

Indian Ocean record of *Brachypterois curvispina* Matsunuma, Sakurai & Motomura, 2013 (Scorpaenidae: Pteroinae) – a misidentification of *B. serrulifer* Fowler, 1938

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Abstract

Brachypterois curvispina Matsunuma, Sakurai & Motomura, 2013, previously known only from northeastern Australia, has been recently recorded from India. However, examination of the detailed description given for the supposed *B. curvispina* specimens showed them to be identical with *B. serrulifer* Fowler, 1938, distributed in the Indo-West Pacific region. In contrast, *B. curvispina* and a third congener, *Brachypterois serrulata* (Richardson, 1846), are restricted to the Coral Sea (off northeastern Australia) and the northwestern Pacific Ocean from the South China Sea north to Japan, respectively.

Keywords: *Brachypterois curvispina*, *Brachypterois serrulifer*, *Brachypterois serrulata*, Distribution, Identification.

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Introduction

The scorpaenid genus *Brachypterois* Fowler, 1938, as reviewed by Matsunuma et al. (2013), included the following valid species: *Brachypterois curvispina* Matsunuma, Sakurai & Motomura, 2013, a new species based on 32 specimens from the Coral Sea off northeastern Australia, *Brachypterois serrulata* (Richardson, 1846), distributed in the northwestern Pacific Ocean from the South China Sea north to Japan and *B. serrulifer* Fowler, 1938, a widespread Indo-West Pacific species, including the Red Sea (Matsunuma et al. 2013). A key to *Brachypterois* species was also provided by Matsunuma et al. (2013).

Recently, Naranji and Kandula (2017) recorded *B. curvispina* from India, based on 17 specimens from waters off Visakhapatnam (west coast of India, facing the Bay of Bengal), and included *B. serrulata* in a key to *Brachypterois* species found off Visakhapatnam. However, their examples of *B. curvispina* are here identified as *B. serrulifer*. In addition, their record of *B. serrulata* from Indian waters was entirely unsupported. Accordingly, the status of *B. curvispina* and *B. serrulata* in Indian waters is reconsidered.

Material and Methods

Terminology of head spines and ridges follows Matsunuma et al. (2013). Standard and head lengths are abbreviated as SL and HL, respectively. Because examples of supposed *B. curvispina* and *B. serrulata* from Indian waters were unavailable, the present report was based on a consideration of the description given by Naranji and Kandula (2017).

Results and Discussion

Brachypterois curvispina was originally diagnosed by Matsunuma et al. (2013), having the following combination of characters: pectoral-fin rays 14–16 (modally 15); scale rows in longitudinal series 41–45 (44); scales above lateral line 4–5 (4); scale rows between last dorsal spine base and lateral line 4–5 (4); pre-dorsal scale rows 3–5 (4); suborbital scale rows 0–2 (1); total gill rakers 16–18 (16); head length 41.5–44.5 (mean 43.1) %SL; orbit diameter 13.0–15.4 (14.3) %SL; upper-jaw length 20.2–23.0 (21.6) %SL; longest dorsal-fin soft ray length 19.5–24.5 (22.5) %SL; longest anal-fin soft ray length 23.6–28.4 (25.3) %SL; caudal-fin length 37.8–46.4 (42.3) %SL; posterior lacrimal spine usually directed posteriorly, its tip being strongly curved upward in large adults; spine(s)

on corner of outer angular ridge longer and stouter than others on ridge, directed posteriorly; and number and size of caudal fin spots moderate, 5–13 (mean 9.3) spots on longest caudal-fin ray.

Although Naranji and Kandula (2017) stated that their specimens agreed with the above diagnostic characters of *B. curvispina*, they described neither the direction of the posterior lacrimal spine tip nor the spine condition on the corner of the outer angular ridge of the lower jaw in their specimens, simply referring to the differences in such head spines among *Brachypterois* species given by Matsunuma et al. (2013).

