

# GARRA ELONGATA, A NEW SPECIES OF THE SUBFAMILY GARRINAE FROM MANIPUR, INDIA (CYPRINIDAE, CYPRINIFORMES)<sup>1</sup>

WAIKHOM VISHWANATH AND LAISHRAM KOSYGIN<sup>2</sup>

(With one plate and one text-figure)

**Key words:** *Garra elongata*, new species, Manipur, *gotyla* complex

*Garra elongata* sp. nov. is described from a hill stream of the Chindwin basin in Manipur, India. It is characterised by 39-40 lateral line scales, 13 predorsal scales, 2½ scale rows between lateral line and pelvic fin origin, a transverse groove on snout tip, a weakly developed proboscis, and position of vent situated midway between pelvic and anal fin origins. Further, it is characterised by a transverse black bar on the dorsal fin and a longitudinal black streak on median rays of caudal fin. *G. elongata* is considered as a member of *gotyla* complex.

## INTRODUCTION

Menon (1964) reviewed the genus *Garra* Hamilton 1822, and recognised 37 species. It is chiefly characterised by a suction disc on the ventral surface of the head, just behind the mouth. Most species of this genus inhabit rapid running waters. They adapt to the swift current by clinging to the substratum with their suction disc and horizontally placed paired fins (Menon, 1964). They are widely distributed in Asia and Africa (Talwar and Jhingran, 1991).

In Manipur, fishes of the genus *Garra* are distributed both in the Brahmaputra and Chindwin basins. Hora (1921) described *G. naganensis* from Senapati stream, Brahmaputra basin, Manipur. Vishwanath and Sarojnalini (1988) described *G. manipurensis* from the Manipur river (Chindwin basin). Vishwanath (1993) reported the occurrence of nine species of *Garra* in Manipur, namely, *G. gotyla gotyla* (Gray 1832), *G. nasuta* (McClelland 1838), *G. rupecula* (McClelland 1839), *G. lissorhynchus* (McClelland 1842), *G. gravelyi* (Annandale 1919), *G. kempfi* Hora 1921, *G. naganensis* Hora 1921, *G. manipurensis* Vishwanath & Sarojnalini 1988, and *G. litanensis* sp. nov. During our studies on the fish diversity of Ukhrul district,

Manipur (Chindwin basin), four undescribed specimens of *Garra* were collected in November, 1997. They are described herein as new species.

## MATERIAL AND METHODS

Measurements and counts followed Menon (1964). Measurements were made with a dial calliper 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 elongata* sp. nov.

(Plate 1, Fig. 1)

**Holotype:** Regn no. MUMF 2311, 94.9 mm SL; Locality: INDIA: Manipur: Chindwin basin: hill stream near Tolloi, 25° 12' N, 94° 20' E, c. 2,016 m above msl; Coll. L. Kosygin, 12.xi.1997.

**Paratypes:** Regn no. MUMF 2308-2310, 3 ex., 77.9-85.5 mm SL; collection data same as holotype.

**Material examined:** *Garra gravelyi*: MUMF 64/7, 1 ex.; India: Manipur, Lokchao river; W. Viswanath, 21.vi.1984. – MUMF 2273, 1 ex.; India: Manipur, Wanze stream at Khamsom, 94° 32' E, 25° 12' N; L. Kosygin, 7.vii.1997. *G. gotyla gotyla*: MUMF 66/1-2, 2 ex.; India: Manipur, Lokchao river; 12.viii.1984.

<sup>1</sup>Accepted February, 1998

<sup>2</sup>Department of Life Sciences, Manipur University, Canchipur 795 003, Manipur, India.



