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## Spatial variation in the structure community of canopy springtails (Hexapoda: Collembola) from San Lorenzo Tropical Forest, Panama

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In the soil environment, Collembola are one of the most abundant arthropods, and tropical rainforest canopy research has shown that they are numerically dominant in tree crowns. As part of the project Biodiversity of Soil and Canopy Arthropods (IBISCA: 1), a spatial study investigated beta diversity in ground (horizontal) and canopy (vertical) Collembola assemblage.

Eight sites (20 x 20m plots) were sampled in a 2 km area around the canopy crane of the Smithsonian Tropical Research Institute (2) in the San Lorenzo, Colon Province, Panama (9°17'N, 79°58'W). At each site during September-October 2003, three trees were sampled. At each tree eight canopy litter samples and eight ground litter samples were collected. Simple rope techniques were used to access the canopy. Samples were extracted for 48 hours in Berlese funnels. A total of 11,595 individuals (1.45 ind/g dry weight litter) were collected during the study, including 6,231 individuals from the forest floor (1.43 ind/g dry weight litter) and 5,364 individuals from the canopy (1.48 ind/g dry weight litter). Although Collembola abundance was not significantly different between the ground and canopy ( $F_{1,363}=0.49$   $p>0.05$ ), site differences were detected ( $F_{7,363}=8.75$   $p<0.001$ ). Faunal composition differed both among sites and between forest layers. Entomobrids were the most abundant in the canopy, while in the ground isotomids and neelids were numerically abundant. The presence of some *Americanura* and *Oncopodura* species in the canopy is remarkable, because typically they have only been recorded from soil on the ground. Species richness varied between sample sites (20 to 35 species). We suggest that the variation in the structure of Collembola assemblages between sites is correlated to the high heterogeneity and tree diversity of this rainforest. This study was possible thanks to a DGAPA-UNAM fellowship to GCM.

1: [http://www.naturalsciences.be/cb/ants/projects/ibisca\\_main.htm](http://www.naturalsciences.be/cb/ants/projects/ibisca_main.htm)

2: [www.stri.org/english/research/facilities/terrestrial/cranes/index.php](http://www.stri.org/english/research/facilities/terrestrial/cranes/index.php)