

Records of Three Tetraodontoid Fishes from Japan

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In the course of studies on the Japanese tetraodontiforms, we obtained three tetraodontoid fishes: *Canthigaster inframacula* Allen et Randall, 1977 from the Izu Islands, and *C. compressa* (Marion de Procé, 1922) and *Diodon eydouxi* Brissout de Barneville, 1846 from the Ryukyu Islands. *C. inframacula* has been known only from the type specimens collected from off the north shore of Oahu in the Hawaiian Islands (Allen and Randall, 1977). The type specimens were taken at depths between 126 and 157 m and represent the deepest record of sharpnose pufferfishes. *C. compressa* is distributed in tropical regions in the Pacific from Borneo to the New Hebrides. The northern limit of its distribution lay on Taiwan. Thus, the two species are recorded here for the first time from Japan. *Diodon eydouxi* has been reported to be a pelagic, oceanic species which is found circumtropically (Leis, 1978). The present specimen represents the first record of this species from inshore waters. In the following pages these three species are described and figured.

Methods of counts and measurements for the sharpnose pufferfishes follow those of Tyler (1967) and Allen and Randall (1977), and those for the porcupinefish are made in accordance with those of Leis (1978). The specimen of

C. inframacula is deposited at the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo (NSMT-P) and those of *C. compressa* and *D. eydouxi* at the Department of Marine Sciences, University of the Ryukyus (URM-P).

Canthigaster inframacula Allen et Randall, 1977
(New Japanese name: Hokuro-kinchakufugu)

(Fig. 1)

Material examined. NSMT-P 22288, 1 specimen, 40.8 mm in standard length (SL), Torishima I., Izu Is., 130 m depth, dredging by R/V Soyo-maru, 20 July 1979.

Description. D 11; A 10; P₁ 17; C i, 9, i; Vertebrae 8+9=17.

Body depth 2.9, body width 3.8, head length 2.4, snout length 4.6, snout to origin of dorsal fin 1.3, snout to origin of anal fin 1.3—all in SL. Eye diameter 3.7, interorbital width 3.4, postorbital length 4.4, depth of caudal peduncle 3.0, length of caudal peduncle 2.2, length of dorsal fin base 4.4, length of anal fin base 4.7, length of longest dorsal ray 2.5, length of longest anal ray 2.6, length of longest pectoral ray 2.5, length of caudal fin 1.3—all in head length.

Body moderately compressed, covered with very small spines except for around pectoral fin base and lower side of caudal peduncle; dorsal and ventral profiles of body convex. Snout long and conical. A raised skin fold on back extending from above posterior edge of eye to origin of dorsal fin. Mouth small and terminal; two large dental plates in each jaw. A single nostril on each side of snout, surrounded with

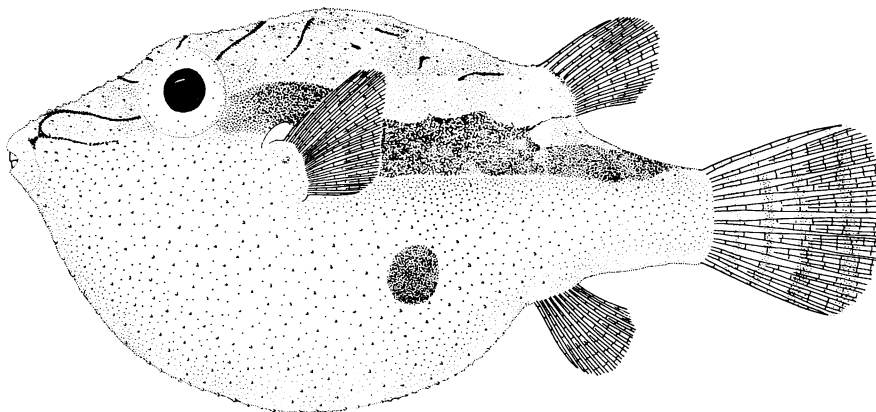


Fig. 1. ♂ *Canthigaster inframacula*, 40.8 mm SL, Izu Islands, NSMT-P 22288.

