

First Record of *Fugu flavidus*, from Korea

Ik-Soo Kim and Wan-Ok Lee

Dept. of Biology, College of Natural Sciences,
Chonbuk National University, Chonju 560-756, Korea

A puffer fish *Fugu flavidus* Li, Wang *et* Wang of Family Tetraodontidae was studied for the first time in Korea. Specimens were obtained from fish markets in Kunsan and Mokpo in February 1985 and June 1989. The *Fugu flavidus* is similar to *F. obscurus* and *F. niphobles* in morphometric characters, but differs from them in dorsal part of the body: yellowish-brown or greenish-brown, and covered with many round white spots which are clear in young and become indistinct as the fish grow. A new Korean name "Hwangjombok" is proposed for the *F. flavidus*.

Introduction

The first description of the puffer *Fugu flavidus* Li, Wang *et* Wang, from Quing-dao in China (Cheng *et al.*, 1975) and the puffer from Japanese waters was reported by Matsuura(1984). In the course of studies on the Korean Tetraodontiformes, we obtained the specimens of *Fugu flavidus* which were commercially caught from the Yellow Sea by the trawl-net.

Since this species is recorded here for the first time in Korea, a detailed description of them is given below and compared with *Fugu niphobles* and *F. obscurus*.

The specimens of *Fugu flavidus* are deposited at the Department of Biology, College of Natural Science, Chonbuk National University (CUB). Counts and measurements for the puffer fish were made according to Matsuura (1980) and Abe (1949).

Fugu flavidus (Li, Wang *et* Wang)
(New Korean name ; Hwangjombok)

Material examined. CUB 14663, 14664, Two specimens 158.4 mm, 146.7 mm, in standard length (SL). Kunsan, Chollabuk-do, January 3, 1987 ; CUB 14662, 1 specimen 258.2 mm, in standard length (SL). Mokpo, Chollanam-do, June 17, 1989 ; CUB 14926-14930, 5 specimens 101.5-225.5 mm, in SL. Kunsan, Chollabuk-do, February 12, 1985.

Description. Dorsal fin rays 15, anal fin rays 13, pectoral fin rays 18, caudal fin rays 11

vertebrae 21 (=8+13).

Body depth 2.9-3.7, head length 2.8-3.4, in standard length. Snout length 2.0-2.2, eye diameter 7.7-8.7, of head length. Eye diameter 3.6-4.0, of snout length. Body slightly elongated, heavier in front, tapering behind; head broad and flattish above; back smoothly rounded; snout about as long as the postorbital; nasal area low, each with two nostrils; dermal spines rather strong, dorsal and ventral spinous areas separated. A lateral line encircling eye, and continuing posteriorly along dorsal part of body to caudal fin base, each line connected with the opposite on by a transverse branch crossing over back at level of pectoral fin base.

Color in life. Ground color of body yellowish-brown dorsally, whitish-pale ventrally, covered with many round white spots which are clear in young (CUB 14663, 158.4 mm in SL) and become unclear as the fish grow (CUB 14662, 258.2 mm in SL); an irregular small black blotch on the body side just behind pectoral fin; a longitudinal yellowish-orange band running on ventrolateral part of body from corner of mouth to lower base of caudal fin. Dorsal, ventral and caudal fins are gray-brown with proximal dark brown; pectoral fin is pale in upper part and yellowish-orange in lower part. The base of pectoral fin has a dark spot.

Remark. The present specimens were from off the Cheju Island, the Yellow Sea caught by trawl-net. Young specimens CUB 14663 (158.3 mm in SL), CUB 14664 (146.7 mm in SL), of the present species have been obtained in the Kunsan fish market. The young specimens differ slightly from the adult specimens in coloration. Young puffer have numerous whitish spots of irregular size on the back, which become indistinguishable in adults (Fig. 1A).

In large specimen CUB 14662 (258.2 mm in SL) the back uniformly yellowish-brown, the sides yellowish-orange (Fig.1B).

The species is widely distributed in the Yellow Sea and the Gulf of Po-Hai and the northern part of East China Sea (Matsuura, 1984).

The external appearance of this species is closely related to those of *F. niphobles* and *F. obscurus*, but it differs from the *F. niphobles* in coloration change with specimens of different size, and smaller eye diameter (*F. flavidus* is lower than 14.5% in head length, while in *F. niphobles* is 20.9-25.2% in head length), shorter caudal peduncle length (*F. flavidus* is 16.1-20.1% in standard length and *F. niphobles* is 20.0-26.8% in standard length), higher caudal peduncle depth (*F. flavidus* is 9.4-11.2% in standard length, while *F. niphobles* is 8.0-8.9% in standard length), more number of dorsal fin rays (*F. flavidus* is 14-16 and *F. niphobles* is 13) more number of anal fin rays (*F. flavidus* is 13-15 and *F. niphobles* is 11-12).

