



Occurrence of *Oxyurichthys paulae* (Pezold, 1998) from Ratnagiri Coast, Maharashtra, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Oxyurichthys paulae (Jester goby) was originally described from the Western Indian Ocean, known only from Cochin, India. Based on the specimens with a maximum SL of 69 mm, the occurrence of *O. paulae* from the Ratnagiri Coast in Maharashtra, India was reported in this paper. A specimen was collected from a bottom trawler that operated off the Ratnagiri coast of Maharashtra and landed at Mirkarwada fishing harbour in Ratnagiri, Maharashtra, on May 2024, for the first time. The fish was taxonomically identified as *O. paulae* [1], belonging to the family Oxudercidae based on its

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morphometric and meristic characteristics. The result of the current study confirmed the occurrence of this species from the eastern Arabian Sea and provided the first report of this species from Ratnagiri, Maharashtra.

Keywords: Bottom trawling; by-catch; goby; mirkarwada harbour.

1. INTRODUCTION

Fish of the genus *Oxyurichthys*, belonging to Family Gobiidae, are frequently found in tropical and subtropical waters of the Pacific and Indian Oceans. Large and identifiable gobies, *Oxyurichthys* sp. are found across the tropical Indo-West Pacific in several estuaries and coastal marine environments. This genus is not known to exist in the eastern Atlantic or continental Pacific [2]. The majority of *Oxyurichthys* sp. are found only in shallow coastal waters, where silt or other fine sediments make up the bottom substrate [1]. These fishes appear to have been separated from other gobioid genera mainly by possessing a single row of 20-27 teeth in the upper jaw and teeth in inner and outer bands in lower jaw. These fishes have two dorsals with filamentous spines in the first one. Posterior rays of the second dorsal reach post caudal finbase. Based to the description, genus *Oxyurichthys* includes species with two pairs of nasal canal pores, paired anterior interorbital pores, a single row of upper jaw teeth (with a partial row anteriorly in some large specimens), a transverse sensory papillae pattern, no flaps on the shoulder girdle, a lower jaw that curves slightly upwards, and a tongue that is mostly fused to the floor of the mouth with a free tip. Preopercular pores were also observed to be absent [3]. The ichthyofaunal variety of Maharashtra has been documented in a great deal of previous reports, research and documentations; nevertheless, none of them mentioned the presence of *Oxyurichthys paulae*

in the seas off the Ratnagiri coast of Maharashtra. As the occurrence of this fish in trawl catches along Ratnagiri coast was unusual, current study was undertaken. Data was collected from the Mirkarwada fishing harbour along Ratnagiri coast, as these fishes were not reported from this area previously.

2. MATERIALS AND METHODS

Single specimen of Goby (Fig. 1) was collected in May 2024 from Mirkarwada landing center (16°59'48"N 73°16'48"E) at Ratnagiri coast of Maharashtra. The fish was identified in accordance with Pezold [1]. The fish was photographed using Nikon coolpix 4500 camera. The morphological measures were obtained using Comet Vernier Calipers 125mm. Standard measurements were made and noted in (Table 1). The measurements were taken according to the guidelines provided by Hubbs and Lagler [4] for standard length, caudal-peduncle length, interorbital width (least fleshy breadth) and body depth. According to Pezold [5], head length, orbit length and snout length were measured. Since this fish was reported for the first time along the Ratnagiri coast, it was considered valuable to include the specimen's morphometric data and description. The specimen was taken to the laboratory for morphometric measurements and related aspects and preserved for further studies in the of Department of Fisheries Biology, College of Fisheries, Ratnagiri, Maharashtra, India.



Fig. 1. Specimen of *O. paulae* collected from Mirkarwada landing center, Ratnagiri, Maharashtra, India

Table 1. Morphometric data of *O. paulae* collected from Mirkarwada Fisheries harbour, Ratnagiri

Morphometric measurements recorded	Present study
Measurements (mm)	
Standard length	69
Head length	16
Snout length	4.5
Orbit length	5
Interorbital width	0.66
Caudal peduncle length	6
Body depth	10
Counts in Numbers	
Pectoral fin rays	21
Pelvic fin rays	19
Dorsal fin	18
Anal fin	14

3. RESULTS AND DISCUSSION

Based on the morphometric characteristics, the fish was identified as *Oxyurichthys paulae* [1]. The head moderate was (22% SL), mouth oblique, jaws reaching to beneath mid-orbit, single row of teeth in upper jaw and there were 2 rows in lower jaw with 25 large conical teeth either side of premaxillary symphysis. The fish showed light orange ocular tentacle. Free neuromasts were seen on cheek and no preopercular lateralis canal was seen. Sensory papillae pattern was noticed on the head and snout regions. Coloration of the fresh specimen showed yellowish back-ground colour on the trunk except the anal fin which appeared white. There were four soft grey broad vertical bands on side of body and soft grey rounded blotch on caudal-fin base, skin around posterior edge of eye fleshy orange. Iris pale golden orange, blackish dorsally and ventrally, snout with faint gold streak from eye to lateral midpoint of jaw (refer Fig. 2), silvery opalescent mark on upper and lower pectoral-fin base, almost smudge like, lower half of caudal fin dusker than upper half, gold highlights on cornea, ocular tentacle light orange, pelvic fins darker than other fins. Additionally, the measurements were compared with those reported by other authors (Table 2).

First dorsal fin with filamentous spines, first five spines nearly equal in height, third or fourth spine longest, increasing slightly in size through third or fourth spine with first and sixth spines shortest. Pectoral fin oval, central rays longest, extending to vertical between anal-fin origin and second anal-fin element. Pelvic fins rounded to oval, reaching anus in females, reaching anal-fin origin in males. Caudal fin elongated, pointed.

This species is very similar in appearance to *O. uronema* and *O. tentacularis* as reported by Pezold and Larson [3]. It differs from *O. uronema* by first dorsal-fin spine lengths as *O. paulae* did not show elongated spines, while in *O. uronema*, the second to fifth spines were elongated. This species shares a tentacle on the eye with *O. ophthalmonema*, *O. cornutus*, *O. tentacularis* and *O. uronema*. *O. paulae* differed from others in colour pattern, too as it had only bars on the side of the body, with no alternating spots and bars. The pelvic-fin length was also slightly longer in *O. paulae*. *O. tentacularis* has oblong blotches on the side of the trunk instead of vertical bars. It is also distinguished from *O. paulae* and *O. uronema* in having a membranous crest and absent in *O. tentacularis* [3].

Table 2. Comparison of first dorsal fin spine length of *O. paulae* (in mm)

Particular	Present study (2024)	Pezold [1]
Place of report	Ratnagiri, India	Cochin, India
First spine	11	14-15
Second spine	12	16-18
Third spine	14	16-20
Fourth spine	14	17-19
Fifth spine	12	16-18
Sixth spine	8	8-11



Fig. 2. Shape of snout of *O. paulae*

Prior records of the Gobiidae fishes were made by Hubbs and Lagler [4], Mead and Bohlek [6], Pezold [2] and Prince et al. [7]. These fishes were recorded as data deficient by IUCN [8]. Known only from the type specimens, it was earlier reported from trawl catches from Bombay by Day in 1885 and Cochin by Pezold and Larson [3].

4. CONCLUSION

The ichthyofaunal diversity of coastal waters of the South - west region of Maharashtra had recorded the occurrence of *O. paulae* for the first time. The specimen's morphometric and meristic characteristics closely corresponded with Pezold's [1] descriptions. Hence there is further need to monitor and study these gobids along the Maharashtra coast.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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