



Short Communication

First record of two Gobioid fishes, *Myersina filifer* (Valenciennes, 1837) and *Yongeichthys nebulosus* (Forsskål, 1775), from Odisha Coast, India

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Abstract

This paper reports two fish species: *Myersina filifer* (Valenciennes, 1837) and *Yongeichthys nebulosus* (Forsskål, 1775) (Gobiiformes: Gobiidae) for the first time from Odisha coast, India. The materials were collected from Aryapalli fish landing centre and Gopalpur beach of Odisha coast. Diagnostic characters of these species are presented to record their occurrence along Odisha coast.

Keywords: Aryapalli, Gobiidae, Gopalpur, New Records, Odisha

Introduction

The maritime state Odisha is located along northern part of peninsular India having 482 kilometers of coastline adjoining the Bay of Bengal (Barman *et al.*, 2007). The first ever study on fishes of Odisha (Orissa) was put forth by Day (1869) which included 146 species of marine and fresh water fishes. Barman *et al.*, (2007), based on earlier studies and their survey findings enlisted a total of 605 species of marine and estuarine fishes of Odisha belonging to 138 families and 27 orders that included 47 fishes of the family Gobiidae. Only one gobioid fish, *Periophthalmus novemradiatus* (Hamilton, 1822), was additionally reported from coastal waters of Odisha (Mittra *et al.*, 2010; Das and Palita, 2015). However, occurrence of *Myersina filifer* (Valenciennes, 1837) and *Yongeichthys nebulosus* (Forsskål, 1775) along Odisha coast was not reported yet.

During the collection of fish samples from Gopalpur coast 4 specimens of gobioid fishes were collected and later identified as *Myersina filifer* (Valenciennes, 1837) and *Yongeichthys nebulosus* (Forsskål, 1775), hitherto not reported from Odisha coast. This paper reports these two species for the first time from the Odisha coast.

Materials and Methods

A single specimen of an interesting gobioid fish was collected from trashes at Aryapalli fish landing centre (19°18'38.91" N and 84°58'20.68" E) on 5th January 2018, which was later identified as *Myersina filifer* (Valenciennes, 1837). Later, three specimens of another gobioid fish were collected from the bycatch of Gopalpur fish landing center collections (19°15'47.56"N, 84°54'59.26"E) on 26th June, 2018 and identified as *Yongeichthys nebulosus* (Forsskål, 1775). The specimens were photographed soon after collection to note the coloration and later preserved in 10% formaldehyde. Measurements were taken in mm by dial calipers with 0.1 mm accuracy. The specimens were identified in the laboratory using standard literature (Day, 1876; Koumans, 1941; Winterbottom, 2002; Ray *et al.*, 2018) and electronic reference such as FishBase (Froese and Pauly, 2018). The specimens were registered and deposited at Estuarine Biology Regional Centre, Zoological Survey of India, Gopalpur-on-Sea, Odisha.

Results

Taxonomic accounts of both the species are given hereunder based on collected specimens.

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Class ACTINOPTERYGII Klein, 1885
Order GOBIIFORMES Gunther, 1880
Family GOBIIDAE Cuvier, 1816
Subfamily GOBIINAE Cuvier, 1816
Genus *Myersina* Herre, 1934

1. *Myersina filifer* (Valenciennes, 1837)
(Filamentous shrimp goby) (Figure 1)

1837. *Gobius filifer* Valenciennes, in Cuvier & Valenciennes, *Hist. nat. pois.*, **12**: 106 (Type locality: Indian seas).
2012. *Myersina filifer*: Allen and Erdmann, *Reef fishes of the East Indies*, **3**: 880.

Materials examined: EBRC/ZSI F 9468, 01 ex., 78 mm SL., Aryapalli Fish Landing Center (19°18'38.91"N, 84°58'20.68"E), Ganjam district, Odisha, Anil Mohapatra and party; 5th January, 2018.



Figure 1. *Myersina filifer* (Valenciennes, 1837) 101 mm TL, EBRC/ZSI F 9468.

