

**GARRA PERIYARENSIS, A NEW CYPRINID FISH FROM PERIYAR
TIGER RESERVE, KERALA, INDIA¹**

K.C. GOPI²

(With four text-figures)

Key words: *Garra periyarensis* sp. nov., cyprinid fish, Periyar, Kerala

A new cyprinid fish, namely *Garra periyarensis*, from the headwaters of the Periyar river in the Periyar Tiger Reserve, Kerala, South India, is described. It is characterised by 37-39 scales on the lateral line, naked breast and belly, snout with a prominent tuberculated knob-like protuberance (antero-rostral lobe) differentiated from the tip of snout and 3-4 + 12-13 gillrakers on the first arch.

INTRODUCTION

The genus *Garra* Hamilton-Buchanan, of the Subfamily *Garrinae*, according to Talwar and Jhingran (1991), is represented by 21 species in the Indian subcontinent, including *Garra menoni* Rema Devi and Indra, 1986, described from Silent Valley, Kerala, India, synonymised by them (without any discussion) with *Garra mullya* (Sykes) and *Garra kalakadensis* Rema Devi, described subsequently from Kalakad Wildlife Sanctuary, Tirunelveli district, Tamil Nadu (Rema Devi, 1992). *Garra menoni* has recently been treated as a valid species (Easa and Chand Basha 1995, and Easa and Shaji 1997). Shaji *et al.* (1997) have described *Garra surendranathanii* from Chalakudy, Periyar and Pamba river systems of Kerala, treating *Garra menoni* as a valid species. Thus, six species of *Garra* are so far known to occur in Kerala. They are *Garra mullya* (Sykes), *G. gotyla stenorrhynchus* (Jerdon), *G. hughi* Silas, *G. maclellandi* (Jerdon), *G. menoni* Rema Devi and Indra, and *G. surendranathanii* Shaji, Arun and Easa. Except for *Garra hughi* and *Garra menoni*, these species are already reported from the drainage system associated with the Periyar Tiger Reserve (Zacharias *et al.* 1996, Arun *et al.* 1996).

During a faunistic survey of the watershed areas of Periyar river within the Periyar Tiger Reserve, Kerala, India, two specimens of *Garra* were obtained, which appeared to be distinct from all the earlier known species of the genus. It is described here as a new species.

MATERIAL AND METHODS

The material examined were two specimens measuring 124.5 mm and 156.0 mm SL, collected by castnet from the Periyar river at Thanikkudy in the Periyar Tiger Reserve. Measurements were taken by dial calipers with an accuracy of 0.1 mm. Data are presented as percentages, with the range followed by the mean in parentheses.

***Garra periyarensis* sp. nov.**
(Figs 1-4)

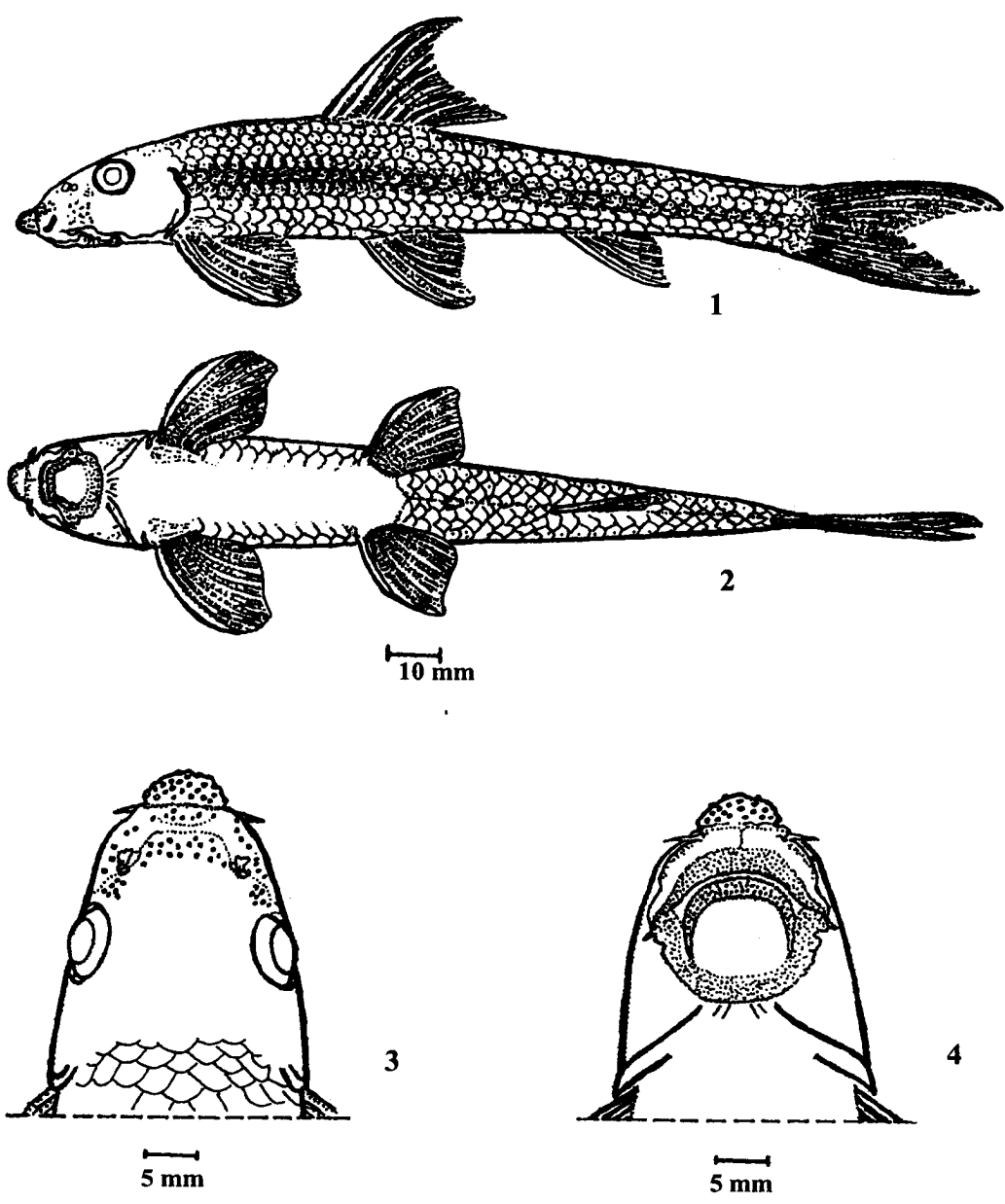
Diagnosis: A species of *Garra* having elongate and slender body with 37-39 scales on lateral line; breast and belly naked; a prominent, tuberculated, knob-like protuberance (antero-rostral lobe) on snout; 3-4 + 12-13 gillrakers on the first arch.

