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**Identification of four anchovy species collected from the southern coastal belt of Sri Lanka using molecular and morphological markers**

L. M. P. Gamage<sup>1</sup>, B. S. N. Damayanthi<sup>2</sup>, M. A. M. Rupasinghe<sup>1</sup> and D. H. N. Munasinghe<sup>1\*</sup>

<sup>1</sup>Department of Zoology, Faculty of Science, University of Ruhuna, Sri Lanka.

<sup>2</sup>Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna, Sri Lanka.  
dhn@zoo.ruh.ac.lk\*

Anchovy is a pelagic fish species belonging to the family Engraulidae. Six anchovy species have been recorded from Sri Lankan waters. They belong to two genera; Genus: *Encrasicholina*, including *E. heteroloba*, *E. punctifer*, *E. devisi* and Genus: *Stolephoru*, including *S. indicus*, *S. commersonii*, *S. weitei*. The current study aimed to distinguish the selected four anchovy species based on both molecular and morphological data. A total of 120 anchovy samples were collected from geographically distant fish landing sites along the southern coastal belt of Sri Lanka. For the morphological study, variation of fish body shape was studied using a geomorphometric method using eleven landmarks and data were analysed under the Principal Component and Canonical Variant Analyses, respectively. According to the results, 62% of the variance of fish body shape is explained by the first three components (PC1=32%, PC2=17% and PC3=13%) and there were three groups of taxa representing *E. heteroloba*, *S. indicus*, *S. commersonii* ( $P < 0.05$ ) in which *E. heteroloba* and *E. devisi* overlapped with each other ( $P > 0.05$ ). For the molecular study, partial mitochondrial *Cytochrome Oxidase I (COI)* gene sequences of the four species were compared with reference sequences available on Genbank (NCBI) and pairwise P-distance was calculated. The average blast results combined with pairwise P-distance (under 2% criteria of speciation) revealed that there were four species of anchovies; namely, *S. indicus*, *S. commersonii*, *E. heteroloba* and *E. devisi*. Three individuals previously identified as *E. devisi* only compared with *E. heteroloba* as there were no sequences recorded in NCBI under this name. Pairwise P distance was obtained below the value of 2% for all the assumed anchovy species except *E. devisi* which 4.7% was observed with respect to the most correspondent *E. heteroloba* reference sequence. The results of the two methods were not consistent in the current study. There are some possibilities for this outcome; errors in the initial identification of species or phenotypic plasticity between *E. heteroloba* and *E. devisi* would be contributed to the similar shape variation. Further studies are warranted to correctly identify anchovy species inhabiting coastal waters in Sri Lanka.

**Keywords:** Anchovy morphology, Cytochrome Oxidase I, Pairwise P-distance, Phenotypic plasticity

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