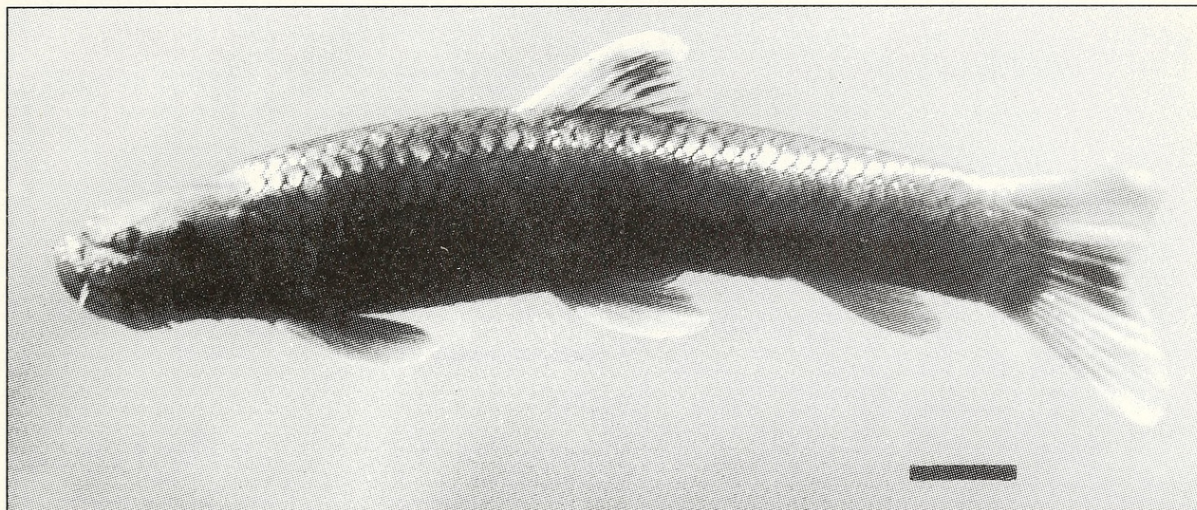


Fig. 1: Lateral view of *Garra elongata* sp. nov. (MUMF 2311 - holotype, 94.9 mm SL). Scale bar = 10 mm.

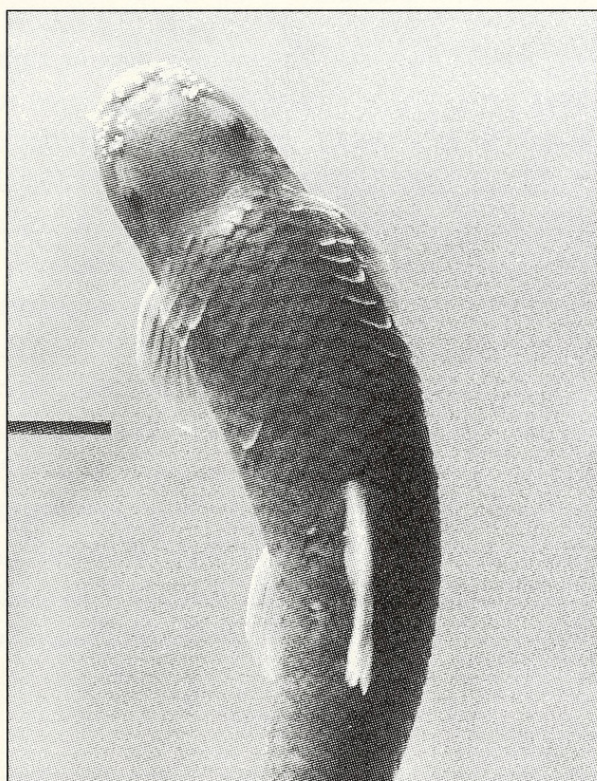


Fig. 2: Dorsal view of *G. elongata* (holotype).  
Scale bar = 10 mm.

