

First Records of Two Pufferfishes, *Arothron mappa* and *A. reticularis*, from Japan

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During the course of studies on the western Pacific pufferfishes, two species, *Arothron mappa* and *A. reticularis*, were collected from shallow waters in the Ryukyu Islands. Since these species are here recorded for the first time from Japan, a somewhat detailed description of them is given below.

The specimen of *A. mappa* is deposited at the Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University (HUMZ), and that of *A. reticularis* at the Department of Zoology, National Science Museum (Natural History Institute), Tokyo (NSMT-P). The methods for counts and measurements follow Dekkers (1975), with the following additions: length of caudal fin, the distance from the caudal fin base to the tip of the longest caudal fin ray; length of caudal peduncle, the distance from the end of the anal fin to the caudal fin base; and depth of caudal peduncle, the least vertical measurement of the caudal peduncle. The generic name *Arothron* is here tentatively applied to the two species, although the validity of the name is a complicated and problematic affair (Tyler, 1964). This problem on nomenclature will be discussed in a separate paper by the senior author.

Arothron mappa (Lesson, 1830)
(New Japanese name: Kesho-fugu)
(Fig. 1)

Tetraodon mappa Lesson, 1830: 102 (type locality: Dorery Bay, New Guinea).

Material examined. HUMZ 38847, 1 specimen, 322.0 mm in standard length (SL). Ohjima, Okinawa I., Ryukyu Is. (26°06'N, 127°40'E), 15 April 1974.

Description. D. 12; A. 11; P. 18; C. 10; vertebrae 18. Head length 2.68, snout length 4.71, greatest body depth 1.96, body depth at pectoral fin base 2.18, body depth at end of dorsal fin base 4.77, body width 3.35, all in SL. Interocular distance 2.14, length of longest (5th) dorsal fin ray 1.92, length of longest (4th) anal fin ray 1.96, length of longest (3rd) pectoral fin ray 2.65, length of caudal fin 1.43, depth of caudal peduncle 2.60, length of caudal peduncle 1.96, length of dorsal fin base 4.04, length of anal fin base 4.26, distance from nasal organ to tip of snout 2.40, distance from nasal organ to eye 5.15, all in head length. Eye diameter 6.84 in snout length. Nasal organ length 1.79 in eye diameter.

Body ovate, back smoothly rounded. Body covered with small dermal spines, except for the regions surrounding the mouth, pectoral fin base, and caudal peduncle at caudal fin base, which are without spines. A small bifid nasal tentacle before eye. Dorsal and anal fins rounded, anal fin originates slightly posterior to insertion of dorsal fin. Pectoral and caudal fins also

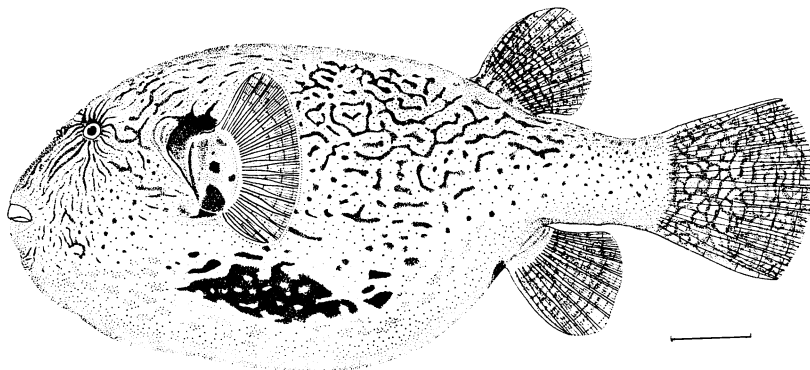


Fig. 1. *Arothron mappa*, 322.0 mm SL, Okinawa Island, HUMZ 38847. Scale bar indicates 40 mm. Drawing by K. Matsuura.

rounded. A lateral line encircling eye, and continuing posteriorly along dorsal part of body to caudal fin base, each line connected with the opposite one by a transverse branch crossing over back at level of pectoral fin base.

Color in life: ground color of body light brown dorsally, white ventrally; dorsal half of body covered with a network of wavy dark brown lines, similar lines radiate from eye; a large irregular black blotch on belly; anus surrounded by a black blotch; dorsal and ventral ends of gill opening covered with a black blotch; dorsal, anal, and caudal fins with many wavy dark brown lines; pectoral fin rays dark brown and membrane pale.

Remarks. A young specimen (176.5 mm SL) of the species has been collected in the Amami Islands (pers. comm. Mr. Shirasaki). This young specimen differs slightly from the adult specimen in coloration as follows: the ground color of the body is brown both dorsally and ventrally; numerous small rounded white spots are scattered on the belly.

This species is widely distributed in the tropical region of the Indo-Pacific, from Zanzibar to the Society Islands (Beaufort in Beaufort and Briggs, 1962: 405). Shen et al. (1975) reported very young specimens (10.8~17.6 mm SL) of this species from the northern and southwestern coasts of Taiwan.

