

## Short Communication

# First Record of *Seriolina nigrofasciata* (Ruppell, 1829) (Perciformes: Carangidae) from Odisha Coast, India

Sanmitra Roy<sup>1</sup>, S. Dash<sup>1</sup> and Subhrendu Sekhar Mishra<sup>2\*</sup>

<sup>1</sup>Estuarine Biological Regional Centre, Z.S.I., Gopalpur-on-Sea, Odisha – 761002, India

<sup>2</sup>Marine Fish Section, Zoological Survey of India, Kolkata – 700016, India; subhrendumishra@gmail.com

## Abstract

The paper reports *Seriolina nigrofasciata* (Ruppell, 1829) (Perciformes: Carangidae) first time from Odisha coast with description of material collected from the Rushikulya estuary. Photographic evidence on occurrence of reef associate *Apolemichthys xanthurus* (Bennett, 1833) and *Chaetodon decussatus* Cuvier, 1829 in the sea near Gopalpur, Odisha is also provided in this paper.

**Keywords:** Carangidae, First Record, Reef ridge, Odisha Coast

## Introduction

Fishes of the family Carangidae are well known for their commercial importance as many of them are very important food fishes. They are represented by 20 genera and 66 species in Indian waters (Gopi and Mishra, 2015). But their occurrence along the east coast of India is numbered at 20 genera and 47 species (Mishra, 2013). However, there are only 28 species of Carangids belonging to 14 genera are known from Odisha coast (Barman *et al.*, 2007). The genus *Seriolina* Wakiya, 1924 is monotypic and known by only one species, *S. nigrofasciata* (Ruppell, 1829) worldwide. From taxonomic point of view, this species is clearly distinguished from other genera of the family in having longer maxilla extending to below posterior margin of eye, 4 to 10 numbers of mostly rudimentary gill rakers on first arch, anal fin base distinctly shorter than soft dorsal fin base, pectoral fins shorter than head; and in absence of lateral line scutes and finlets.

One specimen of interesting fish has been collected from the mouth of the Rushikulya River hitherto not known from the region. The specimen was later identified as a young specimen of *Seriolina nigrofasciata* (Ruppell, 1829) (Figure 1). A systematic account of the species is detailed hereunder reporting it as first record from coastal waters of Odisha state, India.



**Figure 1.** *Seriolina nigrofasciata* (Ruppell, 1829) (127 mm FL) from Rushikulya River mouth.

## Materials and Methods

During a local survey trip to the Rushikulya River mouth one specimen of an interesting carangid species unfamiliar to local fishermen was collected. The specimen was photographed soon after collection to note the colouration and later preserved in 10% formalin after bringing to laboratory for further identification. Measurements were taken in mm by dial calipers up to 0.1 mm accuracy. The specimen was identified using standard literature (Talwar and Kacker, 1984; Smith-Vaniz, 1984,

\* Author for correspondence

1986, 1999) and deposited with the Estuarine Biological Station, Zoological Survey of India, Gopalpur-on-Sea, Odisha with registration number EBRC/ZSI F 8938.

## Results

The collected specimen was identified as a juvenile stage of *Seriolina nigrofasciata* (Ruppell) (Perciformes: Carangidae), a first record from Odisha coast.

### *Seriolina nigrofasciata* (Ruppell, 1829)

1829. *Nomeus nigrofasciatus* Ruppell, Fische Rothen Meers: 92, pl. 24 (type locality: Massawa, Eritrea, Red Sea).

1999. *Seriolina nigrofasciata*: Smith-Vaniz in Carpenter and Niem, FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. 4: 2742.

*Material examined*: EBRC/ZSI F 8938, 1 ex., 127 mm FL, Rushikulya River mouth, 05.xii.2016, Sanmitra Roy.

