What's Eating You? Saddleback Caterpillar (*Acharia stimulea*)

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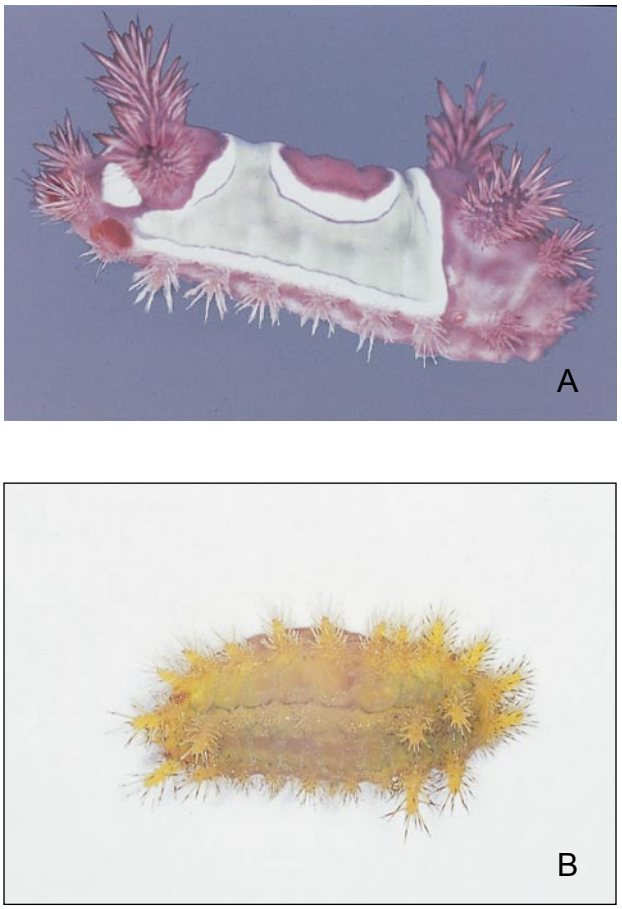
The saddleback caterpillar, *Acharia stimulea* (formerly *Sibine stimulea*), has a striking appearance (Figure). It is brown with a depressed green back and flanks on which conspicuous oval brown patches are present, usually with white borders. The depressed back and brown patches give the appearance of a saddle and the green area resembles a saddle blanket. The caterpillar varies in size and may exceed an inch in length. It grows to a stout 3/8-in wide, giving it a sluglike appearance. It is sometimes referred to as a slug caterpillar and is similar to other members of the family Limacodidae. The venomous spines are found on protuberances anterior and posterior to the depressed back. There also are smaller stinging organs on each side. Abdominal prolegs (false legs on the abdomen) are absent, and the thoracic legs are very small.

Adult moths lay eggs during the summer. The caterpillars feed on corn foliage; the leaves of apple, pear, cherry, basswood, chestnut, oak, and plum trees; roses; and a wide variety of other plants. The cocoon is a tough, brown, oval structure that retains the stinging hairs and is capable of causing envenomation.

Stings occur when the caterpillar falls on an individual, when the caterpillar is handled or ingested, or when an individual accidentally brushes against the caterpillar. The sting is moderately painful and accompanied by redness and swelling. Stings on the fingers commonly occur when attempting to remove the caterpillar from clothing.

In a 1-year prospective study of 112 caterpillar envenomations, identification of the caterpillars involved was possible in only 68% of cases.[1] The authors were from the southeastern United States, which influenced the caterpillars involved. In this study, 4 caterpillar species were strongly associated with stings: the buck moth caterpillar (*Hemileuca maia*), the Io moth caterpillar (*Automeris io*), the woolly asp/southern flannel moth caterpillar (*Megalopyge opercularis/Lagoa crispata*), and the saddleback caterpillar (*A stimulea*). The most common signs and symptoms were local pain, erythema, and swelling. Muscle spasms, paresthesia, and radiating pain in an extremity were noted in



Acharia stimulea (A and B).