All the specimens reported by Naranji and Kandula (2017) as *B. curvispina* possessed 16 pectoral-fin rays, being consistent with *B. serrulifer* [15–17 (modally 16)], compared with 14–16 (modally 15; rarely 16) in *B. curvispina* and 14–16 (modally 15) in *B. serrulata* (Matsunuma et al. 2013: table 1). Obvious differences in body scale counts are apparent between Naranji and Kandula (2017) and Matsunuma et al. (2013), including 38–42 longitudinal series scale rows in *B. curvispina* [41–45 in Matsunuma et al. (2013)] and 14–17 scale rows below the lateral line in *B. serrulata* and *B. serrulifer* [9–12 in both species in Matsunuma et al. (2013)]. Such disagreements may indicate different methodologies of the two studies [those for counts not given by Naranji and Kandula (2017)] or simple mistakes. Unfortunately, Naranji and Kandula (2017) gave no basis for the data included in their key for *B. serrulata* and *B. serrulifer*.

Naranji and Kandula (2017) described *B. curvispina* as having head length 40.0–44.1 (mean 41.6) %SL [vs. 36.9–44.1 (40.5) %SL in *B. serrulifer* and 33.4–41.6 (39.1) %SL in *B. serrulata*]; eye diameter 20.0–28.0 (24.2) %of HL [vs. 22.8–29.0 (25.1) %HL in *B. serrulifer* and 20.0–30.0 (26.3) %HL in *B. serrulata*]; and maxillary length 42.3–48.3 (46.3) %HL [vs. 43.7–52.7 (46.7) %HL in *B. serrulifer* and 43.3–52.9 (47.6) %HL in *B. serrulata*], including these morphometrics in their key to species of *Brachypterois*. However, the data clearly overlapped and is of little value in distinguishing between the three species. Importantly, Naranji and Kandula (2017) omitted length measurements for the longest dorsal- and anal-fin soft rays, and caudal fin of their specimens of *B. curvispina*, although such characters were regarded as diagnostic for the species by Matsunuma et al. (2013).

Naranji and Kandula (2017) gave no information regarding the whereabouts or catalog numbers of their specimens of *B. curvispina*. However, a photograph of an apparently flattened specimen [102 mm total length body; depth at pelvic-fin origin ca. 30 %SL, cf. 34.8–40.4 %SL given by Matsunuma et al. (2013)] in Naranji and Kandula (2017: fig. 1), purported to be *B. curvispina*, revealed relatively few large red spots on the caudal fin (approximately 3 or 4 spots on the middle, longest rays) and at least 3 spines on the median lateral ridge of the maxilla [Naranji and Kandula (2017: fig. 1a)], although their photograph of the maxilla was somewhat equivocal. Such characters are consistent with *B. serrulifer* [relatively few large spots on the caudal fin, including 2–10 (mean 5.2) spots on the longest ray; and 0–22 spines on the median lateral ridge of the maxilla in specimens >58 mm SL], compared with *B. curvispina* [number and size of caudal fin spots moderate, 5–13 (mean 9.3) spots on longest caudal-fin ray; and spines absent on the median lateral ridge of the maxilla in all stages] (Matsunuma et al. 2013). Therefore, the Indian specimens reported by Naranji and Kandula (2017) as *B. curvispina* are re-identified here as *B. serrulifer*.

Naranji and Kandula (2017) also included *B. serrulata* (without comment or supporting data) in their key to species of *Brachypterois* found off Visakhapatnam, although the former has not previously been recorded from the Indian Ocean (Matsunuma et al. 2013). Accordingly, records of both *B. curvispina* and *B. serrulata* from Indian waters should be erased until convincing evidence is forthcoming.

Following Matsunuma et al. (2013), the corrected geographic distributions of the species of *Brachypterois* are as follows: *B. curvispina* (northeastern Australia), *B. serrulata* (northwestern Pacific Ocean from the South China Sea north to Japan) and *B. serrulifer* (Indian and western Pacific oceans, including the Red Sea, from the east coast of Africa east to northern Australia, and north to Japan).

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