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Phylogeography in the northern Andes: Complex history and cryptic diversity in a cloud forest frog, *Pristimantis w-nigrum* (Craugastoridae)

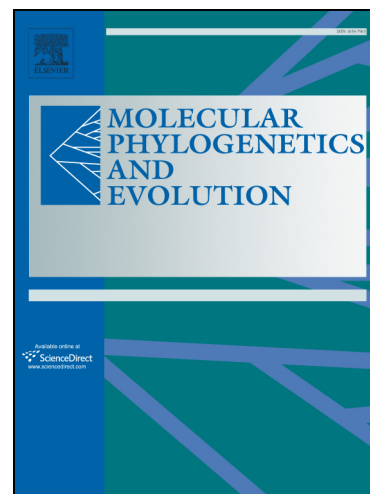
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1 Title: Phylogeography in the northern Andes: Complex history and cryptic diversity in a cloud
2 forest frog, *Pristimantis w-nigrum* (Craugastoridae)

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13 **Abstract:**

14 We investigated the pattern of genetic and morphological variation and the timing of
15 diversification in a Neotropical direct developing frog, *Pristimantis w-nigrum* (Craugastoridae)
16 to gain insight into the historical biogeography of the northern Andes. Phylogenetic inference
17 and analyses of genetic differentiation at mitochondrial and nuclear markers reveal eight
18 mitochondrial clades that display concordant and highly structured nuclear genetic variation
19 along both eastern and western slopes of the Ecuadorian Andes. These eight phylogroups are
20 deeply divergent and show little evidence of change in effective size over substantial periods of
21 time. Consistent with other phylogenetic studies of vertebrates in the Andes, the timing of
22 genetic divergence among lineages coincides with sequential bouts of Andean orogenesis during
23 the late Miocene and early Pliocene. Morphometric analyses recover little morphological

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