

ON A NEW SPECIES OF THE GENUS *GARRA* HAMILTON (PISCES : CYPRINIDAE)
FROM NAMDAPHA WILD LIFE SANCTUARY, ARUNACHAL PRADESH, INDIA.

A. K. DATTA AND R. P. BARMAN
Zoological Survey of India, Calcutta

ABSTRACT

A new species of fish *Garra tirapensis* belonging to the genus *Garra* Hamilton and the family Cyprinidae from Namdapha river at Namdapha wild life sanctuary, Tirap district, Arunachal Pradesh, India, is described. Range of variations of the characters are compared and discussed with the related species.

INTRODUCTION

During the course of taxonomic studies on the fishes of Namdapha wildlife Sanctuary, Tirap district, Arunachal Pradesh (formerly NEFA), we came across eleven examples of fish belonging to the genus *Garra* measuring 55 to 135 mm in standard length collected by Dr. S. Biswas, Zoologist and Shri S. Saha, Asstt. Zoologist, Zoological Survey of India, Calcutta. These examples represent hitherto unknown species. Systematic characters of this new species is described in the text. This new species is named *Garra tirapensis*.

***Garra tirapensis* sp. nov.**
(Figs. 1 & 2)

Holotype : *Material* : 105 mm in standard length. Reg. No. Z.S.I. FF 1700

Locality : Hornbill Camp., 30 km NE of Miao, Namdapha wildlife Sanctuary, Tirap district, Arunachal Pradesh, India, *coll.* Dr. S. Biswas & S. Saha, Date : 11. 4. 81.

Paratypes : 10 examples, 55 to 135 mm in standard length. Reg. No. Z.S.I. FF. 1701, Locality, collector and date as in holotype.

DIAGNOSIS

Head length 3.93-4.41 and body depth 3.89-5.27 in standard length. Eye diameter 3.50-5.33 in head length. Two pairs of barbels, without dark spot at the base of dorsal fin ray, lateral line scales 34-35. Vent located in advance of base of anal fin. Origin of dorsal fin nearer to tip of snout than to base of caudal fin.

DESCRIPTION

D. 10 P. 13 V. 8 A. 7 LL 34-35

Upper lip coalesce with the skin of rostrum. Paired fins horizontal, lower lip modified into a sucking disc. Mouth inferior.

Head length 4.24 (3.93-4.41) at the distant point on the opercular membrane, body depth 4.90 (3.89-5.27) at the origin of pelvic fin and predorsal distance 2.28 (2.12-2.49) in the standard length. Width of head 1.48 (1.32-1.71) at its widest point and depth of head 1.65 (1.41-1.86) at the occiput in head length. Eye situated in the middle of head. Diameter of eye 4.34 (3.50-5.33) and interorbital width 2.08 (1.85-

2.33) in head length. Snout paraboloid without tubercles. Snout length 2.21 (2.07-2.27) in head length. Interorbital width convex. Length of the disc 2.23 (1.75-2.56) in head length, width of disc 2.28 (1.67-3.00) in

pelvic to anal fin. Length of caudal peduncle 1.78 (1.67-1.97) in head length, width 1.66 (1.50-1.88) its length.

Lateral line scales 34-35, transverse scales 7; scales between lateral line and base of

