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Chapter 14: Factsheets for 80 representative alien species**

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**14.68 – *Cameraria obridella* Deschka & Dimić, 1986 - Horse chestnut leaf-miner
(Lepidoptera, Gracillariidae)**

Sylvie Augustin

Description and biological cycle: Tiny moth, 3–5mm long, forewing background orange-brown with basal white longitudinal streak and white v-marks bent towards costa and running straight across dorsum at rest, edged posteriorly in black, two of these fasciae continuous medially, one post-medial fascia interrupted and a final convex fascia towards wing apex, bisected by a diffuse blackish subapical streak (*Photo left- see also Figure 11.7c in Chapter 11*). Fringe forming a conspicuous orange tuft that is longest dorsally at rest. Head tufted with orange hair-like scales intermixed with white, scape and base of antenna silvery white. Antennae about 4/5 forewing length. Phytophagous larvae, mining leaves of white-flowered horse chestnut *Aesculus hippocastanum*; but can also develop on other *Aesculus* species and occasionally on maples, *Acer pseudoplatanus* and *A. platanoides*. Leaf mines from April onwards; an average of 75 eggs are laid per female on the upper epidermis of horse-chestnut leaves. Produces four (rarely five) mining and two spinning larval instars; usually three generations per year in W Europe, but up to five overlapping generations depending on weather conditions and climate. Pupae diapause in leaves.

Native habitat (EUNIS code): G1 - Broadleaved deciduous woodland.

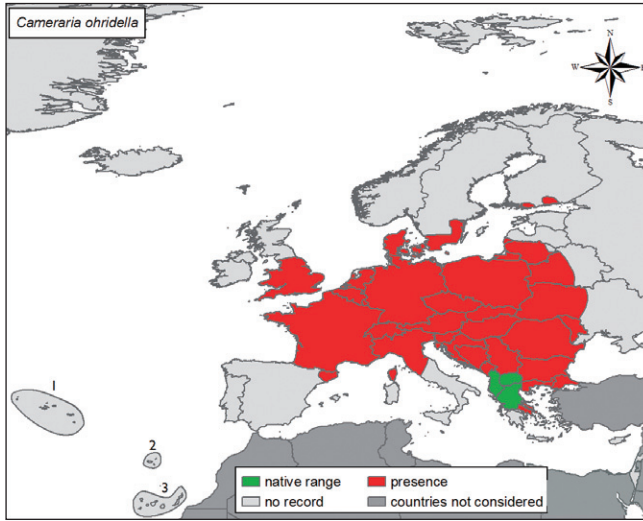
Habitat occupied in invaded range (EUNIS code): G1 - Broadleaved deciduous woodland; I2 - Cultivated areas of gardens and parks; X13 - Land sparsely wooded with broadleaved deciduous trees; X11 - Large parks; J - Constructed, industrial and other artificial habitats.

Native range: Southern Balkans.

Introduced range: Most of Europe, except part of Northern Europe and Western Russia (*Map*). Increasing its distributional range and abundance in newly colonized areas.



Credit: Sylvie Augustin



Pathways: Adult moths are transported by wind. Anthropogenic transport occurs by vehicles, in infested leaf fragments or infested nursery stock.

Impact and management: Severely defoliated trees produce smaller seeds with a lower fitness that affects tree regeneration and seriously impairs recruitment of horse chestnut in the last endemic forests in the Balkans. A single leaf can host up to 106 leaf-miners (*Photo right*). Parasitism rates low, as most parasitoids emerge when larvae or pupae are not yet available; this may have an important impact on native leaf-miners. There is significant public concern because of aesthetic impact. Main costs are caused by removal or replacement of severely damaged horse chestnut trees planted in cities and villages. Complete removal of leaf litter, in which pupae hibernate, is the only effective measure available to lessen damage. The majority of adults can be prevented from emerging when leaves are properly composted (e.g., mulching of horse chestnut leaves with a layer of soil or uninfested plant material). Chemical control: aerial spraying with dimilin is efficient; spraying with Fenoxycarb combined with a surfactant has proved effective. Other “biological pesticides” with fewer non-target effects, such as neem, are also feasible, but their efficiency is considered to be lower. Stem injection is also efficient, but is not widely registered. This injures trees through necrosis and infections, and systemic insecticide may cause side effects on non-target species such as honey bees.

Selected references

- Gilbert M, Grégoire J-C, Freise J, Heitland W (2004) Long-distance dispersal and human population density allow the prediction of invasive patterns in the horse-chestnut leafminer *Cameraria ohridella*. *Journal of Applied Ecology* 73: 459–468.
- Lees DC, Lopez-Vaamonde C, Augustin S (2009) *Cameraria ohridella* Deschka & Dimić 1986. <http://eolspecies.lifedesks.org/pages/8675>.
- Valade R, Kenis M, Hernandez-Lopez A, Augustin S, Mena NM, Magnoux E, Rougerie R, Lakatos F, Roques A, Lopez-Vaamonde C (2009) Mitochondrial and microsatellite DNA markers reveal a Balkan origin for the highly invasive horse-chestnut leaf miner *Cameraria ohridella* (Lepidoptera, Gracillariidae). *Molecular Ecology* 18: 3458–3470.