

A NEW SPECIES OF *RASBORA* BLEEKER (CYPRINIFORMES: CYPRINIDAE) FROM MANIPUR, INDIA¹

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A new fish species of the genus *Rasbora* Bleeker is described from the Lokchao and Chatrickong rivers (Chindwin drainage) of Manipur, India. It is distinguished from *Rasbora rasbora* (Hamilton-Buchanan), the only other known species from the region, by the lateral line incomplete vs. complete, lateral transverse scale 4Y:Z/1/2 vs. 4Y:z/III, greater head length of 29.3(27.5-31.1) vs. 24.5(22.1-26.9)% of SL, greater gape width of 8.1 (7.1-9.1) vs. 6.8(6.0-7.6)% of SL and gill rakers numbering 4-5+ 11 vs. 3+9-10.

Key words: New fish species, *Rasbora*, Manipur

INTRODUCTION

Freshwater fishes of the genus *Rasbora* Bleeker belong to subfamily Danioninae (=Rasborinae). Certain rasboras are much prized aquarium fishes (Brittan 1954). Four species of the genus are known from India, namely *R. caverii* (Jerdon), *R. daniconius* (Hamilton-Buchanan), *R. labiosa* Mukerji and *R. rasbora* (Hamilton-Buchanan). Hora (1921) reported *R. rasbora* (Hamilton-Buchanan) from Dhaneshwori stream near Dimapur, Nagaland, which forms part of the Brahmaputra drainage system. Further, Hora and Mukerji (1935) reported the species to be widely distributed. Vishwanath *et al.* (1998) listed *R. rasbora* from Chatrickong river, Ukhrul district, Manipur. A fish collection from the Lokchao river (a tributary of the Yu River of Myanmar which, in turn, flows into the Chindwin river) in Chandel district of Manipur and from Chatrickong river (a tributary of Chindwin river) in Ukhrul district, included 14 specimens of *Rasbora* which did not fit into any of the hitherto described species. The species is described here as a new species.

MATERIAL AND METHODS

Measurements and counts followed Brittan (1954). Measurements were made with dial callipers to the nearest 0.1 mm and expressed in percentages of standard length (SL) and head length (HL). Type specimens are deposited in the Manipur University Museum of Fishes (MUMF).

Rasbora ornatus sp. novo (Fig. 1)

Holotype: MUMF 3032, 56.0 mm SL, Lokchao R., Moreh, Manipur, a tributary of the Yu River, (Chindwin drainage), 24.iii. 1999, W. Vishwanath Singh and party.

Paratypes: MUMF: 1210-1212, 3 specimens, 44.2-57.1 mm SL, Chatrickong R., 6.vi.1996, K. Selim; MUMF 3033/ 10, 10 specimens, 35.1-77.6 mm SL, same data as holotype.

Diagnosis: A medium-sized *Rasbora* with an incomplete lateral line. Lateral transverse scales 4½/1/2. Lips simple, first dorsal fin ray without a fleshy sheath and the lateral stripe on body running from tip of snout to the end of median caudal rays.

DESCRIPTION

D. ii, 7; P. i, 12-13; V. i, 8; A. iii, 5; C. 9+8. Body elongate, slightly compressed, its depth 28.0 (21.1-29.3)% SL. Mouth small, cleft oblique, lip simple, lower jaw slightly prominent with an upward projecting knob at symphysis fitting into a corresponding depression in upper jaw. Barbels absent, pharyngeal teeth in three rows 2,4,5-5,4,2. Gill rakers soft and low, 4-5+ II. Branchiostegal rays 3. Lateral line with a downward curvature anteriorly, runs along below centre of body and terminates at a line vertical to anterior origin, or sometimes at posterior extremity of dorsal fin. Lateral line incomplete, 26-28 scales in longitudinal series with 11-20 scales perforated. Lateral transverse scales from dorsal fin origin to the lateral line 4Y2 and from lateral line to origin of pelvic 2. Dorsal fin inserted a little behind origin of pelvic fin, nearer to

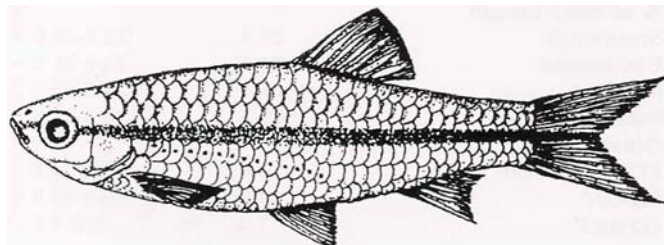


Fig. 1: Lateral view of *Rasbora ornatus* sp. novo

NEW DESCRIPTIONS

caudal fin base than to tip of snout. Pelvic fin not reaching base of anal fin. Head moderate, eyes large, visible from ventral side. Inter-orbital space wide, slightly arched, 35.7(29.8-39.0)% HL. Inter-narial space 24.6(20.8-27.6)% HL. Mouth gape wide. Dorsal-hypural distance when carried forward, falling at anterior rim of eye. Sexual dimorphism unknown.

