



First record of the one-stripe anthias *Pseudanthias fasciatus* (Kamohara, 1954) (Perciformes: Serranidae: Anthiinae) from Indian waters

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Abstract

The anthiid fish *Pseudanthias fasciatus* (Kamohara, 1954) is reported from Indian waters for the first time. These fishes were found in trawler bycatch landed at the Neendakara fisheries harbour (09° 41' 18.28" N lat. 76° 33' 05.89" E long.) near Kollam, Kerala, India. The morphometric and meristic characters of the two specimens obtained correspond with those of *P. fasciatus* published previously.

Keywords: *Pseudanthias fasciatus*, one-striped anthias, serranidae, Anthiinae

Introduction

Anthiinae, along with Epinephelinae and Serraninae, is one of the three subfamilies of the family Serranidae which includes groupers, fairy basslets, anthias, sea goldies and others. The subfamily Anthiinae comprises about 170 spp. belonging to 21 genera, most of which are found in the Indo-west Pacific and have fewer species in the Atlantic (Heemstra and Randall, 1999). The genus *Pseudanthias* alone has about 65 species which are distributed in tropical and temperate oceans. They are believed to be proterogynous hermaphrodites and are found over a wide depth range of 20-400 m (Kamohara, 1954). New records of species under the genus *Pseudanthias* continue to be added (Randall, 1979; Katayama and Masuda, 1983; Ida and Sakauero, 2001; Randall and Pyle, 2001) to the list frequently. Most of the anthias fishes are brightly coloured and popular aquarium fishes. *Pseudanthias fasciatus*, the one-striped anthias, is considered to be a nonaggressive, peaceful fish and survives best with other species of similar disposition in marine aquarium tanks. As it is a deep water species it does best in dimly lit aquaria and has a natural tendency to swim upside down under overhanging structures

(Schultz, 2008). The maximum recorded size is that of a male specimen measuring 21 cm in total length.

Distribution

P. fasciatus is distributed in the Indo-west Pacific from the Red Sea to Japan and Taiwan, Palau, Papua New Guinea, Indonesia and the Great Barrier Reef in Australia (Krupp and Paulus, 1991; Myers, 1999). It has also been reported from Tonga (Kuitert and Tonozuka, 2001; Randall *et al.*, 2003), Sri Lanka, Maldives and Mauritius (Debelius, 2007). There is no record of this species so far from India. However, *Anthias cichlops*, *A. cooperi*, *A. squamipinnis* (Jones and Kumaran, 1980), *P. conspicuus* (Eschmeyer, 2003), *P. hypselosoma* and *P. pulcherrimus* (Debelius, 2007) are some of the species recorded from Indian waters.

Holotype

The holotype of the species is housed at the Department of Natural Science, Faculty of Science, Kôchi University, Japan under the name *Franzia fasciata* (Catalogue number BSKU 3032). The holotype of *Anthias rubrolineatus* is housed at the Muséum National d'Histoire Naturelle, Systématique et Évolution, Laboratoire d'Ichthyologie Générale

et Appliquée, Paris, France (Catalogue number MNHN 1978-0686). Both are regarded as conspecific of *Pseudanthias fasciatus* (Eschmeyer, 2009). The current specimens described are deposited in the Designated National Repository for marine organisms at the Central Marine Fisheries Research Institute, Kochi, Kerala, India under the accession number GB.31.139.44.18 The prevalent common names for the fish in English are one-stripe anthias and red-striped seaperch or basslet. No vernacular name is in use.

Material and Methods

The specimens were obtained from the bycatch of trawlers from Neendakara fisheries harbour (09° 41' 18.28" N lat; 76° 33' 05.89" E long.) Kollam, Kerala during February, 2006 (Fig.1). The fishes were brought to the laboratory and photographed. The meristic and morphometrics of the species were documented as per the method prescribed by Hubbs and Lagler (1949).



Fig. 1. Location of Neendakara (Kerala) on the west coast of India

Results and Discussion

Synonyms of Pseudanthias fasciatus

Franzia fasciata Kamohara, 1954 (Kamohara, 1954).

Anthias rubrolineatus Fourmanoir & Rivaton 1979 (Fourmanoir & Rivaton 1979).

Anthias fasciata (Kamohara, 1954) (Allen & Starck 1982).

Pseudanthias fasciatus (Kamohara, 1954) (Randall, et al., 1990).

Colouration: Body orange yellow, lighter towards belly. Prominent orange red broad stripe with lavender margins running from operculum to caudal peduncle. The presence of the above stripe indicates that the specimen is an adult female. Dorsal fin spines reddish orange, dorsal fin rays, pectoral fins and anal fins yellow, tinged with orange towards the base. Caudal fin yellow.

Morphological diagnosis and description: The fish is laterally compressed with a single dorsal fin and a lunate tail. As in all serranids, *P. fasciatus* possesses a single dorsal fin with a spinuous and soft ray part, three flat opercular spines and three spines in the anal fin. Pelvic fin has one spine and five soft rays. Tip of the maxilla exposed even when mouth closed.

The specimens examined also showed stipulated characters for the subfamily Anthiinae: Single dorsal fin with X - XI spines and 13 - 20 soft rays or XIII spines and 15 soft rays; vertebrae 25 - 28. Spine at corner of preopercle, if enlarged not extending past subopercle. No scaly flap of skin joining base of upper pectoral-fin rays to body. Oblique scale series equal or lesser than lateral-line scales. Caudal fin rays 12 - 15. Nostrils on rear half of snout, close together. Supramaxilla rudimentary or absent.

