

## First record of *Muraenichthys gymnopterus* (Ophichthidae: Myrophinae) from east coast of India, Bay of Bengal

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*Muraenichthys gymnopterus* (Bleeker, 1853) is reported for the first time from seven specimens collected from the Shankarpur fishing harbour (West Bengal), Visakhapatnam fishing harbour (Andhra Pradesh), and Chilika lagoon (Odisha). This paper reports *Muraenichthys gymnopterus* for the first time from the east coast of India as well as from Chilika lagoon.

[**Keywords:** Anguilliformes; Chilika lagoon; West Bengal coast; Andhra Pradesh coast]

### Introduction

The snake eel and worm eel fish family Ophichthidae comprises 59 genera. Among these, 45 genera belong to the subfamily Ophichthinae (tail tip hard, pointed and finless; known as snake eels)<sup>1-3</sup> and 14 genera to the subfamily Myrophinae (tail tip flexible and confluent with dorsal and anal fins; known as worm eel)<sup>4-5</sup>. All together, they comprise more than 260 species in the family Ophichthidae, distributed in the tropical and subtropical seas throughout the world<sup>6</sup>.

The genus *Muraenichthys* Bleeker (Ophichthidae: Myrophinae) comprise eight valid species<sup>7</sup> in tropical, temperate and subtropical waters of Indo-Pacific Ocean. *Scolecenchelys* Ogilby, previously treated as a subgenus of *Muraenichthys* Bleeker, has been elevated and distinguished from the latter by Castle & McCosker<sup>8</sup>. Accordingly, *Muraenichthys* Bleeker was distinguished in having single pore between nostrils; posterior nostril opening outside of mouth, a hole along upper lip preceded by a flap; teeth blunt, jaw teeth in bands; and intermaxillary teeth in a broad patch. However, Hibino and Kimura<sup>7</sup> re-defined the genus *Muraenichthys* and observed that tooth shape and arrangement in the genus show variations and three pre-opercular sensory pores present in all species belonging to the genus.

In Indian waters, the genus *Muraenichthys* is represented by two species. *M. gymnopterus*

(Bleeker, 1853) has been recorded from Mumbai<sup>9</sup>, while *M. schultzei* Bleeker, 1857 from Andaman Islands<sup>10</sup> and from Rupan, Okha and Kiew Point (Gujarat coast)<sup>11</sup>. During the collection of fishes from the east coast of India for the study of the Anguilliform eel diversity in Indian waters, seven specimens of eels belonging to the genus *Muraenichthys* were collected and identification confirmed as *M. gymnopterus*. This paper reports the occurrence of *Muraenichthys gymnopterus* (Bleeker, 1853), for the first time from the east coast of India, Bay of Bengal and also from the Chilika lagoon.

### Materials and Methods

Five specimens were collected from Shankarpur fishing harbor of West Bengal (MARC/ZSI/F3031, F3861; TL: 334-422 mm), one specimen from Visakhapatnam fishing harbour, Andhra Pradesh (MARC/ZSI/F4451; TL:249 mm) and one specimen from Chilika lagoon (MARC/ZSI/F4789; TL: 270 mm). The detailed measurements were carried out according to Castle and McCosker<sup>2</sup>. Fresh photographs were taken before the preservation in 10% formalin. Vertebral count was made by digital X-ray. Vertebral count was done following Bohlke<sup>12</sup>. Teeth and head pores were counted using a Leica EZ4 microscope. Specimens were deposited in the Museum of MARC, ZSI, Digha.



