

First Record of the Unicornfishes, *Naso lituratus* (Pisces: Acanthuridae) from Korea

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A rare species of unicornfishes, *Naso lituratus* (Schneider) was recently collected from coastal waters in Cheju-do, Korea. This species was described and figured as first record from Korea. A key of three species belonging to the genus *Naso* from Korea is presented.

Key words : *Naso lituratus*, Acanthuridae, first record, key, Korea

Introduction

The previous records of the family Acanthuridae of Korea were those of Mori (1952) and Chyung (1977) who listed two species belonging to two genera. In the family Acanthuridae, the genus *Naso* was distinguished from the genus *Prionurus* by the two anal spines (*versus* three spines), three soft pelvic rays (*versus* five rays) and one or two bony plates on the caudal peduncle (*versus* four or five plates) and was found mainly in the Indo-Pacific Ocean. About 17 species in the genus *Naso* were known in the world (Nelson, 1994). This genus from Korea has not been well known so far except two species *Naso unicornis* from Tongyeong by Mori (1952) and *Naso brevirostris* from Cheju-do by Kim and Lee (1994). One specimen of *N. lituratus* was collected for the first time by otter trawls in Cheju-do, Korea, during survey of Korean fish fauna in 1995. The purpose of this paper were to provided a key of the genus *Naso* and the first record of *N. lituratus* from Cheju-do and adjacent waters in Korea.

Counts and measurements follow mainly Hubbs and Lagler (1964) with minor modifications. All measurements were made with digital calipers and expressed in millimeters. Vertebral counts and rudimentary fins were from radiographs.

The specimen is deposited at the Faculty of Biological Science, Chonbuk National University, Chonju, Korea (CNUC), and three comparative specimens were examined deposited in the Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University, Hokkaido, Japan (HUMZ).

Systematic Account

Family Acanthuridae 양귀돔과
Genus *Naso* Lacepède, 1802 표문취치속
Naso unicornis (Forsskål, 1775) 표문취치
(Korean name: Pyomun-jwichi)

Chaetodon unicornis Forsskål, 1775, p. 63 (type locality: Red Sea); Mori, 1952, p. 134 (Tongyeong).

Naso brevirostris (Valenciennes, 1835)
큰빨표문취치

(Korean name: Keunbbul-pyomun-jwichi)
Naseus brevirostris Valenciennes in Cuvier and Valenciennes, 1835, p. 277 (type locality: Moluccas, Mauritius, New Guinea); Kim and Lee, 1994, p. 36-37 (Cheju-do).

Naso lituratus (Forster, 1801) 제주표문취치
(국명신칭) (Fig. 1)

(New Korean name: Cheju-pyomun-jwichi)
Acanthurus lituratus Forster in Bloch and Schneider, 1801, p. 216 (type locality: Tahiti).

Material examined : One specimen, off Seog-

Fig. 1. *Naso lituratus* from Korea. CNUC 23535, 215.2 mm in SL, Seogwipo, Cheju-do.

wipo, Cheju-do. CNUC 23535, 215.2 mm in standard length, 9 October 1995.

Description : Dorsal fin rays VII, 29; anal fin rays II, 30; all dorsal and anal soft rays branched; pectoral fin rays 16; pelvic fin rays I, 3; gill rakers 4+9; vertebrae 8+13.

Proportion of measurements as a percentage of standard length: body depth 46.1%; head length 28.6%; predorsal length 34.2%; preanal length 43.0%; prepectoral length 25.4%; caudal peduncle length 13.4%; caudal peduncle depth 5.4%; pectoral fin length 17.5%; pelvic fin length 14.5% (damaged); length of longest dorsal spine 12.2%; length of longest dorsal ray 12.6%; length of longest anal spine 7.9%. And as percentage of head length: orbit diameter 22.2%; snout length 68.7%; interorbital width 26.6%; upper jaw length 24.7%; lower jaw length 24.0%.

Body moderately elongate and compressed, dorsal profile of snout above lips smoothly concave, becoming smoothly convex on nape, without any protuberance; ventral profile of head concave; interorbital space strongly convex with a broad median ridge; caudal peduncle with two immovable bony plates forming recurved spines; mouth terminal, nearly horizontal, and small; teeth in jaws small and rounded, with entire edges; nostrils very small; scales highly modified, very small, close-set each with an elevated dense mass of spinules which expand to form a flattened outer surface. Dorsal fin origin anterior to upper end of gill opening; dorsal and anal spines robust and transversely broad in its base, particularly first spine on each fin; caudal fin emarginate without a filament on each lobe but both lobes produced into long free filament on

adult (Fig. 2) (Kishimoto, 1984); pectoral fins pointed; pelvic fins reaching base of anal fin.