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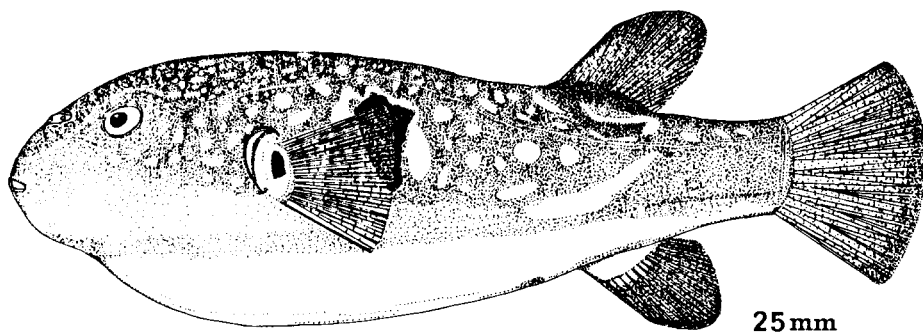


Fig. 1A. *Fugu flavidus*, 180.2 mm SL, Kunsan, Korea, CUB 14663. 25 mm

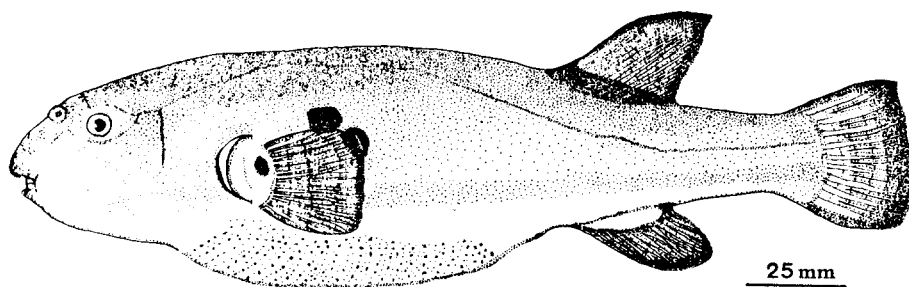


Fig. 1B. *Fugu flavidus*, 258.2 mm SL, Mokpo, Korea, CUB 14662. 25 mm

This species differ from *F. obscurus* by having dorsal color pattern of white spots in the young stage and higher caudal peduncle depth (*F. flavidus* is 9.4-11.2% in standard length and *F. obscurus* is 8.8-9.0% in standard length) as shown in Table 1.

Table 1. Comparison of some measurements and meristic counts in *Fugu flavidus*, *F. niphobles* and *F. obscurus* from different localities

	<i>Fugu flavidus</i>			<i>Fugu niphobles</i>	<i>Fugu obscurus</i>
	Quingdao* (China)	Mokp'o (Korea)	Kunsan (Korea)	Mokp'o (Korea)	Unǵp'o (Korea)
No. of individual	38	1	7	6	2
Standard length (mm)	50.0-295.0	258.2	101.2-225.5	59.1-89.5	93.5-108.5
% to Standard length					
Body depth	24.4-30.3	27.0	31.8±2.58** (28.7-34.7)	28.5±1.06 (26.7-29.7)	26.4-27.0
Head length	34.5-37.0	29.6	33.4±1.97 (30.2-35.5)	33.2±0.94 (31.9-34.5)	32.0-33.8
Caudal peduncle length	-	17.0	17.9±1.49	22.9±2.27	17.9-18.7

Caudal peduncle depth	-	10.2	(16.1-20.1) 10.1±0.57 (9.4-11.2)	(20.0-26.8) 8.4±0.41 (8.0-8.9)	8.8-9.0
% to head length					
Snout length	35.7-45.5	49.3	45.2±2.41 (41.0-48.8)	43.0±0.51 (42.3-43.6)	41.8-44.8
Eye diameter	11.2-13.9	13.1	12.8±0.95 (11.2-14.5)	22.7±1.57 (20.9-25.2)	12.7-17.3
% to caudal peduncle length					
Caudal peduncle depth	-	60.3	56.7±4.65 (50.6-64.0)	36.0±2.43 (32.9-40.0)	48.0-48.7
No. of					
Dorsal fin rays	15-16	15	15-16	13	17
Anal fin rays	13-15	13	14	11-12	15
Pectoral fin rays	-	18	17-18	14-15	17

* Wang *et al.* (1975) ** Mean ±SD (range)

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한국산 참복속 어류 1 미기록종 *Fugu flavidus*

김 익수 · 이 완옥
전북대학교 자연대 생물학과

1985년 2월부터 1989년 6월까지 전북 군산과 전남 목포 연안에서 수집된 참복과 어류 가운데 체장 101.5-258.2 mm의 8 개체는 우리나라에서 알려지지 않은 *Fugu flavidus* Li, Wang et Wang으로 동정되었다.

본 종의 어린 개체는 황갈색 바탕에 흰반점이 산재하나 성체에 가까울수록 흰반점은 희미해지며, 완전한 성체가 되면 몸 전체가 황갈색을 띤다. 모든 개체는 입에서 꼬리지느러미 기부에 까지 황색띠가 뚜렷한 점 등 유연종인 복섬 *Fugu niphobles*과 잘 구분되고, 또 어릴 때와 성체에서 반문의 차이가 뚜렷하여 황복 *Fugu obscurus*과도 잘 구분되어 채집된 표본의 계수·계측치와 형태적 특징을 기재하고, 국명으로는 “황점복”으로 명명한다.