Journal of Fisheries
Volume 8 Issue 2 Pages 865–867 August 2020
Peer Reviewed | Open Access | Online First

eISSN 2311-3111
pISSN 2311-729X

Short Communication

Note on occurrence of Lutke's halfbeak *Hemiramphus lutkei* Valenciennes, 1847 (Beloniformes: Hemiramphidae), along Odisha Coast

Swarup Ranjan Mohanty[1] • **Jaya Kishor Seth**[2] • **Anil Mohapatra**[1] • **Subhrendu Sekhar Mishra**[3]

[1]*Estuarine Biological Regional Centre, Zoological Survey of India, Gopalpur-on-Sea, Odisha-761002, India*
[2]*Post Graduate Department of Zoology, Berhampur University, Ganjam, Odisha-760007, India*
[3]*Marine Fish Section, Zoological Survey of India, 27-J.N.Road, Kolkata, West Bengal-700016, India*

Correspondence
Jaya Kishor Seth; Post Graduate Department of Zoology, Berhampur University, Ganjam, Odisha-760007, India

jkseth52@gmail.com

Manuscript history
Received 28 April 2020 | Revised 22 May 2020 | Accepted 23 May 2020 | Published online 24 May 2020

Citation
Mohanty SR, Seth JK, Mohapatra A, Mishra SS (2020) Note on occurrence of Lutke's halfbeak *Hemiramphus lutkei* Valenciennes, 1847 (Beloniformes: Hemiramphidae), along Odisha Coast. Journal of Fisheries 8(2): 865–867.

Abstract

The paper reports occurrence of Lutke's halfbeak *Hemiramphus lutkei* Valenciennes, 1847, for the first time from the coastal waters of Odisha coast, India. This report confirms the occurrence of this species form an extended geographical range along the east coast of India and will be helpful in further study of its biology, zoogeography and taxonomic status of the family Hemiramphidae.

Keywords: New record; Hemiramphidae; Lutke's halfbeak; *Hemiramphus lutkei*; east coast of India

1 | INTRODUCTION

Order Beloniformes comprises six families which constitute about 272 valid species (Fricke *et al.* 2019). Out of six families, the family Hemiramphidae encompass about 61 valid species (Fricke *et al.* 2019). In India, the family Hemirampidae is represented by five genera and 19 species (Gopi and Mishra 2015). Along the Odisha coast, the order Beloniformes comprises of 16 species (Barman *et al.* 2007; Roul *et al.* 2018) and the family Hemiramphidae constitutes of only five species (Barman *et al.* 2007), *viz.*, *Hemiramphus far* (Forsskål 1775), *Hyporhamphus limbatus* (Valenciennes 1847), *H. unicuspis* Collette and Parin, 1978, *Rhynchorhamphus georgii* (Valenciennes 1847) and *R. malabaricus* Collette, 1976. The present report forms the first record of *H. lutkei* from Odisha coast, which confirms occurrence of this species from an extended geographical region along the east coast of India.

2 | METHODOLOGY

During local survey thirteen fish specimens of family Hemiramphidae were collected from Gopalpur (19˚15'55.13''N; 84˚55'4.56''E) and Boxipalli (19˚15'8.83''N; 84˚54'13.14'') coast, Odisha, India, Bay of Bengal. After collection, the specimens were preserved in 10% formaldehyde solution, photographed and the detail morphometric measurements were taken. All measurement was made by digital calipers. Magnus MS13/24 stereomicroscope was used for scale and gill raker count. The collected specimens were subsequently identified as *Hemiramphus lutkei* Valenciennes, 1847 following the key and descriptions by Collette (1974, 1999). The specimens were deposited in Estuarine Biological Regional Centre

(EBRC), Zoological Survey of India, Gopalpur–on–Sea with registration number EBRC/ZSI/F10798, EBRC/ZSI/F10818 and EBRC/ZSI/F10819 for future references and study.

