Zootaxa 3793 (3): 301–330
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3793.3.1
http://zoobank.org/urn:lsid:zoobank.org:pub:874ED359-D4A4-4EF0-BB3B-C0A70563472E

A review of the genus *Pempheri*s (Perciformes, Pempheridae) of the Red Sea, with description of a new species

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Abstract

Four species of the fish genus *Pempheris* are recognized for the Red Sea: *P. adusta* Bleeker, 1877; *P. mangula* Cuvier, 1829; *P. nesogallica* Cuvier in Cuvier & Valenciennes, 1831; and a new species *P. tominagai*. All are wide-ranging in the western Indian Ocean, and *P. mangula* has migrated via the Suez Canal to the eastern Mediterranean Sea. Morphological and genetic analysis of 15 species in this genus show that *P. adusta*, a widely distributed species, that can't be divided into different species, because of the continuity of morphologies and distribution, and lack of variance in genetics between Indian Ocean, Red Sea, and Pacific Ocean populations. This confirms that the two subspecies described by Randall *et al*. (2013) are both synonyms of *P. adusta*. *Pempheris adusta* is distinguished from other species by a blackish spot on pectoral fin base, pored lateral-line scales 56–64, scale rows above lateral line 4 1/2–6 1/2, distinct blackish band on outer edge of anal fin, and blackish band on posterior edge of caudal fin. *Pempheris mangula* was named by Cuvier (1829) in a footnote making reference to a drawing and short description in Russell (1803) of a *Pempheris* from southeast India, giving only the native name "Mangula-Kutti", and listing no specimen. The wide distribution of this species, from the Indian Ocean to the Red Sea is also demonstrated by morphological and genetic analysis. Thus, the specimen collected from southern India is herein designated as the neotype. This species is distinguished from other species by its huge eye, deep body, blackish tip of the dorsal fin, pored lateral-line scales 49–60, and scale rows above lateral line 4 1/2–5 1/2. The extant syntype of Kossmann & Räuber's *P. rhomboidea* is designated as the lectotype of the species; however, *P. rhomboidea* is a synonym of *P. mangula*. In addition, Kossmann & Räuber's *Pempheris erythraea* and *P. russellii* Day, 1888 are also synonyms of *P. mangula*. Of two existing syntypes of *P. nesogallica* from Mauritius, one is designated as the lectotype, the other is re-identified as *P. mangula*; *P. nesogallica* is presently known only from the southern Red Sea. This species has a similar morphology to *P. mangula*, but can be distinguished by a smaller eye than *P. mangula*, and lack irregular faint longitudinal light stripes on the body side. *Pempheris tominagai* are distinguished from *P. schwenkii* Bleeker 1855, formerly misidentified, by the form of posterior nostril, scale counts, color of caudal fin, and by a 2.1% mitochondrial DNA sequence divergence.

Key words: taxonomy, revision, Pempheridae, *Pempheris adusta*, *Pempheris mangula*, *Pempheris nesogallica*, *Pempheris tominagai* **n. sp.**, Red Sea

Introduction

The fishes of family Pempheridae are commonly found on rocky and coral reefs of the tropical and temperate Indo-Pacific and western Atlantic Oceans. The family is characterized by a compressed body that is strongly tapered posteriorly on the ventral side, very large eyes, short snout, strongly oblique mouth with protrusible upper jaw; a single short-based dorsal fin, its origin before the middle of the body, and a long-based anal fin below the posterior half of body. There are two genera *Parapriacanthus* Steindachner, 1870, and *Pempheris* Cuvier, 1829, the latter currently reported with 38 species (Eschmeyer, 2014).

Tominaga (1968) published an extensive study of the internal anatomy of the Pempheridae and discussed its position in the Perciformes. Tominaga (1986) presented evidence that the Glaucosomatidae is closely related to the Pempheridae (as Pempheridiidae). This was supported by Johnson (1993) who proposed that the two families should be treated as subfamilies of the Pempheridae. Molecular analysis, however, challenges this classification (Koeda *et al*., unpublished data).

Accepted by W. Holleman: 20 Feb. 2014; published: 30 Apr. 2014

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