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Short Communication

First Record of the Longtooth Hairtail, *Eupleurogrammus glossodon* (Bleeker, 1860) from the South Gujarat Coast, India

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This study reports the first record of the Longtooth hairtail (Scombriformes: Trichiuridae family), *Eupleurogrammus glossodon* (Bleeker,1860) based on a single specimen caught by commercial trawl off South Gujarat, landed at Dholai fish landing center on January 2023. Identification was confirmed based on detailed morphometric and meristic characteristics of *E. glossodon,* including a black spot present just behind the bottom of the lower jaw, two large fang-like teeth without barbs in the upper jaw, a pair of fangs at the tip of the lower jaw. The lower hind margin of the gill cover is convex, the pelvic fin small scale-like; situated below the 11th to 14th dorsal fin soft ray, and dorsal fin III/118-130. The comparison facilitates a better taxonomic understanding of these species. However, several hairtail fishes have been reported from the South Gujarat Coast. The present study confirms the first report of *E. glossodon* from the South Gujarat Coast of India with detailed morphological characteristics.

(***Key words:*** *Eupleurogrammus glossodon, South Gujarat, Hairtail, Trichiuridae, India)*

Hairtail fishes belong to the family Trichiuridae and are distributed in tropical and temperate oceans (Nakamura and Parin, 1993; Udupa *et al.,* 2022). Globally, 10 genera and 43 species of cutlass fishes (hairtails) have been recorded from the family Trichiuridae (Myers *et al.,* 2022). Currently, 13 species of hairtail are known to exist in Indian seas, including *Aphanopus microphthalmos* (Norman, 1939), *Benthodesmus tenuis* (Gunther, 1877), *B. elongatus* (Clarke, 1879), *B. tuckeri* (Parin and Becker, 1970) from the sub-family Aphanopodinae, *Eupleurogrammus glossodon* (Bleeker, 1860), *E. muticus* (Gray, 1831), *Lepidopus caudatus* (Euphrasen, 1788) from the sub-family Lepidopodinae; *Lepturacanthus pantului* (Gupta, 1966), *L. savala* (Cuvier, 1829), *Tentoriceps cristatus* (Klunzinger, 1884), Trichiurusauriga (Klunzinger, 1844), *T. gangeticus* (Gupta, 1966), *T. lepturus* (Linnaeus, 1758) from the sub-family Trichiurinae (Anuraj *et al.,* 2023).

Gray (1831) originally proposed *E. glossodon* as *Trichiurus intermedius*. But later, *Eupleurogrammus* species was redefined by (Tucker, 1956), including a key, and considered *T. intermedius* a synonym of *E. intermedius*. Following that, (Nakamura and Parin,1993) claimed *E. muticus* (Gray, 1831) and *E. glossodon* (Bleeker, 1860) as two valid species. Still, they failed to take into account a wide range of materials and the type specimen of *Eupleurogrammus*. They are distributed in the Indo - West Pacific, including the Persian Gulf, India, Sri Lanka, Malaysia, Singapore, Indonesia, and Thailand (Fricke *et al.,* 2023). In India, the genus *Eupleurogrammus* comprises two species *viz.*, *Eupleurogrammus glossodon* and *E. muticus*. *E. glossodon* was first reported in small quantities in Kakinada Bay and exploited seasonally throughout the entire East coast of India (James,1967; Narasimham,1983). Chitra *et al.* (2022) studied the length-weight relationship and condition factor of *E. glossodon* at South-west and East coast of India. Pathak *et al.* (2022) mentioned on their checklist that *E. glossodon* is present at Dharamtar estuary, Maharashtra. James *et al.* (1986) recorded four species (*T. lepturus, L. savala, E. muticus* and *E. glossodon*) along the Gujarat coast at Veraval and Kandla. Despite its commercial importance, there is no previous report or valid literature on the occurrence of *E. glossodon* on the South Gujarat Coast of India to date. Therefore, the current specimen is the first report from the South Gujarat Coast of India.

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Fig. 1. *E. glossodon (42.5 cm) collected from Dholai fish landing centre, Gujarat*

The study specimen of *Eupleurogrammus glossodon* (Fig.1) was collected from commercial trawl catches at the Dholai fish landing center (20.73 73°N, 72.8951°E) (Fig. 2) on the South Gujarat coast of India in January 2023. Due to initial ambiguity, the specimen was separated and immediately placed in an ice box for future examination. Standard keys (FAO, 1984; Nakamura and Parin, 1993) were used to identify and describe the specimen, including morphometric measurements, meristic counts, and colour descriptions. To ensure accuracy, specimens of *Lepturacanthus savala* were also collected for comparison. Morphometric measurements were taken using a digital Vernier caliper to the nearest 0.1 mm. The identified specimen was preserved in 5% formalin and deposited in the Aquatic Biodiversity Museum of the College of Fisheries Science, Kamdhenu University, Navsari, with accession code (A 17.2.1.1-A.N).