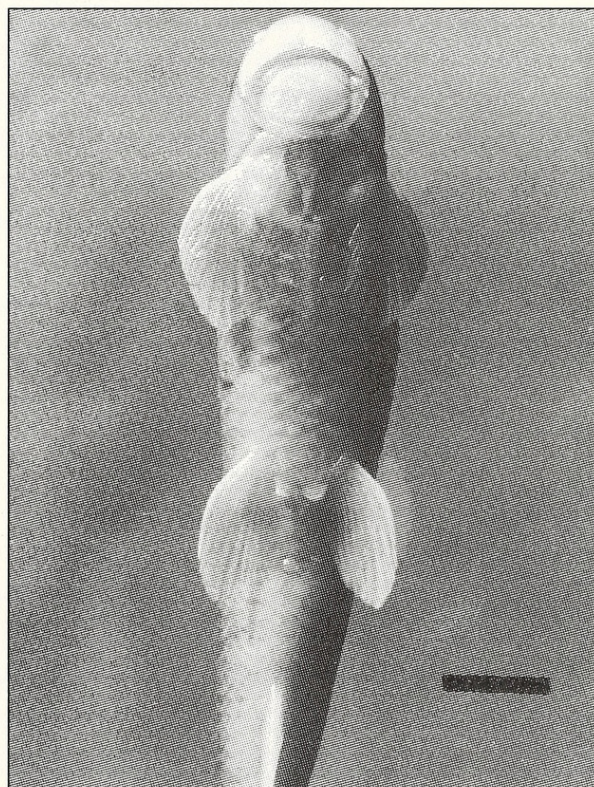


Fig. 3: Ventral view of *G. elongata* (MUMF 2308 paratype, 80.0 mm SL). Scale bar = 10 mm.







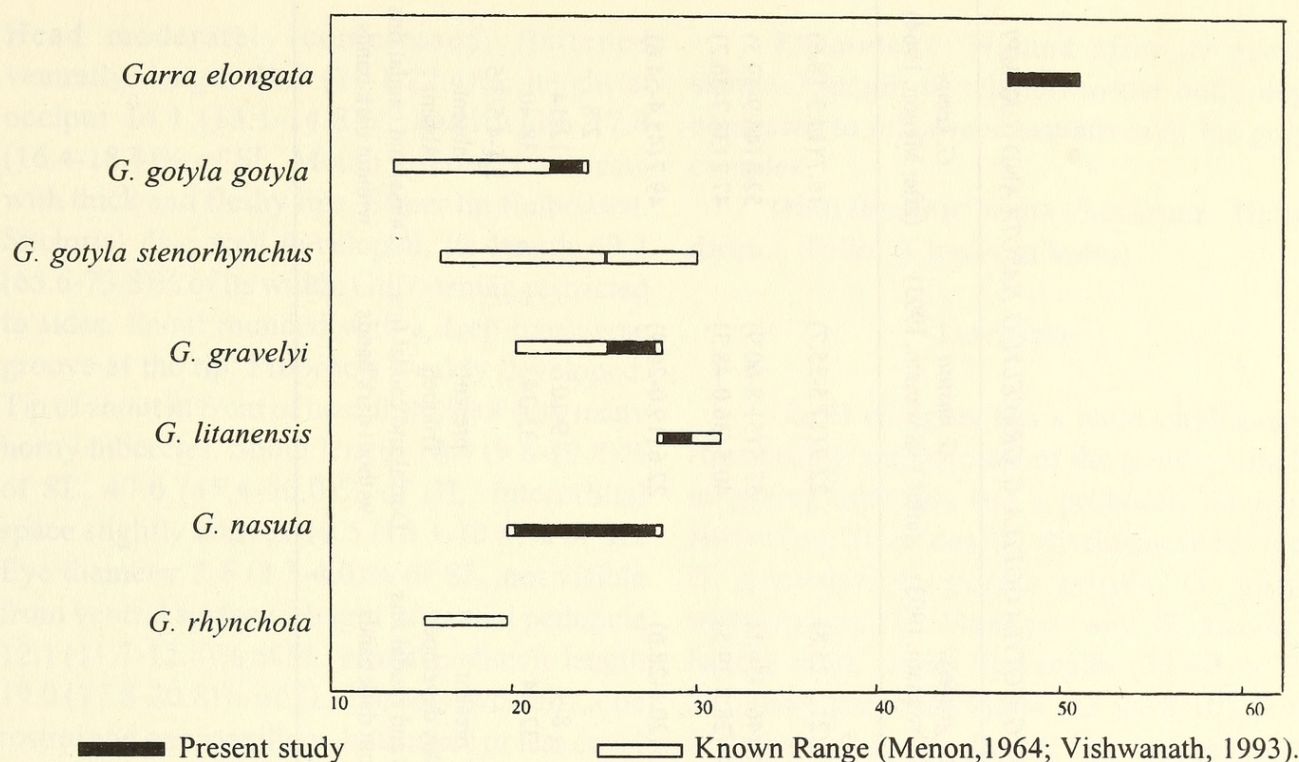


Fig. 4: Comparison of percentage distance between vent and anal fin origins, in the distance between pelvic and anal fin origins of the *Garra gotyla* species complex.

