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Dazzling freshwater fishes discovered from Western Ghats

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MANGALURU: Filament barbs are a group of small freshwater fishes found in the rivers of peninsular India and Sri Lanka from where around nine species are currently known under the genus *Dawkinsia*.

Collaborative research by scientists from the Bombay Natural History Society (BNHS), the Kerala University of Fisheries and Ocean Studies (KUFOS) and the Indian Institute of Science Education and Research (IISER) – Pune, has unravelled unexpected diversity in the charismatic filament barbs of the Western Ghats.

The first species which occurs in the Sita and Sowparnika rivers has been named *Dawkinsia apsara* after the beautiful celestial nymphs in Hindu mythology. The second species discovered from the Muvattupuzha river in

Kerala has been named *Dawkinsia austellus* referring to the Latin word for 'South' and refers to the distribution range of the species in Southern Kerala and the third new species has been named *Dawkinsia crassa* after the Latin word for 'round/thick' referring to the rounded appearance of the fish, which is found in the Netravati river of Coastal Karnataka.



Dawkinsia austellus

Filament barbs are popular among aquarium hobbyists around the world and are both wild-collected and captive bred for the trade. New research employing an integrative approach of evidence gathering using morphological and genetic analysis, and based on fresh collection of *Dawkinsia* specimens from throughout the Western Ghats. The scientific paper has been published in the international journal – Vertebrate Zoology, published from the Senckenberg Museum in Germany.



Dawkinsia crassa

This research has also cleared long-standing taxonomic confusions associated with the small cyprinids of the genus Dawkinsia, paving way for improved conservation prioritisation and attention for these species. “It took almost eight years of extensive

field work, examination of historic specimens in museums both within and outside India, and genetic analysis to understand the true diversity of these charismatic freshwater fishes which are much sought after globally as aquarium pets”, said Unmesh Katwate, fish scientist at the Freshwater Research Unit of the Bombay Natural History and PhD student at KUFOS who led the study.

The research has also helped stabilize the identity of *Dawkinsia assimilis* and *Dawkinsia lepida*, two species of filament barbs described by British ichthyologists in the 1800s.

"This study on filament barb is a remarkable contribution to Indian Ichthyology. This new study will help us in delineating important freshwater key biodiversity areas, and help prioritise conservation initiatives for Western Ghats freshwater biodiversity. This study also highlights the urgent need to conserve the Western Ghats freshwater resources as several unknown and plausibly narrow endemic species are still getting described." said Deepak Apte, director, Bombay Natural History Society

“Despite this updated publication, the taxonomy of fishes of the genus *Dawkinsia* remains poorly known and further intensive explorations and research will no doubt yield more new species from this group” said Rajeev Raghavan, assistant professor, KUFOS, and the South Asia coordinator of the IUCN Freshwater Fish Specialist Group, who co-supervised the project.

“This study has also highlighted the importance of using an integrative approach for understanding the taxonomy of complex groups of fishes, especially those that are cryptic and difficult to distinguish by external morphology. Only by combining advanced molecular studies with traditional morphology, can we understand the true diversity of our freshwater ecosystems”

said Neelesh Dahanukar, scientist at Indian Institute of Science Education and Research (IISER) and a co-supervisor of the project.