The identified specimen in this study was confirmed to be *E. glossodon* (Bleeker, 1860) belonging to the Order: Scombriformes, Family: Trichiuridae and Subfamily: Lepidopodinae based on a detailed examination of its morphological and meristic characteristics. The morphometric ratios of *E. glossodon* and *L. savala* from South Gujarat are presented in Table 1. Additionally, a comparison of the morphological and meristic features of *E. glossodon* with *E. muticus*, and *L. savala* was described Table 2, and pictorial identification keys were illustrated between *E. glossodon* and *L. savala* to facilitate easy and prompt reporting (Fig. 3). These comparisons help to improve the taxonomic understanding of these species.

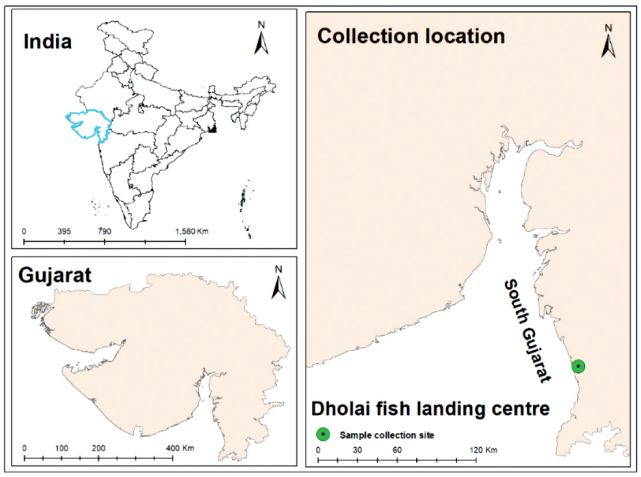


Fig. 2. *Map depicting specimen collection site from South Gujarat, India*

The body of *E. glossodon* is very elongated and strongly compressed, ribbon-like, tapering to a point where the post-anal portion of the body ends abruptly. Mouth large, lower jaw projecting; usually a dermal process at the tip of each jaw. Lower hind margin of gill cover convex; operculum partly overlapping the pectoral-fin base and fin; lacrymal covers the two-thirds length of maxilla and premaxilla. Uniseriate palatine teeth. Pectoral fin long, extending above lateral line. The eye is small, located close to the dorsal profile of the head; its diameter is about seven times in head length. Two large fang-like teeth in the upper jaw, a pair of fangs at the tip of the lower jaw, and a single series of sharp compressed lateral teeth in both jaws. Maxilla is reaching the posterior portion of the orbit. Groove-like structure on interorbital space. A single nostril on each side. The dorsal fin with 110-113 soft rays starts from the posterior edge of the eye. Anus is elongated and relatively large. Pectoral fin (1.50 cm) slightly shorter than snout (1.90 cm), with I spine and 13 soft rays; Anal fin reduced to tiny spinules buried in the epidermis, its origin beneath 32nd or 33rd dorsal fin ray; Scaly pelvic fin, situated below the 14th soft ray of the dorsal fin; no caudal fin. Lateral line gently sloping from the upper angle of operculum to tip of tail.Commonly, the body is steely blue in fresh specimens with metallic reflections, becoming silvery grey after death. The

Table 1. *The morphometrics ratio with Total length (TL) and Head length (HL) of E. glossodon and L. savala from the South Gujarat.*

Characteristics	*E. glossodon* (cm)	*L. savala* (cm)	Ratio (*E. glossodon*)	Ratio (*L. savala*)
Total length	42.5	43.2	-	-
Pre-dorsal length	2.6	4.3	0.06 TL	0.1 TL
Dorsal fin length	29.4	27.1	0.69 TL	0.63 TL
Pre-anal length	12.9	13.9	0.3 TL	0.32 TL
Pre-pectoral length	4.6	5.5	0.11 TL	0.13 TL
Pectoral length	1.5	1.7	0.04 TL	0.04 TL
Head length	4.9	5.9	0.12 TL	0.14 TL
Pre-orbital length	1.9	1.9	0.39 HL	0.32 HL
Eye diameter	0.7	0.8	0.14 HL	0.14 HL
Post-orbital length	2.3	2.7	0.47 HL	0.46 HL
Maximum body depth	3.0	2.7	0.61 HL	0.46 HL
First anal spine length	-	0.5	-	-

