Conference Program and Abstracts

7 - 11 January, Irakleio Crete GREECE

5th International conference of the International Biogeography Society

5th Conference of IBS
Irakleio, Crete 2011

53. EFFECTS OF EXPERIMENTAL RAINFALL EXCLUSION ON A DIVERSE ANT ASSEMBLAGE ALONG AN ELEVATIONAL GRADIENT IN THE ECUADORIAN ANDES

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Models of global climate change predict higher rainfall variability, with more intense rainfall events separated by extended drought periods. We integrated experimental and gradient approaches to study the effects of prolonged droughts on a diverse ant assemblage in a mountain rainforest of Ecuador. The experiment was designed to test three predictions. (1) Prolonged drought will lead to declines in species richness and abundance. (2) Declines will be more marked at higher elevations where ants are adapted to moist conditions. (3) Soil-nesting species will be less affected than species nesting in dead wood or in leaf litter because the moisture decrease will be more important aboveground than underground. Three 3x3 m experimental tents and three controls were installed at three elevations (1000, 1500 and 2000 m a.s.l.). Ants were collected six months after the experiment started. Total species richness was not significantly affected by the experiment but abundance increased and assemblage composition was modified. Changes differed according to microhabitat. *Camponotus* in dead wood, and *Dacetini* in leaf litter, were more frequent underneath tents. At the opposite, *Pheidole* species seemed to prefer moist conditions. Ant response was globally consistent over the elevational gradient. It appears that moisture limits the production of a majority of Andean ant species, maybe by causing a physiological distress and/or limiting nesting site quantity.

54. COMPARATIVE PHYLOGEOGRAPHY OF AFROMONTANE MAMMALS: INTEGRATING CLIMATIC HISTORY AND GENETIC VARIATION

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In African montane forests, the expansion and contraction of habitats may have played an important role in shaping the diversity of mammalian communities. More specifically, centers of taxonomic and genetic diversity are predicted to be coincident with areas that acted as persistent forest refugia during glacial maxima. My study utilizes species distribution models that are integrated with molecular genetic data to investigate how geographic and climatic processes have driven these evolutionary processes. An array of spatio-temporal population genetic hypotheses are tested using a model-based statistical phylogeographic approach based on wide sampling of five co-distributed rodent and shrew species groups in the Eastern Afromontane region. Questions addressed include whether and by what processes taxa are continuing to diverge and how historical scenarios shaped current patterns of lineage and genetic diversity. The Eastern Afromontane region is ideally suited for combining climatic/landscape modeling and new approaches in genetic data analysis in order to study the evolutionary processes that have shaped variation within a megadiverse and ecologically threatened region.