

The horse-chestnut leaf-miner



Driving into Burgess Hill about four years ago, I noticed a horse-chestnut tree with grey-brown bands on many of its leaves. I took a few leaves home and found the bands were caused by a moth, the horse-chestnut leaf-miner, *Cameraria ohridella*. The next day I had to go to Lindfield and Newick and saw the same thing in Lindfield, Scaynes Hill, Newick, Chailey and Plumpton. So it was everywhere, but I just hadn't noticed it before.

Actually, I haven't had that much time to notice it. It was described as a new species from Macedonia in 1985, but may not originate in Europe. It was first recorded in UK in Wimbledon in 2002. Now it is widely recorded throughout England and Wales and apparently spreading fast (as it has elsewhere in Europe).

It is a tiny moth (5mm), a pretty metallic orange with white stripes. Eggs are laid on the leaf, usually by a leaf vein, and the larva lives on the leaf tissue. It chews between the upper and lower surface of the leaf and between the veins – hence the name 'leaf-miner'. There is a small flattened dark 'scale' (actually a silken cocoon) somewhere in the 'mine', often close to the mid-rib, which is where the caterpillar relaxes and eventually pupates. It may stay there until the leaf drops and remains in the leaf litter, to emerge the following spring.

The speed at which this moth spread is astonishing (up to 70km per year), mainly by flight or wind blown, but it is thought to have been greatly helped by dead and dying leaves being carried or blown around by vehicles, especially in making major jumps in its distribution. Its density on trees can also be astonishing (up to 100 larvae in a single leaflet). That may be partly due to it being a new addition to our fauna, and parasites and predators are still learning about it. About 30 parasitic wasps (out of more than 6,000 such species in Britain) have been recorded for this leaf-miner, but they only account for about 10% of the leaf-miner populations (whereas with other leaf-miners, the mortality rate from parasitoids might be 50–80%).

The current wisdom is that infestation by the leaf-miner does not mean the trees should be felled (indeed, that would mean felling just about all these

trees, which, although not native, are an important amenity tree). The trees recover full leaf in the following year and there is no long-term detrimental effect – certainly those first trees I saw four years ago still look healthy. One recommended control measure is removal of the dead leaves, but is unlikely to eliminate the moth – it is surely here to stay.

Horse-chestnut is first to come into leaf in the spring and one of the first to drop its leaves in the autumn. Even if very badly infested, the tree loses only 15–30% of its photosynthetic capacity and that principally in a relatively short period before its natural leaf drop. And looking this year, I noticed that many of the mines had been opened and were empty and I wonder if some predator, such as a smart old blue tit, has learned that here is a source of food. And curiously, the red-flowered horse-chestnut is much less prone to attack than the white.

Despite all that, leaf-miner was one of the reasons given for felling of a couple of horse-chestnuts with Tree Preservation Orders in the village.

You can find further information on the website of the Forestry Commission and in a recent article in *British Wildlife* (Vol 22(5): 305-313; June 2011) and, if you want to get your name on the map, the leaf-miner is still not recorded in a couple of areas north of Chichester and around Crawley.

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