Table 2. *Morphological key characters and meristic details of E. glossodon, E. muticus and L. savalafrom India*

Morphological Observation	*E. glossodon*	*E. muticus*	*L. savala*
Ventral view of the head	A black spot is present just behind on the bottom of the lower jaw.	A black spot is absent just behind on the bottom of the lower jaw.	Slit present just behind on the bottom of the lower jaw.
Fang-like teeth	Two large fang-like teeth (without barbs) in the upper jaw, pair of fangs at the tip of the lower jaw, and a single series of sharp compressed lateral teeth in both jaws.	There are 2 or 3 large fang like teeth (without barb) in the upper jaw, no fangs on the tip of the lower jaw, and a single series of sharp compressed lateral teeth in both jaws.	Two large fang-like teeth (with barbs) in the upper jaw, pair of fangs (without barbs) at the tip of the lower jaw, and a single series of sharp compressed lateral teeth in both jaws.
Eye diameter	Eye diameter is about 7 or 8 times in head length and eye is small, located close to the dorsal profile of head.	Eye diameter 6 or 8 times in head length and eye located far from dorsal profile of head.	Eye diameter 7 or 9 times in head length.
Gill cover	Lower hind margin of gill cover convex.	Lower hind margin of gill cover convex.	Lower hind margin of the gill cover concave.
Gill rackers on the first gill arch	Gill raker's spine scent short, conical in shape, few and pointed, their length increases in the middle portion of the gill arch.	Sharply spines scent gill rakers, smaller towards end portion of gill arch.	Gill rakers with a triangular base, rudimentary or minute and spine-like.

Pectoral fin	A fairly noticeable black blotch on the base of the anterior margin of the pectoral fins.	A small pale black spot on the base of the anterior margin of the pectoral fins	Black spot absents on base of anterior margin of pectoral fins.
Pelvic fin	Reduced to small scale like; situated below 11th to 14th dorsal fin soft ray.	Reduced to small scale like; situated below 15th to 18th dorsal fin soft ray.	Absent
Anal fin	Anal fin is reduced to minute spinules buried in the skin, its origin below the 31st to 35th dorsal fin ray.	Anal fin is reduced to minute spinules buried in the skin, its origin below the 41st to 43rd dorsal fin ray.	The anal fin is reduced to minute spinules breaking through the skin, the anterior - most fairly long (1st anal fin spine large), its origin below the 36th to 39th dorsal fin ray.
Caudal fin	Caudal tapering part smaller	Caudal tapering part smaller	The caudal tapering part is very long
Fin formula			
Dorsal fin	III, 118-130	III, 140	III to IV, 110-120
Anal fin			
(Small spinules)	69	70	75
Pectoral	I, 13	I, 12	I, 10

dorsal fin membrane is slightly tinged with black along the spines; the dorsal side of the posterior part of the fin is tinged somewhat with black; dermal flaps at the tip of each jaw are black; a black spot present just behind the dermal flap of the ventral side of the lower jaw, a fairly noticeable blotch on the base of anterior margin of pectoral fins.

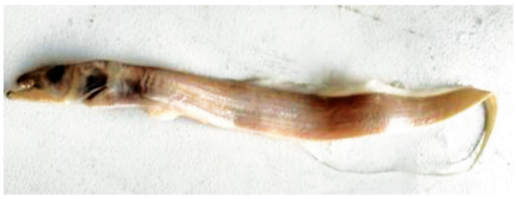
E. glossodon mostly lives in marine water, benthopelagic, coastal waters down to about 80 m depth and often comes near the surface at night. Around the world, *E. glossodon* is found in Indo - West Pacific including Persian Bay, India, Sri Lanka, Malaysia, Singapore, Indonesia and Thailand. In the current study, *E. glossodon* was caught from the sandy and muddy base at a typical profundity of 50-70 m seaward from the South Gujarat Coast.

The present study examined the morphological variations between *E. glossodon* and *L. savala*, and compared them in detail. The results indicated that the two species had distinct differences in body shape, fin length, and other characteristics.

