

# First record of long nose chimaera *Neoharriotta pinnata* (Chondrichthys: Chimaeriformes: Rhinochimaeridae), from Bay of Bengal, India (north-eastern Indian Ocean)

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*Our paper describes the first record of Neoharriotta pinnata from the Bay of Bengal region of the Indian Ocean. A single specimen of a male N. pinnata had a total length of 1040 mm, weighing 1750 g. We explain its extended distribution towards the north-eastern Indian Ocean.*

**Keywords:** Indian Ocean, distribution, Bay of Bengal

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## INTRODUCTION

Long-nosed chimaeras representing the cartilaginous fish family Rhinochimaeridae inhabit in deep water from 200 m to more than 2000 m (Bigelow & Schroeder, 1953). Rhinochimaeridae comprises 3 genera (*Harriotta*, *Neoharriotta* and *Rhinochimaera*) with 8 species and they are discontinuously distributed worldwide with predominance in the Atlantic Ocean. The species *Neoharriotta pinnata* (Schnakenbeck, 1931) of the family Rhinochimaeridae were previously reported only from the Atlantic Ocean, eastern Atlantic: Cape Blanc, Mauritania to Walvis Bay, Namibia (Kreff, 1990), Arabian Sea (Manilo & Movchan, 1989); off south-west India (Silas *et al.*, 1969; Silas & Selvaraj, 1980); and from the Gulf of Aden (Ali *et al.*, 2009).

A single specimen of *N. pinnata* was recorded for the first time from the Bay of Bengal region of the Indian Ocean from Nagapattinam landing centre (10.76°N 79.84°E) Tamil Nadu, south-east coast of India on 26 January 2010. Based on interviews with a boat crew, it is confirmed that the present specimen was caught at a depth of 400–600 m during deep water otter trawl net operation towards the east of the Nagapattinam coast, from the Bay of Bengal. Based on the identification keys of Didier (1995) and Didier & Stehmann (1996) the specimen was confirmed as *N. pinnata*. The total length of the specimen is 1040 mm and weight, 1750g. The details of morphometric and meristic characters are given in Table 1. The specimen is preserved in the Museum of the CAS in Marine Biology, Faculty of Marine Sciences, Annamalai University, India (catalogue No. 646).

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## RESULTS

*Rhinochimaeridae* Garman (1901)

*Neoharriotta pinnata* Schnakenbeck, 1931

Synonym: *Harriotta pinnata* Schnakenbeck, 1931,

Presence of elongated and pointed snout; weakly raised caudal-fin axis (diphycercal but appears heterocercal) with the fin asymmetrical, epaxial caudal-fin lobe narrower than hypaxial lobe and the presence of a separate anal fin. Occurrence of second dorsal fin base extends well beyond anal fin origin; plane of snout in lateral view dorsal, extending forward at about eye level; pectoral tip barely reaches second dorsal origin and falls far short of pelvic origin; angular (maxillary) canal loop tapers gradually to broad, rounded point.

## DESCRIPTION

Body elongated, snout long, pointed moderately flaccid with large tentaculum on its mid-dorsal surface and pair of grasping prepelvic tentacula. The recorded specimen of *N. pinnata* was identified as adult male with bulbous, denticulate frontal tentaculum that rests in a pouch atop the head anterior to eyes; prepelvic tentaculæ blade-like with large denticles along the medial edge, hidden in pouches anterior to the pectoral fins, and slender, rod—from pelvic fins with small, fleshy denticulate tip (Figure 1). Lateral line well comprising straight, closely arranged sensory hillocks. The angular (maxillary) mucous canal loop has a tapering and bluntly rounded angular loop that connects on either side with the terminating suborbital canal. The branches of the suborbital canals have a distinct lateral flexure anteriorly. Colour dark brown. Morphometric and meristic details following Didier (1995) and Didier & Stehmann (1996) and the specimen compared

**Table 1.** Morphometric and meristic characters of *Neoharriotta pinnata* compared with the male (juvenile) specimen obtained by Silas & Selvaraj (1980).