Colour: Body creamish, abdomen pale, dorsal part of head brownish. A deep dark blue longitudinal stripe extending from tip of snout to end of median caudal rays. Scales on lateral and dorsal sides of body with a dark edge formed by a row of spots on each scale. All fins dusky in appearance.

Etymology: The species is named after its beautiful colouration.

Distribution: INDIA: Manipur, Lokchao R., Moreh, Chatrirkong R.

Remarks: *Rasbora ornatus* sp. novo belongs to the Daniconius-complex as it has 14 circumpeduncular scales, 2 scales between lateral line and pelvic fin origin, the typical characters of the complex. As in some forms of this complex, this species shows reduced number of lateral line pores and prominent dark lateral stripe, which runs from the tip of the snout to the median caudal rays.

Rasbora ornatus sp. novo differs from *R. rasbora* in having an incomplete lateral line vs. complete and lateral transverse scale of 4½/1/2 vs. 4½/1/1. It has longer head length, 29.3(27.5-31.1) vs. 24.5(22.1-26.9)% SL, wider gape

Table 1: Comparative morphometry of *Rasbora ornatus* sp. novo and *R. rasbora*

| | <i>Rasbora ornatus</i> sp. novo | | | <i>Rasbora rasbora</i> (H.B.) | | |
|---------------------------|---------------------------------|----------------------|------|-------------------------------|-------------|-------|
| | Holotype | Paratypes (N=13) | | ZSI F 2107/2, 1087 | | |
| | MUMF 3032 | MUMF 3033/10, 1210/3 | | | | |
| | | Range | Mean | S.D. | Range | Mean |
| Standard length (mm) | 56.0 | 35.1-77.6 | | | 65.5-124.1 | |
| % of Standard length | | | | | | |
| Body depth | 29.3 | 21.1-29.3 | 28.0 | 2.1 | 26.0-30.5 | 28.3 |
| Caudal length | 27.5 | 26.3-32.4 | 30.2 | 1.7 | 18.9-28.9 | 23.9 |
| Head length | 27.5 | 27.5-31.1 | 29.3 | 0.9 | 22.1-26.9 | 24.5 |
| Head depth (occiput) | 17.7 | 16.8-19.5 | 18.4 | 0.6 | 14.8-17.6 | 16.2 |
| Head depth (eye) | 15.0 | 13.2-15.2 | 14.8 | 0.7 | 11.6-13.9 | 12.8 |
| Head width (nares) | 10.5 | 8.9-10.9 | 10.2 | 0.6 | 7.8-8.7 | 8.3 |
| Max. head width | 14.3 | 13.2-15.7 | 14.7 | 0.7 | 12.5-12.6 | 12.6 |
| Mouth Gape width | 9.1 | 7.1-9.1 | 8.1 | 0.5 | 6.0-7.6 | 6.8 |
| Body width (dorsal) | 15.5 | 12.4-15.5 | 14.7 | 1.0 | 10.1-12.7 | 11.4 |
| Body width (anal) | 10.4 | 7.4-10.7 | 10.0 | 1.1 | 8.6-8.6 | 8.6 |
| Length of caudal peduncle | 17.5 | 13.8-18.2 | 15.9 | 1.5 | 17.6-20.2 | 18.9 |
| Height of caudal peduncle | 13.0 | 11.9-14.8 | 13.8 | 0.5 | 13.3-13.4 | 13.4 |
| Pre-dorsal length | 52.5 | 52.1-55.6 | 53.3 | 1.0 | 52.7-53.9 | 53.1 |
| Post-dorsal length | 49.1 | 44.2-49.1 | 46.8 | 1.5 | 45.7-46.6 | 46.2 |
| Pre-pelvic length | 51.9 | 47.6-52.6 | 51.2 | 1.1 | 48.6-49.0 | 48.8 |
| Pre-anal length | 74.6 | 70.2-75.7 | 73.8 | 1.7 | 67.5-73.6 | 70.6 |
| Pre-anus length | 73.0 | 69.1-74.1 | 72.0 | 1.6 | 66.1-71.6 | 68.9 |
| Dorsal fin base length | 11.4 | 10.6-13.1 | 12.4 | 0.8 | 10.4-11.5 | 11.0 |
| Dorsal fin height | 20.5 | 20.2-25.4 | 22.3 | 1.5 | 17.1-22.4 | 19.8 |
| Pectoral fin length | 18.8 | 18.8-22.8 | 21.4 | 1.2 | 21.0-21.7 | 21.4 |
| Pelvic fin length | 16.6 | 16.6-19.8 | 18.5 | 0.8 | 14.6-19.5 | 17.1 |
| Anal fin base length | 7.0 | 7.0-12.1 | 9.7 | 1.3 | 9.6-10.2 | 9.9 |
| Anal fin height | 17.0 | 16.0-20.2 | 18.7 | 1.3 | 8.9-17.1 | 13.0 |
| % of Head Length | | | | | | |
| Snout length | 29.9 | 23.2-29.9 | 26.4 | 1.8 | 26.7-27.0 | 26.9 |
| Eye diameter | 24.0 | 22.9-31.3 | 25.9 | 2.3 | 27.8-30.7 | 29.3 |
| Inter-orbital width | 37.0 | 29.8-39.0 | 35.7 | 2.5 | 25.6-37.5 | 31.6 |
| Inter-narial width | 25.3 | 20.8-27.6 | 24.6 | 1.8 | 13.9-21.0 | 17.5 |
| Other ratios | | | | | | |
| ED*/Snout length | 80.4 | 80.4-134.8 | 94.9 | 15.1 | 104.3-113.5 | 108.9 |
| EDI/OW* | 64.9 | 60.9-93.9 | 73.1 | 10.3 | 74.2-120.0 | 97.1 |
| LCPI/HCP* | 1.3 | 0.9-1.5 | 1.2 | 0.1 | 1.5-1.9 | 1.7 |

