

**A NEW FISH SPECIES OF THE GENUS *GARRA* HAMILTON-BUCHANAN
(CYPRINIFORMES: CYPRINIDAE) FROM MANIPUR, INDIA¹**

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A new cyprinid fish of the genus *Garra* is described from the Khuga river of Churachandpur district of Manipur state, India. The species differs from *Garra lissorhynchus* (McClelland) in having a smaller number of: scales in lateral line (30-31 vs. 33-34), lateral transverse scale count (3/1/3 vs. 4/1/3), pre-dorsal scales (11-12 vs. 14), gill rakers (6 vs. 12). The fish also differs from *Garra rupecula* (McClelland) in having a smaller number of: gill rakers (6 vs. 8), scales on lateral line (30-31 vs. 34) and also in the presence of scales on the back. *G. rupecula* is characterised by the absence of scales on the pre-dorsal region. The new species also differs from both the species under comparison in its colour banding pattern on the caudal fin.

Key words: *Garra*, new species, *Lissorhynchus* complex, Manipur

INTRODUCTION

Menon (1964) reviewed the genus *Garra* Hamilton-Buchanan, and recognised 37 species. The important character of the genus is the possession of suckorial disc on the ventral surface of the head, just behind the mouth. Most of the species inhabit rapid running waters and adapt to the substratum, by means of the horizontally placed paired fins, especially the pectorals (Menon 1964). This genus is widely distributed in the hill streams of Manipur, India.

Hora (1921) described two new species, *G. abhoyai* and *G. naganensis* from the State and also recorded *G. nasuta* (McClelland). Menon (1964) while revising the genus *Garra*, considered *G. abhoyai* Hora to be a synonym of *G. rupecula* (McClelland). Vishwanath *et al.*, (1987) recorded a Burmese form *G. gravelyi* (Annandale) and an Assamese form *G. kempi* Hora from the State. Vishwanath and Sarojnalini (1988) described *G. manipurensis* from the Manipur river. Vishwanath (1993) reported only three species of *Garra* in the *Lissorhynchus* complex, namely *G. lissorhynchus*, *G. rupecula*, and *G. manipurensis*, while reviewing the genus from Manipur. Kosygin and Vishwanath (1998) and Vishwanath and Kosygin (2000) described *G. compressus* and *G. elongata* respectively from the state.

In the collection of freshwater fishes of the Khuga river in Manipur (Chindwin drainage), II specimens of *Garra* which resemble species of *Lissorhynchus* complex were collected. These do not fit into the description of any known species of the genus. The fish is described here as a new species.

MATERIAL AND METHODS

Measurements and counts followed Menon (1964). Measurements were made with dial callipers to the nearest 0.1 mm and expressed in percentage of standard length (SL) or head length (HL). The type specimens of the new species are deposited in the Manipur University Museum of Fishes, MUMF.

Garra paralissorhynchus sp. nov. (Fig. 1)

Holotype: Female. MUMF 5054, 67.3 mm SL; Khugariver, Churachandpur district, Manipur, India; K. Shanta Devi. 25.vii.2000.

Paratypes: Sex not determined. MUMF-5041, 57.3 mm SL; MUMF-5053 & 5055, 2 exs. 58.6, 58.2 mm SL, 3.v.2000; MUMF-5074, 63.4 mm SL, 2.xi.2000; MUMF-5081 & 5094, 2 exs. 59.7, 60 mm SL, 10.iv.2000; MUMF-5103-5106, 4 exs., 53.7-63.4 mm SL, 21.viii.2002. Same collection data as Holotype.

Sexual dimorphism: None.

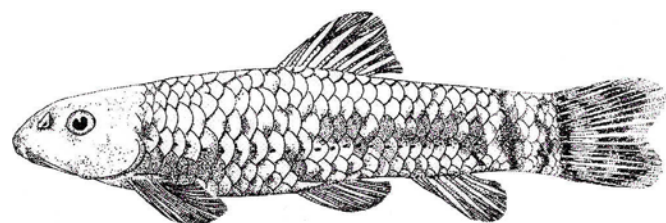


Fig. 1: *Garra paralissorhynchus* sp. nov.

