

## *Parapsilorhynchus odishaensis*, a new cyprinid fish (Teleostei: Cyprinidae) from Odisha, India

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### Abstract

A new cyprinid fish, *Parapsilorhynchus odishaensis*, is described from Odisha, India. It is distinguished from its congeners by a combination of the following characters: poorly developed callous pad behind lower lip, which is not sharply delimited posteriorly; many prominent horny tubercles on the snout; deep head (depth at occiput 57.2–75.0% HL); stout and deep body (depth at dorsal fin origin 19.6–25.0 % SL); narrow mouth (23.5–28.6% HL); eye visible in ventral view of head; rounded lower lip; 3–4 simple pectoral fin rays; 33–35 lateral line scales.

**Keywords:** *Parapsilorhynchus*, New species, Odisha

### Introduction

The genus *Parapsilorhynchus* was created by Hora (1921) to accommodate *Psilorhynchus tentaculatus* Annandale as type species and *Parapsilorhynchus discophorus* was described based on a single specimen. Robert (1989) considered *Parapsilorhynchus* as synonym of *Garra* Hamilton. However, Yazdani & Singh (1991), Talwar & Jhingran (1991), Singh (1994) and Jayaram (1999) considered it as a valid genus. Fishes of the genus *Parapsilorhynchus* are characterized by having two blunt rostral barbels on the snout, cyprinid type swim bladder, upper lip concealed by a fringed and papillated rostral fold, prominent lower lip with a rudimentary disc or callous pad behind it, gill openings extended to the ventral surface, small mouth and 2 or more simple pectoral fin rays. The genus *Parapsilorhynchus* is known to contain four species namely *P. tentaculatus* (Annandale), *P. discophorus* Hora, *P. prateri* Hora & Mishra and *P. elongatus* Singh. They are endemic to India and are found in a few hill streams of the Western Ghats and the Satpura mountain ranges (Singh 1994), except *P. tentaculatus* which was also reported

from Eastern Ghats (Rema Devi & Menon, 1995; Rema Devi & Indra, 2003). While collecting the fishes from the streams of Rayagada and Ganjam districts of Odisha, ten specimens of an undescribed species of *Parapsilorhynchus* were collected. The species is herein described as *P. odishaensis* sp. nov.

### Materials and Methods

Measurements and counts were made following Jayaram (1999). Measurements were made on the left side of specimens whenever possible. Fins rays were counted under a binocular dissecting microscope (Leica EZ4) using transmitted light. Body proportions were expressed in percent of standard length and head length. The specimens were preserved in 70% spirit and deposited in the Zoological Survey of India, Kolkata. Abbreviations used are: HL, Head length; Max, Maximum; Min, Minimum; *n*, number of specimens examined; SD, Standard deviation; SL, Standard length; ZSI, Zoological Survey of India; WRCP, Western Ghat Regional Centre, ZSI, Pune.

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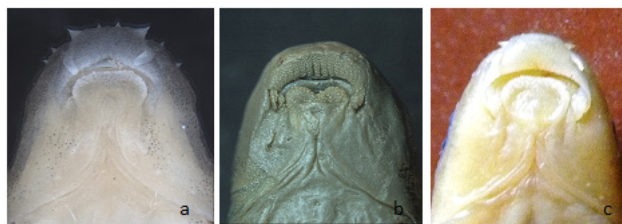
### *Parapsilorhynchus odishaensis* sp. nov.

**Material examined:** Holotype: 35.0 mm SL, India, Odisha, Rayagada district, Mahendra Tanaya River, Tiniamba village, 19°09'26"N; 83°55'26"E, 18.iv.2012, coll. B.K. Baliarsingh (ZSI FF 4625). Paratypes: 4 ex., 31.0–36.0 mm SL, 20.v.2012, same information as in Holotype (ZSI FF 4626); 5 ex., 26.0–32.0 mm SL, India, Odisha, Ganjam district, Baghua nala, a tributary of Rushikulya River, 25.v.2012, Coll. B.K. Baliarsingh (ZSI FF 4627).

**Diagnosis:** *Parapsilorhynchus odishaensis* can be distinguished from its congeners by a following combination of characters: poorly developed callous pad behind lower lip, which is not sharply delimited posteriorly; many prominent horny tubercles on the snout; deep head (depth at occiput 57.2–75.0% HL); stout and deep body (depth at dorsal fin origin 19.6–25.0 % SL); narrow mouth (23.5–28.6% HL); eye visible from ventral side of head; rounded lower lip; 3–4 simple pectoral fin rays and 33–35 lateral line scales.



