



# First record of Genus *Parabathymyrus* Kamohara, 1938 (Anguilliformes: Congridae) from Eastern Indian Ocean

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## Abstract

*Parabathymyrus macrophthalmus*, Kamohara, 1938 is recorded for the first time from the eastern Indian Ocean based on one specimen (246 mm SL) collected from the Bay of Bengal. This record extends the range of the species from Western Pacific to the Eastern Indian Ocean. The Genus *Parabathymyrus* is also reported for the first time from India with its morphometric measurements.

**Keywords:** First report, Indian Ocean, *Parabathymyrus*, Range Extension, West Bengal

## Introduction

There are six valid species found worldwide under Anguilliformes genus *Parabathymyrus* Kamohara (1938) (Ho *et al.*, 2015). The Genus *Parabathymyrus* belongs to family Congridae under subfamily Bathymyrine having posterior nostril below mid-eye level and unsegmented rays to dorsal and anal fin. Six recognized genera are present under subfamily Bathymyrine, viz., *Ariosoma*, *Bathymyrus*, *Chiloconger*, *Kenyaconger*, *Parabathymyrus* and *Paraconger*. Kamohara (1938) established the genus *Parabathymyrus* with description of a new species *P. macrophthalmus* (type species) from Tosa, Japan and described this genus as intermediate between the genera of the families Congridae and Echelidae. Members of the genus *Parabathymyrus* are generally with stout scaleless body, short snout, wide eye, small and villiform teeth, posterior nostril covered by flap and small gill opening. They are generally found in continental shelf and slope at a depth of around 100 – 500 m (Ho *et al.*, 2015). On personal communication Ho *et al.*, (2015) have included

this specimen as an uncatalogued specimen in Zoological Survey of India but no details of the specimen from India was provided in that paper.

During a survey on West Bengal coast of India, authors collected a specimen of Congridae from Digha coast and subsequently identified as *Parabathymyrus macrophthalmus* Kamohara (1938), which was included in Ho *et al.*, 2015 upon personal communication as an uncatalogued specimen in Zoological Survey of India but no details of the specimen from India was provided in that paper. Thus, the species is reported here as an evidential report from India and Eastern Indian Ocean.

## Material and Methods

One specimen of *Parabathymyrus macrophthalmus* Kamohara, 1938 was collected (Figure 1), (MARC/ZSI/FF4586) of 246 mm in Total Length (TL) from Digha Mohana, West Bengal, India by a commercial trawl at about 43 nautical miles from Digha coast of West Bengal, India (21°01'N and 087°02'E) at about 72 feet (22 m)

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of depth, during 2016. The original coloration of live specimens was recorded on photographs. Measurements and counts of the examined specimens follow Smith and Kanazawa (1977). Morphometric measurements were taken using digital calipers and recorded to the nearest mm. Head pores and dentition were observed and counted under microscope (Leica EZ4). Vertebrae counted with the help of digital X-ray. The specimen was deposited in the museum of Marine Aquarium and Regional Centre, Zoological Survey of India, Digha, West Bengal with accession number MARC/ZSI/FF4586. The abbreviation TL, HL and POM represents total length, head length and preoperculo mandibular pore, respectively. Meristic and morphometric values are presented in Table 1.

## Result

### *Parabathymyrus macrophthalmus* Kamohara, 1938

1938. *Parabathymyrus macrophthalmus* Kamohara, *On the offshore bottom-fishes of Prov. Tosa*: 14.

Type locality: Mimase, Kochi Prefecture, Japan.

## Description

Small, stout fish with elongated (246 mms SL.) scale less body, more compressed on tail region. Head 19.1 % of TL and 1.9 in trunk; body depth at dorsal-fin origin 6.3% of TL and at anus 5.16% of TL. Trunk and tail long; head and trunk cylindrical, but posterior half tapering; trunk 22.7% of TL. Snout short and obtuse, 12.8% of HL; eye larger than snout, reaching up to the rictus, eye 17% of head length; interorbital space wide. Tube like anterior nostril present in front of snout and posterior nostril large, dorsally covered by a flap and located below mid-eye level, just above the upper jaw. Gill opening high, in front of well-developed pectoral-fin; upper end of gill opening at middle of pectoral-fin base. Dorsal-fin origin above the pectoral fin base; predorsal length 19.9% of TL; preanal length 43.4% of TL. Fin rays of dorsal and anal fin unsegmented.

