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## FEATURE ARTICLES

### PLUMAGE CONVERGENCE IN *PICOIDES* WOODPECKERS BASED ON A MOLECULAR PHYLOGENY, WITH EMPHASIS ON CONVERGENCE IN DOWNY AND HAIRY WOODPECKERS

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*Abstract.* Adult and juvenile plumage characters were traced onto a well-resolved molecular based phylogeny for *Picoides* woodpeckers, and a simple phylogenetic test of homology, parallelism, and convergence of plumage characters was performed. Reconstruction of ancestral character states revealed multiple events of independent evolution of derived character states in most characters studied, and a concentrated changes test revealed that some plumage characters evolved in association with habitat type. For example, there was a statistically significant association between loss of dorsal barring and use of densely vegetated habitats among *Picoides* species. Two analyses indicated that convergence, as opposed to parallel evolution or shared ancestry, underlies the similarity in plumage patterns between the Downy (*Picoides pubescens*) and Hairy (*P. villosus*) Woodpeckers. Possible causal explanations for convergence in plumage patterns may include mimicry and interspecific territoriality.

*Key words:* adaptation, character evolution, convergence, *Picoides*, plumage, woodpeckers.