



Paleoecological potential of mid-altitude peat deposits in the Tropical Andes: evidence from subfossil wood and palynology

Catalina Gonzalez Arango (1), David Andres Ayala Usma (1), Arnoud Boom (2), Sonia Archila (3), and Camilo Montes (4)

(1) Departamento de Ciencias Biológicas, Universidad de los Andes, Bogotá, Colombia (c.gonzalez2579@uniandes.edu.co), (2) Department of Geography, University of Leicester. Leicester LE1 7RH, United Kingdom (ab269@leicester.ac.uk), (3) Departamento de Antropología, Universidad de los Andes, Bogotá, Colombia (sarchila@uniandes.edu.co), (4) Departamento de Geociencias, Universidad de los Andes, Bogotá, Colombia (cmontes@uniandes.edu.co)

The understanding of past climatic and ecological phenomena at mid-altitudes in the tropical Andes is limited by the lack of ancient lakes and other well preserved paleoclimatological archives. During the opening of a main road a decade ago in the Central Cordillera of Colombia, some buried peat deposits became exposed within the Pereira Volcanodetritic Fan (~ 2000 m.a.s.l), revealing a rich resource of organic remains, including big fragments of subfossil trees and micro and macro plant remains ideal for multiproxy analysis. Radiocarbon dating and palynological analysis suggest that the deposit dates back to the last glacial period. We present the first $\delta^{13}\text{C}$ results of a subfossil wood sample with visible tree rings, that was identified as a member of the genus *Chrysochlamys* (Clusiaceae) and that revealed a periodic signal that might be attributed to climatic variability. A clear seasonal pattern arises suggesting a different climatic configuration, most likely related to a broader migrational range of the ITCZ related to higher eccentricity. Pollen analysis reveals the prevalence of montane Andean forests and Paramo elements (today ca. 1200 meters higher) indicating much colder climates than today. These first findings indicate that mid-altitude Andean peats are highly sensitive to climatic variability and provide an excellent opportunity to study ancient environmental phenomena at extremely high resolution.