



CHAPTER 22

THE BEST CONTROL FOR STINGING CATERPILLARS

See: <http://www.uky.edu/Ag/Entomology/entfacts/misc/ef003.htm>
and
http://forsyth.ces.ncsu.edu/files/library/34/CES_Venomous_Caterpillars.pdf

PEST OVERVIEW

CLASS - Insecta

ORDER - Lepidoptera

FAMILIES - Mainly Limacodidae, Megalopygidae and Saturniidae and a few Nymphalidae, Anthelidae, Lasiocampidae, Bombycidae, Noctuidae, Notodontidae, Epypterotidae, Lymantriidae and Arctiidae (tiger moths)

METAMORPHOSIS - Complete

DESCRIPTION - Caterpillars are the immature or larval stage of a butterfly or moth. Also known as Lepidoptera, this insect order is an economically important and aesthetically pleasing group of insect. Lepidoptera refers to the overlapping scales on the wings that give butterflies their attractive color and most moths their camouflage. The scales of butterflies and moths contain waste products from their pupal stage; the scales are formed from specially flattened and ridged hairs. The average caterpillar has 2,000 muscles in its body, while the average human has less than 700. Many people who would never touch any insect or "bug" routinely pick up cute, colorful (stinging) caterpillars. Stinging caterpillars have evolved stinging hair or urticating spines as an effective means of defense.

If you find a fuzzy or spiny caterpillar which inflicts a painful sting upon contact, you probably have found a stinging caterpillar. Reaction to the nettling effect or sting ranges from mild, with local reddening, swelling and itching, to rather severe depending on the susceptibility of the individual, the tenderness of the skin and the place of contact, and may even require hospital care for unusually sensitive persons. Hypersensitive persons may experience symptoms and/or allergic reactions, e.g., severe swelling, nausea, difficulty in breathing and generalized systemic reaction. If so, or if you are stung in the eyes, immediately go to see a medical professional.

The most common stinging caterpillars are the larval stage of the buck moth, hag moth, io moth, puss moth caterpillar, brown-tail caterpillar and saddleback caterpillar. These caterpillars are the immature feeding stages of various moths and do not have a "stinger" such as a wasp or bee so they can not really sting. Instead, their venom is contained in glands which bear rather stiff, hollow hairs or spines like hypodermic needles through which the venom flows upon contact or breakage of the spines. These special venomous spines or setae are called urticating hairs, a name from the plant family name that includes nettles. The caterpillars feed upon the foliage of many plants, including trees, shrubs and flowers. They rarely occur in numbers sufficient to damage plants, but they are important because of their medical effects on people. *Stings* usually occur when people brush against a caterpillar or attempt to remove it from their body or their clothing or when children collect them for their "bug- collections". Only a few of the many thousand caterpillars can sting. Most of the moths they develop into cannot sting nor do they have the urticating hairs or spines.

The intensity of the irritation, whether it be caused by "venomous" or "irritating" hairs or barbed hooks and/or sharp, hollow spines, will be dependent on the species of caterpillar and the sensitivity of the patient. Patients that come in contact with stinging caterpillars usually develop wheals and widespread rashes which can be accompanied by a burning sensation. Other symptoms include dermatitis, papules, pain, itching, intestinal disturbances, lesions and/or swelling of the infected area. This inflammation can persist for days, although in most cases the symptoms are transitory. If mucous membranes have been affected there may be some swelling and irritation. Detached hairs can also be inhaled and the upper respiratory tract can be affected producing dyspnoea or laboured breathing. Injuries to the eye have been recorded, resulting in conditions such as nodular conjunctivitis and, less commonly, permanent damage to the cornea. In the case of a mistletoe browntail caterpillar infestation, large numbers of school age children have been known to become affected after sitting under infested *Eucalyptus* trees, or as a result of disturbing leaf litter and bark at the base of the trees where the caterpillars have rested or pupated.

Accurate identification is essential in treating and controlling stinging caterpillar infestations. This should be undertaken by experienced staff, with the use of light microscopy and taxonomic keys.