Holotype: ZSI, CLT (Zoological Survey of India, Calicut) No. V/F. 9426; 156.0 mm SL; Periyar river, Thanikkudy, Periyar Tiger Reserve, Kerala State, India; coll. P.M. Sureshan, 7.xi.1996.

¹Accepted March, 1998

²Western Ghats Field Research Station
Zoological Survey of India,
Calicut 673 002, Kerala, India.

NEW DESCRIPTIONS



Figs 1-4: *Garra periyarensis* sp. nov.
1. Lateral view; 2. Ventral view; 3. Head: Dorsal view; 4. Head: Ventral view.

NEW DESCRIPTIONS

Paratype: One specimen, ZSI, CLT No. V/ F. 9427, 124.5 mm SL; same data as of holotype.

Description: Based on these two specimens (holotype and paratype),

D. 2/8, A. 2/5, P. 1/14, V. 1/7, L.1. 37-39, L tr. 5/1/4-5,

Predorsal scales: 10-11, Gillrakers: 3-4 + 12-13.

Body elongate and slender, dorsal profile gently rising anteriorly up to the origin of dorsal fin, and thereafter sloping straight to caudal base; ventral profile almost straight. Depth of body 17.67-17.76 (M=17.72)% SL, length of head 21.41-23.21 (M=22.31)% SL, width of head 65.40-70.96 (M=68.18)% HL, height of head 57.79-58.68 (M=58.24)% HL. Snout obtusely rounded, tuberculated, tip marked off by a transverse groove and differentiated into a prominent, flexible and knob-like protuberance (antero-rostral lobe, Figs 1-4). Horny tubercles present on snout and cheek: small and underdeveloped, with scattered mucous pores on cheek in holotype (possibly female), but prominent and well-developed ones in paratype (possibly male). Length of snout including the lobe at tip 53.28-53.29 (M=53.29)% HL. Diameter of eye 22.49-23.05 (M=22.77)% HL and 60.19-61.6 (M=60.9)% interorbital width. Interorbital region flat, its width 37.37-37.43 (M=37.4)% HL. Barbels two pairs, subequal, rostral shorter than eye and maxillary rudimentary. 3-4 + 12-13 gillrakers on the first arch. Length of mental disc 36.23-36.33 (M=36.28)% HL, width 65.82-66.67 (M=66.25)% width of head, length of disc 78.21-83.33 (M=80.77)% its own width. Abdomen slightly rounded, vent much anteriorly located away from the origin of anal fin, distance from vent to anal origin 42.89-46.58 (M=44.74)% interdistance between anterior origins of pelvic and anal fins.

Caudal peduncle length 18.27-19.12 (M=18.7)% SL, 82.35-85.33 (M=83.84)% HL,

its least height 48.74-48.82 (M=49.28)% its own length.

Squamation: Tube bearing scales on lateral line 37-39, scales in transverse series from midline of back to abdomen 5/1/4-5 with 4.5 series from origin of dorsal to lateral line and 3-3.5 between lateral line and origin of ventral fin, predorsal scales 10-11, circumpeduncular scales 12, breast and belly naked (Fig. 2), post-pelvic region scaly.

