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Short Communication

Peristedion longicornutum Fricke, Kawai, Yato and Motomura, 2017 (Actinopterygii: Teleostei: Peristediidae) from Philippines and Taiwan

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ABSTRACT: *Peristedion longicornutum* Fricke, Kawai, Yato and Motomura, 2017 was found from the Philippines and Taiwan. The species had been known only from the western South Pacific, i.e. Papua New Guinea, Solomon Sea, Solomon Islands and Vanuatu. Therefore, this report is the first record of the species from the Philippines and Taiwan, respectively, and also from the North Pacific. Geographical intraspecific variation between North Pacific and South Pacific specimens was found as follows: count of groups of chin barbels (5 in North Pacific specimens vs 6–7 in South Pacific specimens), count of total chin barbels (12–15 vs 15–24) and count of gill rakers on lower limb (23–26 vs 15–20).

KEY WORDS: North Pacific, deep sea, armored searobins, Scorpaeniformes

INTRODUCTION

Armored searobin genus *Peristedion* Lacepède, 1801 (family Peristediidae) distributed of the world tropical to temperate deep-sea waters is characterized in having no upper jaw teeth, smooth lateral margin of head and posterior pairs of bony plates in lower lateral rows contralaterally sutured along the mid-line (Kawai, 2008). This genus comprise 7 species in the Indo-West Pacific, i.e. *P. orientale* Temminck and Schlegel, 1843 from Japan and Taiwan, *P. liorhynchus* (Günther, 1872), *P. riversandersoni* Alcock, 1894 and *P. amblygenys* Fowler, 1938 from the eastern Indian Ocean and the western Pacific, *P. weberi* Smith, 1934 from the western Indian Ocean, *P. richardsi* Kawai, 2016 from Indonesia, and *P. longicornutum* Fricke, Kawai, Yato and Motomura, 2017 from Papua New Guinea, Solomon Islands to Vanuatu (Fricke *et al.*, 2017).

Peristedion longicornutum was collected from the Philippines and Taiwan in 2007 and 2002, respectively, and those specimens have been deposited in the Biodiversity Research Center, Academia Sinica, Taipei, Taiwan (ASZIP) and the Hokkaido University Museum, Hakodate, Japan (HUMZ), respectively. This species had never been known from the Northern Hemisphere. Therefore, I describe those specimens in detail, morphologically.

MATERIALS AND METHODS

Counts and proportional measurements follow Kawai (2016). Measurements were made to the nearest 0.1 mm with digital calipers. Terminology for bony plates and barbels, and for cranial spines follow Yatou

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and Okamura (1985), and Miller (1967), respectively. Standard length is abbreviated as SL.

Peristedion longicornutum Fricke, Kawai, Yato and Motomura, 2017

(Fig. 1)

Material examined. ASZIP 67852, 1 specimen, 119.2 mm SL, Luzon (16°0.5988'N 121°53. 2440'E), Philippines, 358–342 m depth, 20 May 2007; ASZIP 68155, 1 specimen, 107.5 mm SL, Luzon (15°11.6598'N 121°34.5198'E), Philippines, 620–627 m depth, 31 May 2007; HUMZ 185185, 1 specimen, 117.3 mm SL, Donggang Fishing Port, Taiwan, 28 Aug. 2002.

Diagnosis. A species of *Peristedion* with 20–23 dorsal-fin soft rays; 19–22 anal-fin soft rays; 29–33 bony plates in dorsal row, 35–38 in upper lateral row, 25–29 in lower lateral row, 23–26 in ventral row; 3 lip and 5–7 chin groups of barbels; 14–26 branches of filamentous barbel; 12–24 total chin barbels; anterior edge of 4th sensory pore of rostral projection located very anterior to premaxilla; very long needle-like rostral projection, length 14.2–22.3% SL; wide interspace between rostral projections, interspace 0.20–0.30 in rostral projection width; rostral projection with rounded margin on medial side at base; perifacial rim smooth and straight; and upper detached pectoral-fin ray longer than joined pectoral fin.

