
Morphometric variation in Sri Lankan populations of *Puntius vittatus* and a comparative analysis with some Indian populations

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Puntius vittatus (Teleostei: Cyprinidae) is originally described from India, yet it is known to have a wide distribution in inland waters of Asian region. No previous information exists on its intraspecific geographic variation in Sri Lanka, and whether the Sri Lankan species is similar or different from Indian *P. vittatus*. The present study describes morphometric characters of *P. vittatus* in Sri Lanka, and a comparative analysis with some Indian populations is carried out. Fish specimens from selected streams connected to different rivers were used to collect data on 13 morphometrics from digital images of fish (Gin river at Wackwella n=19 and Mapalagama n=20; Kalu river at Rathnapura n=17; Nilwala river at Godapitiya n=30; Mee oya at Puttalam n=10, museum; Kala oya at Sigiriya n=5, museum; and Kelani river at Bellanwila–Attidiya n=5, museum). Museum specimens of three Indian locations (WHT collection: n=10 each from Kerala & Veliyanadu, n=5 from Nedu Mudi-Alleppey) were also included. The size effect was removed from all data prior to analysis. Only Head-pre Dorsal diagonal (HPdD) of *P. vittatus* was significantly different between males and females (t-test, p=0.04, n=30, Nilwala River), thus further data analysis was done excluding HPdD to disregard the sex effect. Except Pre-orbital length, dorsal fin base length, anal fin base length, maximum body depth and pre-anal length, all the others were significantly different (ANOVA p<0.05) among Sri Lankan populations. Three Indian populations did not show any significant difference (p>0.05). Cluster analysis revealed a diverging group represented by Kalu River and Gin river populations, which can be considered as evolutionary significant units (ESU). All the others were clustered into two closely related clades. The study concludes that a group of populations in Sri Lanka (Kalu River & Gin River) is diverging from *P. vittatus*. Although some differentiation exists, the rest of the Sri Lankan populations share the characters more closely with the Indian *P. vittatus*. Until genetic work is done to confirm further, it can be concluded that the Sri Lankan specimens belong to the same species *P. vittatus*, but some populations have diverged.

Keywords: ESU, morphometric characters, phenotypic variation, *Puntius vittatus*

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