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Ant-Plant Interactions

Impacts of Humans on Terrestrial Ecosystems

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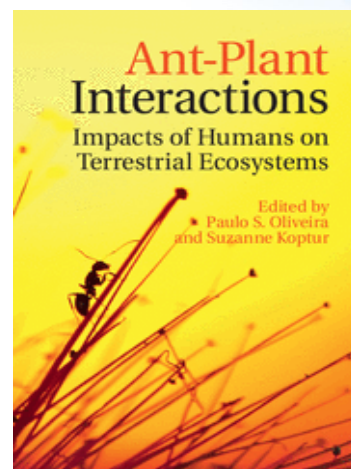
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Ants are probably the most dominant insect family on earth, and flowering plants have been the dominant plant group on land for more than 100 million years. In recent decades, human activities have degraded natural environments with unparalleled speed and scale, making it increasingly apparent that interspecific interactions vary not only under different ecological conditions and across habitats, but also according to anthropogenic global change. This is the first volume entirely devoted to the anthropogenic effects on the interactions between these two major components of terrestrial ecosystems. A first-rate team of contributors report their research from a variety of temperate and tropical ecosystems worldwide, including South, Central and North America, Africa, Japan, Polynesia, Indonesia and Australia. It provides an in-depth summary of the current understanding for researchers already acquainted with insect-plant interactions, yet is written at a level to offer a window into the ecology of ant-plant interactions for the mostly uninitiated international scientific community.

Preface. Ants and plants: a prominent interaction in a changing world; Part I. Landscape Mosaics, Habitat Fragmentation and Edge Effects: 1. Ant biodiversity and functional roles in fragmented forest and grassland ecosystems of the agricultural Midwest, North America; 2. Diversity and specificity of ant-plant interactions in canopy communities: insights from primary and secondary tropical forests in New Guinea; 3. Living together in novel habitats: a review of land-use change impacts on mutualistic ant-plant symbioses in tropical forests; 4. Ecology of leaf-cutting ants in human-modified landscapes; Part II. Ant-Seed Interactions and Man-Induced Disturbance: 5. Global change impacts on ant-mediated seed dispersal in Eastern North American forest; 6. Effects of human disturbance and climate change on myrmecochory in Brazilian Caatinga; 7. Anthropogenic disturbances affect the interactions between ants and fleshy fruits in two neotropical biodiversity hotspots; Part III. Ant-Plant Protection Systems Under Variable Habitat Conditions: 8. Plasticity and efficacy of defense strategies against herbivory in ant-visited plants growing in variable biotic and abiotic conditions; 9. Interhabitat variation in the ecology of extrafloral nectar production and associated ant assemblages in Mexican landscapes; 10. Integrating ecological complexity into our understanding of ant-plant mutualism: ant-acacia interactions in African savannas; 11. Ecological and evolutionary responses of protective ant-plant mutualisms to environmental changes; Part IV. Effect on Invasive Ants on Plants and Their Mutualists: 12. Playing the system: the impacts of invasive ants and plants on facultative ant-plant interactions; 13. Biological invasions and ant-flower networks on islands; 14. Mutualisms and the reciprocal benefits of comparing systems with native and introduced ants; 15. Invasion biology and ant-plant systems in Australia; Part V. Applied Ant Ecology: Agroecosystems, Ecosystem Engineering and Restoration: 16. Services and disservices of ant communities in tropical cacao and coffee agroforestry systems; 17. Ant-plant-herbivore interactions in northern neotropical agroecosystems; 18. Leaf-cutting ants in Patagonia: how human disturbances affect their role as ecosystem engineers on soil fertility, plant fitness and trophic; Part VI. Perspectives: 19. The study of interspecific interactions in habitats under anthropogenic disturbance: importance and applications; 20. Why study ant-plant interactions?



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