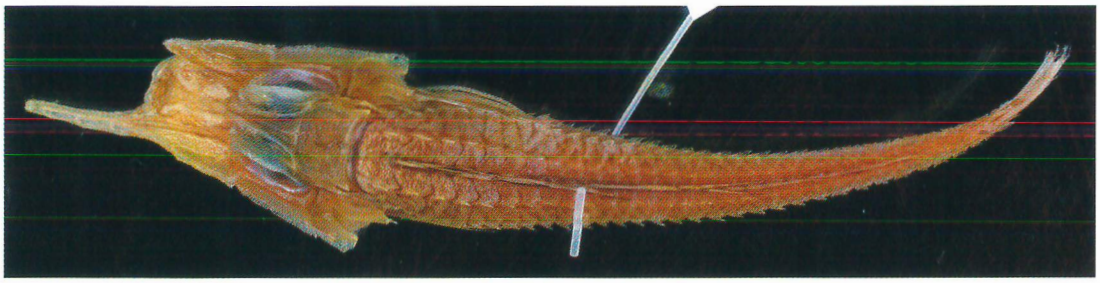


Figure 1. *Peristedion longicornutum*, ASZIP 68155, 107.5 mm SL, Luzon, Philippines.

Description. Counts and proportional measurements (% SL) are listed in Table 1. Body fusiform, covered with bony plates. Snout with very long and needle-like rostral projection on each side. Four sensory pores on ventral side of rostral projection; 4th pore very anterior to anterior edge of premaxilla. Perifacial rim smooth and straight. Eye large. Interorbital concave. Mouth inferior without teeth on both jaws. Posterior margin of upper jaw anterior to anterior margin of orbit. Posterior tip of lower jaw reaching below anterior margin of orbit. Vomer and palatine toothless. Three groups of barbels on lip: anterior two groups with two barbels; posterior one (filamentous barbel) with 16–20 branches. Five groups of barbels on chin: 1st group with 3 barbels; 2nd with 2–3; 3rd with 2–3; 4th with 3; and 5th with 2–3. Gill rakers slender and serrated. Gill membrane narrowly united to isthmus. Rostral exsertion spine single and rudiment at the base. Nasal, ethmoid, lateral ethmoid, preocular, supraocular, extrascapular and preopercular spines absent. Postocular spine absent (single spine present in left side of ASZIP 68155). Spenotic spine absent (single spine present in ASZIP 68155). Pterotic having bony ridge (lacking in HUMZ 185185). Posttemporal, frontal-1 and parietal spines single, respectively. Frontal-2 spine 1–2 or bony ridge. 4th infraorbital ridge present. Opercular spine with ridge. Supraocular bone not exposed on dorsal surface.

Bony plates on body mainly in 4 rows,

each plate with single backwardly directed spines; size of spines in dorsal and ventral plates gradually reduced from anterior to posterior body. Plates in upper lateral row of posterior body with anterior directed spines, 25–34 in ASZIP 67852, 27–35 in ASZIP 68155 and 28–35 in HUMZ 185185. Anteriormost 4 plates in upper lateral row small. Posteriormost 3 plates in lower lateral row contralaterally sutured with plates of other side along ventral midline. Three large plates in front of anus.

Dorsal fin originating at anterior part of second bony plate in dorsal row, ending at caudal peduncle. Anal fin originating posterior to anus, ending at caudal peduncle Two detached pectoral-fin rays thick, upper ray longer than lower ray and joined pectoral fin. Length of pelvic fin almost equal to length of joined pectoral fin. Caudal fin nearly truncate or weak emarginate.

Color in alcohol. Head, body and all fins right brown. Dorsal and dorsolateral body black vermiculated pattern (faded in HUMZ 185185). Dorsal fin margin black (faded in HUMZ 185185). Joined pectoral fin with three black transverse band-like pattern at base, middle and distal margin, respectively (faded in HUMZ 185185).

Distribution. Taiwan, Philippines, Papua New Guinea, Solomon Sea, Solomon Islands and Vanuatu (Fricke *et al.*, 2017; present study).

Table 1 Counts and measurments of *Peristedion longicornutum*.