*Description*: D VII + I, 31; A I, 17; P 17; GR 2+5 = total 7. Body elongate, laterally compressed; body depth 3.4 in fork length; head profile with a steep rise from snout tip to anterior part of eye and gently convex to dorsal fin base. Upper jaw rounded posteriorly, extending to below posterior end of eye; its length about 2 times in head length. Head length about 3.6 times in fork length, slightly less than body depth. Height of dorsal fin lobe slightly longer than pectoral fins and 17.6% of fork length; length of anal fin base 2.3 times in second dorsal fin base; pelvic fins longer than pectoral, 1.6 times in pectoral fin; pectorals short, 57.1% of head length. Caudal peduncle with a low lateral fleshy keel on each side; dorsal and ventral grooves present before commencement of caudal fin. Scutes on lateral line absent. Body bluish grey dorsally, whitish ventrally; 7 dark oblique bands and blotches on upper part of body; spinous dorsal fin black; second dorsal and anal fins dusky brown, tips of anterior lobes white; caudal and pelvic fins black. All measurements in mm are given in Table-1.

*Distribution*: Southwest coast of South Africa in the Atlantic; from east Africa to Red Sea, through southern coasts of India to Indonesia in Indian Ocean; north to Japan and south to Australia in western Pacific. From Indian waters this fish has been reported from the

maritime states such as Andaman and Nicobar Islands, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka and Maharashtra (Joshi *et al.*, 2011) and Gujarat (Barman *et al.*, 2000).

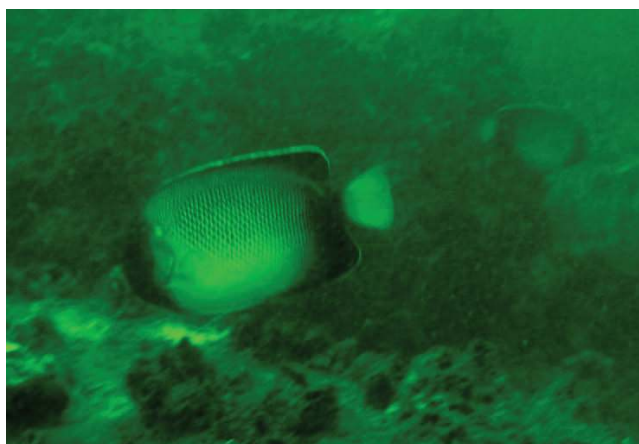
**Table 1.** Morphometric measurements of the specimen collected

Characters	Actual in mm	%FL	%HL
Total Length	142		
Fork Length (FL)	127		
Standard Length	110	86.61	
Body depth at dorsal fin origin	48	37.8	
Body depth at anus	36	28.35	
Height of Dorsal fin	22	17.32	
Length of soft Dorsal fin base	57	44.88	
Length of Anal fin base	27	21.26	
Head Length (HL)	35	27.56	
Pectoral fin Length	20	15.75	57.14
Pelvic fin Length	32	25.2	85.71
Snout Length	11	8.66	31.43
Post-orbital Length	12	9.45	34.3
Eye Diameter	08	6.3	22.86
Maxilla (upper jaw) Length	18	14.17	51.43
Mandible (lower jaw) Length	16	12.6	45.7

