

## A new fish species of *Garra* from the Western Ghats, India (Teleostei: Cyprinidae)

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A new species, *Garra triangularis*, is described from the Sakartod River at Khanvel, Dadra & Nagar Haveli, Western Ghats, India. The new species belongs to the proboscis species group and differs from the hitherto described congeners in having the following combination of characters: a triangular shaped labellum consisting of eight or nine transverse ridges, a large conical tubercle directed laterally on each side of the transverse lobe of the snout, relatively large and elongate papillae on torus and relatively large and widely arranged papillae on labrum.

### Introduction

The genus *Garra* is a cyprinid fish characterized by the presence of a gular disc. They are found in Africa, and Southwest, South, Southeast and East Asia. Species of *Garra* in South, Southeast and East Asia are found in habitats with strong current, such as rapids, torrents and waterfalls, usually solitary under rocks or among stones and boulders. Most have a dull brown to black body with more or less distinct darker stripes between scale rows on the posterior half of the body (Kottelat, 2020).

Based on the snout morphology, Nebeshwar & Vishwanath (2017) arranged the species of *Garra* from South and Southeast and East Asia in five distinct groups: (i) smooth snout species group; (ii) transverse lobe species group; (iii) proboscis species group; (iv) rostral flap species group; and (v) rostral lobe species group.

During a faunal survey in the Sakartod River at Khanvel, Dadra & Nagar Haveli Union territory, Western Ghats, India, an unnamed species of *Garra* of the proboscis species group was collected. A description and a name for this species are provided further below.

### Material and methods

The specimens were fixed in 10 % formalin and then preserved in 70 % ethanol. Measurements were made point to point with digital callipers on the left side of the specimens to the nearest 0.1 mm whenever possible. Counts and measurements follow Nebeshwar & Vishwanath (2013). Identification of the elements of the gular disc follows Kottelat (2020).

Lateral-line scales were counted from the anteriormost pored scale in contact with the shoulder

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## Literature cited

- Arunachalam, M. & S. Nandagopal. 2014. A new species of the genus *Garra* Hamilton, (Cypriniformes: Cyprinidae) from Nethravathi River, Western Ghats, India. Species, 10: 43–57.
- Gong, Z., J. Freyhof, J. Wang, M. Liu, F. Liu, P. Lin, Y. Jiang & H. Liu. 2018. Two new species of *Garra* (Cypriniformes: Cyprinidae) from the lower Yarlung Tsangpo River drainage in southeastern Tibet, China. Zootaxa, 4532: 367–384.
- Gopi, K. 2001. *Garra periyarensis*, a new cyprinid fish from the Periyar Tiger Reserve, Kerala, India. Journal of the Bombay Natural History Society, 98: 80–83.
- Kottelat, M. 2001. Fishes of Laos. Wildlife Heritage Trust, Colombo, 196 pp.
- Kottelat, M. 2020. *Ceratogarra*, a genus name for *Garra cambodgiensis* and *G. fasciacauda* and comments on the oral and gular soft anatomy in labeonine fishes (Teleostei: Cyprinidae). Raffles Bulletin of Zoology, Supplement, 35: 156–178.
- Menon, A. G. K. 1964. Monograph of the cyprinid fishes of the genus *Garra* Hamilton. Memoirs of the Indian Museum, 14: 173–260.
- Nebeshwar, K. & W. Vishwanath. 2013. Three new species of *Garra* (Pisces: Cyprinidae) from north-eastern India and redescription of *G. gotyla*. Ichthyological Exploration of Freshwaters, 24: 97–120.
- Nebeshwar, K. & W. Vishwanath. 2017. On the snout and oromandibular morphology of genus *Garra*, description of two new species from the Koladyne River basin in Mizoram, India, and redescription of *G. manipurensis* (Teleostei: Cyprinidae). Ichthyological Exploration of Freshwaters, 28: 17–53.
- Rema, K. D. & T. J. Indra. 1984. *Garra menoni*, a new cyprinid fish from Silent Valley, Kerala, South India. Bulletin of Zoological Survey of India, 5: 121–122.
- Roberts, T. R. 1989. The freshwater fishes of western Borneo (Kalimantan Barat, Indonesia). Memoirs of California Academy of Sciences, 14: 1–210.
- Tamang, L., B. Sinha, S. Abujam & R. Kumar. 2019. *Garra ranganensis*, a new cyprinid fish (Teleostei: Cypriniformes) from Arunachal Pradesh, north-eastern India. Species, 20: 59–71.
- Thoni, R. J., D. B. Gurung & R. L. Mayden. 2016. A review of the genus *Garra* Hamilton 1822 of Bhutan, including the descriptions of two new species and three additional records (Cypriniformes: Cyprinidae). Zootaxa, 4169: 115–132.

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