	31.0	-
Caudal peduncle depth	40.5-52.1	50.0	-
Meristic characters			
Dorsal rays	XIII-XIV, 11-13	XIV, 11	XIII-XIV, 10-12
Anal rays	II, 10-11	II, 10	II, 9-10
Pectoral rays	18-19	19	18-20
Caudal spinules	2/2	-	2/2
Lateral line scales	18-19	17	17-19
Lateral line above scales	3-4	4	4
Lateral line below scales	9-10	10	9-10

Results

Chromis fumea(Tanaka), 1917

(Fig. 1)

New Korean name : *Yeonmoo-ja-ri-dom*

Pomacentrus fumeus Tanaka, 1917 : 9(Type locality : Nagasaki, Japan).

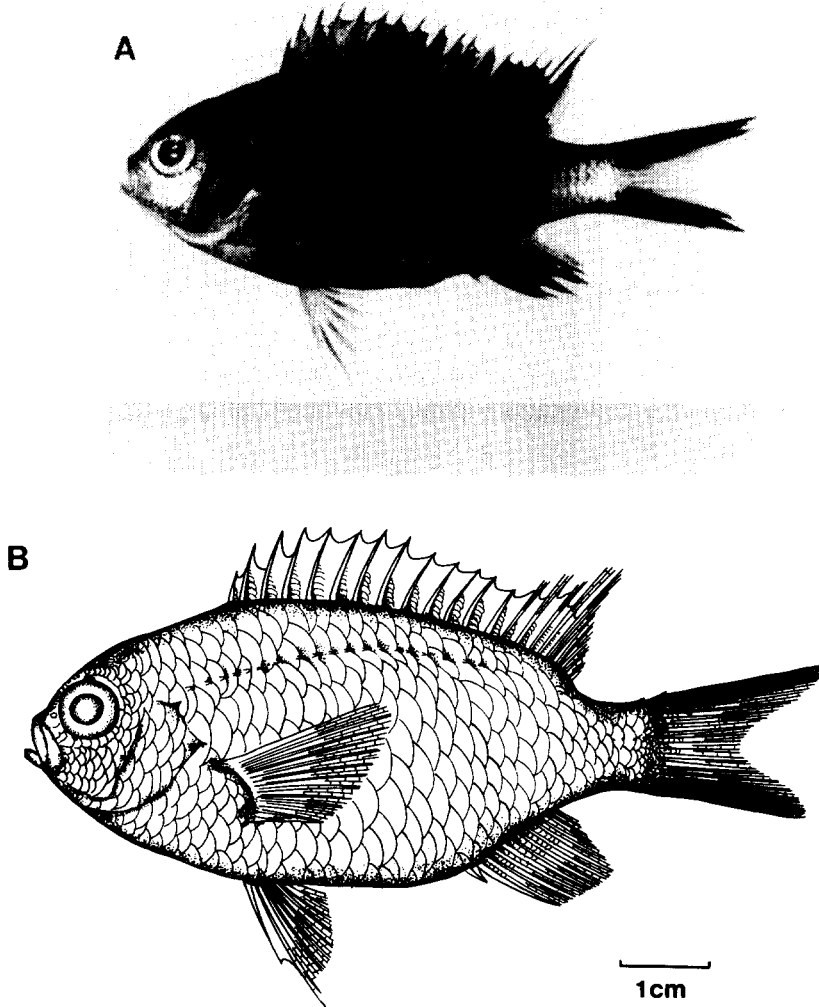


Fig. 1. *Chromis fumea*(Tanaka), 73.8mm SL, collected from Cheju-do, Korea, lateral view.

A. A live specimen; B. An illustration figure

Material examined : NFUP04101~04127, 27 specimens, 58.7~84.1mm in standard length(SL), Mosulpo, Seogwipo in Cheju-do, Korea, April-August, 1993.

Diagnosis : Morphological counts and measurements of *Chromis fumea* are shown in Table 1. D. XII~XIV, 11~13 ; A. II, 10~11 ; P. 18~19 ; tubed lateral-line scales 18~19 ; pored lateral-line scales on caudal peduncle 9~10 ; scales above the lateral line to origin of dorsal fin 3 or 4 ; scales below the lateral line to origin of the anal fin 9 or 10 ; gill rakers 6~9+19~24 ; vertebrae 11+15, predorsal bones 3.

First four interspinous membranes of the dorsal fin moderately incised, the posterior membranes slightly incised ; the caudal concavity 10.5~18.6% SL.

Description : Body short and compressed ; snout length short. Scales ctenoid ; no auxiliary scales ; head fully scaled except the front of snout ; suborbital scaled, its free margin extending only to a vertical at the front edge of pupil ; crescent opening of supraorbital canal small (Fig. 2, A). Only upper preopercular margin and corner finely serrated (Fig. 2, B). Mouth small ; 24~26 teeth conical in outer row on each side of the upper jaw ; 22~24 conical teeth in outer row on each side of the lower jaw (Fig. 3, A). The urohyal was relatively short and broad ; small processes dorsomedially (Fig. 3, B). Posterior margin of the soft dorsal and anal fins angular ; the caudal fin forked, the lobe tips pointed to slightly rounded, upper and lower caudal spinules 2. Color : yellowish gray, shading ventrally to whitish with light orange color. Interspinous membranes of the dorsal fin black, scaled part of dorsal fin yellowish green. Pelvic fins yellowish orange with first filamentous ray. Anal fins brown, shading to black to the tip. No black spots at base of pectoral fins, although axil and narrow upper edge of the base of fins are black. Caudal fin with a broad blackish band in each lobe, the centro-posterior part of fin light orange.