*Garra gotyla stenorhynchus*: ZSI (Zoological Survey of India, Calcutta) F 1748, 1 ex.; India: Moyar river at Nilgiris; 15.iv.1955. *G. kempfi*: MUMF 2251-2254, 4 ex.; India: Manipur, Wanze stream at Khamsom; L. Kosygin, 30.iv.1995. *G. litanensis*: MUMF 68/1, 1 ex., type; India: Manipur, Litan stream at Litan; W. Viswanath, 16.iii.1986. MUMF 69/1-3, 3 ex.; paratypes; India: Manipur, Litan stream at Litan; W. Viswanath, 12.ii.1988. *G. nasuta*: MUMF 2098, 1 ex.; India: Manipur, Chalou river at Jessami 94° 35' E, 25° 38' N, L. Kosygin 2.vi.1994, MUMF 2270-2272 3 ex. India, Manipur, Wanze stream at Khamsom; L. Kosygin, 7.vii.1997.

#### DIAGNOSIS

A species of *Garra*, distinguished from its congeners by the following combination of characters: 39-40 lateral line scales, 13 predorsal scales, 2½ scale rows between lateral line and

pelvic fin origin, transverse groove on snout, weakly developed proboscis, no scales on chest, 7 branched dorsal fin rays, 11-12 branched pectoral fin rays and position of vent situated midway between pelvic and anal fin origins. It is also distinct in having a dorsal fin with a transverse black bar, and caudal fin with a longitudinal black band in the middle (Table 1).

#### DESCRIPTION

General body shape and appearance are shown in Plate 1 Fig. 1. Dorsal fin rays I, 7 (last ray branched at base); pectoral fin rays I, 11-12; pelvic fin rays I, 8; anal fin rays I, 5; caudal fin rays 10+9 (17 branched); lateral line scales 39-40; lateral transverse scales 3½ between dorsal fin origin and lateral line and 2½ between lateral line and pelvic fin origin, predorsal scales 13.

The measurements in mean and ranges (in parentheses) are given here. Body elongate and subcylindrical, depth 18.5 (17.4-19.2)% of SL.



TABLE 1  
COMPARISON OF MORPHOLOGICAL CHARACTERS OF *GARRA ELONGATA* SP. NOV., *G. GOTYLA GOTYLA*, *G. GRAVELYI*, *G. NASUTA* AND *G. KEMPI*

	<i>G. elongata</i>	<i>G. gotyla gotyla</i> (after Menon, 1964)	<i>G. gravelyi</i> (after Vishwanath, 1993)	<i>G. nasuta</i> (after Vishwanath, 1993)	<i>G. kempi</i> (after Menon, 1964)
In % of SL					
Body depth	18.5 (17.4-19.2)	23.9 (20.0-27.0)	23.7 (21.1-25.8)	22.9 (17.5-25.7)	16.7 (14.3-18.6)
In % of HL					
Snout length	47.6 (45.4-50.0)	54.6 (47.6-62.1)	51.8 (46.1-56.1)	57.5 (51.8-60.9)	52.6 (46.9-59.5)
Disc length	42.9 (42.0-44.1)	40.8 (34.8-45.0)	34.8 (28.2-39.5)	40.5 (36.0-48.3)	47.2 (38.7-56.2)
In % of distance from ventral to anal					
Distance from vent to anal fin origin	48.8 (47.5-51.2)	19.4 (13.9-24.4)	24.5 (20.8-28.6)	22.6 (19.0-26.9)	49.7 (45.4-54.6)
Counts					
Dorsal fin rays	2/7	3/7-8	-	-	2/8
Predorsal scales	13	9-10	8-9	9-10	12-14
Lateral line scales	39-40	32-35	32-34	33-34	38-40
Lateral transverse scales	3.5/2.5	4.5/3.5	-	-	3.5-4.5/3.5
Scales on chest	absent	present	present	present	absent
Probosis	Weakly developed	Single lobed	Weakly developed	Trilobed	Absent
Colour of fins	Dorsal fin with transverse black bar and caudal fin with longitudinal black band	Dorsal and caudal fin without dark bands	Dorsal and caudal fins without dark bands	Dorsal and caudal fins without dark bands	Dorsal and caudal fins without dark bands



