Bagworm Moth

Thyridopteryx ephemeraeformis


Larva with head out of bag


Bag with bits of maple leaf

Bagworms produce conspicuous spindle-shaped cocoons on trees and shrubs throughout the United States where they feed on over 128 plant species. In spite its nickname, it is not a worm, but a moth.

The larval form appears worm-like, hence the name *bagworm*.

The bagworm's best defense is that camouflage bag worn throughout its life cycle. The bag allows otherwise vulnerable larvae to move freely from place to place.

Adult males have short inch-long clear wings, hairy black bodies and feathery antennae. They fly and seek out a female to mate. The female bagworm moth lives her entire life cycle inside the safety of her bag with no functional eyes, legs, mouthparts or antennae.

Bagworm Moths live anywhere suitable host plants are available, especially forests or landscapes with cedar, juniper, or arborvitae.

Larvae of some species eat lichen while others prefer green leaves of a host plant, which is usually a deciduous or coniferous tree. In the absence of these, bagworms will eat foliage of just about any tree. Only the larvae feed; the adult moths do not feed and live just long enough to mate.

The female bagworm's largely immobile existence is spent entirely inside a cocoon, where she lives for only a couple of weeks to lay eggs that ensure the next generation. The life span of a male moth is even shorter — he lives only a couple of days to fulfill his role of fertilizing the females, which he accomplishes through an opening in the females' cocoons.

During mating, the male climbs onto the female's bag, hangs upside down, and extends and inserts his abdomen about 4 cm into the bag. Once mated, the female ceases production of pheromone and is no longer attractive to males. After oviposition, the female may die inside the bag, mummifying around her eggs, or may fall to the ground just before death

Females may lay up to 1,000 eggs, which hatch into tiny caterpillars that leave the cocoon immediately to spin their own, individual cocoons. The first silk strands they weave upon exiting their birth cocoons catch wind currents and transport them to new spots where they weave their own cocoons — a process called "ballooning."

When the hatchling caterpillars spin their new cocoons, they weave bits and pieces of pine needles around the silk-lined case like little shingles, camouflaging it. Bagworm caterpillars have the distinction of being the only insect that builds this type of home. They leave a hole at the top of the cocoon, from which they dart in and out to feed on needles. As they grow, they continually enlarge their cocoon home which seems to grow with them.

Like all moths, the bagworm moth undergoes a complete metamorphosis with the four stages:

1. Egg: In late summer and fall, the female lays up to 1,000 eggs inside her case. Some females then leave their bags and drop to the ground while other female species die and stay in the bag; the eggs overwinter in the sealed case.

2. Larva: In late spring, tiny larvae (1/25 inch long) hatch, lower themselves on silken threads to new foliage, and immediately begin feeding and constructing their own bags. As they grow, they enlarge their bags by adding more foliage, so the bag seems to grow with them. They stay within the safety of their bags, sticking their heads out to feed and carrying the bags from branch to branch. Frass falls out of the bottom end of the cone-shaped bag through an opening. Full grown caterpillars within bags are up to 1 inch long.

3. Pupa: When the larvae reach maturity in late summer and prepare to pupate, they attach their bags to the underside of a branch. The pupa remains inside the bag and is dark brown to black in color. The bag is sealed shut, and the larvae turn head down inside the bag. The pupal stage lasts four weeks. The pupae of male moths wriggle out of the bottom of the bag before the male emerges, leaving the empty pupal skin behind.

4. Adult: In September, adult males emerge from their pupal cases and leave their bags to fly in search of mates. Females have no wings, legs, or mouthparts, and remain within their bags. Female moths, though confined to their bags, attract mates by releasing strong sex pheromones. When they sense the chemical alert from females, the males leave their bags to find partners.

Good photos of the life stages: www.abundantnature.com/2012/10/a-strange-moth-that-lives-in-bag.html