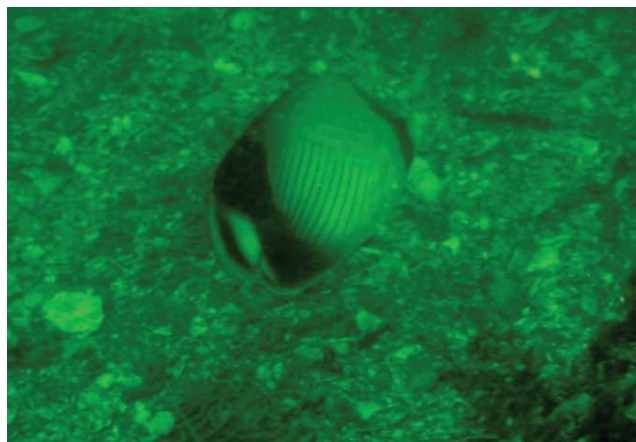
*Discussions*: Barman *et al.* (2007) enlisted 605 species of fishes belonging to 138 families and 27 orders from marine and estuarine waters of Odisha coast with just 28 species belonging to the family Carangidae. Since then, only few species have been reported from Odisha coast, viz., *Parexocoetus mento* (Valenciennes) by Mishra *et al.* (2010), *Acanthurus triostegus* (Linnaeus) by Mohapatra *et al.* (2013), *Monodactylus kottelati* Pethiyagoda by Mohapatra *et al.* (2014), *Acanthurus bariene* Lesson by Ray *et al.* (2014), *Diagramma pictum* (Thunberg) by Seth and Sahoo (2014) and *Cephalopholis sonnerati* (Valenciennes) by Behera *et al.* (2015). However, *Seriolina nigrofasciata* is hitherto not recorded from this coastal region and this report forms its first report from Odisha coast. Even the local fishermen expressed that this species was not seen earlier.

This species is a non-schooling, usually solitary species rarely seen close to shore and most commonly inhabit offshore reefs near continental shelf at depths of 20 to 150 m (Smith-Vaniz, 1999). A ridge reef has been

observed close to Gopalpur (Mohana Rao *et al.*, 2001) and there recorded 25 gorgonid species (Thomas *et al.*, 2004) and about 70 species of sponges (Thomas *et al.*, 2002). This indicates that the near shore zone at 25 to 35 m depth along Ganjam coast (particularly near Gopalpur) is rich in coral associate fauna. The third author received two fish photographs during the year 2010 from this particular region showing presence of reef associate fishes such as *Apolemichthys xanthurus* (Bennett, 1833) (Figure 2) and *Chaetodon decussatus* Cuvier, 1829 (Fig.-3) which were also not recorded earlier. For obvious reason, there is likelihood that *Seriolina nigrofasciata* do occur in this region and the juvenile might have drifted to the river mouth by wind and wave action.



**Figure 2.** *Apolemichthys xanthurus* (Bennett, 1833);



**Figure 3.** *Chaetodon decussatus* Cuvier, 1829: underwater photograph taken near Gopalpur (Photo by Mr. Rajesh).

## Acknowledgements

The authors are thankful to the Dr. Kailash Chandra, Director, Zoological Survey of India, Kolkata, Dr. S. Das, Scientist-D and Officer-in-Charge, Estuarine Biological Research Center, Z.S.I., Gopalpur-on-Sea, Odisha, Dr. L. Kosygin Singh, Scientist-D and Officer-in-Charge, Fish Division, Z.S.I., Kolkata for permission and facilities. Their thanks are also due to Mr. Rajesh of Command Clearance Diving Team, Indian Navy, Vishakhapatnam for providing the underwater photographs.