	Present specimens n=3	**Fricke *et al.* (2017)** n=28
Standard length (mm)	107.5–119.2	90.7–116.6
Counts		
Dorsal-fin rays	VIII,20–22	VII–IX,21–23
Anal-fin rays	19–21	20–22
Principal caudal-fin rays	12 (n=2)	11–12
Pectoral-fin rays including two detached rays	14	13–15
Pelvic-fin rays	I,5	I,5
Bony plates in dorsal	31–32	29–33
Bony plates in upper lateral	36	35–38
Bony plates in lower lateral	25–27	26–29
Bony plates in ventral	24	23–26
Bony plates before anus	3	2–4
Groups of barbel (lip + chin)	3 + 5	3 + 6–7
Branches on filamentous barbel (left / right)	18 (n=2) / 16–20 (n=2)	14–26
Total chin barbels (left / right)	13–15 / 12–15	15–24
Gill rakers	4–6 + 1 + 23–26	4–7 + 1 + 15–20
Measurements (% SL)		
Body depth	14.6–15.7	12.2–17.2

Table 1 (Continued).

	Present specimens n=3	**Fricke *et al.* (2017)** n=28
Body width	11.1–13.1	8.3–15.4
Head length	31.6–36.5	30.2–36.2
Head depth	14.2–15.2	11.8–17.6
Head width	19.2–27.2	19.0–25.0 (n=25)
Snout to dorsal fin	32.6–37.5	31.1–36.8
Snout to anal fin	45.4–54.9	46.3–53.5
Snout to anus	45.4–54.9	41.9–51.5
Snout length	15.3–18.3	14.8–17.6
Rostral projection length	18.1 (n=1)	14.2–22.3 (n=19)
Rostral projection width	2.0–2.4	1.8–2.6 (n=27)
Interspace between rostral projections	9.7 (n=1)	7.1–10.2 (n=24)
Filamentous barbel length	9.5–10.6 (n=2)	8.6–13.2 (n=27)
Upper jaw length	11.2–14.3	10.6–13.9
Lower jaw length	12.9–15.2	8.6–14.8
Orbital diameter	8.2–9.4	8.1–10.0
Interorbital width	7.6–7.9	6.6–8.1
Pectoral-fin length	15.8–19.5	15.3–18.9
Upper detached pectoral-fin ray length	20.7–25.8	18.7–25.9
Lower detached pectoral-fin ray length	16.6–21.9	16.6–21.8
Pelvic-fin length	16.5–20.8	15.4–22.1
First dorsal spine length	10.6–11.5	5.4–11.7 (n=25)
Caudal peduncle length	10.0–12.5	7.7–13.9
Caudal peduncle depth	1.9–2.0	1.6–3.1

Remarks. Present specimens correspond to *P. longicornutum* (Fricke *et al.*, 2017, see Table 1) with the following exceptions, i.e. count of groups of chin barbels (5 vs 6–7), count of total chin barbels (12–15 vs 15–24) and count of gill rakers on lower limb (23–26 vs 15–20). I consider those differences as geographical intraspecific variation of this species, such as *Satyrichthys adeni* (now recognized as *S. laticeps*: see Kawai, 2013) by Kawai and Tashiro (2008). This species is easily distinguished from the Indo-West Pacific congeners in having wide interspace between both rostral projections (interspace 0.20–0.30 in rostral projection length), anterior edge of 4th sensory pore of rostral projection located very anterior to premaxilla, rounded inner margin at rostral projection base and needle-like rostral projection, and in lacking prominence of perifacial rim (see Table 2).

This species had been known only from the western South Pacific, i.e. Papua New Guinea, Solomon Sea, Solomon Islands and Vanuatu (Fricke *et al.*, 2017). Therefore,

this report is the first record from the Philippines and Taiwan, respectively, and also from the North Pacific.