Morphometric characters values in mm	Adult male (present specimen)	Juvenile (male) from Silas & Selvaraj
Total length (TL)	1040.0	—
Precaudal length (PCL)	735.0	—
% in TL	70.7	—
Body length (BDL)	470.0	—
% in PCL	63.9	—
Head length (HDL)	265.0	42.76
% in PCL	36.1	—
Head depth (HDH)	130.0	—
% in HDL	49.1	—
Head width (HDW)	96.0	—
% in HDL	36.2	—
Interorbital distance (INO)	58.0	9.54
% in HDL	21.9	—
Orbital length (EYL)	34.0	—
% in HDL	12.9	—
Preorbital length (POB)	170.0	—
% in HDL	64.2	—
Prepectoral length (PP1)	270.0	43.75
% in PCL	36.7	—
Prepelvic length (PP2)	450.0	66.78
% in PCL	61.2	—
Preanal length (SVL)	660.0	95.72
% in PCL	89.8	—
Pre 1st dorsal fin length (PD1)	290.0	44.34
% in PCL	39.5	—
Pre 2nd dorsal fin length (PD2)	410.0	64.15
% in PCL	55.8	—
1st dorsal fin base (D1B)	108.0	20.39
% in PCL	14.7	—
1st dorsal fin height (D1H)	101.0	—
% in PCL	13.7	—
2nd dorsal fin base (D2B)	230.0	33.21
% in PCL	31.3	—
2nd dorsal mid-length height (D2H)	30.0	—
% in PCL	4.1	—
2nd dorsal fin rear end height (D2R)	13.0	—
% in PCL	1.7	—
Pectoral fin length (P1L)	155.0	28.62
% in PCL	21.1	—
Pectoral fin base (P1B)	43.0	—
% in PCL	5.8	—
Pelvic fin length (P2L)	96.0	—
% in PCL	13.1	—
Pelvic fin base (P2B)	41.0	—
% in PCL	5.6	—
Gonopod length	100.0	3.95
% in PCL	13.6	—
Anal fin base (AB)	30.0	—
% in PCL	4.1	—
Anal fin height (AF)	40.0	—
% in PCL	5.4	—
Caudal fin length (CVM)	210.0	67.42
% in TL	20.2	—
Caudal fin length (CDM)	180.0	63.81
% in TL	17.3	—
Caudal filament length (CFI)	125.0	—
% in TL	12.0	—
Total caudal length (CTL)	305.0	—

Continued

**Table 1.** Continued

Morphometric characters values in mm	Adult male (present specimen)	Juvenile (male) from Silas & Selvaraj
% in TL	29.3	—
Caudal peduncle depth (CPH)	26.0	—
% in TL	2.5	—
Eye length (EYL)	35.0	6.91
% in PCL	4.8	—
Eye height (EYH)	30.0	—
% in PCL	4.1	—
Frontal tentaculum length (FTL)	40.0	—
% in PCL	5.4	—
Frontal tentaculum knob length (FKL)	15.0	—
% in PCL	2.0	—
Inter dorsal fin distance (IDS)	80.0	—
% in PCL	10.9	—
Body height (BDH)	38.5	19.47
% in PCL	5.2	—
Pelvic caudal space (PCA)	220.0	—
% in TL	21.2	—
Snout basal height (SHB)	45.0	—
% in PCL	6.1	—
Mouth length (MOL)	30.0	25.66
% in PCL	4.1	—
<b>Meristic characters</b>		
Number of 1st dorsal fin spine	1	
Number of 1st dorsal fin rays	5	
Number of 2nd dorsal fin rays	24	
Number of pectoral fin rays	12	
Number of pelvic fin rays	13	
Number of anal fin rays	15	

with male (juvenile) obtained by Silas & Selvaraj (1980) are given in Table 1.

## DISCUSSION

The long nose chimaeras (family Rhinochimaeridae) have a wide range distribution in the Atlantic, Pacific and Indian Oceans, but there are many gaps in its range distribution that probably reflect the general paucity of knowledge about occurrence and distribution of deep-benthic Chondrichthyes in most areas.

Silas *et al.* (1969) reported the occurrence of the chimaeroid fish *N. pinnata* from the upper continental slope off the south-west coast of India. Silas & Selvaraj (1980) reported 7 specimens of *N. pinnata* from the south-west coast of India, of which 2 specimens were adult females and the remaining 5 specimens were juveniles, of which 2 were males and 3 were females.

*Neoharriotta pinnata* was early recorded in the Atlantic Ocean by Manilo & Movchan (1989). Its distribution is



**Fig. 1.** Anterior image of *Neoharriotta pinnata*.

extended to the Indian subcontinent along the coasts of the western Indian Ocean (Bigelow & Schroeder, 1953; Compagno *et al.*, 1990; Krefft, 1990; Didier & Stehmann, 1996). A recent record of *N. pinnata* in the Gulf of Aden (Ali *et al.*, 2009) shows its extended distribution towards the north-western Indian Ocean.

The occurrence and distribution of *N. pinnata* are restricted only to the eastern Atlantic and western Indian Ocean, particularly in the Arabian Sea. It is interesting to note that the present record of *N. pinnata* in Bay of Bengal waters throws new light on the eastward extension of its distribution. Based on personal interviews with the crew of a fishing boat it is confirmed that the present specimen was caught from the Bay of Bengal. The reasons for the occurrence of *N. pinnata* in the Bay of Bengal are not clearly understood, but the possible reasons might be attributed to changes in hydrography and current pattern that might trigger its migration and its extended distribution towards the north-eastern Indian Ocean. Based on the occurrence of a single specimen of *N. pinnata*, this record cannot be scientifically verified and more detailed research is warranted.

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