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T-05

10:45-11:10, Saturday, September 27 (Day 2)

**Phylogeography and genetics of invasion of the lime leaf miner *Phyllonorycter issikii***

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The lime leaf miner *Phyllonorycter issikii* Kumata (Lepidoptera: Gracillariidae) (fig. 1) is a moth originating from Eastern Asia. It was described in 1963 by T. Kumata from the island Hokkaido, Japan (Kumata, 1963). Few years later, the species was also reported from Eastern China, Korea and the Russian Far East. Since the mid-1980s, the moth has invaded Western Russia, nearly the whole Eastern Europe and reached some countries in Western Europe. This tiny insect provides a great example of a fast range expansion from East to West throughout Eurasia.

The insect develops on leaves of several lime species *Tilia* spp. (Malvales: Malvaceae). It represents an ornamental pest causing aesthetical damage to the plants in urban parks and gardens. In Western Russia, it has a negative effect on the reproductive and productive characteristics of lime forests which play an important role in honey production (fig. 2).

Here we use molecular sequenced data from three genes: mitochondrial COI and two nuclear genes, 28S and Histone3 to reconstruct the phylogeography of the species. Our preliminary results show a loss of genetic diversity from the East to the West following the range spread. We also found a deep genetic split, clearly individualizing one clade from the Russian Far East, which suggests the possible existence of a new sibling species of *P. issikii*.

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Fig. 1. An emerged adult of *P. issikii*.

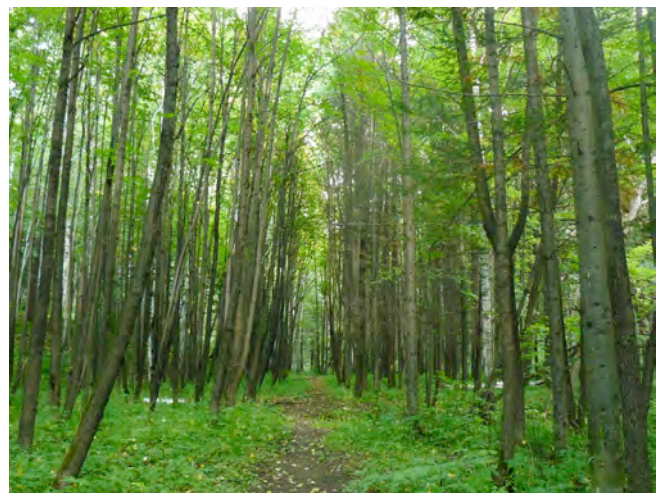


Fig. 2. *Tilia* plantation in Russia.