

**GIBBON PHYLOGENY STILL LIES HIDDEN IN THE TREES: MOLECULAR GENETIC AND CHROMOSOMAL HYPOTHESES**

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The canopy dwelling gibbons (Family Hylobatidae) are less well known than the other apes and their evolutionary history is still unresolved. Currently, 16 living species are recognized and placed in four genera which are defined in terms of fixed karyotypic differences. More than 30 phylogenetic hypotheses have been proposed based on morphology, behavior, chromosomes, molecular genetic, and biogeographic evidence. I will discuss the different conclusions drawn from the different lines of evidence and offer a new phylogeny based on a combination of nuclear and mitochondrial DNA sequence data. These results will be compared to the phylogeny based on the mapping of chromosomal synteny breakpoints; family-specific markers of the gibbon's complex history. Resolving the gibbon's phylogeny will provide a framework upon which we can test various ideas concerning other aspects of the family's evolution?"

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