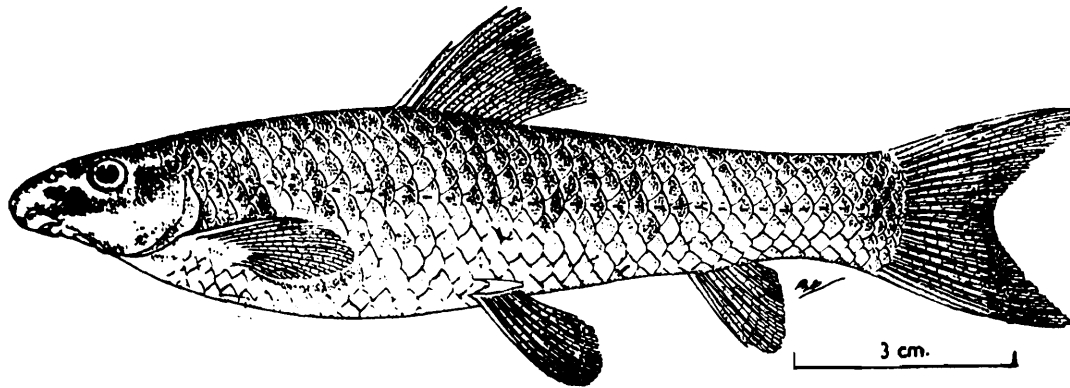


Fig. 1. Holotype of *Garra tirapensis* Datta & Barman

width of head. Barbels 2 pairs, anterior or rostral pairs of barbels and posterior or maxi-

pelvic fin $3\frac{1}{2}$. Predorsal scales 10.

Dorsal fin rays with 2 spines and 8

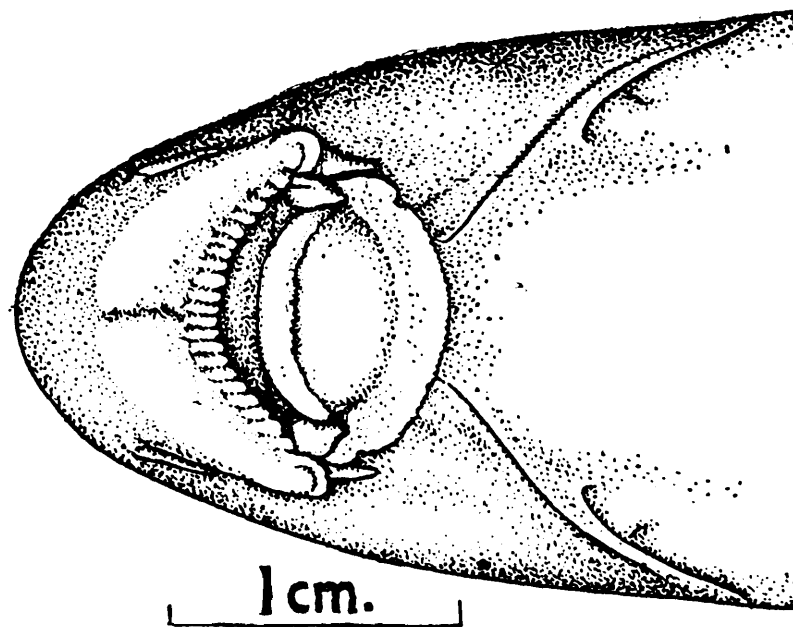


Fig. 2. Ventral view of mouth showing the adhesive disc.

illary pairs of barbels are shorter than eye diameter. Distance between anterior origin of pelvic fin to anal fin 1.97 (1.04-2.22) in that between anterior origin of pelvic fin to base of caudal fin. Distance from vent to anal fin 2.83 (1.88-3.78) in that between anterior origin of

branched rays. Anal fin rays with 2 spines and 5 branched rays. Pectoral length 1.13 (1.04-1.28) in head length.

8 or 9 outer gill rakers in the lower part of anterior arch. Posterior chamber of air bladder 11.70 in the standard length. Chest

and belly scaled.

Colour in alcohol : Dorsal surface gray and ventral surface cream coloured.

Distribution : Namdapha river, Tirap district, Arunachal Pradesh, India.

Measurements and meristic counts of *Garra tirapensis* sp. nov. are given in table 1.

of snout in length of head 2.21 (2.07-2.27) against 1.90 (1.68-2.13), length of disc in length of head 2.23 (1.75-2.56) against 2.12 (1.78-2.58), predorsal distance in standard length 2.28 (2.12-2.49) against 2.07 (1.94-2.21), distance from vent to anal in that between anterior origin of pelvic and anal fin 2.83 (1.88-3.78) against 2.01 (1.83-2.20). Length of

TABLE 1. Measurements (in mm) and meristic counts of *Garra tirapensis* sp. nov.

