

Case moths, bag moths or bagworms

Fact Sheet



Case moth. Image: QM, Jeff Wright

Introduction

Case moths, bag moths or bagworms are names given to a group of moths (Family Psychidae) whose caterpillars make portable homes from silk, usually attaching plant material, detritus or sand grains to the outside. Caterpillars of each species build quite distinctive cases, although there can be considerable variation within a single species, especially in those that feed on a wide variety of different plants.

Biology

Case moths spend most of their lives as caterpillars, the larval stage, which may last for up to 1 or 2 years in some species. Once constructed, the caterpillars never leave their cases. The head and thorax of the caterpillars are quite heavily armoured and they have 3 strong pairs of legs on the thorax with which they move around, dragging the case behind them. The case has two openings, a larger 'mouth' through which the caterpillar protrudes its head and thorax to feed and move, and smaller hole at the other end through which the droppings are ejected. Many species of case moth caterpillars are plant feeders; others feed on lichens; while some live within the nests of ants and are thought to be scavengers.

When fully grown and ready to pupate, the caterpillar firmly anchors the case and closes off the 'mouth' opening. A dense cocoon is woven within the case and just before pupating the caterpillar reverses its position so that the head is pointing downwards.

Adult male case moths have fully developed wings and are capable of flight. The wings of the female moths are variously developed depending on the species. In some the wings are fully developed, but in many they are reduced or even completely absent. In species with females that have very reduced wings, the eggs are laid within the case. Females of some species are said to lay large numbers of eggs, as many as 13 000 in one West Indian species, *Oiketicus kirbyi*. The eggs hatch and the first stage caterpillars exit through the opening at the end of the case, lowering themselves on silk threads. They soon construct small silken cases of their own, which they continually enlarge as they grow.

Saunders' Case Moth *Metura elongata*

Saunders' Case Moth is among the largest and most commonly encountered case moths in Queensland. Its biology is typical of those species where the adult female is wingless.

This species occurs in Queensland, New South Wales

and Victoria where it feeds on eucalypts, tea trees (*Leptospermum*), paperbarks (*Melaleuca*) and a wide range of other plants including many garden ornamentals. The caterpillars build long, quite soft cases that are broadest in the middle and taper at both ends. Short pieces of twig, arranged lengthwise and attached only at their bases, are scattered over the outside of case. The cases of females are larger than those of males and grow to around 12–15 cm long.



Saunders' Case Moth, adult male. Image: QM, Jeff Wright.

As the caterpillar grows, the case is enlarged at the mouth end from which its head and thorax protrude. New twigs are added to the case in a complicated fashion. The caterpillar uses its jaws to harvest a twig of a desired length, attaching it to the mouth of the case with a few strands of silk. The caterpillar now withdraws into the case and, from the inside, cuts a small slit in the bag. This may take almost an hour to complete because the material of the bag is incredibly tough. The caterpillar then sticks its head and thorax out through the hole, reaches up and grabs the twig and cuts it free. Withdrawing back into the case, the caterpillar holds the base of the twig in the hole and sews it firmly into place with silk. From start to finish, the process takes about one and half hours to complete.

Fully grown larvae of both sexes pupate head-downwards within the case. Before emerging as adults, the male pupa moves downwards and partially emerges from the opening at the end of the case. On emergence, the male moth flies off in search of females. Males are about 2.5–3.0 cm long



Saunders' Case Moth case. Image: QM, Jeff Wright.

with a wingspan of about 4–5 cm. The wings are brown with contrasting pale veins; the head and front of the thorax are covered with bright orange scales and the abdomen is dark brown banded with orange. Adult females are wingless and have very reduced legs and antennae and remain within the case. Mating takes place through the hole in the 'tail-end' of the female's case. This presents some difficulties because the female is inverted with her abdomen furthest from the opening. The male is able to mate with the female using his elongate telescoping abdomen: hence the species name, *elongata*. The female lays thousands of eggs within the case. She then dies within the case or occasionally drops to the ground.

Firewood Case Moth *Clania ignobilis*

This species feeds mostly on eucalypts and is widespread, occurring in much of eastern and southern Australia including Tasmania. Caterpillars construct a cylindrical case with a short neck and tail which is completely surrounded by a solid 'fence' of parallel twigs attached with silk along most of their length. All of the twigs are similar in length except for one or sometimes two that are much longer and project well beyond the end of the silken bag. Cases of these species can grow to about 5cm in length.



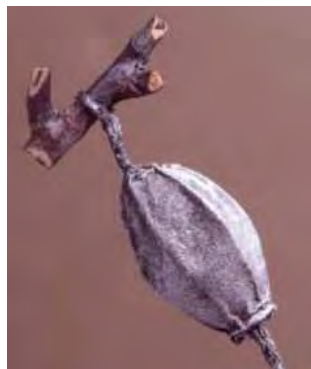
Left: Firewood Case Moth, *Clania ignobilis*, larval case. Right: Leaf Case Moth, *Hyalarcta huebneri*, two larval cases, the left adorned with eucalypt leaves, the right with tea-tree leaves. Images: QM, Jeff Wright.

Leaf Case Moth *Hyalarcta huebneri*

A common and widespread species, especially in coastal areas, found from north Queensland south to Victoria and South Australia and across to Western Australia. The caterpillars feed on a very wide range of plants including eucalypts, brush boxes (*Lophostemon*), tea trees (*Leptospermum*) and other natives, as well as a wide range of fruit trees and ornamentals. The caterpillars attach pieces of leaves from the food plant to their cases. Since this species feeds on such a wide variety of plants the appearance of the cases can vary greatly. Cases of this species can grow to about 5 cm in length.

Ribbed Case Moth *Hyalarcta nigrescens*

This species is found from southern Queensland to Victoria and feeds on eucalypts and brush boxes (*Lophostemon*). Unlike the preceding species, the case consists of a silken bag and is not decorated with leaves or twigs. The case is oval-shaped, broadest in the middle and tapers to a narrow neck and a tapering, pointed tip. The bag has several ridged ribs running along its length. Cases of this species can grow to about 4 cm in length.



Ribbed case Moth, *Hyalarcta nigrescens*, larval case. Image: QM, Jeff Wright.

Further Information



'Secondhand Houses', May Gibbs, 1940 from *Snugglypot and Cuddlepie*, Harper Collins. Kind permission of the Northcott Society and the Spastic Center of New South Wales.

Clyne, D. 1972. Insects in my garden. Part 4 – Saunders Case Moth, *Wildlife in Australia*, vol. 9, p.35.

Common, I.F.B. 1990. *Moths of Australia*. Melbourne University Press, Melbourne, pp.174–180.

Hill, W.H.F. 1898. Notes on some Victorian case moths. Part I, *Victorian Naturalist*, vol.15, pp.3–11.

Froggatt, W.W. 1899. Australian case or bag moths, *Agricultural Gazette of New South Wales*, Vol. 10, pp.1084–1091.

Websites

http://www.geocities.com/brisbane_moths/PSYCHIDAE.htm

<http://www.usyd.edu.au/macleay/larvae/psyc/psychidae.html>

Author: Chris Burwell

Queensland Museum
PO Box 3300, SOUTH BRISBANE QLD 4101
Phone: (07) 3840 7555
<http://www.qm.qld.gov.au/>