

Autumn Gum Moth

Scientific name: *Mnesampela privata*

Order: Lepidoptera

Family: Geometridae

Mnesampela privata is common to the southern half of Australia and is considered a pest of plantation eucalypts in Tasmania, Victoria, South Australia, New South Wales and WA. It can occasionally cause significant damage in 1-3 year old plantations.

One-year-old plantings are most susceptible but two and three year old plantations may also receive some damage. Defoliation is generally restricted to the lower half of trees, although in severe cases whole trees can be defoliated. The larva is the only damaging stage, preferring to feed on juvenile leaves that are soft, broad and waxy. Initial damage begins as skeletonisation at the tips of lower lateral juvenile branches. Feeding damage is usually concentrated in the lower half and particularly the outer extremities of the tree, but can quickly spread to upper sections. The majority of damage is caused by the late instar larvae.

Eggs are small (<1 mm) and laid in tight masses of 2-300 usually on the underside of juvenile leaves. Eggs are a translucent light green colour when first laid, but become brownish prior to hatching or black if parasitised. Eggs hatch about two weeks after being laid.

There are five larval stages or instars. Newly hatched larvae are 2-3 mm long with a mixture of yellow, green and brown markings on the body. The early larval stages are gregarious and feed on soft leaves only. The late instar larvae are found singly or in small groups and hide in curled leaf shelters during the day before emerging at night to feed. The pupa is brown, 10-15 mm in length and covered in a cocoon made of silk and soil particles. Light brown nondescript moths of about 2 cm in length and wingspan of about 4 cm.

In SE Australia, there can be two generations per year. The winter generation is the main generation. In south-western Australia there is generally one generation per year, although in some years two generations have been recorded. Adult moths emerge in autumn and begin mating and ovipositing, which continues into winter. Eggs are typically laid between April and June, with larvae present between May and early November. Larval development is dependent on temperature and usually takes around 2-3 months. Pupation occurs in the soil surface (top 10 cm) beneath defoliated trees, especially around tree roots. The pupal stage lasts about 6-8 months, after which adult moths emerge. Moths are mostly active at night, but can be found on trees during the day.

Moths / Catepillars



Autumn gum moth damage on 2-3 year old tree, note only the bottom juvenile foliage is affected



Top, autumn gum moth damage on *E. globulus* side branch; middle left, newly layed eggs on underside of juvenile leaf, ≈ 1 mm; middle right, early instar larva ≈ 4 mm long, note the skeletonising damage on leaf ; bottom, pupae 10-15 mm long



Adult Autumn gum moth



Larva emerging from leaf shelter, individual leaf shelters may contain single to numerous larvae.