	1	*2	3	4	5	6	7	8	9	10	11
Standard length	98	105	106	127	103	87	128	55	100	105	135
Depth of body	22	20	21	29	24	22	30	11	25	27	28
Length of head	28	24	25	29	24	21	29	14	24	25	32
Width of head	15	15	18	17	16	14	18	10	18	19	23
Depth of head	15	17	15	20	17	14	19	8	17	15	18
Eye diameter	5	6	6	7	5	5	6	4	6	6	6
Length of snout	10	10	11	13	11	10	14	6	11	12	15
Interorbital width	12	13	12	14	12	9	13	7	11	12	15
Length of disc	7	7	6	8	8	7	10	6	7	7	8
Lateral line scales	34	34	35	35	34	35	34	34	34	35	34
Predorsal scales	10	10	10	10	10	10	10	10	10	10	10
Lateral	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/	3.5/
Transverse scales	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Dorsal fin rays	10	10	10	10	10	10	10	10	10	10	10
Predorsal distance	44	45	44	51	46	40	56	26	45	49	50
Length of pectoral fin	21	21	23	26	23	19	27	13	20	21	25
Distance from anterior origin of pelvic to base of caudal fin	51	55	58	64	54	48	68	16	55	59	15
Anal fin rays	7	7	7	7	7	7	7	7	7	7	7
Distance from vent to anal fin	8	10	8	12	10	9	9	8	10	9	14
Length of caudal peduncle	21	23	25	24	22	19	27	13	22	25	32
Depth of caudal peduncle	13	14	13	16	14	12	17	8	13	15	17
Distance between origin of pelvic to origin to anal fin	23	27	28	32	27	23	34	15	27	27	38
Length of caudal fin	20	18	20	25	21	18	26	11	21	22	27

*Holotype

Relationships : This new species fall in between *Garra kempfi* and *G. naganensis*, near to *G. kempfi*. It differs from the aforesaid species by its width of head in length of head 1.48 (1.32-1.71) against 1.24 (1.08-1.42), length

caudal peduncle in length of head 1.78 (1.67-1.92) against 1.15 (0.96-1.64), depth of caudal peduncle in its length 1.66 (1.50-1.88) against 1.73 (1.22-1.83). Chest scaled against chest naked.