Description: D VI + I, 10; A I, 9; P 18; V 8. Body depth 6.2 times and head length (HL) 3.4 times in standard length (SL); eye diameter 3.5 times and snout length 5.7 times in HL; inter-orbital space 4.3 times in eye diameter. Maxillary length 2.5 times in HL; pre-dorsal length 2.8 times while pre-ventral length 3.2 times in SL. Pectoral fin length 5 times, pelvic fin 4.4 times and caudal fin length 3.3 times in SL. Caudal peduncle depth 1.7 times in peduncle length. A small sized fish with moderately elongate and compressed body; mouth large, oblique, lower jaw slightly projecting; upper jaw with curved teeth, outer row caniniform. Dorsal fin spines filamentous except last spine; pelvic fins united; scales cycloid; head, midline on nape and pectoral fin base without scales; caudal fin oblong, longer than head length. Sensory pores on cheek in transverse pattern; two pores on preopercle. Gill membrane fused together and to isthmus; lower gill rakers 12. Body colour white with five ventrally

tapered, brown bars; head marked with pale spots; a pale-edged black spot at base of first dorsal fin between first and third spine; orange-brown spots on soft dorsal and upper part of caudal fin; anal fin and lower lobe of caudal fin with blue streaks.

Distribution: Generally the species is found in sandy bottoms of coral reefs of Indo-West Pacific: Persian Gulf and Reunion to Indonesia and the Philippines, north to southern Japan (Winterbottom, 2002). *Myersina filifer* was recently reported from India from West Bengal coast (Ray *et al.*, 2018) as *Cryptocentrus filifer* (Valenciennes, 1837) and the present report forms its first record from Odisha coast and second record from India.

Genus *Yongeichthys* Whitley, 1932
2. *Yongeichthys nebulosus* (Forsskål, 1775)
(Shadow goby) (Figure 2)

1775. *Gobius nebulosus* Forsskål, *Descript. animal.* (Forsskål): 24, x (type locality: Red Sea, Saudi Arabia Djidda [Jeddah]).
2013. *Yongeichthys nebulosus*: Kottelat, *Raffles Bull. Zool., Suppl.*: 432.

Materials examined: EBRC/ZSI F 10220, 03 ex., 35-53 mm SL., Gopalpur Fish Landing Center (19°15'47.56"N, 84°54'59.26"E), Ganjam district, Odisha, Anil Mohapatra and party; 26th June, 2018.



Figure 2. *Yongeichthys nebulosus* (Forsskål, 1775) 35-53 mm SL, EBRC/ZSI F 10220.

Description: D VI + I, 9; A I, 9; P 18; V 7. Body depth 4.5-4.8, Head Length (HL) 3.3-3.5 times in Standard Length (SL); snout shorter than eye, eye diameter 2.2-2.6 and snout length 3.2-3.6 in HL; inter-orbital space 3.0-5.0 in eye diameter; pre-dorsal length 2.8-3.2, pre-anal length 1.5-1.7

in SL. Pectoral fin length 3.4-4.3, pelvic fin 3.7-3.9, caudal fin length 3.5-4.1 in SL; caudal peduncle depth 1.3-1.7 in peduncular length. A small fish with stout body, cylindrical anteriorly and compressed posteriorly; head slightly compressed with large eyes, eyes well above midline of head; snout rounded; cheek and operculum entirely naked; maxilla short, extending to below anterior border of eye; teeth on upper jaw in several rows; tongue emarginated; gill opening almost restricted to pectoral fin base. Dorsal spines thin, flexible; second and third dorsal spines longest; basal membrane of pectoral fin well developed; caudal fin rounded, slightly shorter than head. Head with longitudinal rows of papillae; longitudinal scale series 30-31; lateral transverse scales 11; head scaleless; nape before dorsal fin naked; body scales ctenoid except cycloid on breast. Body colour pale yellowish grey with three large dark brown blotches on sides extending below lateral line; faint brown markings on head and body; fins yellowish in colour with dark margins and dark brown spots.

Distribution: Usually this species is found in sandy bottoms of coral reefs of Indo-West Pacific region; widely distributed from East Africa, through Indonesia to Micronesia, north to China and the Ryukyu Islands, south to northern Australia.