To treat irritations as a result of urticating caterpillars, remove all affected clothing and apply a piece of adhesive or duct or cellophane tape to each of the affected areas, then pull the tape off immediately. This will remove

some of the hairs and irritants and reduce the full impact of the irritation. The use of analgesics, ice, creams, antihistamines and lotions with steroids will also assist in relieving the symptoms. Wash the affected area with soap and water, after which you can try a little calamine lotion, diluted Safe Solutions Enzyme Cleaner or hydrated bentonite clay to help with the itch and inflammation and swelling. Seek first aid.

BUCK MOTH CATERPILLAR - *Hemileuca maia*

The buck moth larvae or caterpillar is purple-black with a reddish head and the spiny tubercles on the 2' long body are reddish to black on each segment of the body (except the 11th). There are at least six groups of spines and on several segments there are eight groups of spines. The prolegs (false legs on the abdomen) are red and the true legs on the thorax are glossy black. The Black Moth Caterpillar lacks body stripes, but it has numerous small, pale-yellow or white dots scattered over the body. They are gregarious and will follow one after the other when traveling almost in single file.



Probably only one generation occurs each year. The insects overwinter as tiny larvae inside egg cases and emerge to begin feeding in groups, principally on oak trees, in late spring and summer. Following pupation, the moths emerge in September and October to deposit eggs in collar-like masses which usually encircle a small twig. Food groups include oaks, willow, hazelnut, wild cherry and rose. Peak larval activity in the northern states occurs in spring (it often is compared with spiny elm and gypsy moth caterpillars), but the peak buck moth activity occurs/ coincides in the fall when the deer run or the rutting season of the white-tail deer, hence the adult insect's name.

The sting characteristics and effects of the buck moth larvae are similar to those of the io moth; both are Giant Silkworm Caterpillars.

HAG MOTH CATERPILLAR OR MONKEY SLUG - *Limacodidae* *Phobetron pithecium* (J.E. Smith)

The monkey slug or hag moth larva feeds on many kinds of shrubs and on low branches of deciduous trees. They are fleshy; very bizarre in appearance. Every segment of the body is longer than the ones in between. When full grown it is about 3/4"-1" long and is covered in dense, dark brown hairs. It has nine pairs of variable-length lateral processes (leg-like appendages-three of which are long, pointed and twisted) upon which the stinging hairs are borne. The longer processes are curved and twisted, suggesting the disheveled locks of a hag, after which it is named.



This larval stage is probably the least common of the stinging caterpillars. Its sting is said to be comparable to that of the saddleback caterpillar. Primary host plants include apple, ash, birch, sassafras, rose, alder, spirea, dogwood, hickory, oak, willow and other woody plants.

IO MOTH - *Saturniidae* *Automeris io* (Fabricius)

The io moth larva is similar in size (up to 2-1/2" long when fully grown) and appearance to the buck moth larvae but they are readily distinguished by their color. They are a beautiful pale green with white or yellowish and reddish to maroon stripes edged with white running lengthwise on the sides of its body. It appears *spiny* as compared to the furry puss caterpillar and lacks any long body hairs. Instead, each body segment is equipped with numerous fleshy tubercles each armed with several short, greenish, venomous spines tipped with black.



The IO moth caterpillars hatch in late spring or early summer from eggs deposited on various trees and shrubs

on which they feed including ash, oak, sassafras, locust, oak, birch, cherry, elm, maple, rose, willow, alder and/or other deciduous trees and herbaceous plants and/or corn, grasses and clover. They then feed for several weeks on foliage before reaching their mature size of 2" - 2-1/2" in length. They probably have only one generation per year. They usually pass the winter as a pupa inside a tough oval cocoon, often enclosed in leaves laying on the ground. Moths then emerge in the spring and summer to mate and deposit eggs.

Their sting mechanism is similar to that of the following puss caterpillar, but the pain apparently may be less severe, and complications from its stings are less frequently reported, but this may only be due to the fact that they are less frequently encountered.

SPINY OAK SLUG MOTH
Euclea delphinii

The pale yellow-green caterpillar has four dark patches of spines toward the rear and numerous spiny, yellow or red fleshy lobes. Fully grown caterpillars have a brown area on their backs. They feed on many trees, e.g., oak, beech, chestnut, pear, etc.



