Zootaxa 3755 (5): 491–495
www.mapress.com/zootaxa/

Article

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

http://dx.doi.org/10.11646/zootaxa.3755.5.9
http://zoobank.org/urn:lsid:zoobank.org:pub:96AA169A-0FB4-4475-BB99-559FC2EBA860

Gymnoxenisthmus tigrellus, new genus and species of gobioid fish from the Red Sea (Gobioidei: Xenisthmidae)

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Abstract

Gymnoxenisthmus tigrellus is described from the 15.2 mm SL holotype collected from the Farasan Archipelago, southern Red Sea. It is distinguished from other xenisthmid genera in having the following combination of characters: head pores absent; no scales; first dorsal fin with five spines; at least some dorsal-, anal- and pectoral-fin rays branched; pelvic fin with a spine and five unbranched rays. Evaluation of available (mostly external) characters suggests the new genus is the sister group of a clade consisting of *Rotuma*, *Tyson* and *Allomicrodesmus*.

Key words: Indo-Pacific, systematics, taxonomy, morphology

Introduction

The Xenisthmidae is a family of small (mostly less than 25 mm SL), very secretive fishes that live in sand patches adjacent to coral reefs or reef rubble throughout the Indo-Pacific. The family includes five genera: *Allomicrodesmus* Schultz in Schultz *et al.* 1966, *Paraxenisthmus* Gill & Hoese 1993, *Rotuma* Springer 1988, *Tyson* Springer 1983, and *Xenisthmus* Snyder 1908 (of which *Gignimentum* Whitley 1933, *Luzoneleotris* Herre 1938, *Platycephalops* Smith 1957, and *Kraemericus* Schultz in Schultz *et al.* 1966 are synonyms). Several synapomorphies distinguish xenisthmids from other gobioid fishes and support monophyly of the family (although only the first has been confirmed in the poorly known genus *Allomicrodesmus*): lower lip with uninterrupted, free ventral margin; basibranchial 2 absent; premaxillary ascending processes greatly reduced; rostral cartilage ossified; and hypobranchial 3 reduced to small cartilage nubbin or absent (Springer 1983, 1988; Gill & Hoese 1993). During fieldwork in February of 2012 in the Farasan Archipelago, Red Sea, a single gravid female of a distinctive, scaleless xenisthmid was collected by the second author from a reef slope at a depth of 8 m. The specimen could not be assigned to any known xenisthmid genus, and we therefore describe it herein as a new genus and species.

Material and methods

Methods of counting and measuring follow Winterbottom and Gill (2006). Where counts were recorded bilaterally from the holotype, both counts are given and separated from each other by a slash; the first count presented is the left count. Osteological details were determined from a radiograph. The holotype is deposited in Senckenberg Museum, Frankfurt (SMF). Comparisons with other xenisthmids are based on specimens amassed by the first author for an upcoming revision of the Xenisthmidae, and by details provided in the following publications: Springer (1983, 1988), Gill and Hoese (1993, 2004), Gill and Randall (1994) and Winterbottom and Gill (2006).

Accepted by W. Holleman: 12 Dec. 2013; published: 24 Jan. 2014

two large indistinct pale grey-orange spots on basal part of fin, one dorsal and the other ventral; pectoral and pelvic fins translucent.

Preserved coloration: head and body generally pale beige, greyish brown on lower abdomen; melanophores within orange bars on body remain, though indistinct and confined to midside and upper half of body; melanophores within orange areas on lips, upper stripe on head and upper half of pectoral-fin base remain; orange markings on first dorsal fin become dark grey; orange markings on second dorsal and anal fins remain, becoming dark grey-brown.

Etymology. The specific epithet is from the Latin, meaning a little tiger, alludes to the orange bars on the body. The name was selected by school children at the Australian Museum Science Festival Expo in August 2013.

Habitat. The holotype was collected from an unnamed rocky island with a narrow reef flat, and a slope with patches of corals and a rocky wall of about 3m with small caves and shelters. The sandy slope began at depths of 8–10 m; the holotype was collected on sand at the base of coral in 8 m.

Acknowledgements

This study was conducted as part of the scientific research cooperation between the Faculty of Marine Sciences (FMS), King Abdulaziz University (KAU), Jeddah, Saudi Arabia, and the Senckenberg Research Institute (SRI), Frankfurt, Germany, in the framework of the Red Sea Biodiversity Project, and was funded by KAU GRANT NO. "D/1/432-DSR". The authors acknowledge, with thanks, KAU and SRI for technical and financial support. The second author thanks Fareed Krupp (SMF) for facilitating the field work and T. Alpermann for his comprehensive help. The first author's studies on xenisthmids were initially supported by a Smithsonian Postdoctoral Fellowship under the supervision of V.G. Springer and G.D. Johnson. The first author is grateful to the 850 students that contributed to the naming of the new species at the Australian Museum Science Festival Expo, and to the organisers of the event. Also at the Australian Museum, we thank J. King for the radiograph of the holotype, and M. McGrouther for accommodating specimen loans.

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