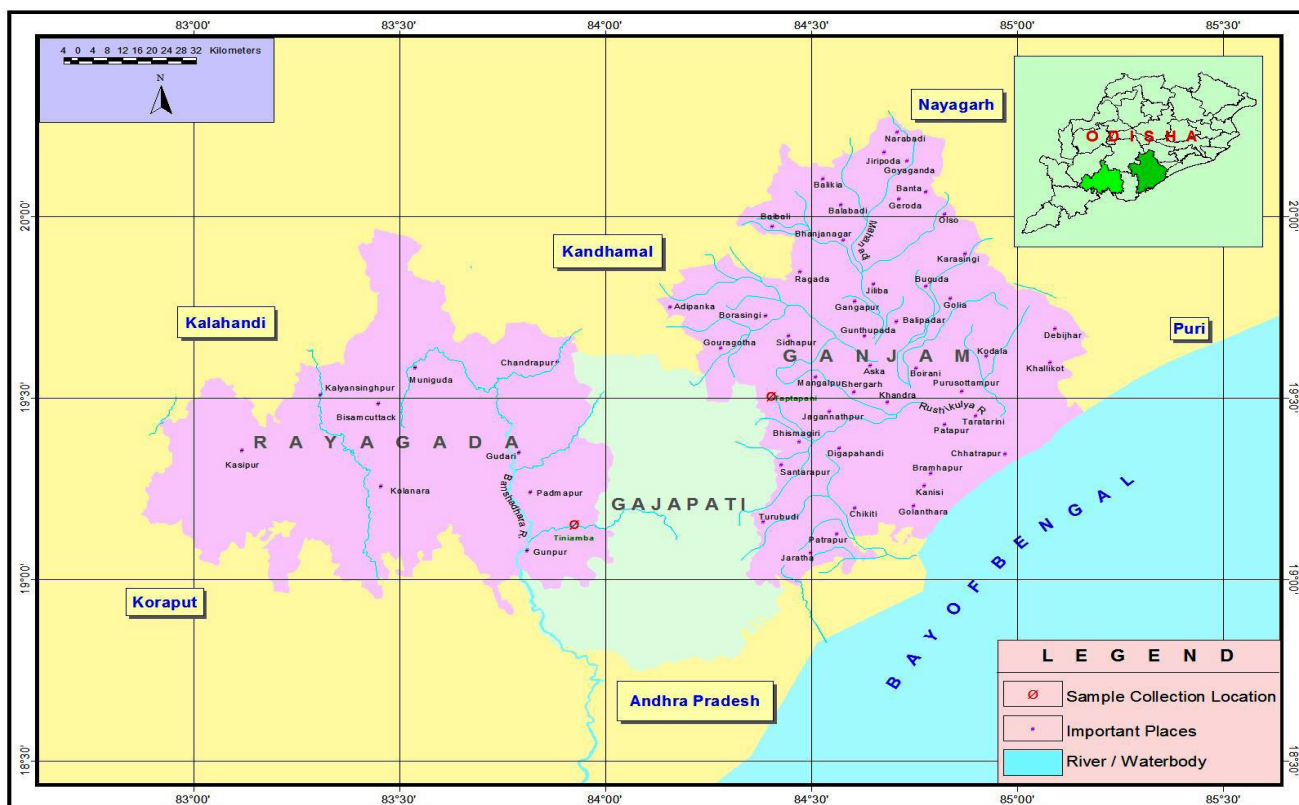
**Figure 1.** *Parapsilorhynchus odishaensis* sp. nov. (ZSI FF 4625), holotype, 35.0 mm SL.



**Figure 2.** Ventral view of head: a. *Parapsilorhynchus odishaensis* (ZSI FF 4626), paratype; b. *P. tentaculatus* (ZSI F 9695/1); c. *P. discophorus* (ZSI-WRC P/3360).

**Table 1.** Morphometric data of *Parapsilorhynchus odishaensis* sp. nov.

	Holotype ZSI FF4625	Range		Mean	SD
		Min.	Max.		
Standard Length (mm)	35.0	26.0	36.0	31.6	3.3
<b>In % Standard length</b>					
Head length	22.8	22.8	26.9	24.2	1.3
Body depth	22.8	19.6	25.0	22.1	1.4
Caudal peduncle length	15.7	12.9	16.6	14.4	1.4
Caudal peduncle height	14.3	12.1	15.3	13.7	0.9
Predorsal length	57.1	51.5	57.1	54.4	1.6
Prepectoral length	21.4	17.7	21.1	19.5	1.1
Prepelvic length	55.7	51.5	56.9	54.8	1.7
Preanal length	80.0	75.7	86.1	79.8	2.8
Preanus length	34.2	72.7	77.7	71.2	13.0
Dorsal fin height	17.1	16.6	19.3	17.7	1.0
Pectoral fin length	25.7	23.2	25.8	24.6	1.0
Pelvic fin length	18.6	18.0	21.1	19.2	1.0
Anal fin height	14.2	13.8	17.8	15.5	1.4
Caudal fin length	28.7	21.4	28.7	24.6	2.1
<b>In % Head length</b>					
Head height at occiput	75.0	57.2	75.0	66.9	4.8
Head wide	87.5	71.4	94.1	81.4	7.1
Eye diameter	18.7	18.7	28.6	25.1	3.6
Snout length	37.5	35.3	42.8	38.8	2.8
Inter orbital space	56.2	53.3	64.3	59.3	3.8
Mouth width	25.0	23.5	28.6	26.4	2.1
Caudal peduncle length	68.7	50.0	70.6	60.0	7.3



