
Plant-insect-symbiont interaction networks along elevational gradients

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Résumé

Elevational gradients are a useful approach to assess how abiotic conditions shape terrestrial communities, and to forecast how these communities will be impacted by future climatic conditions. Plant and animal diversity usually decrease with elevation, but how elevation alters species interactions and rewires ecological networks is far less understood. With elevation environmental uncertainty increases while resource competition is relaxed, leading to the evolution of a broader diet breadth and to networks that are more intertwined or connected. These effects, however, vary depending on the guild of species studied and whether networks are mutualistic or antagonistic. In this study we sampled thrips (a group of minute insects) on plants along replicated elevational gradients. We built quantitative networks of insects thriving on plants, and of bacteria colonising insects. Network analyses revealed that, in agreement with our hypothesis, networks were dominated by generalists at high elevations, but this effect varied between the plant-insect and the insect-microbe networks. I will discuss the importance of our network approach to understand the resilience of herbivores to environmental disturbances, and the dual nature of insect-associated bacteria as either pathogens or mutualistic symbionts.

Mots-Clés: elevational gradients, insect, plant interactions, insect symbiosis, interaction networks, thysanoptera

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