Scientists identified patterns of colonization of woody plants by leaf-eating insects.

Patterns of settlement of non-native woody plants, which are atypical for Siberia, by the insect, as well as the prospect of the use of botanical gardens to assess factors affecting the intensity of the colonization of plants by the insects are the objects of the joint research by the scientists from Russia and Switzerland. The results were published in the international scientific journal Oecologia.

According to Natalia Kirichenko, the Associate Professor of Siberian Federal University, Senior Researcher at the Institute of Forest of the SB RAS, the proposed working hypothesis was that local insects, both leaf-eating and living within the tissue of leaves (leaf miners), much less willingly colonize non-native plant than native plants.

To test the hypothesis the researchers used the collection of woody plants of the Central Siberian Botanical Garden of the SB RAS (Novosibirsk) which has more than 600 species and forms of local and foreign woody plants from different botanical-floristic regions (Europe, Asia, North America). Scientists analyzed the trophic relations of insects with 150 species of woody plants in Siberia, assessed the degree of settlement of plants by the leaf miners and leaf-eating insects and compared the taxonomic diversity of the leaf miners on the plants of native and non-native origins.

"*We have identified a number of settlement patterns of woody plants by the set of native insects. In Western Siberia non-native woody plants are less damaged by the native leaf miners and leaf-eating insects than native plants. Native woody plants have sibling relationship with the native flora and are being settled more intensively by the leaf miners and serve as a niche for a larger number of leaf miners species than non-native plants (having no taxonomic relationship with the native arboriflora at the level of genus or bloodline),* — **Natalia Kirichenko** emphasized. *The degree of settlement of the non-native plants by the leaf miners depends on the year of introduction of the plants in a botanical garden, but does not have a clear connection with the plant spacing in the research area. At the same time, there is the opposite trend for the leaf-eating insects: the degree of settlement of the plant is influenced by the plant spacing, but not by the year of introduction. We concluded that the region of origin of the non-native woody plants is not always a factor in determining the degree of the damage to the plants done by the leaf miners and leaf-eating insects*".

Her colleague **Marc Kenis**, Invasions Risk Assessment Laboratory manager of Commonwealth Agricultural Bureau International (CABI, Switzerland), pointed: "*In addition to the fundamental value, the results of these research are applicable and can be used for testing hypotheses concerning biological invasions of the leaf-eating insects. They also reveal the potential of botanical gardens to carry out large-scale works on the revision of the local fauna and studying the trophic relations of insects with different species of woody plants*".

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