

# *Enneapterygius phoenicosoma*, a New Species of Triplefin (Tripterygiidae) from the Western Pacific Ocean

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(Received 19 November 2014; Accepted 13 February 2015)

A new species of triplefin (Tripterygiidae), *Enneapterygius phoenicosoma*, is described on the basis of 71 type specimens (17.2–37.2 mm standard length: SL) from southern Japan. An additional five specimens from the Caroline Islands and Vanuatu are also identified as belonging to this species. Males of the new species have the same distinct nuptial coloration as males of the Hawaiian endemic species *E. atriceps* (Jenkins, 1903). Comparisons of the present material with the holotype and 46 non-type specimens of *E. atriceps* show, however, that *E. phoenicosoma* differs from the latter in having a simple nasal tentacle (vs a bilobed tentacle in *E. atriceps*); lower counts of the anal-fin soft rays (16–18, mode 17 vs 19–21, 19); second dorsal-fin spines (11–13, 12 vs 12–15, 14); scale rows in longitudinal series (32–35, 33 vs 35–37, 36); and pored lateral-line scales (16–19, 17 vs 17–20, 19); a higher count of the pectoral-fin rays (15–17, 16 vs 14–17, 15); and several morphometric features, including the lengths of the dorsal-fin spines and rays, the second dorsal-fin base, and the anal-fin base. The new species grows larger than *E. atriceps* (largest recorded size, 37.2 mm SL vs 26.9 mm SL in *E. atriceps*).

**Key Words:** Actinopterygii, Teleostei, Perciformes, *Enneapterygius atriceps*, Japan, morphology.

## Introduction

The triplefin genus *Enneapterygius* Rüppell, 1835, the largest genus of tripterygiids, has been diagnosed by a discontinuous lateral line with an anterior series of 6–22 pored scales and a posterior series of 13–27 notched scales, a first dorsal fin with three spines, an anal fin with one spine, pelvic fins with one spine and two soft rays, and a naked head, opercle, pectoral-fin base, and abdomen (Fricke 1997). However, synapomorphies for the genus have not been found, and further investigation at the generic level is therefore necessary.

During surveys of the ichthyofauna of southern Japan from southern Kyushu to the Ryukyu Islands (e.g., Motomura and Matsuura 2010, 2014; Motomura *et al.* 2013), 71 specimens of a species attributed to *Enneapterygius* were collected in depths of less than 25 m. The specimens were similar to the Hawaiian endemic species *Enneapterygius atriceps* (Jenkins, 1903) in their overall appearance and the coloration of nuptial males, but differed in several aspects, including the shape of the tentacle on the anterior nostril, scale and fin-ray counts, and various morphometrics. The species from Japan is herein described as new, and five specimens from the Caroline Islands and Vanuatu are also identified as belonging to it.

## Materials and Methods

Counts and measurements follow Fricke (1997) and Holleman and Bogorodsky (2012), with the mandibular pore formula following Hansen (1986). Measurements were made to the nearest 0.1 mm with needle-point calipers under a dissecting microscope. Standard length is abbreviated as SL. Nuptial coloration is defined as the coloration of adult males during the courtship display and after death; all collected adult males retained the coloration (except for red colors) after preservation. Curatorial procedures for newly collected specimens followed Motomura and Ishikawa (2013). The specimens examined in this study are deposited in the Academy of Natural Sciences of Drexel University, Philadelphia (ANSP); Bishop Museum, Honolulu (BPBM); Laboratory of Marine Biology, Faculty of Science, Kochi University, Kochi (BSKU); Coastal Branch of Natural History Museum and Institute, Chiba, Katsuura (CMNH); Field Museum of Natural History, Chicago (FMNH); the Kagoshima University Museum, Kagoshima (KAUM); Muséum National d'Histoire Naturelle, Paris (MNHN); National Museum of Nature and Science, Tsukuba (NSMT); Royal Ontario Museum, Toronto (ROM); and National Museum of Natural History, Smithsonian Institution, Suitland (USNM).