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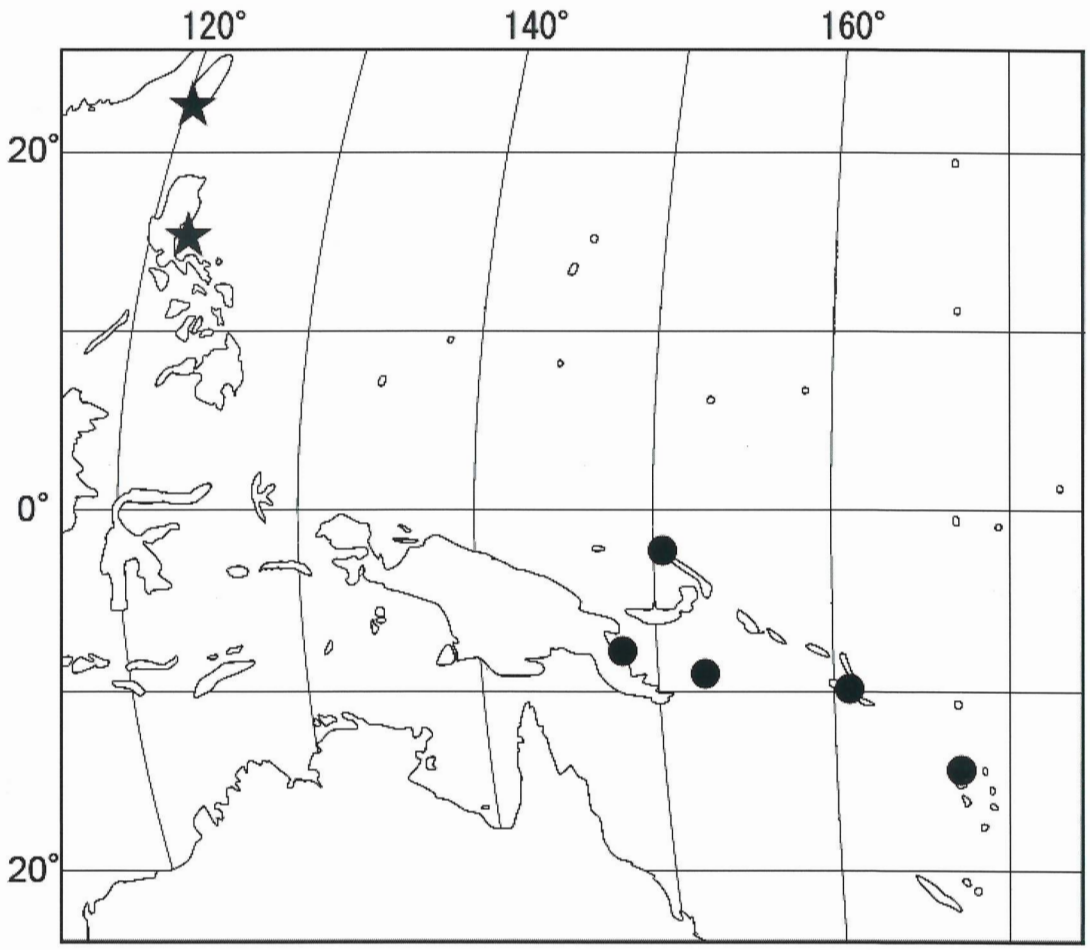


Figure 2. Map showing localities of types (circle) and present specimens (star) of *Peristedion longicornutum*.

Table 2 Selected characters of the Indo-West Pacific species of *Peristedion* (after Kawai, 2016).

	P. longicornutum		*P. amblygenys*
	Present study n=3	**Fricke *et al.* (2017) n=28**	**Kawai (2016) n=8**
Rostral projection width / Interspace between both rostral projections	0.25 (n=1)	0.20–0.30 (n=24)	0.86–1.08
Position of anterior edge of 4th sensory pore of rostral projection	Very anterior to premaxilla	Very anterior to premaxilla	Anterior to premaxilla
Prominence of perifacial rim	Absent	Absent	Present
Shape of inner margin at rostral projection base	Rounded	Rounded	Straight
Shape of rostral projection	Needle like	Needle like	Triangular

	P. liorhynchus	*P. orientale*	*P. richardsi*
	Kawai (2016) n=47	**Kawai (2016) n=75**	**Kawai (2016) n=4**
Rostral projection width / Interspace between both rostral projections	Impossible to measure	0.56–0.94 (n=58)	1.33–1.73
Position of anterior edge of 4th sensory pore of rostral projection	Posterior to anterior edge of premaxilla	Anterior to premaxilla	Anterior to premaxilla
Prominence of perifacial rim	Absent	Absent	Present
Shape of inner margin at rostral projection base	Rounded	Rounded	Straight
Shape of rostral projection	Spatulate	Triangular	Spatulate

	P. riversandersoni	*P. weberi*
	Kawai (2016) n=65	**Kawai (2016) n=14**
Rostral projection width / Interspace between both rostral projections	0.48–0.91 (n=43)	0.29–0.51 (n=12)
Position of anterior edge of 4th sensory pore of rostral projection	Anterior to premaxilla	Anterior to premaxilla
Prominence of perifacial rim	Present	Absent
Shape of inner margin at rostral projection base	Rounded	Rounded
Shape of rostral projection	Triangular	Triangular

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