Discussion

Barman *et al.*, (2007) mentioned 47 species belonging to the family Gobiidae as occurring along Odisha coast. Mitra *et al.*, (2010) and Das and Palita (2015) recorded another gobioid fish, *Periophthalmus novemradiatus* (Hamilton, 1822), from Subarnarekha estuary in Balasore district and Bhitarkanika mangroves respectively. However, both the species described in this work, *Myersina filifer* and *Yongeichthys nebulosus*, are hitherto not recorded from this coastal region and thus, forms new record for Odisha coast.

There are 11 shrimp-associated gobiid genera distributed in the Indo-Pacific region (Allen and Erdmann, 2012). In Indian coastal waters, 28 species belonging to eight such shrimp-goby genera are recorded so far: *Amblyeleotris* (12 spp.), *Cryptocentrus* (6 spp.), *Ctenogobiops* (3 spp.), *Mahidolia* (1 sp.), *Myersina* (1 sp.), *Stenogobiops* (1 sp.), *Tomiyamichthys* (1 sp.) and *Vanderhorstia* (3 spp.). However, most of them are known from Andaman and Nicobar Islands, but only 4 species recorded from coastal waters of peninsular India, viz., *Amblyeleotris*

gymnocephala (Bleeker, 1853), *Amblygobius albimaculatus* (Ruppell, 1830), *Mahidolia mystacina* (Valenciennes, 1837) and *Myersina filifer* (Valenciennes, 1837). Winterbottom (2002) redefined the genus *Myersina* and recognized seven species in this genus. Further, Larson and Murdy (2001) treated '*Cryptocentrus*' *papuensis* (Peters, 1876) under *Myersina*, while Shibukawa and Satapoomin (2006) described a new species, *Myersina adonis*. Of these species only *M. filifer* have a wide distribution from Persian Gulf to Japan, while all others known from Western Pacific, except *M. pretoriusi* from South Africa. *M. filifer* is at present known only from West Bengal coast of India (Ray *et al.*, 2018). The present report from Aryapalli, near Gopalpur, southern Odisha coast indicate its wider distribution along east coast of India.

Original description of *Gobius criniger* was based on specimens from Dorey Harbor, New Guinea and Malabar, India (Cuvier and Valenciennes, 1837). Later, Cantor (1849) and Day (1865) stated its occurrence from Malabar along west coast, whereas, Günther (1861) and Day (1876) mentioned its presence at Madras (Chennai), east coast of India. Koumans (1941) reported this species as *Ctenogobius criniger* and examined specimens from Malabar (Kerala), Madras (Tamil Nadu), Vizagapatnam (Andhra Pradesh), Long Island and Port Blair (Middle Andaman). Rema Devi (1992) listed it from Ennore estuary with the name *Yongeichthys criniger* following Talwar and Jhingran (1991). However, in current parlance of nomenclature *Gobius criniger* is now being treated as synonym of *Yongeichthys nebulosus* (Forsskal, 1775) (Kottelat, 2013). Therefore, *Y. nebulosus* has been recorded from Kerala, Tamil Nadu, Andhra Pradesh and Andaman Islands, while Barman *et al.*, (2013) listed it from Karnataka and Sundaram *et al.*, (2014) from Ratnagiri, Maharashtra.

Yongeichthys tuticorinensis is the other species of this genus known from India (Fowler, 1925), which was never reported after its discovery and *Y. thomasi* (Boulenger, 1916) is distributed in Atlantic waters, from Senegal to Democratic Republic of Congo, western Africa (Fricke *et al.*, 2018). Boulenger (1916) distinguished *Y. thomasi* in having 8 transverse scales, lesser lateral series scales (26-27) and caudal fin as long as head. As per the original description, *Y. tuticorinensis* differs from *Y. nebulosus* in having relatively larger head, 3 times in SL (vs 3.3-3.6 times in SL) and less lateral series scales (28-30 vs 30-32).

The present report confirms extension in its distributional range to Odisha coast.

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Acknowledgements

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