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Gracillariidae). Chapter 14: Factsheets for 80
representative alien species**

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David Lees. Phyllonorycter issikii (Kumata, 1963) (Lepidoptera, Gracillariidae). Chapter 14: Factsheets for 80 representative alien species. Alien terrestrial arthropods of Europe, 4 (2), Pensoft Publishers, 2010, BioRisk, 978-954-642-555-3. 10.3897/biorisk.4.69 . hal-01189414

HAL Id: hal-01189414

<https://hal.science/hal-01189414>

Submitted on 1 Sep 2015

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**14.70 – *Phyllonorycter issikii* (Kumata, 1963)
(Lepidoptera, Gracillariidae)**

David Lees

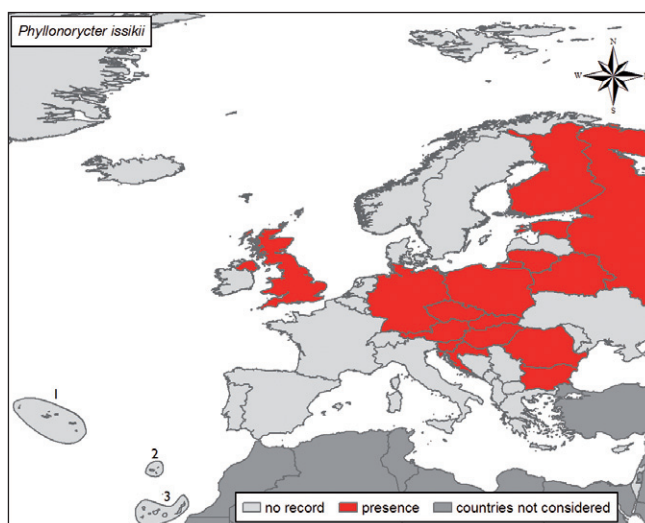
Description and biological cycle: Small moth, wingspan 7.0–7.5 mm. Thorax and forewing ground colour golden to light brownish ochreous, with blackish stripes and three white stripes in summer form (see Figure 11.6d in Chapter 11), dusted with white scales in autumn form (see Figure 11.6c in Chapter 11), well camouflaged for hibernation; hindwings pale grey, cilia tinged with yellow. Adult resembles *Phyllonorycter corylifoliella*, but male genitalia highly asymmetric, right valve especially wide and left one slender. Eggs oblong, greenish, about 0.24 x 0.35 mm. Larva yellowish towards caudal end and white toward head. Leaf-miner on lower surface (Photo) of small-leaved Lime *Tilia cordata*, *Tilia platyphyllos* or various crosses such as *Tilia x vulgaris* (Tiliaceae), with adults flying in two generations at end of April and May and August–September (in Europe). Oligophagous on *Tilia*, apparently without strong preference. Feeds on *T. maximowicziana*, *T. kiusiana* and *T. japonica* (in Japan), *T. amurensis* (far eastern Russia) and *T. mandshurica* (in Korea). Development: egg, 4–8 d, larva in five instars, the last two tissue feeding, 13–40 d, pupa 10–15 d. Prefers trees in understory/shade. Mine when unfolded showing micro-ridges, elliptical to oblong, whitish, on underside of leaf, usually at fork of primary or secondary veins, with frass piled up at one end. Hibernates as adult.

Native habitat (EUNIS code): G - Woodland, forest and other wooded land.

Habitat occupied in invaded range (EUNIS code): G5 - Lines of trees, small anthropogenic woodlands, recently felled woodland, early-stage woodland and coppice; I - Regularly or recently cultivated agricultural, horticultural and domestic habitats; I2 - Cultivated areas of gardens and parks; X24 - Domestic gardens of city and town centres. Spreading quite rapidly westwards especially after 2000.



Credit: Hana Šefrová



Native range: Japan (Hokkaidō, Honshū, Kyūshū) and probably also in far eastern Russia, eastern China and Korea (where first reported 1977).

Introduced range: First reported from Moscow in 1985, *Phyllonorycter issikii* spread to the Baltic countries of the Baltic countries and most of Central Europe (Map and Šefrová (2002) for a review of spread in Europe).

Pathways: Apparently spread by wind and possibly also by horticultural trade and passive spread of hibernating adults, since the distance between eastern and western Russia seems too large for possible long distance aerial transport.

Impact and management: Causes damage including limited leaf folding to lime trees. Potential aesthetic impact to park and garden trees is relatively minor, since sunny branches are avoided, and no native *Tilia* populations are threatened. Natural controls include the chalcidoid eulophid wasp parasitoids *Chrysocharis laomedon*, *Mischotetrastichus petiolatus*, *Pediobius saulius*, *Pleuroppopsis japonica*, *Sympiesis laevifrons* and *S. sericeicornis*, but biological control seems unnecessary, since parasitoid levels attained 20% in some localities even the year after arrival in eastern Europe.

Selected references

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