Head moderately compressed, flattened ventrally, length 21.8 (21.1-22.4)%, height at occiput 14.1 (13.1-14.8)%, head width 17.4 (16.4-18.4)% of SL. Mouth inferior, transverse with thick and fleshy lips. Upper lip fimbriated. Suctorial disc well developed, its length 69.2 (65.6-73.8)% of its width. Gill opening restricted to sides. Snout rounded with a deep transverse groove at the tip. Proboscis weakly developed. Tip of snout in front of nostril studded with many horny tubercles. Snout length 10.4 (9.8-10.8)% of SL, 47.6 (45.4-50.0)% of HL. Interorbital space slightly convex 10.5 (10.3-10.6)% of SL. Eye diameter 3.6 (3.3-4.0)% of SL, not visible from ventral surface. Height of caudal peduncle 12.1 (11.7-12.8)% of SL, caudal peduncle length 19.0 (17.8-20.8)% of SL. Barbels two pairs, one rostral and one maxillary, both more or less equal to eye diameter. Scales of moderate size, absent on chest, poorly developed on belly.

Dorsal fin base length 47.1 (46.7-47.7)%, height 18.8 (18.0-19.2)% of SL. Predorsal length 47.1 (46.7-47.7)% of SL. Pectoral fin almost equals dorsal fin height, its length 18.3 (18.0-19.2)% of SL, 84.3 (81.4-86.0)% of HL. Pelvic fin shorter than pectoral fin, not reaching vent, its length 16.6 (16.0-17.1)% of SL. Caudal fin forked, its length 19.9 (19.0-20.5)% of SL. Vent in middle of pelvic and anal fin origins, distance from vent to anal fin origin 48.8 (47.5-51.2)% of the distance from pelvic to anal fin origins.

**Coloration:** Dark greenish-grey; dorsally black; ventral surface pale white. A broad, dark grey longitudinal stripe from gill opening to caudal fin base. Scales on lateral sides of body orange. Dorsal fin with a broad, transverse black bar near the free margin. Caudal fin with a black, longitudinal mark on median rays (black colour appears on 8th-12th branched rays). All the fins orange.

**Preserved specimens:** Body dark grey, darker on the back. Black area on dorsal and caudal fins as in live specimens.

**Etymology:** Named after its greater standard length in relation to the body depth compared to other representatives of the *gotyla* complex.

**Distribution:** INDIA: Manipur, Ukhrul district, Tolloi (Chindwin basin)

#### DISCUSSION

*Garra elongata* has a close phylogenetic relationship with species of the *gotyla* complex in having tubercles and a proboscis on snout. However, it is easily distinguished from *G. gravellyi*, *G. gotyla gotyla*, *G. gotyla stenorhynchus*, *G. litanensis* and *G. nasuta* in having more lateral line scales (39-40 vs. 32-35), more predorsal scales (13 vs. 8-10), fewer scale rows between lateral line and pelvic fin origin (2.5 vs. 3.5), absence of scales on chest and more anteriorly placed vent. Further, the new species is distinct in having (i) a distinct transverse black bar on dorsal fin and (ii) absence of black spots at the base of its branched rays.

The new species is also similar to species of *yunnanensis* complex in respect of the number of lateral line scales, number of predorsal scales and more anteriorly placed vent. Further, it is nearer to *G. kempi* in having the vent in the middle of pelvic and anal fin origins. However, it is easily distinguished from *G. kempi* by a deep transverse groove on its snout, weakly developed tuberculated proboscis on the snout, distinct black bar on the dorsal fin, longitudinal black band on the median rays of caudal fin and fewer scale rows between lateral line and pelvic fin origin (2.5 vs 3.5).

Menon (1964) considered gradual shifting of vent forward and development of proboscis on snout as interesting adaptations of *Garra* to rapid running waters, which are of great taxonomic significance within the genus. Vishwanath (1993) pointed out that in



*lissorhynchus* and *yunnanensis* complexes, which do not possess a proboscis, the vent has shifted far forward of the anal fin, whereas in the *gotyla* complex, where a proboscis is present, the vent is not far forward. Thus, the new species appears to be more adapted to rapid running waters than any other member of the species

complexes in the genus.

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