3 | RESULTS

Based on the specimens collected, systematic account of the species, *Hemiramphus lutkei* Valenciennes, 1847, is presented here in order to provide the first time material evidence from the Odisha coast.

3.1 Systematic account

Order: Beloniformes Berg, 1937
Family: Hemiramphidae Gill, 1859
Genus: *Hemiramphus* Cuvier, 1816
Hemiramphus lutkei Valenciennes, 1847 (Lutke's half-beak)
Hemiramphus lutkei Valenciennes in Cuvier and Valenciennes, Histoire naturelle des poisons, 19: 49 (type locality: Buru, Indonesia).

3.2 Materials examined

EBRC/ZSI/F10798, 1 ex., 235 mm SL, collected from: Gopalpur fish landing centre; EBRC/ZSI/F10818, 2 ex., 219 – 220 mm SL; EBRC/ZSI/F10819, 10 ex., 219 – 270 mm SL (Figure 1), collected from: Boxipalli fish landing centre. Meristic counts and morphometric measurements of *H. lutkei* are presented in Table 1.

3.3 Diagnostic characters

D 13; A 11 – 12; P 11. Body long and compressed. Its depth 5.6 – 6.7 in SL. Upper jaw short, triangular, without scales, broader than long; lower jaw elongate. Pectoral fin relatively long 5.2 – 5.3 in SL, its length more than the distance from anterior margin of nasal fossa to pectoral fin origin. Head 4.1 – 4.9 in SL. Eye moderate, interorbital space 3.5 – 4.6 in HL and preorbital ridge absent. Snout 2.6 – 3.1 in HL. Nasal papilla rounded. Caudal fin forked with an elongate lower lobe. Dorsal-fin rays 13; anal-fin rays 11 – 12. Gill rakers on first arch 37, predorsal scales 39.

3.4 Colour

Dark blue on the back and silvery white on the sides and ventrally with no spots or bars on sides. The fleshy tip of the lower jaw is bright red and upper lobe of caudal fin bluish (Figure 1).

3.5 Distribution

Hemiramphus lutkei is a wide ranging Indo-west Pacific species known from East Africa to the Philippines and Samoa, north to Japan and south to northern Australia (Fricke *et al.* 2019). From Indian coastal waters its distribution is well documented from almost all maritime states and Islands. Along the east coast of India it has been reported from Andhra Pradesh (Barman *et al.* 2004), Tamil Nadu (Barman *et al.* 2011) and West Bengal (Yennawar *et al.* 2017).

TABLE 1 Meristic and Morphometric data of *Hemiramphus lutkei* in comparison with the description provided by Collette (1999).

Characters	Present study	Collette (1999)
Meristic counts		
Dorsal fin rays	0 + 13	12 – 15(usually 13 or 14)
Anal fin rays	0 + 11	10 – 13 (usually 12)
Pectoral fin rays	11	10 – 12 rays (usually 11)
Gill rakers on first arch	37	33 – 46 (usually 36 – 41)
Morphometric ratio		
In head length (HL)		
Snout	2.6 – 2.9	–
Eye diameter	3.7 – 4.3	–
IOS	3.4 – 3.7	–
In standard length (SL)		
Head length	4.1 – 4.3	–
Pre dorsal length	1.3	–
Pre anal length	1.2	–
Pectoral fin length	5.3 – 5.5	4.8 – 5.4
Body depth	5.6 – 5.9	–
Caudal peduncle length	12.2 – 12.4	–
Caudal peduncle depth	14.6 – 14.7	–

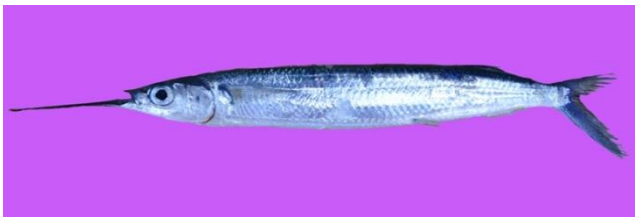

FIGURE 1 *Hemiramphus lutkei* collected from Odisha coast, India, Bay of Bengal.

