

# Bag-shelter Moths and processionary caterpillars

## Fact Sheet



Processionary caterpillars. Image: Sybil Curtis.

### Introduction

Many Australians are familiar with the very hairy, processionary caterpillars that follow each other head-to-tail and form long chains in late summer and autumn. These 'itchy grubs' as they are sometimes called, are the caterpillars of the Bag-shelter Moth, *Ochrogaster lunifer*. A trick, sometimes played by children, is to join up the head and tail of the procession so that the caterpillars follow each other in a continuous ring. However, these caterpillars are best left alone because contact with their long hairs causes an intensely itchy dermatitis and can result in severe allergic reactions in some people.

Bag-shelter Moths are found throughout coastal and inland Australia where their caterpillars mostly feed on wattles, rarely on eucalypts. Large numbers of the caterpillars rest together in a silken bag, leaving it to forage for leaves. In coastal areas, the bag is located on the ground at the base of the trunk of the food tree; while in inland areas the bag is located up in the canopy. The ground-nesting and canopy-nesting caterpillars probably belong to two different species, but currently the scientific name, *Ochrogaster lunifer*, is used for both. In this leaflet, the ground-nesting populations are called the Coastal Bag-shelter Moth and the canopy-nesting populations the Inland Bag-shelter Moth.

Female Bag-shelter Moths have a wing-span of about 5.0–6.5 cm. The smaller males have a wingspan of 4.5–5.5 cm. The wings of females are brown or brownish-grey with a small white spot on each forewing and hindwing. Males resemble females, or they can have two to four white streaks on the forewings. Both sexes have an orange abdomen



A female Coastal Bag-shelter Moth, sometimes known as 'bunny-tailed moths'. The round white tip of the abdomen is tightly packed with scales that are used to cover her eggs. Image: QM, Jeff Wright.

that is banded with brown. Adults are sometimes called 'bunny-tailed moths' because the abdomen of the female has a large white bulbous tip that is made up of a mass of very tightly packed scales. Males have a whitish tuft of scales at the tip of the abdomen.

Fully-grown processionary caterpillars are about 4–5 cm long, brownish and densely covered with long, pale hairs.



The white, scale-covered egg mass with newly hatched caterpillars. Image: QM, Jeff Wright.

### Biology

These notes on the life cycle refer to the Coastal Bag-shelter Moth that in Queensland is found throughout coastal areas as far north as the Atherton Tableland near Cairns.

In south-eastern Queensland, adult moths emerge in late October. They do not feed and each moth lives only a few days. Moths are on the wing from October to November and fly in the late afternoon and early evening. Each female moth lays a single batch of 150–500 eggs at the base of a wattle tree. She then covers them with a thick coating of scales from the large tuft at the tip of her abdomen. The result is a conspicuous white egg mass about 2–3 cm in diameter. Often more than one female will lay eggs at the base of the same tree.



Long procession of caterpillars returns to the base of a wattle tree after feeding on the leaves at night. Image: QM, Jeff Wright.

The eggs hatch into tiny caterpillars that stay within the egg mass and do not feed. These shed their old skins and

emerge as second stage caterpillars which feed on leaves. Each caterpillar goes through a series of eight moults until it is fully grown when it metamorphoses into a pupa. During the day, the second and third stage caterpillars travel up into the canopy where they feed together on the wattle leaves. At the end of the day, they return to the base of the tree. Older caterpillars also travel up into the leaves to eat, but they only feed at night, returning to the base of the tree before morning. As the caterpillars grow, a brown, stocking-like nest of silk is formed at the base of the tree at the spot where the eggs were first laid. As the summer progresses, this nest grows and is filled with the droppings of the caterpillars and their cast skins. Older caterpillars from different egg batches laid on the same tree can join together to form a single nest occupied by up to 600 caterpillars.

Large amounts of leaves are eaten by the caterpillars and sometimes they can strip the whole tree. If this happens and the caterpillars have not reached maturity, they leave the base of the tree and travel across the ground in a long, single-file procession, looking for another wattle tree.

The caterpillars are fully grown in May and ready to leave the wattle tree. They crawl away from the tree in a long procession that may break up into groups of ten or less caterpillars. Some travel up to 150 metres from the tree before they burrow into the ground. Each caterpillar forms a chamber of soil and silk incorporating their long irritating hairs. The caterpillar sits out the winter within the cocoon and does not turn into a pupa until the spring in September to October. The adult moths emerge in late October, all those within an area emerging within a few days of each other.

### Food Plants

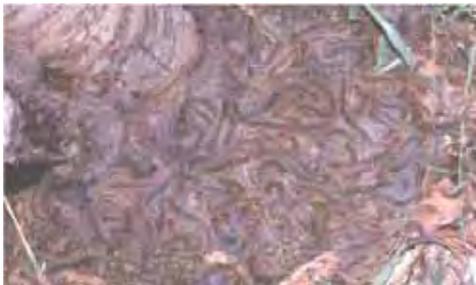
Females of the Coastal Bag-shelter Moth lay their eggs and the larvae will develop on several different species of wattles (*Acacia acuminata*, *A. concurrens*, *A. leiocalyx*, *A. aulocarpa*, *A. implexa*, *A. fimbriata*, *A. pycnantha*, *A. anceps*, and *A. prominens*). However, in south-eastern Queensland two wattle species are most commonly used, Black wattle (*Acacia concurrens*) and Hickory wattle (*Acacia aulocarpa*).

### Dermatitis

**All stages, eggs, caterpillars and adults, of Bag-shelter Moths have irritating hairs, and should be regarded as dangerous and never handled.**

#### *Dermatitis caused by caterpillar hairs*

The extremely furry processionary caterpillars have a notorious reputation for causing irritating rashes. Where a caterpillar comes into contact with the skin an intensely itchy dermatitis usually develops and in some people this can cause a severe allergic reaction. The caterpillars are completely covered with long, thin hairs that taper to a fine point and are very brittle.



A dense group of processionary caterpillars. The hairs cause an intensely itchy dermatitis when they come into contact with skin. Image: QM, Jeff Wright.

They easily penetrate skin and break off, and are difficult to remove because they have hundreds of microscopic barbs along their length. The hairs contain an irritating protein that produces the allergic response. Eye injuries may also result from the penetration of caterpillar hairs and in the most severe cases can result in loss of vision.

Direct contact with many kinds of hairy caterpillars can result in itchy rashes and as a general rule they should not be touched. Even the hairs on the cast off skins of processionary caterpillars retain their irritating properties. Consequently, contact with the silken nest at the base of the tree, which contains shed caterpillar skins can result in severe dermatitis. In the case of the canopy-nesting caterpillars, people have reported suffering rashes just by sleeping beneath trees with bag-nests in their branches. People mowing their lawns and using whipper-snippers in coastal areas should be very careful not to disturb the bag-shelters at the bases of trees.

#### *Dermatitis caused by moth scales*

Contact with adult female Bag-shelter Moths, or with their egg cases may also cause an itchy dermatitis or eye injuries. The large tuft of the tip of the abdomen of the female moth contains two types of scales that she uses to cover her eggs. There are short, flat scales and very long, thread-like scales. These long scales also have hundreds of small barbs along their length. It is thought that these long barbed scales can penetrate the skin or eye. Whether these scales contain an irritating protein is not known, but just the mechanical irritation caused by embedded scales may be enough to cause a reaction in some people.



A mass of nearly fully grown processionary caterpillars and their copious droppings at the base of a wattle tree. Image: QM, Jeff Wright.

### Further Information

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