This document has been scanned from hard-copy archives for research and study purposes. Please note not all information may be current. We have tried, in preparing this copy, to make the content accessible to the widest possible audience but in some cases we recognise that the automatic text recognition maybe inadequate and we apologise in advance for any inconvenience this may cause.
AUTUMN GUM MOTH
(MNESAMPELA PRIVATA)
R. H. Eldridge

INTRODUCTION

Autumn gum moth *Mnesampela privata* (Lepidoptera: Geometridae) belongs to the moth family which includes looper caterpillars. It is found from southern Queensland to Tasmania, South Australia and south-western Australia. It is a serious pest of many eucalypts, preferring young trees less than three metres high with blue-grey foliage.

The adult is a medium-sized moth (wing span 35-40 mm) with light brown forewings, having irregular darker markings, and uniform light orange hind wings (Fig. 1).

The larvae (caterpillars) are green/brown with two characteristic yellow spots on the upper surface about one third of the way down the body (Fig. 3). The head is reddish brown and there are three pairs of legs close to the head and a further five pairs of fleshy “prolegs” on the abdomen (Fig. 2).

LIFE HISTORY AND GENERAL BIOLOGY

Autumn gum moth adults can be present from late summer to early winter, but are not easily seen. They are nocturnal flyers and usually rest during the day, sometimes with their wings spread and pressed to the surface on which they are resting.

![Figure 1. Adult moth.](image1.png)

![Figure 2. Side view of caterpillar showing prolegs.](image2.png)

![Figure 3. Mature caterpillar showing characteristic yellow spots.](image3.png)
Batches of 10 to over 150 eggs, laid on either side of a leaf, are, at first, pale green but change to a mottled brown colour as they develop over two to three weeks.

Newly hatched caterpillars are green/brown and from 2-3 mm long. They group together initially and eat only the surface of the leaf (Fig. 5a,b). As the caterpillars increase in size they form a loose shelter by joining leaves together with silk. Two or three caterpillars may occupy the same shelter, hiding during the day and emerging at dusk to feed. They return to the shelter before dawn.

Larvae moult five times before they are fully mature, and reach a length of 35 mm. This may take up to three months. Mature caterpillars leave the tree and burrow into the soil where they form a soft cocoon made of soil particles and excreted body fluid. A pupa forms within three weeks, and will remain in the soil for up to six to nine months.
DESCRIPTION OF DAMAGE

The early stage of autumn gum moth damage is not obvious. The young caterpillars are very small and inconspicuous as they erode the surface leaf tissue to create a skeleton effect. As the caterpillars grow they begin to eat whole leaves, eventually defoliating whole stems leaving only the larval shelters at the tips (Fig. 6). If populations are large enough, entire young trees can be defoliated and they may also attack nearby species which are not normally favoured.

Badly damaged and even defoliated trees usually recover but their growth is severely affected that year. If severe damage occurs over consecutive years death can result. Recorded hosts in New South Wales include many species of eucalypts, but Eucalyptus globulus, E. grandis, E. pilularis, E. bicostata, E. saligna and E. botryoides are the species most commonly attacked.

CONTROL

Populations of autumn gum moth are naturally controlled by insect parasites. Eggs may be parasitised by very small wasps (Hymenoptera: Chalcidoidea) and fail to hatch. Caterpillars may be parasitised by a range of wasps (chiefly Chalcidoidea and Ichneumonoidae) and flies (Diptera: Tachinidae) which lay their eggs on or inside the body of their host. In a naturally controlled population relatively few larvae successfully develop to the adult moth. Severe damage may occur to plantations when, for one reason or another, the natural control systems fail or lag behind a rapidly increasing population of autumn gum moth. The dynamics of the autumn gum moth, host tree and control parasite systems is at this time not well known.

To prevent serious damage check trees regularly during autumn for eggs, early stages of damage and young caterpillars. Removing caterpillars by hand may be an option for control of outbreaks in small areas of younger plantations. Leaf shelters are highly visible and rarely occur very high in the tree. Further damage can be prevented if these are detected and removed early enough.

Application of either chemical or biological insecticides (Bacillus thuringiensis) may be necessary for the control of outbreaks in larger plantations. Detection of eggs, young caterpillars or early stages of damage is essential so that effective control can be implemented before serious damage has occurred. Contact insecticides may be ineffective against caterpillars once they have built leaf shelters. Check plantations regularly from late summer through autumn.

Details of suitable insecticidal control options can be found in Leaflet CI - Control of insects on eucalypts.

FURTHER INFORMATION


Forestry Commission Tasmania. Autumn gum moth. Forest Pests and Diseases Leaflet No. 2.