BROWN-TAIL MOTH CATERPILLAR
Euproctis chryorrhoea (Nygmia phaeorrhoea)

The fully grown larva is about 2" long. They are reddish-brown to nearly black in color with a broken white stripe on either side and two red dots on the back near the hind end. The body bears tufts of brownish, long barbed hairs. Head is light brown. Food groups include, oak, willow, apple, plum, pear, rose, elm and maple.

PUSS MOTH CATERPILLAR - Megalopygidae
Megalopyge opercularis (J.E. Smith)

The most common stinging caterpillar or venomous moth larva is the 1" long, hairy puss moth caterpillar which is the larval stage of the Southern flannel-moth. Because the puss caterpillar larvae belong to the so-called "flannel moths", several species of which also produce similar stinging caterpillars, the puss caterpillar has often been incorrectly termed an "asp". In late spring and early summer the moth emerges from a protected cocoon in which it overwintered to deposit its eggs on various trees, shrubs or bushes. The eggs hatch in a few days into tiny, fuzzy or fluffy (somewhat pear or tear shaped), whitish larvae which resemble small tufts of cotton. They develop gradually over a period of a few weeks, molting and shedding their skins at periodic intervals to allow for their continual growth. They are about 1" long when mature; their color changes gradually as they mature from white to tan to gray with darker markings. Interspersed among their long, soft, yellow or reddish-brown or mouse-colored silken body hairs are numerous short spines which discharge venom upon contact. When viewed from above, the puss caterpillar's head, true legs and abdominal prolegs are totally obscured beneath the body. The puss caterpillar produces the severest sting of all U. S. Caterpillars. It feeds on the foliage of many trees including almond, apple, orange, pecan, persimmon, hackberry, elm, plum, sycamore, and oak and blackberry and rose bushes.



A person's first symptom following contact with a puss caterpillar is an intense, local burning at the site of the contact. The pain may soon radiate a considerable distance as localized swelling begins to occur. The area of contact may become greatly reddened with minute papules, and the inflammation may spread several inches around the sting. Insensitive persons, lymph nodes under the arms or in the groin may become enlarged and painful and a severe headache may also develop. The victim may become weak and nauseated, and even shock-like symptoms may occur. All of these conditions usually occur within 2 hours after initial contact. Even when such systemic reactions do not occur, the sting site may remain inflamed, sore and irritated for several days. The severity of the symptoms appears to be related to the individual's sensitivity, maturity of the larvae, number of spines contacted, degree of pressure against the caterpillar and site of the sting.

SADDLEBACK MOTH CATERPILLAR - Limacodidae
***Sibine stimulae* (Clemens)**

The saddleback caterpillar or larva is a striking, venomous, grotesque, slug-like creature. It is about 1" long and flat on the underside, but rounded on the top when fully mature. The basic body color is brown or reddish; its back and sides in the center of the body is a bright or vivid pea-green patch with an oval, purplish-brown spot often edged in white which suggests a saddle, hence its name. The evenly rounded larva is armed along its sides with groups of spines, and two larger tubercles or projections are situated at the front and rear of its body also bear spines. Thoracic legs are very small and the abdominal prolegs are absent.



Saddleback caterpillars have a wide host range of herbaceous and wood plants including trees, shrubs and even corn plants and the perennial obedient plant. These stinging caterpillars are less commonly encountered than other species previously discussed. **Touch this caterpillar and you can get a rash and a high fever.**

Little information on life history or the habits of this moth is available. Presumably, not more than one, possibly two (in Texas), generations occur each year. Reports indicate that its sting is somewhat less painful than that of other stinging caterpillars. Primary host plants include oak, apple, aster, basswood, chestnut, cherry, plum, blueberry, citrus, dogwood, elm, grape, linden, maple, palm, sunflower and many other plants including corn foliage.

Many other venomous caterpillars exist, including the White Flannel Moth Caterpillar (*Narape cretata*) found in Maryland feeding on red bud, black locust, mimosa, hackberry and other woody plants, and a relative, *Logoa Pyxidifera* found in Georgia and the neighboring Atlantic States and the White-Marked Jussock Moth, *Hemerocampa leucostigma*, one of our most beautiful caterpillars. The head and the glands of the 6th and 7th abdominal segments are a bright vermillion. A band on the back is velvety black, bordered with yellow subdorsal stripes. There is another yellow band on each side just below the spiracles. On each side of the prothorax there is a slender tuft of long, black hairs with plume-like tips. It is found from Colorado to the Eastern States.

