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### SUCCESSIVE WAVES OF COLONIZATION DISPERSED *Cedrela* (MELIACEAE) FROM CENTRAL ANDES INTO EASTERN SOUTH AMERICA

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We investigated the evolutionary history of *Cedrela*, an arboreal genus associated with seasonal forests throughout the Neotropics. DNA sequences from both chloroplast and nuclear genomes were obtained from 385 specimens (representing 12 species) from 81 sites across most of the genus's range in eastern South America (Brazil, adjacent regions of lowland Bolivia, and Argentine Mesopotamia), the Yungas of northwestern Argentina, the central Andes (Ecuador and Peru), and Mesoamerica (Costa Rica, El Salvador, and Mexico). An array of methods — Bayesian phylogenetic analyses, network analyses, measures of molecular diversity, and Bayesian diffusion reconstruction — defined genealogical lineages within *Cedrela*, assessed the relationships among those lineages, and reconstructed the geographic location of ancestors and the diffusion history of *C. fissilis*, one of the two widespread congeners. The central Andes were likely the geographic source of the three extant lineages of *Cedrela* that reached eastern South America. Extant populations of *C. fissilis* resulted from dispersals from two main refugial areas, located either at the eastern side or the western side of the Cerrado of central Brazil. Eastern South America also harbored a Relict lineage, with an extreme geographic disjunction. The geographic range of the widespread *C. odorata* does not include eastern South America. The Mata Atlântica biome of southeastern Brazil is phylogeographically connected to the geographically distant central Andes, from which repeated dispersion waves took place. Across Brazil, most of the extant specimens of *Cedrela* belong to either the East lineage or the West lineage of *C. fissilis*. Refugial areas located on either side of the Cerrado supplied each of the lineages with distinct gene pools, thus shaping the current patterns of genetic diversity of *C. fissilis*.

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