

# Tussock Moths

Number 5

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Tussock Moths belong to the Family Lymantridae.

There are many different Tussock Moths but two species of importance in *Pinus radiata* plantations are the Painted Apple Moth, *Teia anartoides*, and the Painted Pine Moth, *Orgyia australis*. The moths and caterpillars of these species are so similar that it is difficult to tell them apart and, for practical purposes, this is not necessary. These Tussock Moths are native Australian species that have adapted to feed on a wide range of exotic plants. These plants include apple and pear trees, roses, pelargoniums and pine trees – hence their common names. Their original food plant was the wattle (*Acacia* spp) and they are also sometimes referred to as the Painted Acacia Moth.

They were recognised as pests of introduced plants as early as 1896. The Painted Apple Moth is also a pest in orchards and home gardens. It is interesting to note that these species are related to the Gypsy Moth, *Lymantria dispar*, which is a major pest of forest trees in North America and Europe.

It should be emphasised that this leaflet refers specifically to the two species mentioned above. There are other species that may look similar but have different habits and life cycles.

## Description

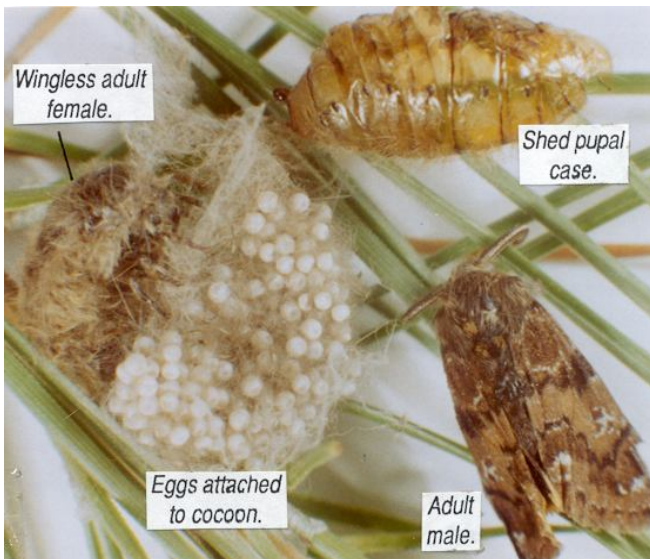
**Eggs:** Eggs are white in colour and approximately 1mm in diameter – quite large for the size of the female. They are round, flattened on top and smooth in appearance.



development.

**Caterpillars:** Newly hatched caterpillars are tiny, nearly black in colour and very hairy. Older caterpillars are densely covered with brown hairs. They have four tufts of white hairs on the back – very like tufts of bristles in a toothbrush – and a pair of long fine black tufts of hairs just behind the head which point forwards like horns. They also have two reddish coloured fleshy appendages on the back near the end of the abdomen. Fully grown caterpillars are approximately 30mm in length. They are solitary i.e they do not aggregate, even in the early stages of

**Pupae:** Mature caterpillars loosely spin cocoons incorporating many hairs from their bodies. The pupa itself inside the cocoon is also very hairy. It is reddish brown in colour. Female pupae are much larger than male pupae.



**Adults:** Adult females are wingless. They are very plump and round, approximately 10mm long and covered with a dense matt of soft pale brown hairs. Males are winged, with a wingspan of approximately 25mm. The forewings are a dark mottled brown while the hindwings are orange with a broad dark brown/black outer band. The antennae are feather-like.

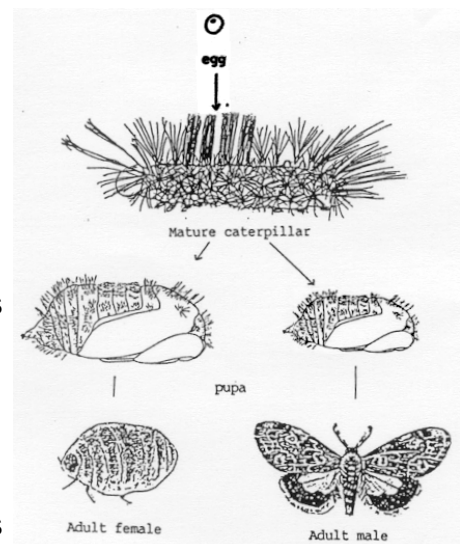
## Life Cycle

Little is known of the life history of Tussock Moths. Fully fed caterpillars pupate amongst the needles on the tree in loosely woven cocoons. The pupal stage may be as short as two weeks in warmer weather but in winter the caterpillars feed for longer and the pupal stage also lasts longer. Individuals that spend the winter as caterpillars do not emerge from the pupal stage until the following summer.

On hatching, the female remains clinging to the outside of the cocoon where she mates and lays eggs. The eggs are laid in a mass amongst the hairs on the outside of the pupal cocoon. Each female may lay up to 700 eggs.

The eggs hatch into tiny caterpillars which swarm over nearby twigs and needles.

There may be several generations per year, depending on temperature. Caterpillars are most abundant in spring but may be found at almost any time of the year. They are particularly active during the cooler winter months.



## Pest Status

Tussock Moths are not regarded as major pests of pine trees in plantations. Damage is often severe but infestations tend to occur in the same place each year. This is because the females, being wingless, are not able to spread their eggs over a wide area. The species can only spread if the caterpillars crawl or are carried on the wind (small caterpillars).

While they may not be a major pest of pine trees, Tussock Moths presents a considerable hazard to people – particularly those people who work in pine plantations. The caterpillar hairs are very irritating to human skin and some people exhibit severe allergic reactions resulting in itchy rashes on the skin if they come in contact with them. This presents a problem not only when the caterpillars are present (they can hang on silken threads and

drop onto people) but also even when the caterpillars have become adults or died, as the hairs remain on the needles. The hairy cocoons also remain attached to the needles for a long time after the adults have hatched.

## Control

**Physical:** In situations where only one or two small trees are involved and the infestation is slight, caterpillars may be removed and squashed.

**Natural Control:** Tussock Moth caterpillars are often parasitised by small black Braconid wasps which lay their eggs on the hairs of the caterpillar's body. These eggs hatch and feed off the caterpillar, killing it in the process. Predation is rare as the caterpillars are so hairy that most birds avoid them as food.

**Chemical:** Because the infestations are usually localised it is possible to spray the area if there is going to be a problem coming into contact with the caterpillars or their hairs. Several chemicals may be used the most effective being Carbaryl or Dipel. Dipel is a biological insecticide and contains a bacteria that causes disease in caterpillars. It is "environmentally safe" as it is specific to certain types of caterpillars and will not harm other animals, including other insects.

## Summary

**When to look:** Look in Autumn and Spring for young caterpillars and adult females. Caterpillars are sometimes present all year but are most active in the cooler months.

**Where to look:** In pine plantations look all over the tree, particularly on the lower needles. On other plants, the caterpillars may be anywhere on the leaves or stem.

**What to look for:** Look for very hairy caterpillars with four erect "toothbrush" type tufts of hairs on the back. Also look for cocoons with wingless females and batches of white eggs surrounding the cocoon.

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