All anthiinids belonging to the genus *Pseudanthias* have the following generic characters: Dorsal fin spines X, fin continuous or deeply notched between spinous and soft ray portions. Dorsal fin rays 13 -18. Pectoral fin rays 13 - 21, middle rays branched. Lateral line scales 25 - 65. Teeth present on vomer and palatines; vomer triangular or V-shaped; teeth absent on tongue. Body depth 1.9 - 3.6 times in standard length. Supramaxilla present (may be rudimentary); branched caudal-fin rays 12 - 15. Lateral-line scales 25 - 41; anal-fin rays 6 - 7. Serrae at corner of preopercle not distinctly enlarged. Posterior soft dorsal and anal fin rays not shorter than anterior soft rays, the second to fourth dorsal-fin rays not elongated. Body depth less, 2.4 to 3.6 times in standard length. These characters are present in the specimen examined (Table 1).

Table 1. Comparative morphometrics of *Pseudanthias fasciatus* (Kamohara, 1954)

	Morphometric characters	Froese and Pauly (2009)	Froese and Pauly (2009)	Present specimen	
1.	Total length	208 mm: 612 pixels	481 pixels	101 mm	91.8 mm
2.	Standard length	64.4 % TL	77.5 % TL	69.5%TL	75.8%TL
3.	Fork length	74.2 % TL	89.8 % TL	89.2%TL	88.7%TL
4.	Head length (HL)	18.6 % TL	24.5 % TL	23.5%TL	28.7%TL
5.	Body depth	24.0 % TL	22.0 % TL	23.7%TL	24.4%TL
6.	Pre-anal length	41.0 % TL	41.8 % TL		45.1%TL
7.	Pre-dorsal length	16.5 % TL	20.4 % TL		19.4%TL
8.	Pre-pelvic length	18.6 % TL	25.6 % TL	24.7%TL	26.1%TL
9.	Pre-pectoral length	18.0 % TL	25.6 % TL	20.5%TL	27.8%TL
10.	Fin length, spinous dorsal			15.3%TL	12.5%TL
11.	Fin length, soft dorsal			27.7%TL	26.9%TL
12.	Base length , dorsal			47.6%TL	48.9%TL
13.	Fin length, pectoral			21.3%TL	23.3%TL
14.	Base length, pectoral			5.4%TL	5.3%TL
15.	Fin length, pelvic			22.1%TL	20.2%TL
16.	Base length, pelvic			3.5%TL	3.6%TL
17.	Fin length anal			16.6%TL	16%TL
18.	Base length, anal			12.1%TL	15.7%TL
19.	Fin length caudal			28.3%TL	22.1%TL
20.	Caudal peduncle depth			9.8%TL	8.4%TL
21.	Caudal peduncle, length			9.1%TL	11.2%TL
22.	First dorsal spine length				4.4%TL
23.	Second dorsal spine length				3.3%TL
24.	Third dorsal spine length				9.7%TL
25.	Third dorsal soft ray				4.8%TL
26.	First anal spine length				7.2%TL
27.	Second anal spine length				15.7%TL
28.	Second anal soft ray length				17.8%TL
29.	Pelvic fin spine depth				11.5%TL
30.	Eye diameter	21.9 % HL	26.3 % HL	32.5%HL	30.3%HL
31.	Inter orbital			25.5%HL	23.5%HL
32.	Pre-orbital length	21.1 % HL	24.6 % HL	17.6%HL	17.3%HL
33.	Post-orbital length			47.1%HL	52.7%HL
34.	Upper jaw			45%HL	39%HL
35.	Lower jaw			53%HL	49.8%HL
36.	Gill rakers (upper)			12	12
37.	Gill rakers (lower)			24	24
38.	Lateral line scales			41	41
39.	Aspect ratio of caudal fin	1.81736	2.21127		

The diagnostic characters of the species *P. fasciatus* include dorsal and anal fins naked with third dorsal spine not longer than head. First dorsal spine distinctly shorter than second. Vomerine tooth patch subtriangular. Caudal fin lunate. Anal fin rays seven. First gill arch bearing 12 gill rakers on the upper limb and 24 on the low limb. Pectoral fin rays and dorsal fin rays 16-17. Lateral line scales 41-54 (41 in the current specimen). The colouration of the

species, especially the broad red band running from operculum to caudal fin unique to (the female of) the species. The examined specimens are consistent with these characters. The presence of these in addition to the distinctive colouration confirms the identity of the specimen as *Pseudanthias fasciatus* (Fig. 2).

Meristics of the specimen examined: Fin formula as per Froese and Pauly (2009) is as follows: D X-

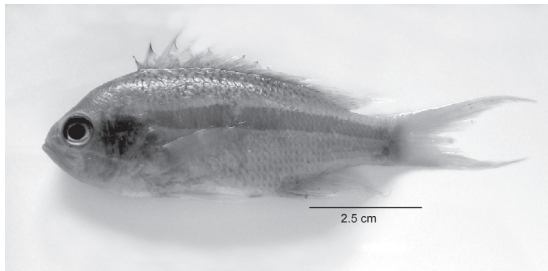


Fig. 2. Female specimen of *Pseudanthias fasciatus* (Kamohara, 1954) landed at Neendakara

X, 16-17; A III-III, 7-7. Both the current specimens have the following meristic characters: D X, 16; A III, 7; L 16, P I, 5.

Conclusion: The morphometric and meristic characters analysed for the two specimens of *P. fasciatus* did not vary significantly from those of the specimens from published accounts. This is the first record of *P. fasciatus* occurring in Indian waters.

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