Table 2: Comparison of *Garra paralissorhynchus* with related species [Readings are: Mean (range)]

	<i>Garra</i> sp. nov.	<i>Garra lissorhynchus</i>		<i>Garra rupecula</i>	
		Menon 1964	Iyei R. (Barak drainage) (MUMF collection)	Menon 1964	Singda R. (Chindwin drainage) (MUMF collection)
	N=11	N=33	N=12	N=64	N=5
SL(mm)	53.7-67.3	31.5-73.5			
In % of SL					
Body depth	24.1 (19.3-25.0)	19.7(15.2-22.5)	21.0(19.7-22.7)	17.6(16.2-24.0)	18.8(18.2-19.4)
In% of HL					
Head height	68.9(64.8-71.9)	57.5(51.8-63.3)	67.1(63.2-73.1)	59.9(50.0-69.9)	63.0(60.6-69.1)
Caudal peduncle length	56.4(46.9-62.6)	74.1(57.8-83.3)	85.6(82.2-91.2)	76.9(53.5-95.2)	78.2(71.9-86.0)
Caud- ped. Ped. width in its length	112.3(103.1-131.4)	73.5(63.7-84.7)	72.2(69.2-74.3)	72.5(57.8-89.3)	76.1 (68.5-80.0)
Counts					
D	ii,6	ii,6	ii,6½	ii,6-7	ii,6
A	ii,4	i,5	i,4	i,5	i,4
L.I.	30-31	32-35	33-34	32-34	34
L. tr.	3/1/3	3-4/1/2-3	4/1/3	3/1/3	4/1/3
Predorsal scales	11-12	11-14	14	o	o
Gill rakers	6	7-9	12	7-9	8
Scales on mid-clorsal streak Colour of fins	Present Dorsal with transverse black bar and caudal with W-shaped band with vertical line and dots anterior to W-shaped band	Present Dorsal with transverse black bar and caudal with W-shaped broad band	Present Dorsal with transverse black bar and caudal with W-shaped broad band	Absent Dorsal with transverse black bar and caudal with W-shaped broad band	Absent Dorsal with transverse black bar and caudal with W-shaped broad band

NEW DESCRIPTIONS

Table 1: Morphological characters of *Garra paralissorhynchus* sp. nov.

	Holotype	Paratypes
	MUMF 5054	MUMF 5041,5053,5055,5074 5081,5094,5103-5106
	N= 1	N = 10
Standard	67.3	53.7-63.4
In % of SL		Mean (Range) ± S.D.
Depth of body	25.7	24.1 (19.3-25.0) ± 2.2
Length of Head	23.2	24.1(20.0-26.8) ± 2.0
Predorsal length	51.1	51.4 (43.9-55.3) ± 3.6
In % of HL		
Head width	81.4	82.1 (75.8-87.7) ± 3.4
Head height	70.5	68.9 (64.8-71.9) ± 2.6
Snout length	51.9	49.3 (46.8-57.7) ± 1.8
Eye diameter	17.9	20.4 (17.2-22.7) ± 1.9
Interorbital space	51.9	50.4 (43.6-55.3) ± 3.5
Pectoral fin length	93.6	94.1 (88.2-101.7) ± 4.8
Disc length	34.6	36.4 (33.3-41.9) ± 4.0
Caudal peduncle length	62.8	56.4 (46.9-62.6) ± 5.6
Disc width in head width	60.6	56.8 (54.2-59.8) ± 1.9
Disc length in disc width	70.1	72.7 (67.1-77.1) ± 3.1
Caudal peduncle height in its length	105.1	112.3 (103.1-131.4) ± 9.1
Space of V-A origins in V origin-caudal fin	61.1	58.8 (56.5-60.4) ± 1.4
Space of Vent-A origins in V-A origins	29.7	28.8 (25.0-30.8) ± 2.5

Diagnosis: A species of *Garra* with the following combination of characters: no transverse groove and proboscis on the snout, scales absent on chest and belly, a dark streak near the free margin of the dorsal fin, a thin and light black W-shaped band on the posterior half of the caudal fin and one or two dark vertical lines anterior to the W-shaped band, lateral line scales 30-31; predorsal scales 11-12; lateral transverse scales 3/1/3, depth of body 19.3-25.0% of SL; caudal peduncle width 103.1-131.4% of its length, gill rakers 6.