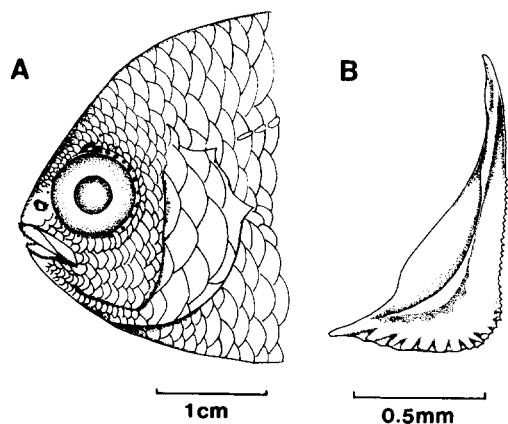


Fig. 2. Head part and preopercular of *Chromis fumea*.

- A. No scales covered on the anterior nasal opening and the crescent opening of the supraorbital canal
- B. Serrated margin and corner of the preopercle

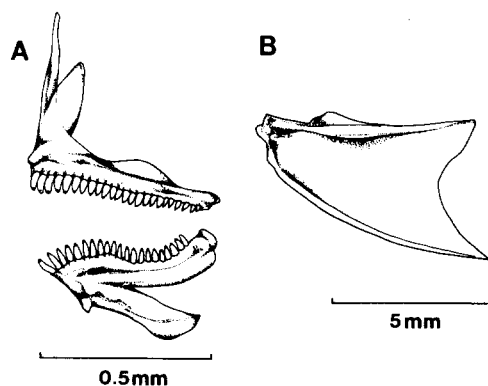


Fig. 3. Jaw bones and urohyal of *Chromis fumea*.

- A. Premaxilla and dentary; B. Urohyal

Distribution and Habitat : *Chromis fumea* was known to occur from southern Japan to Taiwan and found in lagoons and the exposed outer reefs or rocky areas(Randall *et al.*, 1981). They generally face the incoming current. Adults have been observed in tide pools and at depth of 15~20m, depending on the clarity of the water and the thermocline.

Their spawning behavior can be observed in depth of 15m. Males of this species guarded the egg mass attached on rocks. This species are omnivorous(Emery, 1973). In summer, this fish is rather common in the coastal waters of Cheju-do.

Remark : The genus *Chromis* was established by Cuvier in 1814, and first used in binominal nomenclature by Cuvier(1815). According to the rules of zoological nomenclature, generic names of variable gender are to be considered masculine, unless the author of the name specifically indicates otherwise. Thus, the correct gender for *Chromis* is feminine and it applies only to *Chromis*(Emery, 1975). This species belongs to the genus *Chromis* by the following characters : teeth conical, the procurrent spiniform caudal rays 2-3(Randall *et al.*, 1981).

Chromis fumea was originally described in Japanese as a *Pomacentrus fumeus* by Tanaka(1917). This species belongs to the genus *Chromis* in generally characterized by head length 25.7~32.1% SL, depth of caudal peduncle 12.1~14.0% SL, serrated preopercle, no distinctive black spots in pectoral base and caudal fin with a broad blackish band in each lobe. The name of this species has been confused in nomenclatorial history. Matsubara (1979) reported this species as *Pomacentrus fumeus* based on the marginal state of preopercle.

Most characters of the present specimens agree well with the original description of *Chromis fumea* by Tanaka(1917). We propose "*Yeonmoo-ja-ri-dom*" as a Korean name of *Chromis fumea*.

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한국산 자리돔속 어류 1 미기록종, *Chromis fumea*

김용익 · 고정락 · 명정구*
부산수산대학교 해양생물학과 · *한국해양연구소

1993년 4월부터 8월까지 제주도에서 자리돔과 어류를 채집하여 조사하던 중 한국에는 아직 보고되어 있지 않은 자리돔속(genus *Chromis*)의 *Chromis fumea* 27개체가 제주시 동문시장과 서귀포 및 모슬포 항구에서 채집되었기에 한국 미기록종으로 이를 보고한다. *Chromis fumea*는 체장이 58.7~84.1mm로 소형어종이며 본종의 외부 형태는 자리돔속 어류와 비슷하나 꼬리지느러미의 말단 부위에 등쪽과 배쪽으로 검은색의 세로띠를 형성하고 전새개골의 후연은 미세한 톱니모양을 가진다는 점에서 동일속의 자리돔, *Chromis notatus*과 잘 구별되어진다. 본 종의 한국명은 “연무자리돔”으로 명명한다.