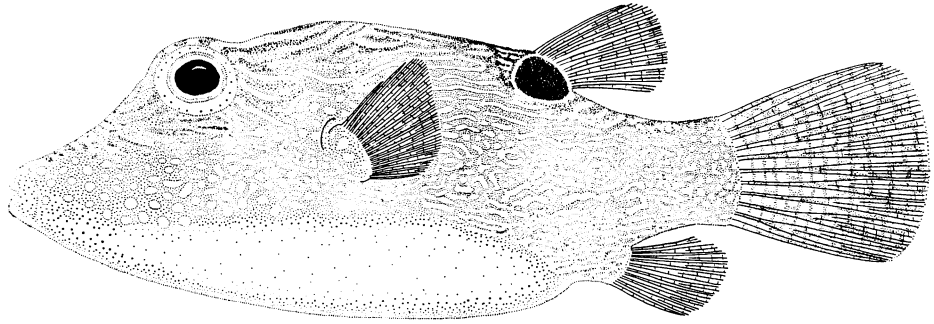


Fig. 2. *Canthigaster compressa*, 25.4 mm SL, Ryukyu Islands, URM-P 4654.

an elevated rim. Interorbital space slightly concave. Caudal peduncle greatly compressed, slightly tapering toward caudal fin base. Dorsal and anal fins small and slightly rounded. Pectoral fin broad but short. Caudal fin slightly convex. Pelvic fins absent.

Color in alcohol: body light olivaceous brown dorsally, becoming whitish ventrally; a longitudinal blackish brown stripe running from eye to upper base of caudal fin; a round blackish brown spot, about equal to eye diameter, on lower side of body between lower base of pectoral fin and origin of anal fin; several blackish brown lines radiating anteriorly, dorsally and posteriorly from eye; short irregular blackish brown lines also present on dorsal half of body; dorsal, anal and pectoral fins pale, slightly light brownish; caudal fin pale with several faint brownish spots forming vertical rows.

Remarks. Allen and Randall (1977) described this species on the basis of four specimens collected from deep water, 69 to 86 fathoms (126 to 157 m), off the north shore of Oahu in the Hawaiian Islands, by a shrimp trawl. The present specimen, taken from a depth of 130 m, further indicates that this sharpnose pufferfish is a deep dwelling species. The present specimen agrees well with the original description in all characters except for the number of dorsal fin rays; it has 11 rays instead of 10. This difference was confirmed by the reexamination of the type specimens, and is considered as intraspecific variation. *C. inframacula* is separated from other sharpnose pufferfishes by a prominent dark spot on the lower side of the body.

Canthigaster compressa (Marion de Procé, 1922)
(New Japanese name: Hime-kinchakufugu)

(Fig. 2)

Material examined. URM-P 4654, 1 specimen, 25.4 mm SL, Amitori Bay, Iriomote-jima I., Ryukyu Is., 5 m depth, 8 September 1982.

Description. D 9; A 10; P₁ 17; C i, 9, i; Vertebrae 8+9=17.

Body depth 2.8, body width 5.1, head length 2.1, snout length 4.1, snout to origin of dorsal fin 1.2, snout to origin of anal fin—all in SL. Eye diameter 3.5, interorbital width 4.3, postorbital length 4.0, depth of caudal peduncle 2.9, length of caudal peduncle 3.8, length of dorsal fin base 6.3, length of anal fin base 6.6, length of longest dorsal ray 2.9, length of longest anal ray 2.9, length of longest pectoral ray 2.9, length of caudal fin 1.5—all in head length. Other morphological characters resemble those of *C. inframacula*.

Color in life: ground color of body reddish brown dorsally, yellowish brown ventrally; vermiculating lines and spots on body blue to pale blue; a black ocellus encircled with a blue line on base of dorsal fin; caudal fin yellow with vertical wavy dusky lines; other fins transparent.

Color in alcohol: body generally dark brown dorsally, becoming pale ventrally; cheek and anterior half of snout covered with many small dark brown spots; six dark brown cross bands on posterior half of snout and interorbital region; eye with radiating dark lines continuous with cross bands on snout; dorsal part of body from nape to upper base of caudal fin with vermiculating dark lines; a large round dark blotch on



Fig. 3. *Diodon eydouxii*, 187.0 mm SL, Ryukyu Islands, URM-P 7491.

base of dorsal fin; a longitudinal dark line running from mid-abdomen to anus; dorsal, anal and pectoral fins pale; caudal fin with vertical wavy dark lines.

