



Redescription of *Sphenanthias whiteheadi* Talwar (Perciformes: Cepolidae) with DNA barcodes from the southern coasts of India

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Abstract

A very rare bandfish, *Sphenanthias whiteheadi* Talwar 1973, is re-discovered and described from the southwest and southeast coasts of India for the first time after its original description and the rarity of the fish is challenged. A mitochondrial COI barcode sequence was generated for the specimen.

Key words: *Sphenanthias whiteheadi*, Cepolidae, India

Introduction

The bandfishes of the family Cepolidae (Perciformes) are known from all tropical and subtropical waters and comprise 22 valid species in 4 genera worldwide (Eschmeyer & Fong, 2011). Members of the genus *Sphenanthias* can be differentiated from the similar *Owstonia* in having lateral lines separate and not forming loops in front of dorsal fins (Smith Vaniz, 2001; Liao *et al.*, 2009). The genus *Sphenanthias* is represented by only one valid species in the Arabian Sea (Manilo & Bogorodsky, 2003), *Sphenanthias whiteheadi* described by Talwar from four specimens collected from southwest coast of India off Quilon at 300 m (Talwar, 1973). *Sphenanthias simoterus* Smith 1968, *Owstonia weberi* (Gilchrist, 1922), and *Owstonia totomiensis* Tanaka 1908 are listed as occurring in this area but the validity of these occurrences are questionable since no detailed description was given in publications discussing their occurrence. After the original description of *S. whiteheadi* there were no reports of this species from the Indian coasts. The present paper confirms the validity and status of *S. whiteheadi* Talwar 1973 and provides a short re-description of the species.

Material and methods

Specimens of *Sphenanthias whiteheadi* were collected from the southwest coast of India near Quilon (Kerala) and the southeast coast of India near Tuticorin (Tamilnadu) in December 2009 from commercial deep-sea shrimp trawler bycatch landings operated at 220 to 350 m depths (Fig. 1). Identification of the species was based on Talwar (1973). Measurements were made to the nearest 0.1 mm using dial calipers. All measurements are expressed as percentage of standard length (SL). The specimens of *S. whiteheadi* were deposited in the Designated National Repository (DNR), Central Marine Fisheries Research Institute, Kochi, Kerala, India (Accession number: GB.31.31.4.1).

DNA analysis was carried out to generate the DNA barcode for the species. Tissue samples collected from one specimen were preserved in 95% Ethanol and used for DNA extraction and sequencing. Total DNA was extracted by standard protocols (Miller *et al.*, 1988). A partial sequence of the mitochondrial COI gene was PCR amplified using primer Fish F1 (5' - TCA ACC AAC CAC AAA GAC ATT GGC AC - 3') and Fish R1 (5' -TAG ACT TCT