Other stinging caterpillars include the Spiny Oak slug, which is the larval stage of the Spiny Oak slug moth *Eudea delphinii* (Boisduval) and the White Flannel moth caterpillar *Norape ovina* (Sepp.) and the Hackberry slug which feeds on the Hackberry leaves they are about one inch long, off white in color with a large purple patch on the back and have six small tufts of hair on each segment. Still another slug caterpillar in Arizona (*Parasa chloris huachucas*) has sharp spines to deter predators. Eruicism is a dermatitis condition associated with contact of the (long) hairs of some caterpillars including "wooly bears" and/or tent caterpillars that also have poisonous glands at the base of each long hair which can cause a painful rash.

STINGING ROSE CATERPILLAR
Parasa indetermina

A yellow to red caterpillar with black and blue stripes down the middle of its back and less distinct red, black and blue stripes along its sides. It feeds on bushes and low tree branches, e.g., oak, sycamore, red bud, hickory, bayberry and wild cherry.



STINGING NETTLE CATERPILLAR
Darna palliritta



It is found on the Hawaiian Islands and has a dark stripe down its back and is about 1" length. It is covered with light-colored venomous spines and hairs. The adult moth is brown and about 1/2" in length. The adult moth can fly considerable distances.

COCKY APPLE STINGING CATERPILLAR
a/k/a BILLYGOAT PLUM STINGING CATERPILLAR - Limacodidae
Thesea Perithima



Australia has this stinging caterpillar which is colored light yellow, is oval-shaped and flattened. It looks like a spine-armored limpet with stinging spines all around its margin and on top of its body.

STINGING BARK CATERPILLAR - Lymantriidae
Euproctis stenomorpha

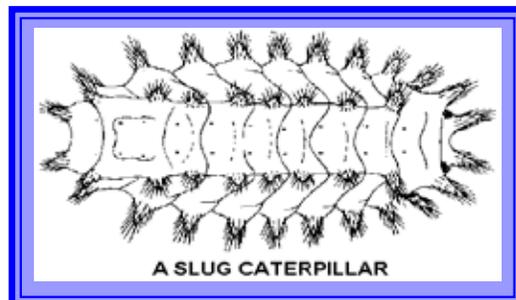
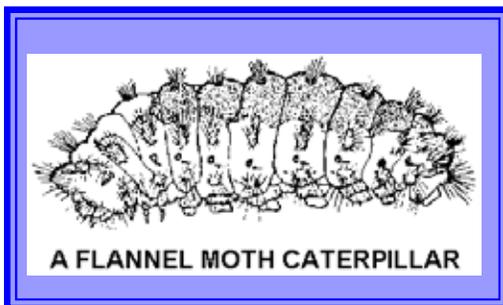


It is chocolate-colored with a pale central stripe, hairy with 4 tufts of hairs behind its head.

FRESH MANGROVE CATERPILLAR - Lymantriidae - *Euproctis lutea* (Fabricius, 1775) a small larvae usually hanging from a silken thread from the mangroves, and the Processionary Caterpillar which is the larval stage of the Bag Shelther Moth (now *Ochrogaster lunifer* and formerly known as *Teara contraria*) are dark brown with dense, very long hairs.

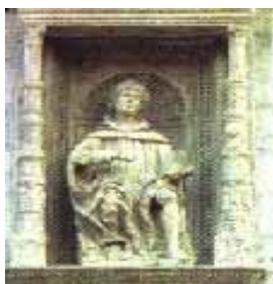
Some other “stinging” or irritating caterpillars include the following:

- Grapeleaf Skeletonizer (*Harrisina brillians*). Zygaenidae.
- Oleander Caterpillar (*Syntomeida epilais*). Arctiidae.
- Paming Moth Caterpillar (*Automeris pamina*). Saturniidae.
- Randa's Eyed Silk Moth Caterpillar (*Automeris randa*). Saturniidae.
- Mesquite Buck Moth or Juno Buck Moth (*Hemileuca juno*). Saturniidae.
- Mesquite Stinger (*Norape tenera*). Megalopygidae.
- Hickory Tussock or Tiger Moth (*Lophocampa caryae*, formerly *Halisidota caryae*). Arctiidae.
- Silver Spotted Tiger Moth (*Lophocampa argentata*) Arctiidae.
- Gypsy moth (*Lymantria* (*Porthetria*) *dispar*). Lymantriidae. Especially the wind-blown, first- instar (stage) larvae
- Satin Moth (*Leucoma* (*Stilpnotia*) *salcis*): Lymantriidae.
- White marked tussock moth (*Orgyia* (*Hemerocampa*) *leucostigma*). Lymantriidae.
- Hickory tussock moth (*Halysidota caryae*). Arctiidae.
- Pale (or banded) tussock moth. (*Halysidota tessellaris*) Arctiidae.
- Common woolly bear or Isabella moth, (*Pyrrharctia* (*Isia*) *isabella*): Arctiidae.
- Spiny elm caterpillar or mourning cloak butterfly (*Nymphalis antiopa*). Nymphalidae.



First Aid for Caterpillar Stings - People stung by stinging caterpillars suffer varying degrees of discomfort, but usually the site reddens and swells much like a bee sting or like a small red rash. No really effective home first-aid treatments for caterpillar “stings” are available. Immediate application of adhesive or duct or cellophane transparent tape, or a commercial facial peel over the sting area and then pulling it off may be helpful in removing broken spines. Washing the affected skin area thoroughly with soap and water (or some diluted Safe Solutions, Inc. enzyme cleaner) may help to remove insect hairs/spines and/or irritating venom. Try spraying the area with Not Nice to Skin Irritations™. Prompt application of an ice pack and a baking soda poultice may help to reduce pain and prevent swelling. First-aid creams or topical applications may ease the discomfort and itching sensation, antihistaminic drugs, often administered for bee and wasp stings, are reportedly ineffective. Household analgesics such as aspirin also appear to be ineffective for alleviating pain and headache. Prompt referral to, and treatment by, a physician are recommended, especially if severe allergic or other reactions are indicated. **Very young, aged or unhealthy individuals are more likely to suffer severe symptoms from the stings, and medical precautions should immediately be taken with such persons.**

Intelligent Pest Management® Control - Adult moths can be attracted to black light bug zappers or to lights hung over buckets of soapy water. Avoid handling any hairy caterpillars or material with which they have been in contact. Suitable protective clothing, including eyewear and gloves should always be worn when handling these insects. **Remember, dead caterpillars can still cause painful stings.** Most caterpillar infestations are usually short lived and should be left undisturbed, unless they are causing a problem. Most infestations will die out either through predation or when all food sources are removed or exhausted. Only plant species that do not attract stinging caterpillars. All the moth larvae are leaf feeders, where stinging caterpillars present hazards to persons, such as around residences or schools, infested shrubs and trees may be vacuumed or sprayed or dusted to reduce or eliminate the caterpillars. You can lightly dust the leaves and infested areas with food-grade DE or use products containing *Bacillus thuringiensis* (Dipel, Thuricide, Bio Spray) and/or Safer’s insecticidal soap if labeled or simply spray with diluted red food color and/or lemon Joy® dish soap or diluted Safe Solutions Enzyme Cleaner with Peppermint (1 oz. per qt. water) or with Not Nice to Bugs® or release Green Lacewings, predator tachnid flies or stink bugs or parasitic wasps, e.g., *Trichogramma minutum*, or even quicker and simpler, pick the larvae off with pliers or tongs and drop them into a bucket of soapy water. The best prevention against stings is education and avoidance and natural predators including birds, e.g., robins and starlings. Note: Some states, e.g., California, labels vary, **so always refer to the pesticide label for each state you are in and spot treat a small area of each plant first to see if your mix burns the leaves/foilage.** Slowly dying caterpillars move contortedly, and will shed many irritating and/or nettling hairs and spines before they die. Note: Fire ants will eat them and human contact is usually uncommon. Try a pair of free-range Guinea fowl.



The Roman historian, Pliny the Elder was convinced that leading a bare-breasted virgin around a hedge 3 times would force caterpillars to fall to the ground.

Remember the 5 simple rules to be happy:

1. Free your heart from hatred.
2. Free your mind from worries.
3. Live simply.
4. Give more.
5. Expect less.

A Biological Control



Caterpillar with Parasites