Fins: Dorsal origin nearer to the tip of snout than to base of caudal, over 11th scale of lateral line, dorsal margin of fin concave, its height more than length of head, 105.99-106.29 (M=106.14)% HL, 22.69-24.66 (M=23.68)% SL. Pectoral and pelvic fins subequal, smaller than head, length of pectoral 83.23-83.74 (M=83.49)% HL, length of pelvic 80.24-80.28 (M=80.26)% HL. Pelvic origin under 14th or 15th scale of lateral line. Anal origin opposite 27th scale of lateral line. Caudal deeply forked, longer than head, 114.88-115.57 (M=115.23)% HL, lobes pointed, the upper lobe longer than the lower one. Distance from tip of snout to anterior origin of fins: predorsal distance 42.76-43.13 (M=42.95)% SL, prepelvic distance 44.36-46.75 (M=45.56)% SL. Distance between anterior origins of fins: Pectoro-pelvic distance 24.23-24.73 (M=24.48)% SL, pelvic-anal distance 25.86-27.96 (M=26.91)% SL, 48.35-50.23, (M=49.29)% in that between pelvic origin and caudal base.

Etymology: Name implies the Periyar river in which it occurs.

Coloration: In preserved state, upper half of body brownish-black, lower yellowish-brown, becoming yellowish-white beneath; an indistinct midlateral band from behind the gill-opening to the base of caudal fin; a faint black spot behind upper angle of gill-opening; dorsal and caudal fins dusky grey, and other fins lighter, shaded with yellowish-grey.

Distribution: Known so far only from the

NEW DESCRIPTIONS

Periyar drainage at Thanikkudy, Periyar Tiger Reserve, Kerala State, India.

Remarks: *Garra periyarensis* appears to be related to *Garra mccllellandi* (Jerdon), *Garra hughi* Silas and *Garra surendranathanii* Shaji, Arun and Easa with respect to the general characters, such as: more elongated body, higher count of scales on lateral line and more anteriorly located vent, away from the origin of anal fin. The new species, like the other three species, falls under the species-group 'yunnanensis complex' of Menon (1964), which also has representatives in northeastern India, as far east as Yunnan, South China and Indo-China. The *yunnanensis* complex includes *Garra yunnanensis* (Regan) and *G. gracilis* (Pellegrin & Chevey) from China, *G. naganensis* Hora and *Garra kempfi* Hora from Assam, India, and *G. mccllellandi* (Jerdon), *G. hughi* Silas and *G. surendranathanii* Shaji, Arun and Easa from the Western Ghats, India.

Garra periyarensis differs from all the above species in the following combination of characters: a prominent, tuberculated knob-like protuberance on snout and absence of scales on breast and belly. It can easily be separated from *G. mccllellandi*, its closest relative in the Western Ghats, by the absence of scales on the ventral side and in the greater number of gill rakers and lateral line scales.

ACKNOWLEDGEMENTS

I thank the Director, Zoological Survey of India, Calcutta and the Officer in charge, Western Ghats Field Research Station, Zoological Survey of India, Calicut, for encouragement and facilities. I also thank Dr. K. Rema Devi, Scientist, Zoological Survey of India, Chennai for going through the manuscript and for suggestions to improve it.

REFERENCES

- ARUN, L.K., C.P. SHAJI & P.S. EASA (1996): Record of new fishes from Periyar Tiger Reserve. *J. Bombay nat. Hist. Soc.* 93(1): 103-104.
- EASA, P.S. & C.P. SHAJI (1997): Freshwater fish diversity in Kerala part of the Nilgiri Biosphere Reserve. *Curr. Sci.* 73(2): 180-182.
- EASA, P.S. & S. CHAND BASHA (1995): A survey of the habitat and distribution of stream fishes in the Kerala part of Nilgiri Biosphere Reserve. Research report, No. 104. Kerala Forest Research Institute, Peechi, Kerala. 87 pp.
- MENON, A.G.K. (1964): Monograph of the cyprinid fishes of the genus *Garra* Hamilton. *Mem. Ind. Mus.* 14(4): 173-260.
- REMA DEVI, K. & T.J. INDRA (1986): *Garra menoni*, a new cyprinid fish from Silent Valley, Kerala, South India. *Bull. Zool. Sur. India* 5: 121-122.
- REMA DEVI, K. (1992): *Garra kalakadensis*, a new cyprinid fish from Kalakad Wildlife Sanctuary, Tirunelveli District, Tamil Nadu. *Rec. zool. Surv. India* 91(2): 239-245.
- SHAJI, C.P., L.K. ARUN & P.S. EASA (1996): *Garra surendranathanii*, a new cyprinid fish from the Southern Western Ghats, India. *J. Bombay nat. Hist. Soc.* 93(3): 572-575.
- TALWAR, P.K. & A.G. JHINGRAN (1991): Inland fishes of India and adjacent countries. Vols. 1, 2. Oxford & IBH Publishing Co., New Delhi, India. 1158 pp.
- ZACHARIAS, V.J., A.K. BHARADWAJ & P.C. JACOB (1996): Fish fauna of Periyar Tiger Reserve. *J. Bombay nat. Hist. Soc.* 93(1): 39-43.