## References

- Barman, R.P., Mishra, S.S., Kar, S., Mukherjee, P. and Saren, S.C. 2007. Marine and estuarine fish fauna of Orissa. *Rec. zool. Surv. India, Occ. Paper*, **260**: 1-186.
- Barman, R.P., Mukherjee, P. and Kar, S. 2000. Marine and estuarine fishes. *State Fauna Series 8: Fauna of Gujarat*, Part 1: 311-411 (Zoological Survey of India, Kolkata).
- Behera, D.P., Mohapatra, D., Naik, S. and Mishra, R.K. 2015. First record of *Cephalopholis sonnerati* (Red Coral Grouper) from Gopalpur Coastal Waters, Bay of Bengal. *Indian Journal of Geo-Marine Sciences*, **44**(8): 1207-1212.
- Gopi, K.C. and Mishra, S.S. 2014. Diversity of marine fish of India. In, Venkataraman, K. and Sivaperuman, C. (eds.), *Marine Faunal Diversity in India: Taxonomy Ecology and Conservation*. Academic Press, Elsevier Inc., USA: 171-193.
- Joshi, K.K., Nair, R.J., Samad, E.M.A., Thomas, S., Kakati, V.S., Jasmine, S., Varghese, M., Miriam Paul, S., Sukumaran, S., George, R.M. and Manisseri, M.K. 2011. *The Carangids of India – a Monograph*. Central Marine Fisheries Institute, Kochi. pp. 437
- Mishra, S.S. 2013. Coastal marine fish fauna of east coast of India. In, Venkataraman, K., Sivaperuman, C. and Raghunathan, C. (eds.), *Ecology and Conservation of Tropical Marine Faunal Communities*, Springer-Verlag, Berlin, Heidelberg: 245-260.
- Mishra, S.S., Rath, S. and Dash, S. 2010. On the occurrence of a flying fish, *Parexocoetus mento* (Valenciennes) from Orissa coast. *Rec. zool. Surv. India*, **110**(2): 135-136.
- Mohana Rao, K., Murthy, K.S.R., Reddy, N.P.C., Subrahmanyam, A.S., Lakshminarayana, S., Rao, M.M.M., Sarma, K.V.L.N.S., Premkumar, M.K., Sree, A. and Bapuji, M. 2001. Submerged beach ridge lineation and associated sedentary fauna in the inner shelf of Gopalpur coast, Orissa, Bay of Bengal. *Current Science*, **81**(7): 828-833.
- Mohapatra, A., Ray, D. and Tudu, P.C. 2013. New record of Convict Surgeon fish *Acanthurus triostegus* (Linnaeus, 1758) from Chilika Lake. *Rec. zool. Surv. India*, **113**(4): 75-77.

- Mohapatra, A., Ray, D., Tudu, P.C. and Mishra, S.S. 2014. Range extension and first report of *Monodactylus kottelati* (Perciformes: Monodactylidae) from Chilika Lagoon, east coast of India. *Marine Biodiversity Records*, 7: e11 (2 pages) (Online) doi: 10.1017/S1755267214000013.
- Ray, D., Tudu, P.C. and Mohapatra, A. 2014. First report of three Surgeon fishes (Family: Acanthuridae) from the north of East Coast of India. *J. Bombay nat. Hist. Soc.*, 111(1): 54-57.
- Seth, J.K. and Sahoo, S. 2014. First record of *Diagramma pictum* (Thunberg, 1792) from the Odisha coast, India. *Indian Journal of Geo-Marine Sciences*, 43(6): 977-979.
- Smith-Vaniz, W.F. 1984. Carangidae. In, Fischer, W. and Bianchi, G. (eds). *FAO species identification sheets for fishery purposes. Western Indian Ocean; (Fishing Area 51)*. Food and Agricultural Organization of the United Nations, Rome, 1: pag. var.
- Smith-Vaniz, W.F. 1986. Family No. 210: Carangidae. In, Smith, M.M. and Heemstra, P.C., *Smith's Sea Fishes*, Springer-Verlag, Berlin (ISBN 978-3-642-82860-7): 638-661.
- Smith-Vaniz, W.F. 1999. Carangidae. Jacks and scads (also trevallies, queen fishes, runners, amberjacks, pilotfishes, pampanos, etc.). In, Carpenter, K.E. and Niem, V.H. (eds). *FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific*. Volume 4. Bony fishes part 2 (Mugilidae to Carangidae). Rome, FAO: 2659-2756.
- Thomas, P.A., Sree, A. and Bapuji, M. 2004. Affinity and zoogeography of the gorgonid fauna off Gopalpur (Orissa) coast (Bay of Bengal). *Ecology, Environment and Conservation Papers*, 10(2): 117-122.
- Thomas, P.A., Sree, A., Bapuji, M., Rao, K.M. and Murthy, K.S.R. 2002. Biodiversity, zoogeography and affinity of Orissa sponges. In, Sree, A, Rao, Y.R., Nanda, B. and Misra, V.N. (eds.). *Proceedings of the National Conference on Utilisation of Bioresources – NAT-CUB-2002*. Regional Research Laboratory, Bhubaneswar: 351-360.