Description: D ii, 6; Pi, 11; V i, 7; A ii, 4; C. 9+8; L.1. 3031; L.tr. 3/1/3. Pre-dorsal scales 11-12. Body short, rounded; head moderately compressed, snout semicircular, blunt without transverse groove and proboscis, a few tubercles present on snout and cheeks, inter-orbital region slightly convex. Barbels two pairs, one rostral and one maxillary, both

shorter than the diameter of eyes. Oral disc well-developed, scales absent on chest and belly. Fins yellowish-white. Dorsal fin with a dark streak near the free margin, a thin and light black W-shaped band on the posterior half of the caudal fin with one or two vertical lines of black spots anterior to the W-shaped band, caudal fin slightly emarginate, gill rakers 6. Proportional measurements are given in Table 1.

Colour in formalin: Body dark grey, yellowish-white ventrally. Scales on sides of the body orange. A dark spot at the upper angle of the gill opening. Dorsal fin with a broad transverse black bar near the free margin. Caudal fin with a thin and light W-shaped dark band with lines of black spots anterior to it. Fins yellowish-white.

Etymology: The species is named so for its similarity to *Garra lissorhynchus* (McClelland) in having a W-shaped dark band on its caudal fin.

Distribution: India: Khuga river, Churachandpur district, Manipur (Chindwin basin).

Discussion: *Garra paralissorhynchus* sp. nov. is similar to *Garra lissorhynchus* in having a snout without transverse groove and proboscis; naked chest and belly; a black bar near the free margin of dorsal fin and a caudal fin with a thin, light W-shaped dark band at the posterior end. However, it can be easily distinguished from the latter in having smaller number of: scales on lateral line (30-31 vs. 33-34), and predorsal region (11-12 vs. 14), lateral transverse scale count (3/1/3 vs. 4/1/3), and smaller number of gill rakers (6 vs. 12). The new species has a deeper body (24.1 vs. 21.0% of SL), deeper head (68.9 vs. 67.1% of HL; and wider caudal peduncle (112.3 vs. 72.2% of its length). It also differs from *Garra rupecula* in having: scales on the back (*rupecula* does not have scales in the mid-dorsal streak in the predorsal region), smaller number of: gill rakers (6 vs. 8), scales on lateral line (30-31 vs. 32-34). The new species also differs from both the species under comparison in its colour banding pattern on the body and caudal fin, as it has a vertical dark band anterior to the W-shaped bands. Thus, the new species is a member of the *lissorhynchus* complex, and may have evolved from a common ancestor. The comparison between the three species is given in Table 2.

REFERENCES

HORA. S.L. (1921): Indian cyprinoid fishes belonging to the genus *Garra* with notes on related species from other countries. *Rec Ind. Mus.* 22: 633-687.

MENON, A.G.K. (1964): Monograph of the cyprinid fishes of the genus *Garra* Hamilton. *Mem. Ind. Mus.* 14(4): 173-260.

VISHWANATH, W. (1993): On a collection of fishes of the genus *Garra* Hamilton from Manipur, India with description of a new species. *J. Freshwater Biol.* 5(1): 59-68.

VISHWANATH, W. & SAROINALINI. CH. (1988): A new cyprinid fish. *Garra manipurensis*. from Manipur, India. *Japanese J. Ichthyol.* 35(2): 124-126.

L. KOSYGIN & W. VISHWANATH (1998): A new cyprinid fish *Garra cOllpressus* from Manipur, India, India. *J. Freshwater Biol.* 10(1-2): 45-48.

VISHWANATH, W. & L. KOSYGIN (2000): *Garra elongata*. a new species of the subfamily Garrinae from Manipur, India (Cyprinidae. Cypriniformes). *J. Bombay Nat. Hist. Soc.* 97(3): 408-414.

VISHWANATH, w., H.T. SINGH. O. SHASHIKUMAR & M. GONCHANDRA (1987): First records of freshwater fishes, *Garra graveleyi* and *G kempfi* in Manipur. *Indian J. Fish* 34(3): 362-364.