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A new species of Indo-Pacific fish, *Canthigaster criobe*, with comments on other *Canthigaster* (Tetraodontiformes: Tetraodontidae) at the Gambier Archipelago

JEFFREY T. WILLIAMS[1], ERWAN DELRIEU-TROTTIN[2] & SERGE PLANES[2]

[1] *Division of Fishes, Department of Vertebrate Zoology, National Museum of Natural History, 4210 Silver Hill Road, Suitland, MD 20746, USA, e-mail williamsjt@si.edu*

[2] *Labex "CORAIL", USR 3278 CNRS – EPHE, Centre de Recherche Insulaire et Observatoire de l'Environnement (CRIOBE), Université de Perpignan, 52 Av. Paul Alduy - 66860 Perpignan cedex, France*

Abstract

A new species of the tetraodontid fish genus *Canthigaster* was discovered during a recent expedition to the Gambier Archipelago, French Polynesia. The new species, named *Canthigaster criobe* herein, is the only known species of *Canthigaster* having 12–14 brown stripes along the body (stripes beginning in front of the eye, extending along the body, and abruptly ending at the base of the caudal fin). It also has 17 pectoral rays, the origin of the anal fin inserts posterior to a vertical from the rear base of the dorsal fin and lacks spots on the caudal fin. *Canthigaster criobe* is currently known from a single specimen collected at the Gambier Archipelago. It appears to be most similar to the white-spotted *C. janthinoptera*, a wide-ranging, Indo-Pacific species, which also inhabits the Gambier Archipelago, and to the Hawaiian endemic *C. jactator* forming a species complex that exhibits incomplete lineage sorting. Specimens of *C. axiologus*, or an undescribed but very similar sibling species, were also collected at the Gambier Archipelago. Molecular analysis of these samples reveals an affiliation with *C. axiologus* specimens collected from disjunct localities in the western Central Pacific. *Canthigaster axiologus* was not previously known to occur east of the Tonga Islands. Geographic range expansions are also reported for *C. rapaensis* and *C. amboinensis*.

Key words: taxonomy, Tetraodontidae, *Canthigaster*, new species, French Polynesia, Gambier Archipelago

Introduction

The pufferfish family Tetraodontidae is divisible into two subfamilies, the Tetraodontinae and the Canthigasterinae. The latter subfamily, popularly known as tobies or sharpnose puffers, consists of the marine genus *Canthigaster* Swainson and the freshwater genus *Carinotetraodon* Benl. These fishes are differentiated from the Tetraodontinae by a laterally compressed body, elongate pointed snout (only for *Canthigaster*), erectile ridge of skin middorsally and midventrally, small gill opening, inconspicuous lateral line, 17 vertebrae, and small size. Britz and Kottelat (1999) discuss a synapomorphy for these two genera wherein abdominal vertebrae 1–3 bear independent, unfused, paired parapophyses. In *Canthigaster*, the hemal spines have posterior lobes that are absent in *Carinotetraodon* (Britz & Kottelatt, 1999). The bold color patterns of *Canthigaster* probably serve to advertise their repelling skin toxin (Eger & Starkus 1973).

Randall *et al.* (2008) summarized previous work on the genus and discussed the historical problems faced by taxonomists in distinguishing the species of *Canthigaster.* In addition to the uniformity of morphological characters among *Canthigaster* species, Randall *et al.* (2008) found a high degree of genetic uniformity within the genus. As noted by Randall *et al.* (2008), color pattern reigns as the primary character used to distinguish the known species of *Canthigaster.* Randall *et al.* (2008) described a new species and resurrected a species from synonymy, resulting in the recognition of 35 valid species.

In September and October 2010, the authors collected fish specimens during an expedition to the Gambier Archipelago, French Polynesia, using a variety of collecting techniques and took tissue samples and photographs of

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