

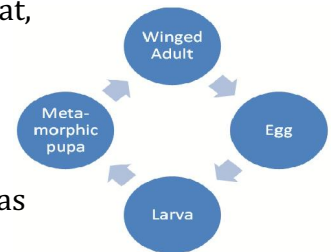


William T. Kemper Center for Home Gardening

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Insect Order ID: Lepidoptera (Butterflies, Moths, Skippers)

Life Cycle—Complete metamorphosis: Adults lay eggs. Larvae (caterpillars) eat, grow and molt. This stage is repeated a varying number of times, depending on species, until hormonal changes cause the larvae to pupate. Inside the pupal case, they change in form and color, exchange chewing mouthparts for sucking, and develop wings. The emerging adults look completely different from the larvae. Exception: only male bagworms pupate; females spend their entire lives as caterpillars inside their bags.



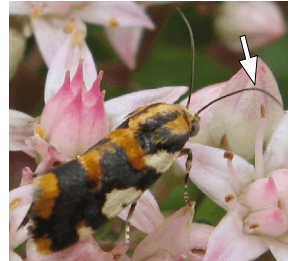
Adults—Wings are scale-coated membranes, thus the name Lepidoptera (scale wing). These scales are the dust-like particles that come off if the wings are touched. Some clearwing moths have sections of their wings that lack scales. Winged adults have sucking mouthparts in the form of a long slender tube which is coiled when not in use. Butterflies and skippers are usually active during the day (diurnal) and have clubbed (knobbed) antennae. The tips of skippers' clubbed antennae are hooked, and their bodies are stout like a moth's body. Most moths are active at twilight or at night (nocturnal) and have feathery or thread-like antennae that lack a knob. *(Click images to enlarge or orange text for more information.)*



Butterflies have clubbed antennae



Some moths have feathery antennae



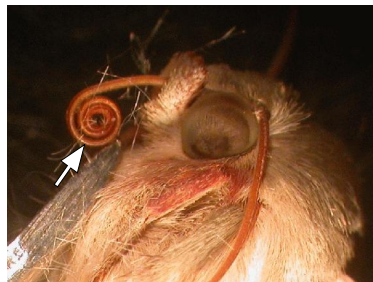
Some moths have threadlike antennae



Wing scales can make colorful patterns



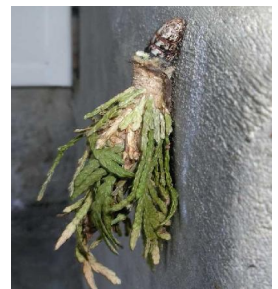
Forewings larger than hindwings



Mouth is a coiled tube

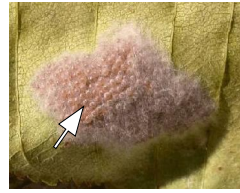


Clearwing moth



Adult female bagworms are wingless

Eggs—Adults lay the eggs, usually where larval food is plentiful. *(Click images to enlarge or orange text for more information.)*



Some protected
by webbing



Some are
laid in a mass



500 - 1000
eggs per bag

Larvae—All are eruciform (caterpillars). None have wings or wingbuds. They have 3 pairs of true legs, which may be hairlike, and most have clearly discernible prolegs (thickened protuberances along their abdomens that help them move, plus a pair of claspers at the tail end). The prolegs are in pairs of 2 to 5 with the claspers at the tail end always counting as a pair. (Over 6 pairs of prolegs indicates a sawfly in the order Hymenoptera.). *(Click images to enlarge or orange text for more information.)*



Maximum of
5 pairs of prolegs



To locate
follow the frass



Newly hatched
look different from
later stage (below)



Smooth



Spiny



3 pairs of true legs



Fake eye spots
(real eyes
microscopic)



Many feed
in colonies



Furry

Pupae—All have a pupal stage, during which the adult, winged form develops. The pupa of butterflies is called a chrysalis. Most moths pupate in a naked pupa or within a silken cocoon that is sometimes combined with other materials. *(Click images to enlarge or orange text for more information.)*



Silken cocoon



Naked moth pupa



Hanging
chrysalis



Silken cocoon
incorporating
leaves

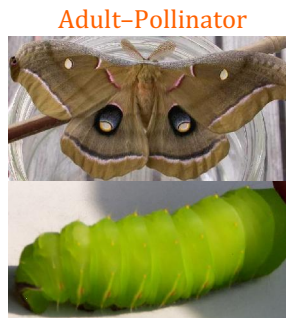
Beneficial / Benign Aspects—Adults have siphoning mouthparts, sip nectar only, and are beneficial pollinators. Although the larvae have chewing mouthparts, the damage from many species is insignificant. *(Click images to enlarge or orange text for more information.)*



Adults are beneficial pollinators



Adult moths are important pollinators



Larva
Damage insignificant



Larva
Damage insignificant

Damage—Larvae have chewing mouthparts and are responsible for all damage to plants from Lepidoptera, although the damage from many species may be inconsequential. Some chew leaves, defoliate plants, or bore into buds, fruit, stems, wood, and roots. *(Click images to enlarge or orange text for more information.)*



Leaf chewers



Needle chewers



Leaf rollers



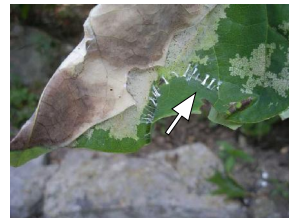
Shade tree borers



Webworms



Skeletonizers



Leaf tiers



Fruit tree borers



Bud worms



Fruit worms



Root borers

Comments—All Lepidoptera larvae (caterpillars) can be confused with sawfly larvae (caterpillar-like) in the order Hymenoptera, suborder Symphyta.