Arothron reticularis (Bloch et Schneider, 1801)
(New Japanese name: Wamon-fugu)
(Fig. 2)

Tetrodon reticularis Bloch and Schneider, 1801:

506 (type locality: Malabar).

Material examined. NSMT-P 18830, 1 specimen, 407.0 mm SL. Toguchi Harbor, Motobu, Okinawa I., Ryukyu Is. (26°39'N, 127°54'E), 14 October 1979.

Description. D. 10; A. 9; P. 18; C. 10; vertebrae 18. Head length 2.86, snout length 6.06, greatest body depth 2.44, body depth at pectoral fin base 2.50, body depth at end of dorsal fin base 4.69, body width 3.63, all in SL. Interocular distance 1.85, length of longest (4th) dorsal fin ray 1.77, length of longest (4th) anal fin ray 2.03, length of longest (3rd) pectoral fin ray 2.41, length of caudal fin 1.24, depth of caudal peduncle 2.18, length of caudal peduncle 1.72, length of dorsal fin base 3.75, length of anal fin base 4.90, distance from nasal organ to tip of snout 2.94, distance from nasal organ to eye 6.12, all in head length. Eye diameter 3.63 in snout length. Nasal organ length 2.18 in eye diameter.

Body slightly elongate, back smoothly rounded. Small dermal spines on body, except for the regions surrounding the mouth, pectoral fin base, and caudal peduncle at caudal fin base, which are without spines. A small forked nasal tentacle before eye. Dorsal and anal fins rounded, origin of anal fin slightly posterior to that of dorsal fin. Pectoral and caudal fins rounded. A lateral line running in the same pattern as found in *A. mappa*.

Color in life: ground color of sides and dorsal part of body greenish brown with many longitudinal white lines and somewhat rounded white spots; white lines posteriorly encircling eye and

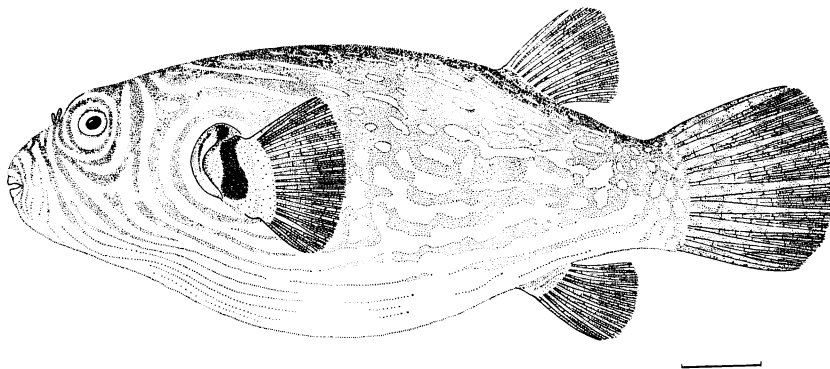


Fig. 2. *Arothron reticularis*, 407.0 mm SL, Okinawa Island, NSMT-P 18830. Scale bar indicates 50 mm. Drawing by K. Matsuura.

curving around gill opening; ground color of belly white with longitudinal parallel greenish brown stripes, curving upward on sides of head; surrounding of anus white, not black; a vertical black band on pectoral fin base; dorsal, anal, and pectoral fins greenish brown; caudal fin greenish brown with many small rounded white spots.

Remarks. This species closely resembles *A. hispidus*, but is distinguishable in having white lines encircling the eye and longitudinal white lines on the sides and back. Beaufort in Beaufort and Briggs (1962: 392, 401~404) reported that the two species were separable from each other by the relation between the length and depth of the caudal peduncle. He stated that in *A. reticularis* the length of the caudal peduncle was smaller than the depth of the caudal peduncle and in *A. hispidus* the reverse relation was found between these two measurements. In the present specimen, however, the length of the caudal peduncle is clearly larger than the depth of the caudal peduncle. Thus, the relation between the two measurements possibly shows intraspecific variation, at least in *A. reticularis*.

This species has been recorded from various localities in the tropical Indo-Pacific (Beaufort in Beaufort and Briggs, 1962: 402). The distributional range is now extended northward from Taiwan to Okinawa Island.

Acknowledgments

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日本初記録のケショウフグ (新称) とワモンフグ (新称)

松浦啓一・戸田 実

本邦初記録のケショウフグ (新称) *Arothron mappa* とワモンフグ (新称) *A. reticularis* が沖縄本島から採集された。

ケショウフグは、腹側面に一大黒斑を有すること、体の背方に虫食い状の暗褐色模様を有することで他のモヨウフグ属の種類と容易に識別できる。

ワモンフグは、サザナミフグ *A. hispidus* に似ているが、眼の周囲に環状の白色線があること、体の背面と側面に多数の白色縦線をもつことで識別される。Beaufort in Beaufort and Briggs (1962) は、ワモンフグの尾柄長が尾柄高より小さく、サザナミフグでは逆に尾柄長が尾柄高より大きいと報告している。しかし、今回得られたワモンフグの尾柄長は明らかに尾柄高より大きく、これらの部位の関係には種内変異があることを示唆した。

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