TABLE 2. Comparison of *Garra tirapensis* with the related species

	<i>G. yunnanensis</i>	<i>G. gracilis</i>	<i>G. naganensis</i>	<i>G. kempfi</i>	<i>G. mcClellandi</i>	<i>G. hughii</i>	<i>G. tirapensis</i> sp. nov.
Depth of body in standard length	4.85(4.54-5.18)	5.49(4.58-6.73)	5.21(4.47-5.69)	5.97(5.38-7.00)	4.96(4.3-5.67)	5.63(4.78-6.65)	4.49(3.89-5.25)
Length of head in standard length	4.78(4.54-5.03)	4.03(3.55-4.78)	4.62(4.25-4.97)	4.46(3.89-5.0)	4.94(4.58-4.47)	4.20(3.72-4.71)	4.24(3.93-4.41)
Width of head in length of head	1.40(1.35-1.46)	1.63(1.31-1.80)	1.24(1.11-1.36)	1.24(1.08-1.42)	1.30(1.15-1.41)	1.31(1.14-1.50)	1.48(1.32-1.71)
Depth of head in length of head	1.55(1.52-1.59)	1.61(1.50-1.70)	1.57(1.40-1.68)	1.63(1.41-1.85)	1.57(1.34-1.75)	1.84(1.70-2.20)	1.65(1.41-1.86)
Length of snout in length of head	1.95(1.84-2.06)	2.42(1.91-3.00)	0.97(1.70-2.17)	1.90(1.68-2.13)	1.74(1.63-2.04)	2.07(1.71-3.0)	2.21(2.07-2.27)
Diameter of eye in head length	4.37	3.53(3.00-4.20)	4.50(3.33-5.57)	4.54(3.50-6.17)	4.03(3.40-4.9)	4.35(3.0-5.5)	4.34(3.5-5.33)
Interorbital width in length of head	1.95(1.84-2.06)	2.54(2.33-2.83)	2.02(1.67-2.47)	1.87(1.65-2.25)	2.08(1.87-2.23)	2.11(1.89-2.25)	2.08(1.85-2.33)
Length of disc in length of head	4.13(3.89-4.37)	3.75(3.00-4.25)	3.25(2.86-3.67)	2.12(1.78-2.58)	2.77(2.53-3.40)	2.62(2.4-3.0)	2.23(1.75-2.56)
Width of disc in width of head	1.93(1.86-2.00)	1.92(1.67-2.50)	1.72(1.50-2.13)	1.24(1.09-1.75)	1.65(1.47-1.91)	1.49(1.25-1.86)	2.28(1.67-3.0)
Lateral line scales	40	36-38	38-40	38-40	35-38	36-38	34-35
Scales between origin of dorsal and lateral line	6.5	4.0-4.5	4.5	3.5-4.0-4.5	4.5	5.0-5.5	3.5
Scales between lateral line and base of pelvic	4.5-4.5	3.0-3.5	3.0-3.5	3.0-3.5	3.5-4.5	3.0-3.5	3.5-3.5
Middorsal (predorsal) scale	16	9-11	12-14	12-14	8-10		10
Dorsal fin rays	II/8	II/8	II/7-8	II/8	II-III/8	II/7	II/8
Predorsal distance in standard length	2.07(1.90-2.15)	2.28(2.11-2.25)	2.11(1.91-2.32)	2.07(1.94-2.21)	2.34(2.23-2.48)	2.01(1.91-2.13)	2.28(2.12-2.49)
Length of pectoral/length of head	1.01(1.00-1.03)	1.10(1.06-1.13)	1.08(0.94-1.12)	1.08(0.96-1.24)	0.92(0.85-1.02)	2.09(1.0-1.33)	1.13(1.04-1.28)
Distance between anterior origin of pelvic to anal/in that between origin of pelvic and base of caudal fin	2.27(2.27-2.8)	2.11(1.78-2.94)	1.88(1.63-2.15)	1.98(1.83-2.12)	1.83(1.68-1.97)	1.96(1.75-2.67)	1.97(1.04-2.22)
Anal fin rays	II/5	III/5	I-II/5	II/5	I-II/5	I-II/5	II/5
Distance from vent to anal in that between anterior origin of pelvic and anal fin	6.24(5.28-7.20)	5.21(4.25-6.00)	2.49(2.14-3.05)	2.01(1.83-2.20)	2.13(1.92-3.30)	3.88(3.2-4.5)	2.83(1.88-3.78)
Length of caudal peduncle in length of head	0.99(0.92-1.06)	1.60(0.89-1.87)	1.25(1.07-1.67)	1.15(0.96-1.64)	1.22(1.06-1.93)	1.55(1.39-1.75)	1.78(1.67-1.92)
Depth of caudal peduncle in its length	1.77(1.65-1.90)	1.57(1.25-2.35)	1.40(1.12-1.61)	1.73(1.22-1.83)	1.56(1.31-1.69)	1.49(1.2-1.8)	1.66(1.5-1.88)
Chest	Scaled	Scaled	Scaled	Naked	Scaled	Naked	Scaled
Belly	Scaled	Scaled	Scaled	Scaled	Scaled	Naked	Scaled

It also differs from *Garra mcClellandi* in respect to the following morphometric characters ; length of snout in length of head 2.21 (2.07-2.27) against 1.74 (1.63-2.04), length of disc in length of head 2.23 (1.75-2.57) against 2.77 (2.53-3.40), width of disc in width of head 2.28 (1.67-3.00) against 1.65 (1.47-1.91), lateral line scales 34-35 against 35-38, length of pectoral in length of head 1.13 (1.04-1.28) against .92 (0.85-1.02). *Garra mcClellandi* is known only from Cauvery drainage, Nilgiri district, Karnataka.

Range of variation of characters between *G. yunnanensis* (Regan), *G. gracilis* (Pellegrin & Chevey), *G. naganensis* Hora, *G. kempi* Hora, *G. mcClellandi* (Jerdon), *G. hughii* Silas are detailed in table II.

Comparing the morphometric measurements of the new species described here against the characters detailed in the table, this new species significantly stands apart from the known species described under

this genus. The new species is named after its locality Tirap district.

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