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## First record of an armored searobin, *Satyrichthys clavilapis* Fowler, 1938 (Teleostei: Peristediidae) from Taiwan

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### Abstract

A single specimen of a rare armored searobin, *Satyrichthys clavilapis* Fowler, 1938 was collected from a fishing port at Donggang, Pingtung, Taiwan. This species was previously known only from the Philippines and Indonesia and so represents not only the first specimen from Taiwan, but also the northernmost record of this species. As of current, six species within the *Satyrichthys* genus are known from Taiwanese waters.

**Key words:** Actinopterygii, Fish, Ichthyology, Scorpaeniformes, Taiwan, Taxonomy

### Introduction

The armored searobins (family Peristediidae), with 6 genera and 45 species currently known, are usually found in tropical and temperate oceans around the world at depths around 50 to 1,324 m. They inhabit continental shelf edge or insular slopes and are often taken in trawl catches from deep waters (>180 m) and are considered trash fish and are very rarely used as food (Miller, 1967; Kawai, 2008, 2013, 2019; Fricke et al., 2017).

Member of Peristediidae are

characterized by a body entirely enclosed by four rows of spinous bony plates (scutes) on each side and a large bony head with spines and ridges; each first infraorbital (lacrimal) anteriorly extending in distinct rostral projections; barbels on the lower jaw and pectoral fins with the two ventral most fin rays free and enlarged (Kawai, 2008).

The genus *Satyrichthys* Kaup, 1873, with 7 species recognized in the Indo-Pacific Ocean, is characterized by no upper jaw teeth, lateral margin of the head

smooth, posterior bony plates in the lower lateral rows separated on the ventral midline, no branched barbels on the lower jaw except for the posterior-most lip (= filamentous barbel) and chin barbels and fewer than 20 soft rays in the dorsal and anal fins (Kawai, 2008, 2013).

In Taiwan, 5 species were collected and documented previously, namely *S. laticeps* (Schlegel, 1852), *S. milleri* Kawai, 2013, *S. moluccensis* (Bleeker, 1850), *S. rieffeli* (Kaup, 1859), and *S. welchi* (Herre, 1925) (*e.g.*, Shen et al., 1993; Shen & Wu, 2011; Kawai, 2013; Kawai & Ho, 2019).

On October 20<sup>th</sup>, 2017, a single specimen identified as *S. clavilapis* Fowler, 1938 was collected off Donggang, Pingtung, southwestern Taiwan. We report this first record from Taiwan herein and provided a detail description of the specimen.

## Materials and methods

Counts and measurements generally followed Kawai et al. (2004) while cranial spine terminology followed Miller (1967). The specimen was collected by bottom trawl and found in a landing ground at fish market, then preserved in 4% formaldehyde liquid and transferred into 70% ethanol for long term preservation. The measurements were made by digital caliper running to nearest 0.1 mm. Standard length (SL) is used throughout.

The voucher specimen is deposited in the fish collection of the National Museum of Marine Biology and Aquarium (NMMB-P) in Pingtung, Taiwan.

## Results

*Satyrichthys clavilapis* Fowler, 1938

菲律賓紅魴鱈

Fig. 1

**Material examined.** NMMB-P27342, 65.7 mm SL, off Donggang, Pingtung, southwestern Taiwan, bottom trawl, 20 Oct. 2017.

**Diagnosis.** A species of *Satyrichthys* with two (rarely one) lip and 0 (rarely one) chin barbels, dusky spots along base of dorsal fin, and antrorse spines on posterior bony plates of upper lateral row (Kawai & Takata, 2008, 2009; Kawai, 2013).

**Description of NMMB-P27342.** *Count.* Dorsal-fin rays VII, 17; anal-fin rays 17; pectoral-fin rays including two detached rays 16; pelvic-fin rays I, 5; principal caudal-fin rays 12; bony plates in dorsal row 27; bony plates in upper lateral row 31 (24<sup>th</sup>–26<sup>th</sup> plates with antrorse spine); bony plates in lower lateral row 23; bony plates in ventral row 23; bony plates before anus 2; groups of barbels (lip+chin) 2+0; branches on filamentous barbel 6; gill rakers 6+1+23=30. Frontal-1 spine 1; parietal 1; post-temporal single weak ridge; opercular 2; preopercular 2 (the



**Fig. 1.** Dorsal (upper) and lateral (lower) views of *Satyrichthys clavilapis*, NMMB-P27342, 65.7 mm SL.

outer spine very large and the inner small). Rostral, nasal, ethmoid, lateral ethmoid, preorbital, supraorbital, sphenotic, pterotic, supratemporal, frontal-2, and third infraorbital absent.

**Measurements (% SL).** Body depth 21.2; body width 11.6; head length 43.8; head depth 21.9; head width 32.6; snout to dorsal fin 44.7; snout to anal fin 53.0; snout to anus 47.0; snout length 21.9; rostral projection length 16.3; filamentous barbel length 7.3; upper jaw length 17.0; lower jaw length 18.1; orbital diameter 11.9; interorbital width 9.9; pectoral-fin length 18.0; upper detached pectoral-fin ray length 23.1; lower detached pectoral-

fin ray length 18.9; pelvic-fin length 22.1; first dorsal spine length 10.8; caudal peduncle length 11.3; caudal peduncle depth 3.3.

**Coloration.** When fresh, based on Yato (2019), body light pinkish; dorsal fin with black margin; small black lines and spots on dorsal surface. When preserved, body creamy white with all black color remained.

**Distribution.** Known from Indonesia and the Philippines (Fowler, 1938; Kawai & Takata, 2008, 2009), and southwestern Taiwan (present study).

**Remarks.** Counts and measurements of the present specimen almost agree with

those of *S. clavilapis* (Kawai, 2013), except for 1) the number of bony plates in the ventral row (23 in the present specimen vs. 21–22 in Kawai, 2013), 2) distance from the snout to the anal fin (53.0% SL vs. 53.9–58.7), and 3) the distance from the snout to the anus (47.0% SL vs. 48.1–52.4).

*Satyrichthys clavilapis* was originally described by Fowler (1938) with specimens from the Philippines. Since then, this species had not been reported before Kawai & Takata (2008) identified specimens off Java, Indonesia (eastern Indian Ocean). Later, Kawai & Takata (2009) considered *Acanthostedion rugosum* Fowler, 1943, originally from the Philippines, as a junior synonym of *S. clavilapis*. This species has never been reported since then. Yato in Koeda & Ho (2019) presented the same putative specimen from southern Taiwan, but was unable to confidently identify it to species level. Therefore, this report is the first record of this species from Taiwan and represents the northernmost record of the species. Those interested in more detail about this searobin should consult Kawai & Takata (2008, 2009) and Kawai (2013).

### Acknowledgements

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