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The Lime Leaf Miner *Phyllonorycter issikii* (Kumata, 1963), a Highly Invasive Pest in Europe: Genetics of Invasion and Systematic

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Herbivore insects are one the most numerous invaders at many locations around the world, representing an economic threat, causing serious impacts on communities of native species, and disturbing natural ecosystem processes. Among those invasive plant-feeding pests, leaf mining insects (larvae developed within leaves) represent an important group of herbivores that threaten crops, parks and gardens. Some leaf mining micromoths provide extraordinary examples of rapid expansion, particularly the lime leaf miner *Phyllonorycter issikii*, a *Tilia*-feeder. A native of Eastern Asia, in the last few decades, this tiny moth has spread westwards over the whole of Russia and has invaded several European countries, becoming a serious ornamental pest of lime trees.
Within a project supported by LE STUDIUM® Loire Valley Institute for Advanced Studies (France), we are analyzing the genetics of the invasion of *P. issikii* across its distribution range using mitochondrial (COI) and nuclear (28S and Histone3) gene fragments. In addition, the morphology of barcoded adult moths is being compared between native and invaded areas. Preliminary results indicate a loss of genetic diversity in *P. issikii* populations, following the range spread from East to West. Both genetic and morphometric data support the existence of a new undescribed non-invasive cryptic species that occurs sympatrically with *P. issikii* in the Russian Far East.

Keywords:*Phyllonorycter issikii*, invasion, Europe, genetics, systematics