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Medically Important Caterpillars

Common Name	Scientific Name	Clinical Manifestations
Saddleback caterpillar	*Acharia stimulea*	Moderate pain, erythema, and swelling
Io moth	*Automeris io*	Less severe pain, erythema, and swelling
Puss caterpillar, woolly asp, southern flannel moth	*Megalopyge opercularis/ Lagoa crispata*	Severe pain, with parallel hemorrhagic lines
Hag moth	*Phobetron pithecium*	Moderate pain, erythema, and swelling
Buck moth	*Hemileuca maia*	Moderate pain, erythema, and swelling
Gypsy moth	*Lymantria dispar*	Severe itching
Browntail moth	*Euproctis chrysorrhoea*	Severe itching and wheals
Woolly bear, mistletoe browntail moth	*Euproctis edwardsi*	Urticarial wheals and papules
Tea tussock moth	*Euproctis pseudoconspersa*	Urticarial wheals
Spanish pine processionary caterpillar	*Thaumetopoea pityocampa*	Urticaria, angioedema, and anaphylaxis
Hickory tussock moth, hickory tiger moth	*Lophocampa caryae*	Poison ivy–like rash with severe itching, sometimes followed by painful burning
Silver-spotted tiger moth	*Halisidota argentata*	Moderate pain
Stinging rose caterpillar	*Parasa indetermina*	Moderate pain

26% of patients. In 61% of patients, signs and symptoms persisted for at least 24 hours postenvenomation. None of the patients in this series exhibited hives or anaphylactic allergic responses. There was no correlation between an atopic background and the type or extent of signs and symptoms following envenomation.[1] Lepidopterism from contact with M *opercularis* is readily distinguished from other species by a greater severity of symptoms and the presence of hemorrhagic lesions in a pattern of parallel lines.[2]

The lack of urticarial lesions with *A stimulea* contrasts with some other species, such as *Euproctis edwardsi*, the woolly bear caterpillar of the Australian mistletoe browntail moth. Itching urticarial wheals as well as papular eruptions can follow contact with these caterpillars or their detached hairs.[3] Immediate hypersensitivity reactions also characterize the dermatitis induced by *Euproctis* caterpillars in Japan and the United States.[4] Skin tests using venomous spicules and the venomous extract from the caterpillar of *Euproctis pseudoconspersa* produce both immediate and delayed-type reactions. The reactions do not occur in all subjects, suggesting that an immune response against venom released by the spicules plays an important role in the induction of the dermatitis. The state of sensitization to the venomous components appears to be an important factor in determining the response to the venom.[4]

Cutaneous lesions caused by the Spanish pine processionary caterpillar *Thaumetopoea pityocampa* also cause immunologic urticaria. Immediate hypersensitivity to this caterpillar has been demonstrated by performing prick tests and immunoglobulin E immunoblotting. In addition to contact urticaria, angioedema occurs in up to 60% of affected patients and anaphylactic reactions occur in roughly 40% of affected patients.[5] Immunoblotting demonstrates specific immunoglobulin E in 87% of patients.[6]

Caterpillar ingestion can cause severe symptoms in children. In a study of 733 cases of exposure to caterpillars, there were 8 cases of caterpillar

ingestion. Ages ranged from 7 months to 7 years, and the children required direct laryngoscopy, bronchoscopy, or esophagoscopy to remove the caterpillar spines.[7]

There are many thousands of species of caterpillars, and many are capable of creating cutaneous signs and symptoms. Some of the more prominent species of medical importance are listed in the Table. Ocular involvement (ophthalmia nodosa) is an important complication caused by caterpillar hairs, and patients with ocular exposure should be evaluated by an ophthalmologist. Patients with oropharyngeal symptoms should be referred to an otolaryngologist, and patients with immediate hypersensitivity should see an allergist. Injectable epinephrine in the form of an EpiPen® (epinephrine auto-injector) should be given to individuals with severe allergic manifestations. Other treatment is largely symptomatic. Spines can be removed with adhesive tape or comedone-removing pads.

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