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*Pine processionary moth caterpillars on a well-developed 'nest'.*

# Pine processionary moth

Pine processionary moth  
*Thaumetopoea pityocampa* (Denis & Schiffermüller) (Lepidoptera: Notodontidae) is a large moth that primarily feeds on pines. This pest is not present in New Zealand. Help us keep pine processionary moth from establishing here by learning what to look for.



*Adult male pine processionary moth.*



Pine processionary moth is a threat to New Zealand's forestry industry as it is a significant pest of pines, including *Pinus radiata*, in its native range. The impact is particularly severe for young host trees, sometimes leading to tree death, whereas feeding on older host trees usually results in reduced growth and significant reduction in wood volume. Trees in both natural and plantation pine forests, as well as amenity plantings, are affected. In addition, the caterpillars are covered in urticating hairs which can cause an allergic reaction in humans, livestock and other animals.

Pine processionary moth occurs naturally in southern Europe, the Middle East and northern Africa. It is particularly widespread in the Mediterranean region where it is an important pest of pine forests. Pine processionary moth from the eastern Mediterranean area is now considered to be a separate species (*T. wilkinsonii*).

## Symptoms to look for

- Widespread defoliation of host trees.
- Conspicuous silken nests constructed amongst pine foliage, usually near the tips of small branches.
- Hairy caterpillars sheltering within the silken nests which, once about half-grown (20 mm in length), start leaving the nest at night to feed on new pine needles, moving in a striking 'nose-to-tail' single-file procession.
- Large hairy caterpillars (around 40 mm in length) moving down host trees and along the ground in a similar single-file procession, in search of a suitable pupation site.



Fully-grown pine processionary moth caterpillars moving in characteristic single-file procession.

## Hosts

Caterpillars feed on many species of pine including Aleppo pine (*Pinus halepensis*), mountain pine (*P. mugo*), black pine (*P. nigra*), maritime pine (*P. pinaster*), stone pine (*P. pinea*), radiata pine (*P. radiata*) and Scots pine (*P. sylvestris*). They are also common in the Atlantic cedar (*Cedrus atlantica*) forests of northern Africa. Douglas fir (*Pseudotsuga menziesii*) is considered to be a minor host.

## Moth life cycle

Pine processionary moth usually has one generation per year, though this may extend to two or more years when conditions are less favourable. Adults usually appear mid-summer and females lay up to 300 eggs on pine foliage within a few hours of emergence. The eggs take 30-45 days to hatch. The caterpillars live in colonies, initially forming white silken nests which become larger and darker in colour through autumn and winter. Fully-grown caterpillars leave their nests in 'procession' for the final time to pupate within the soil in late winter-early spring.

Pine processionary moth naturally disperses as adults (up to several kilometres) and as fully-grown caterpillars preparing to pupate (usually less than 100 metres). Unintentional dispersal of pine processionary moth is most likely via the live plant trade, either as pupae associated with growing media, or eggs or caterpillars on live plants.

## Identification and testing

Identification of adult specimens can be confirmed by microscopic examination of certain characters by a person skilled in the morphological identification of insects. All life stages can be identified using molecular sequencing techniques.

As required by the Biosecurity Act (1993), if you encounter any insects or tree damage which you suspect could be pine processionary moth, call the Biosecurity New Zealand Pest and Disease hotline – 0800 80 99 66. The Ministry for Primary Industries will coordinate how best to proceed with sampling and identification.

## Contact information

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