**Figure 3.** Map showing type locality of *Parapsilorhynchus odishaensis* sp. nov.

**Description:** Morphometric data are given on Table 1. Body small, elongated, somewhat cylindrical, ventral surface flattened. Head depressed with a prominent snout. Snout slightly rounded with many horny tubercles of which two are larger, more prominent, located at anterior sides of snout. Mouth small, inferior, crescent-shaped. Upper lip concealed by a prominent rostral fold, fringed and papillated. A groove present around the corners of the mouth, continuous anteriorly round the outer margin of the rostral fold. Lower lip finely papillated, rounded with a poorly developed callous pad behind it. Callous pad not sharply delimited posteriorly (Figure 2a). Eyes moderate size, visible from ventral surface, its diameter smaller than inter orbital space. Barbels one rostral pair, shorter than eye diameter. Dorsal fin inserted slightly in advance of pelvic fin with 3 simple and 7 branched rays, shorter than head length, its origin slightly nearer caudal fin base than tip of snout. Pectoral fin with 3 to 4 simple and 9–11 branched rays, equal or slightly longer than head, not reaching pelvic fin origin. Pelvic fin with one simple and 6–7 branched rays, shorter than pectoral, not reaching anal opening. Anal fin base short, with 1–2

simple and 5 branch rays, not reaching base of caudal fin. Caudal fin forked with rounded lobes. Lateral line complete with 33–35 scales. Scales in lateral transverse rows above lateral line 5 and below lateral line from pelvic fin origin 4. Predorsal scales 17–20, scales arranged irregularly. The air-bladder well developed and distinctly divided into two parts.

**Colour:** Body dark grey with white ventral surface. A black horizontal bar or spot may be present on the caudal peduncle. Dorsal fin with a distinct black oblique bar near its free margin. Pectoral, pelvic and anal fins whitish. Caudal fin dusky with a distinct vertical black bar at its base.

**Etymology:** Named after the Odisha state from where the type specimens were collected.

**Distribution:** Presently known from the tributaries of Mahendra Tanaya River in Rayagada district and Rushikulya River in Ganjam district of Odisha, India (Figure 3).

## Discussion

*Parapsilorhynchus odishaensis* sp. nov. is similar to *P. discophorus* in having same number of lateral line scales and lateral transverse scales, distinctly visible eyes from ventral side and similar body colouration. However, the new species can be distinguished from *P. discophorus* in having more simple pectoral fin rays (3–4 vs. 2), a deeper head (depth at occiput 57.2–75.0% HL vs. 40.9–49.1), a narrower mouth (23.5–28.6% HL vs. 32.6–40.0), pectoral fin equal or longer than head length (vs. shorter than head length), presence (vs. absence) of many prominent horny tubercles on the snout and poorly (vs. prominently) developed callous pad, which is not sharply (vs. prominently) delimited posteriorly (Figure 2). Hora (1925) synonymised *P. discophorus* under *P. tentaculatus*. However, Yazdani & Babu Rao (1977) considered *P. discophorus* as a valid species and remarked that the two species differ from each other distinctly in the number of lateral line scales, number of simple pectoral fins rays and body proportions. *P. odishaensis* can be distinguished from *P. tentaculatus* in having a deeper body (19.6–25.0 % SL vs. 16.9–18.9), a deeper head (depth at occiput 57.2–75.0 % SL vs. 47.2–56.3), fewer lateral line scales (33–35 vs 36–39), eye visible (vs. not visible) from ventral side of head, a rounded (vs. bilobed) lower lip (Figure 2), presence of a vertical black bar (vs. oval spot) on caudal fin base and presence (vs. absence) of many prominent tubercles on the snout. Further, the new species differs from *P. elongatus* in having a stout (vs. elongate) and deeper body (19.6–25.0% of SL vs. 17.2), a rounded (vs.

bilobed) lower lip, fewer lateral line scales (33–35 vs 36) and presence (vs. absence) of prominent tubercles on the snout. *P. odishaensis* differs from *P. prateri* in having fewer lateral line scales (31–35 vs. 43–47) and poorly (vs. prominently) developed callous pad behind the lower lip.

*Comparative materials: Parapsilorhynchus tentaculatus*: syntype, 1 ex., 36.5 mm SL, India, small hill–streamlets at Khandalla, Poona district, Maharashtra (ZSI F 9695/1); 3 ex., 29.5–32.0 mm SL, India, Chikhalgan, Phansadwas, Raigad district, Maharashtra (ZSI–WRCP/3198); additional data from Annandale (1919). *P. prateri*: syntype, 1 ex., 36 mm SL, India, Deolali, Maharashtra (ZSI F 12498/1). *P. discophorus*: 4 ex., 26.4–32.0 mm SL, India, Vasishti river, Pophli, Ratnagiri district, Maharashtra (ZSI F 12498/1); additional data from Hora (1921) and Yazdani and Babu Rao (1977). *P. elongatus*: data from Singh (1994).

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