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This work was aimed at classifying Rasbora species (Pisces; Cyprinidae) hierachically and to confirm the results by molecular analysis. 131 individuals belonging to Genus *Rasbora* representing several river basins in Sri Lanka were collected. Their various morphometric characters were measured/ counted and were subjected to an

agglomerative hierachical clustering method with pair group mean averages using SPSS/ PC statistical programme.

Five major groups were identified; viz. Groups – 1A, 2A, 3A, 4A, 4B. *R. vaterifloris* (Group 1A) was separated out at 96% distance coefficient shows they are taxonomically very different and confirm the idea of a separate Genus. Group 2A, although it was externally similar to *R. daniconius* was clustered out at 60% distance coefficient indicates the possibility of presence of another species or a hybrid group. Two specimens found through out the whole sampling program, having similar morphological characters to those recorded as *R. wilpita*, formed a separate cluster (3A).

More samples with similar characters should be subjected to analyses prior to categorizing them into a separate species. Group 4B the largest cluster represent the majority of sampled individuals consist of *R. daniconius* and the group 4B having same distance coefficient value as Group 4A represent the remaining species *R. caveri*.

To confirm these groups as separate species or sub species or hybids, part of the D-loop of Mitochondrial DNA (mt. DNA) was amplified by Polymerase Chain Reaction (PCR). However the amplifications could not be optimized to get rid of nonspecific bands. Therefore , future work are to be concentrate on molecular analysis of *Rasbora* spp to conclude the results obtained from hierachical clustering and to confirm the taxonomic status of *Rasbora* spp.