Remarks. This species is closely similar to *C. solandri*. They are separated from each other only by color (Allen and Randall, 1977); in *C. compressa* the caudal fin is covered with series of wavy lines but in *C. solandri* the caudal fin with distinct round spots.

Diodon eydouxii Birssout de Barneville, 1846
(New Japanese name: Yase-harisenbon)

(Fig. 3)

Material examined. URM-P 7491, 1 specimen, 187.0 mm SL, Tozoe, Okinawa I., Ryukyu Is., set net, 20 June 1983.

Description. D 16; A 16; P₁ 20; C i, 7, i; S-D spines 14; S-A speines 12.

Body depth 3.2, body width 3.1, head length 3.1, head width 3.9, snout to origin of dorsal fin 1.4, snout to origin of anal fin 1.4—all in SL. Snout length 2.6, eye diameter 4.4, inter-orbital width 1.6, depth of caudal peduncle 3.7, length of caudal peduncle 1.6, length of dorsal fin base 3.2, length of anal fin base 2.9, length of longest dorsal ray 1.7, length of longest anal ray 1.7, length of longest pectoral ray 1.9, length of caudal fin 1.4—all in head length.

Body relatively slender, almost round in cross section. All parts of body except for snout and lower part of caudal peduncle covered with spines. Most spines long and erectile, but those around gill opening, dorsal fin base and caudal peduncle short and almost fixed. Frontal spines four in number, the longest 3.2 in head length. Three pectoral axil spines present, the longest 2.4 in head length. A short, fixed tri-

base spine just above gill opening. Two short, flat spines with broad lateral bases on anterior border of gill opening. Three spines on caudal peduncle, one on mid-dorsal part and two on dorso-lateral edges; these spines not fully erectile due to a rather long shaft extension.

No barbels or fleshy tentacles on body. Nasal organ with two lateral openings. Dorsal and anal fins falcate. Pectoral fin fan-like, slightly emarginate. Caudal fin round.

Color in life: ground color of body blue dorsally, white ventrally; spots on dorsal and lateral parts of body dark blue to black; gular band also dark blue to black; fins dusky gray; dorsal and caudal fins covered with black spots.

Color in alcohol: ground color of body light brownish gray dorsally, white ventrally; dorsal and lateral sides covered with many oblong spots, most of which are associated with spine axils and smaller than eye diameter; spots on caudal peduncle confluent with one another to form irregular dark markings; a dark gular band extending from eye downward and forward, running parallel with ventral outline of head; dorsal and caudal fins with round dark spots; pectoral fin dusky with a proximal dark line; anal fin dusky.

Remarks. All specimens of this species have been reported from sea except for an individual found dead in a South African harbor (Leis, 1978). The present specimen was collected by a set net from shallow water off Tozoe, Okinawa. This is the first record of a living *Diodon eydouxii* from coastal waters. This species is distinguished from other members of *Diodon* by having short spines on the dorsal side of caudal peduncle and falcate dorsal and anal fins.

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フグ亜目魚類3種の日本からの記録

松浦啓一・吉野哲夫

ホクロキンチャクフグ (新称) *Canthigaster inframacula* が伊豆諸島の鳥島で深さ 130 m から採集され, ヒメキンチャクフグ (新称) *C. compressa* とヤセハリセンボン (新称) *Diodon eydoxii* が琉球列島から得られた。

ホクロキンチャクフグは模式標本以来2度目の記録である。本種は腹部側面に円形の1暗色斑をもつので他のキタマクラ属魚類から容易に識別できる。ヒメキンチャクフグは太平洋の熱帯部に分布し, 従来の北限は台湾であった。本種は体と尾鰭に波状に走る模様をもつことにより他のキタマクラ属魚類から区別される。

ヤセハリセンボンは従来遠洋性の種とされていたが, 本標本は沖縄島の沿岸部の定置網によって生きてそのまま採集された。本種は他のハリセンボン属魚類から尾柄背面に棘をもつこと, 背鰭と臀鰭が鎌形を呈することによって区別される。

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