

Vocal Divergence in a Group of Divergent Forest Babblers in Sri Lanka

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Vocal divergence can be driven by genetic relatedness, environment, or both. Vocalization plays a key role in the evolution of birds, therefore the evolutionary significance of vocalization can be understood by studying how vocal traits drive phenotypic and genotypic divergence in them. Sri Lanka has seven species of babblers (members of the families Timaliidae, Pellorneidae, and Leiothrichidae), of the four, are endemic species and the rest of the three are endemic subspecies, making the members of the entire group unique to the island. The vocal divergence in this group were studied by analysing the frequency, temporal, and syllable attributes of their vocalization to understand the contribution of vocalization towards achieving endemism. A vocal phylogeny was constructed using nineteen vocal characters and using that we compared the divergences in babblers. An ancestral state reconstruction was performed for the vocal phylogeny by using a molecular phylogeny based on 645 bp of mitochondrial ND2 gene. This character reconstruction showed vocal convergence of distantly related species and divergence of closely related species based on their environment. It was found that temporal characters were more congruent with the molecular phylogeny and morphological features such as body weight and beak shape influence the vocalization in these highly divergent forest birds.

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