* ED: Eye diameter; IOW: Inter-orbital width, LCP: Length of caudal peduncle; HCP: Height of caudal peduncle

Table 2: Morphometry and distribution of *Rasbora* species closely allied to *R. ornatus* sp. novo

| Characters | <i>Rasbora ornatus</i> sp. nov | <i>Rasbora rasbora</i> (Ham.-Buch.) | <i>Rasbora daniconius</i> (Ham.-Buch.) | <i>Rasbora labiosa</i> (Muke-i) | |
|---|--|--|---|-------------------------------------|-----------------------------------|
| | | F2107/2, 1087 | Brittan (1954) | | |
| 1 Lateral line pores | 11-20 | 28-31 | 28-31 | 29-32 | 23-31 |
| 2 Lateral line scales | 26-28 | 28-31 | 28-31 | 32-35 | 33-35 |
| 3 Lateral transverse scales | 4%/112 | 4Y:J1/1 | 4%/1/1 % | 4%/1/2% | 4%/1/2% |
| 4 Dark coloured lateral longitudinal band | Snout tip to end of median caudal rays (tip of caudal black) | Opercle to caudal fin base | Opercle to caudal fin base | Snout tip to caudal base | Opercle to caudal fin base |
| 5 Circumpeduncular scales | 14 | 13 | 12 | 14 13- | 14 14- |
| 6 Pre-dorsal scales | 12-13 | 13 | 12 | 15 | 15 |
| 7 Pre-pelvic scales | 13 | 15 | | | |
| 8 Pre-anal scales | 20 | 24 | | | |
| 9 Gill rakers | 4-5+11 | 3+9-10 | | 2-3+9-12 | |
| 10 Distribution | India: Chindwin drainage in Manipur | India: Gangetic provinces, Coromandel coast. Bangladesh, Myanmar, Thailand | India: Gangetic valley, Assam, Peninsular region. Myanmar, Siam | Widely distributed in Indian region | India: Deolali, Maharashtra state |

width of 8.1(7.1-9.1) vs. 6.8(6.0-7.6)% SL. Gill rakers 4-5+ 11 vs. 3+9-10 (Roberts 1989). Circumpeduncular scale rows 14 vs. 12-13. The lateral stripe in *R. ornatus* sp. nov. runs from tip of snout to median caudal rays, whereas it extends from opercle to base of caudal fin in *R. rasbora*. Three specimens of *Rasbora* (MUMF 1210-1212) from Chatrickong R., Ukhrul district, Manipur, identified as *R. rasbora* by Vishwanath *et al.* (1998) have been found to have incomplete lateral lines and therefore belong to the new species.

R. ornatus is distinguished from the description given by Brittan (1954) of *R. labiosa* Mukerji of the Daniconius complex in having 11-20 vs. 23-31 lateral line pores, 26-28 vs. 33-35 in the lateral line series, lateral transverse scales $4\frac{1}{2}/1\frac{1}{2}$ vs. $4\frac{1}{2}/1\frac{1}{2}\frac{1}{2}$; simple lips vs. greatly hypertrophied lower lip, and fleshy sheath on the first dorsal fin ray absent vs. present. Jayaram (1999) considers the latter two characters as important distinguishing features of *R. labiosa* Mukerji from other species.

It does not belong to the Pauciperforata complex, which show incomplete lateral line because of its larger size, 35.1-77.6 vs. less than 55 mm SL, 14 vs. 12 circumpeduncular scale rows.

The specimen of *Rasbora rasbora* (F 2516/2) in Zoological Survey of India, Kolkata, on close examination has 14 anal fin rays, much more than the usual numbers in other species of the genus (5-6). Its dorsal fin is inserted much backward, i.e., nearer the caudal fin base (predorsal length is 66.4% SL and post-dorsal length is 32.7% SL). Brittan (1954) places fishes with such characters in other genera of Danioninae.

Comparative materials.

1. *Rasbora rasbora* (Hamilton-Buchanan), F. 2107/2 ZSI, Dharikati, 31,12 miles R. Bharati near Lokra (Balipara F. track, Assam). Dr. S.L. Hora; no date.

2. *R. rasbora*, 1087 ZSI, no collection data.

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