Color in 10% formalin : Head and body uniform dark-brown, lips slightly paler than the rest of head; caudal plates surrounded with two broad white patches on caudal peduncle; dorsal fin black basally, white distally, with thin infra-marginal brown line; anal fin white-gray basally but otherwise similar to dorsal fin; caudal fin dark-brown with narrow white marginal band.

Distribution : Known from the Seogwipo off Cheju-do in Korea and the Suruga Bay southward in Japan, from Indian to Central Pacific Oceans (Kishimoto, 1984).

Remarks : Although *N. lituratus* is similar to *N. unicornis* and *N. brevirostris* in the body color and the morphological characters, *N. lituratus* differs from them in not having horn or crest-like swelling or hump on the forehead at any age, and bears round teeth in the jaws (*versus* in having projecting horn-like protuberance and pointed teeth in *N. unicornis* and *N. brevirostris*).

The morphological characteristics of the present specimen of *N. lituratus* agreed well with the original description of Bloch and Schneider (1801) (Table 1, 2) and with the descriptions of Kishimoto (1984) and Shimada (1993) from Japan and Munro (1967) from New Guinea.

Key to the species of the genus *Naso* from Korea

- 1a. Forehead without horn or crest-like swelling or hump at any age, teeth rounded, with smooth edges *N. lituratus*
- b. Forehead with a projecting conical horn-like

Fig. 2. *Naso lituratus* from Japan. A) HUMZ 39173, 222.8 mm in SL, Ishigakijima, Okinawa; B) HUMZ 39652, 170.6 mm in SL, Naha, Okinawa; C) HUMZ 63001, 126.8 mm in SL, Ishigakijima, Okinawa.

Table 1. Comparisons of meristic counts of several studies of *Naso lituratus*

Chartacters	Present study		Kishimoto (1984)	Shimada (1993)	Munro (1967)
	Korea (n = 1)	Japan (n = 3)	Japan	Japan	New Guinea
Standard length (mm)	215.2	126.8~222.8	≤550	150, 300	≤500
Dorsal fin rays	VI, 29	VI, 28~30	VI~VII, 27~30	VI~VII, 27~30	VI, 28~30
Anal fin rays	II, 30	II, 29~31	II, 28~30	II, 28~30	II, 28~30
Pectoral fin rays	16	17~18	15~17	15~17	ii+14~15
Pelvic fin rays	I, 3	I, 3	I, 3	I, 3	I, 3
Gill raker	4+9	4+9~13	4+8~9	-	4+9
Vertebrae	8+13	8+14	-	-	-

Table 2. Proportional measurements of *Naso lituratus* collected from Korea and Japan

	Korea	Japan
	CNUC 23535 (n=1)	HUMZ 39173, 39652, 63001 (n=3)
Standard length (mm)	215.2	222.8, 205.9, 153.6
% SL		
Body depth	46.1	47.2±2.40*
Head length	28.6	30.7±1.71
Caudal peduncle length	13.4	16.3±1.00
Caudal peduncle depth	5.4	5.4±0.05
Predorsal length	34.2	35.3±2.27
Preanal length	43.0	40.9±1.60
Longest dorsal spine length	12.2	13.9±1.13
Longest dorsal ray length	12.6	11.5±0.33
Longest anal spine length	7.9	8.0±0.70
Longest anal ray length	Damaged	9.7±0.45
Pectoral fin length	17.5	18.7±1.27
Pelvic fin length	14.5 (damaged)	17.4±0.46
% HL		
Snout length	68.7	70.4±3.91
Orbit diameter	22.2	23.7±3.06
Interorbital width	26.6	29.8±1.04
Upper jaw length	24.7	24.0±0.23
Lower jaw length	24.0	23.0±0.75

* Mean±standard deviation

- protuberance or with a crest-like swelling with age, teeth pointed and with serrated edges 2
- 2a. Caudal fin lobes have long free filament, uniform in color *N. unicornis*
- b. Caudal fin lobes have not free filament and rounded, hind margin white in color
..... *N. brevirostris*

Comparative materials. *Naso lituratus* : HUMZ 39173, 222.8 mm SL, 1 specimen, Ishigakijima, Okinawa, Japan. 16 August 1974; HUMZ 39652, 170.6 mm SL, 1 specimen, Naha, Okinawa, Japan. 21 July 1973; HUMZ 63001, 126.8 mm SL, 1 specimen, Ishigakijima, Okinawa,

Japan. 24 April 1977.

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한국산 표문쥐치속(양쥐돔과) 어류 1 미기록종과 검색표

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한국산 양쥐돔과 어류 중에 지금까지 우리 나라에 기록된 적이 없는 *Naso lituratus* (Schneider) 1개체(체장 215.2 mm)를 제주도 서귀포 앞바다에서 정치망으로 채집하였다. 본 종의 국명은 “제주표문쥐치”라 하였으며, 계수·계측형질을 기재하고, 아울러 표문쥐치속 어류 3종의 검색표를 함께 제시하였다.