Zootaxa 3493: 27–34 (2012)
www.mapress.com/zootaxa/

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

Article

urn:lsid:zoobank.org:pub:DC681CEB-48B5-42E0-8C7C-D7A152DAC53A

A New Species of the Genus *Eulophias* (Zoarcoidei: Stichaeidae) from Korea

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Abstract

A new species, *Eulophias koreanus*, belonging to the family Stichaeidae, suborder Zoarcoidei, is described on the basis of five specimens (70.7–160.7 mm in standard length) collected from the southern sea of Korea. The new species differs from the only two known congeneric species, *Eulophias tanneri* and *Eulophias owashii*, which are endemic to Japan. *Eulophias koreanus* is readily distinguished from *E. tanneri* by the numbers of anal-fin rays (102–103 vs. 75 in *E. tanneri*) and caudal-fin rays (9–10 vs. 7). *Eulophias koreanus* is more similar to *E. owashii* than to *E. tanneri*, but differs from the former in the number of vertebrae (141–143 vs. 133 in *E. owashii*) and pectoral-fin length (36.1–39.5% of HL vs. 27.8%). Regarding the caudal skeletons in *E. koreanus*, the last dorsal pterygiophore is inserted between the last 1st and 2nd or the 2nd and 3rd neural spines, and a small spine is absent on the ventral portion of the parhypural, whereas in *E. owashii*, the last dorsal pterygiophore is inserted between the last 3rd and 4th neural spines, and a small spine is present on the ventral portion of the parhypural. Analyses of 500-bp sequences of mitochondrial DNA cytochrome oxidase subunit I provide strong evidence that the five new specimens belong to the same species, even though they show some variation in head shape.

Introduction

The genus *Eulophias* Smith 1902 of the family Stichaeidae, suborder Zoarcoidei, comprises two species worldwide; *Eulophias tanneri* Smith 1902 and *Eulophias owashii* Okada and Suzuki 1954 (Mecklenburg and Sheiko, 2004; Nelson, 2006). Smith (1902) first described *E. tanneri* on the basis of a single specimen collected from Suruga Bay, Japan. The genus *Eulophias* was originally characterized by the following combination of morphological characteristics: very elongated body, numerous spiny rays and a few soft rays on the dorsal-fin, numerous anal-fin rays, caudal-fin blended with the dorsal- and anal-fins, and pelvic-fin absent (Jordan and Snyder, 1902; Smith, 1902). Subsequently, Okada and Suzuki (1954) reported a second species, *E. owashii*, named for the type locality near Owashe, Japan. The two species are distinguished by the numbers of anal- and caudal-fin rays and by the proportions of the pectoral-fin and the preanal lengths (Okada and Suzuki, 1954). Miki (1985) re-examined *E. owashii* and reported on numbers of anal-fin rays and vertebrae, slightly differing from those reported by Okada and Suzuki (1954). Since Miki (1985), there have been no studies on these two species except Mecklenburg and Sheiko (2004), who noted the two species of *Eulophias* are distributed in water depths of 119–124 m off Japan.

Taxonomic position of the genus *Eulophias* has been changed many times and still remains uncertain to date. Jordan and Snyder (1902) firstly suggested that *Eulophias* belongs to the subfamily Eulophiinae under the family Blenniidae. However, Makushok (1958) moved *Eulophias* from the family Blenniidae to the family Stichaeidae based on morphology and osteology, but maintained to the subfamily Eulophiinae. After that, Anderson (1994) altered the position of *Eulophias* from the subfamily Eulophiinae to the subfamily Neozoarcinae under the family Stichaeidae based on osteology. In recent years, *Eulophias* has been regarded as belonging to different higher taxa, depending on fish taxonomists (Lindberg and Krasyukova, 1989; Mecklenburg and Sheiko, 2004).

Accepted by A.C. Gill: 22 Aug. 2012; published: 21 Sept. 2012