The morphometric varieties between *E. glossodon* and *L. savala* were exceptionally particular; detailed examinations were made between them as presented in Table 1, Fig. 3. The investigation discovered that *E. glossodon* has a reasonably more profound body (0.61 TL, Total length) than *L. savala* (0.46 TL) which has an incredibly extended and unequivocally compacted strip-like body with a caudal tightening part that is extremely lengthy and pointed. The dorsal fin and pre-orbital lengths were additionally longer in the *E. glossodon* (0.69 TL and 0.39 HL, Head length) than in *L. savala* (0.63 TL and 0.32 HL).

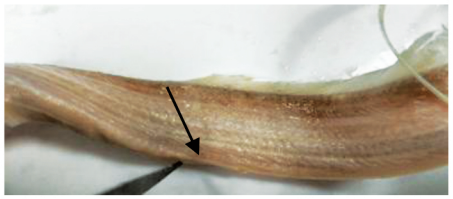
Further correlations were made among *E. glossodon*, *E. muticus* and *L. savala* for point-by-point morphological and meristic attributes. These include the ventral view of the head, fang-like teeth, eye diameter, the lower hind margin of the gill cover, gill rakers, spinescent on the first-gill arch, pectoral fin base black blotch, pelvic fin present or absent and caudal tapering

a. Body extremely elongated and compressed, ribbon-like, caudal tapering part small and pointed

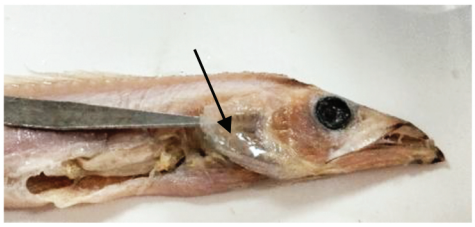


b. Body extremely elongated and strongly compressed, ribbon-like, caudal tapering part very long and pointed

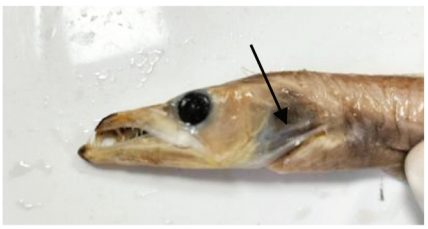
c. Scale-like pelvic fin



d. Pelvic fin absent; first anal spine large



e. Lower hind margin of gill cover convex



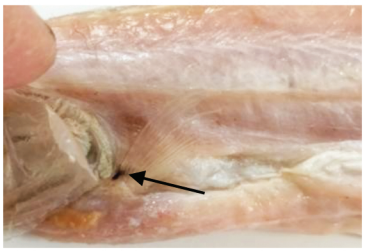
f. Lower hind margin of gill cover concave

g. Black spot present on head (ventral view)

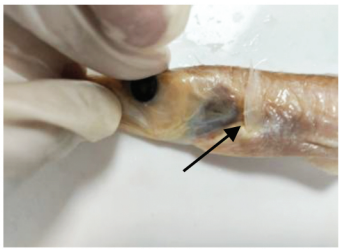
h. Black spot absent on head (ventral view)

i. Gill rakers spine scent, short, conical in shape and few are pointed and small

j. Triangular base, rudimentary or minute and spine-like



k. Black botch on anterior margin of pectoral fin



l. No black botch on anterior margin of pectoral fin

m. No small canine teeth project forward on upper jaw

n. Two small canine (fang like) teeth project forward on upper jaw

Fig. 3. *Pictorial identification of morphological differences (a-n) between E. glossodon and L. savala from South Gujarat, North-West Coast of India*

part small or very long (Table 2, Fig. 3). The meristic formulas for the dorsal fin, anal fin and pectoral fin of *E. glossodon* (D III, 118-130; A 69; P I, 13), *E. muticus* (D III, 118-140; A 70; P I, 12), and *L. savala* (D III to IV, 110-120; A 75; P I, 10) were likewise recorded. The IUCN status showed *E. glossodon* was Not Evaluated (NE) under the criteria of the International Union for Conservation of Nature (IUCN). The current review gives significant ordered data that can be used for better comprehension of these species. The distinct morphological and meristic characteristics shared by *E. glossodon, E. muticus,* and *L. savala* may be helpful for the accurate identification and classification of these species.

In light of the assessment of the specimen gathered from the waters of South Gujarat, this study provides a careful depiction of the morphology of the *E. glossodon*. However, there is a shortage of data on fisheries and biological aspects for specific species. The current study fills the knowledge gap by comparing *E. glossodon* to other closely related species using definite morphometric and meristic correlations, highlighting the need for future research and conservation endeavours to safeguard this species and its habitat on the South Gujarat Coast of India.

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CONFLICTS OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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