Fig. 1 — *Muraenichthys gymnopterus* (Bleeker, 1853)

## Results

*Muraenichthys gymnopterus* (Bleeker, 1853):  
Wormeel

### Characters

Body elongated, sub-cylindrical anteriorly and compressed posteriorly (Fig. 1). Mouth large, inferior, rictus reaches posterior margin of eyes; snout blunt and broad; eyes located anterior to mid-jaw; anterior nostril tubular, and posterior nostril above upper lip and opens outside the mouth with a short flap. Mid-lateral gill opening constricted and pectoral fin absent. Teeth present on intermaxilla, jaws and vomer; teeth in jaws blunt, granular and multiserial; maxillary teeth in two rows, and vomerine teeth in three rows that get reduced to two rows posteriorly. Teeth in lower jaws anteriorly in four rows and continued in two rows posteriorly. Cephalic sensory pores small but conspicuous: 5 infraorbital pores (including a single pore between anterior and posterior nostril), 5 supraorbital pores, 3 preopercular pores, and 6 mandibular pores. MVF: 30–43–130. The details of morphometric measurement in percentage of total length (TL) and head length (HL) are presented in Table 1.

### Colour

In fresh, pale brownish dorsally and whitish ventrally. On preservation, colour fades to pale white.

### Distribution

Reported from China to Indonesia<sup>13</sup>, West coast of India (Arabian Sea): Mumbai<sup>9</sup>, Gujarat<sup>11</sup> and Andaman Islands<sup>10</sup>. The present paper first time reports this species from the east coast of India, Bay of Bengal as well as from Chilika lagoon.

Table 1 — Morphometric measurement of *Muraenichthys gymnopterus* (Bleeker, 1853) in percentage of TL and HL.

	In percentage of TL
Head length:	12.57 – 13.63
Trunk length:	27.48–29.02
Tail length:	56.77–57.48
Preanal length:	38.1–42.96
Predorsal length:	36.07–38.36
Depth at gill opening:	3.5–4.2
Depth at anus:	2.9–3.6
	In percentage of HL
Snout length:	11.92–12.38
Upper Jaw:	29.09–30.45
Eye diameter:	3.85–4.36
Interorbital space:	12.5–13.6
Gill opening:	10.41–11.53

## Discussion

Day<sup>10</sup> first reported the only species of the genus *Muraenichthys*, *M. schultzei* Bleeker, from Andaman Islands, and subsequently Lal Mohan<sup>11</sup> recorded it from Gujarat coast. *Muraenichthys gymnopterus* was reported only once from Mumbai<sup>9</sup> along the Indian coast. However, Froese and Pauly<sup>14</sup> indicated this occurrence report as questionable; and the confirmed records are available only from the Western Pacific (China, Indonesia, Japan, Philippines, Taiwan and Viet Nam). Bal and Mohamed<sup>9</sup> distinguished this species from other eels in having ‘valve-like posterior nostril in the upper lip beneath eye’; however there was no mention of teeth pattern or position of cephalic pores. *M. gymnopterus* can be easily distinguished from other congeners due to the presence of blunt or weakly pointed, granular and multiserial teeth in jaws<sup>15</sup>; while in the others, upper jaw teeth are uniserial to triserial (upper jaw teeth are triserial only in *M. schultzei*, in which lower jaw teeth are biserial). All the species under the genus *Muraenichthys* (*M. gymnotus* Bleeker, *M. laticaudata* Ogilby and *M. xorae* Smith) listed from South Africa are currently included as members of the genus *Scolecenchelys* following recent revision<sup>8,15</sup>. The only species described from Sri Lanka, *Chilorhinus (Muraenichthys) vermiformis* Peters also belongs to this genus. The only *Muraenichthys* species known from Sri Lanka is *M. velinasalis*, described very recently by Hibino & Kimura<sup>7</sup>. However, the other similar species known from the west coast of India is *Skythrenchelys zabra* Castle and McCosker,

characterized in having 'posterior nostril a hole with a small anterior flap, entirely above the margin of upper lip and slightly below in advance of orbit'<sup>8</sup>. Although the authors had no opportunity to examine the specimen, it may be possible that the specimen of Bal and Mohamed<sup>9</sup> represents *Skythrenchelys zabra*, which was originally described from Kerala coast along the west coast of India<sup>8</sup>. If the record of *M. gymnopterus* from Mumbai coast<sup>9</sup> is erroneous, the present report forms the first report of the species from Indian coast amounting to range extension from Western Pacific westward to the east coast of India, Bay of Bengal and Chilika lagoon.

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