**Table 1.** Detail morphometric characters of *Parabathymyrus macrophthalmus* Kamohara, 1938

Characters (mm)	Ho <i>et al.</i> , 2015	Present study
<b>In total length</b>		
HL	5.8-6.8	
Predorsal	5.0-6.3	5.02
Preanal	2.4-2.7	2.29
Tunk	3.8-4.7	4.39
Tail	1.4-1.7	1.73
<b>In head length</b>		
Snout	5.2-7.8	7.6
Eye	5.0-7.8	5.75
Interorbital space	4.5-8.1	5.2
Pectoral fin	2.3-4.0	2.02
<b>Vertebrae</b>		
Predorsal	9-13	12
Preanal	39-46	39
<b>Total</b>	128-137	130
<b>Lateral line pore</b>		
Prepectoral	5-9	9
Predorsal	6-12	11
Preanal	36-44	40
<b>Total</b>	121-132	125
<b>Head pore</b>		
Supraorbital	4	4
Infraorbital	5	5
POM	9-12	10
Supratemporal	0	0
Frontal	0	0



**Figure 1.** *Parabathymyrus macrophthalmus* Kamohara, 1938.

Mouth large, open obliquely; upper labial flange developed; a deep fold on lower jaw; upper jaw larger than lower jaw; rictus reaches up to posterior one third of orbit; tongue free anteriorly. Pectoral fin narrow, 48.2% of HL. Dorsal and anal fin continuous with caudal fin.

Teeth small and villiform; anterior part of intermaxilla with round patch of 4 rows of teeth; vomerine teeth in small, triangular patch; jaw teeth in 5 rows anteriorly and two rows in posteriorly. Supraorbital pores: 4; infraorbital pores: 5; mandibular pores: 6; preopercular pores: 4 (POM:10). Lateral line pores -prepectoral: 9; predorsal:11; preanal: 40; total:125. Vertebrae: predorsal: 12; preanal: 39; total: 130.

**Colour:** Light pink dorsally; pale ventrally; lateral line pores whitish; dorsal and anal fin margin dark. Small dark dermal flaps on interorbital space.

**Distribution:** Western Pacific: Off Japan, Taiwan, Hainan, Vietnam, Australia (Ho *et al.*, 2015). Present study forms the first report of this genus from Indian Ocean, east coast of India.

## Discussion

The genus *Parabathymyrus* differs from all other genera of the subfamily Bathymyrinae in having posterior nostril dorsally covered by a flap. Further, the genus *Bathymyrus* is distinguished by the presence of exposed and upturned intermaxillary teeth on anterior face of snout and the genus *Ariosoma* having a longer snout, greater than eye diameter. The genus *Paraconger* is characterized in having upper end of gill opening at or above upper edge of pectoral fin base and the genus *Kenyaconger* in having a tubular posterior nostril, opening on the edge of the upper lip behind the labial flange. Although the genus *Chiloconger* has a short snout, less than eye diameter as in case of *Parabathymyrus*, it is distinguished in having a wide flap-like flange on the upper lip and uncovered posterior nostril.

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*Parabathymyrus macrophthalmus* Kamohara mainly differs from other congeners by having fewer total vertebrae (128-137) in comparison to other species: *P. brachyrhynchus* (Fowler) with TV 162-168; *P. fijiensis* Karmovskaya with TV 173; *P. karrerae* Karmovskaya with TV 156-160; *P. oregoni* Smith and Kanazawa with TV 149 – 155; *P. philippinensis* Ho, Smith and Shaowith TV 140 – 141 (Ho *et al.*, 2015). Further, they differ in preanal lateral-line pores (36–44 in *P. macrophthalmus*; 46–54 in *P. brachyrhynchus*; and 40–42 in *P. philippinensis*, 47 in *P. fijiensis*; 45-48 in *P. oregoni*) (Smith & Kanazawa, 1977; Karmovskaya, 1991; Karmovskaya, 2004; Ho *et al.*, 2015). Dorsal-fin origin slightly anterior to pectoral-fin insertion, and vertical-fin edges and bases dark in *P. karrerae*. The morphometric data of the present record of the said species matches well with the earlier description of this species (Table 1).

Among the members of the genus *Parabathymyrus*, *P. karrerae* is known from the western Indian Ocean and *P. oregoni*, from the western Atlantic Ocean. The other two species, *P. fijiensis* and *P. philippinensis*, have restricted distributions in Fiji and the Philippines. While *P. brachyrhynchus* is less widely distributed in the central west Pacific, only *P. macrophthalmus* has a wider distribution in western Pacific, from Japan in the north to Australia in the south and up to Indonesia (Gloerfelt-Tarp & Kailola, 1984).

The present study confirms geographical range extension of *Parabathymyrus macrophthalmus* Kamohara (1938) from the Western Pacific to the Eastern Indian Ocean. The present record of *P. macrophthalmus* Kamohara (1938) from western bank of the Bay of Bengal necessitates detailed studies for conservation of such rare fishes.

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