4 | DISCUSSION

Hemiramphus lutkei can easily be distinguished from its congeners so far known from India in having relatively longer pectoral fin (4.5 – 5.4 times in SL, length longer than the distance from anterior margin of nasal fossa to origin of pectoral fin), more gill raker count (33 – 46, usually 36 or more) and more predorsal scales (35 – 43, usually 37 or more) (Collette 1999; Talwar and Kacker 1984). The present record confirms its extended range of distribution along the east coast of India and bridges the gap of unrecorded coastal region of Odisha.

5 | CONCLUSIONS

Odisha coast is known to harbour only a single species *H. far* of the genus *Hemiramphus*. The present report of the

species *H. Lutkei* is the first material evidence of the species and the second species of the mentioned genus from the coastal water of Odisha, India. Further, as the species has been known to occur from Andhra Pradesh, Tamil Nadu and West Bengal coast earlier, the present finding confirms its occurrence along the entire east coast of India.

ACKNOWLEDGEMENTS

Authors are thankful to the Dr. Kailash Chandra, Director, Zoological Survey of India, Kolkata for providing necessary facilities for the work. The second author is thankful to the Head, P.G. Department of Zoology, Berhampur University for providing necessary laboratory facilities.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

All the specimens under the description in the manuscript have been deposited in the national repository of Zoological Survey of India, Gopalpur-on-Sea, Odisha, India.

REFERENCES

Barman RP, Kar S, Mukherjee P (2004) Marine and estuarine fish. Fauna of Andhra Pradesh, State Fauna Series, Records Zoological Survey of India, Kolkata 5(2): 97–311.

Barman RP, Mishra SS, Kar S, Mukherjee P, Saren SC (2007) Marine and estuarine fish fauna of Orissa. Records Zoological Survey of India 260: 1–186.

Barman RP, Mishra SS, Kar S, Mukherjee P, Saren SC (2011) Marine and estuarine fish. Fauna of Tamil Nadu, State Fauna Series, Records Zoological Survey of India, Kolkata 17(2): 293–417.

Collette BB (1974) The garfishes (Hemiramphidae) of Australia and New Zealand. Records of the Australian Museum 29: 11–105.

Collette BB (1999) Hemiramphidae. Halfbeaks. In Carpenter KE, Niem V (Eds) FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Vol. 4. Bony fishes part 2 (Mugilidae to Carangidae). FAO, Rome.

Fricke R, Eschmeyer WN, Fong JD (2019) Species by Family/Subfamily Eschmeyer's Catalog of Fishes. California Academy of Sciences. Electronic version accessed 20 Mar 2019.

Gopi KC, Mishra SS (2015) Diversity of marine fish of India. In: Venkataraman K, Sivaperuman C (Eds) Marine faunal diversity of India: taxonomy ecology and conservation, Academic Press, Elsevier Inc., USA 171–193.

Roul SK, Abdussamad EM, Rohit P, Jaiswar AK (2018) New distributional record of flat needlefish *Ablennes hians* (Valenciennes, 1846) (Beloniformes: Belonidae) in the north-eastern Indian Ocean with taxonomic details. Thalassas: An International Journal of Marine Sciences, 35(1): 43–47.

Talwar PK, Kacker RK (1984) Commercial sea fishes of India. Hand Book. Zoological Survey of India, Kolkata 4: 997 pp.

Yennawar P, Mohapatra A, Tudu PC (2017) An account of ichthyofauna of Digha coast, West Bengal. Records Zoological Survey of India 117(1): 4–21.

CONTRIBUTION OF THE AUTHORS

SRM data acquisition;
JKS data analysis, data interpretation & manuscript preparation;
AM critical analysis & manuscript preparation;
SSK identification & critical analysis.

SR Mohanty https://orcid.org/0000-0002-0473-9166
JK Seth https://orcid.org/0000-0002-1331-5971
A Mohapatra https://orcid.org/0000-0003-3547-7039