Stinging and Itchy Caterpillars in the Top End of the Northern Territory

Medical Entomology
Centre for Disease Control
Department of Health and Families
Northern Territory Government
February 2010
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Australian Lepidoptera (moths and butterflies) contains several species of caterpillars that cause irritation when in contact with humans. They are armed with irritating hairs or stinging spines which serve as protection against predators.

There are two types of hairs. Some can be envenomating, where they are tubular and hold a venom or irritant produced by a gland at their base. Under pressure, the tips of these hairs can break releasing their contents.

The other type of hair is referred to as non-envenomating. These hairs do not contain venom but rather cause inflammation through mechanical irritation.

These hairs can be easily dislodged from the caterpillar and adhere to the surface of the skin on contact or through air borne drift. Airborne hairs can land on surfaces which humans may contact such as bed linen and clothing. Disturbance of old larval skins will also cause irritation, as the hairs retain their properties long after the caterpillars have pupated.

Symptoms

Symptoms from stinging caterpillars usually include instant pain, with a longer lasting ache and a raised weal that usually soon subsides.

Contact with the venomous or irritating hairs include symptoms of extreme itch followed by wheals and a variable rash which can include a burning sensation. Other symptoms are dermatitis, pain, itching, and swelling of the affected area. The intensity of the irritation is dependent on the sensitivity of the patient and the species of caterpillar. Detached hairs if inhaled may cause laboured breathing. Irritation in some cases can last for days. Eye injuries have also been reported and may lead to conjunctivitis.

Diagnosis

A recent history of contact with a moth, caterpillar or food plants are usually required to determine if and which caterpillar has caused a problem. Identification of the caterpillar or moth with pictures or taxonomic keys is essential in the prevention and control of stinging and itchy caterpillar infestations. Medical Entomology staff can identify the moths or caterpillars and offer advice on control and avoidance.

Treatment and Control

Avoid contact with any hairy caterpillars or materials which they have contacted. When handling these insects, suitable protective clothing such as eyewear and gloves should always be worn. Most infestations are short lived and will subside after a short period. If the caterpillar infestations are causing an appreciable problem, a pest control officer can chemically treat the food plant or harbourage area. Infestations will normally die out through the depletion of food resources or predation.
Treatment of affected skin by itchy caterpillars includes the removal of all affected clothing. Apply a piece of adhesive tape to the affected areas and pull the tape off immediately. This should remove the majority of the hairs and reduce the irritation. The tape can be examined under the microscope to observe hairs.

Wash all areas where itchy caterpillars have been observed or where irritation occurs. Commonly irritation occurs from touching the caterpillar or moth, or contact with bed linen after moths or airborne irritating hairs have landed on washing.

Stinging caterpillars are usually only on the food plants and direct contact with the caterpillar causes the sting. The best remedy is to recognise the food plants and avoid them at their active growing period.

Ice packs, analgesics, creams, antihistamines and lotions with steroids may assist in relieving the symptoms of both types of reactions.

Common NT Lepidoptera problem species:

**Itchy caterpillars**
- Fresh-water Mangrove itchy caterpillar
- Stringy-bark itchy caterpillar
- Bag Shelter Moth or processionary caterpillar

**Stinging caterpillars**
- Cocky Apple stinging caterpillar
- River Red Gum Moth (locally) or Mottled Cup Moth (CSIRO)

There are a number of other species of stinging caterpillars in the Top End which are usually brightly coloured with stinging tubercules on the dorsal surface similar to the River Red Gum moth larvae.
The Fresh-water Mangrove Itchy Caterpillar

Identity

Family Lymantriidae

*Euproctis lutea* (formerly *Porthesia lutea*) Fabricius. Identified by R. Southcott, South Australia.

Food plants


Appearance

The early larval instars (caterpillar larval stages) are a pale cream with sparse medium length hairs, and an almost hairless appearance. The later instars are a pale light brown with a darker patch of 4 tufts just behind the head region and two darker tufts at the rear end. The moth is pale yellow with a fine pattern of lighter yellow lines.

Biology

The primary food plant appears to be the Freshwater Mangrove, although it is seasonally common on the Cocky Apple. It is found generally across the Top End of the NT. The eggs are laid as a pale scale covered mass on the leaf surface of the food plant. The larvae on hatching, feed together on the same leaf for the first instars.
and weave a thin silken shelter across the surface of the leaf beneath which they
shelter. The early instars leave a characteristic skeletonised portion on the leaf. If a
larvae is dislodged from the leaf they are suspended by a silken thread and soon
climb back to the leaf. During the later instars, the larvae are found sheltering on the
shaded side of the base of their food tree in a silken shelter, together with shed skins.
The adult moths are strongly attracted to light and can rest and lay egg-masses on
surfaces near the attracting light. They will alight on pale surfaces such as sheets
and clothing on clothes lines at night.

Medical effects
I brushed a mature larvae on the inside forearm and very soon produced white 3mm
x 3mm urticarial lumps surrounded by a large (5cm x 5cm) reddened area. The arm
was extremely itchy from one (1) minute to two (2) hours afterwards. Contact with the
scales covering the egg mass can produce the urticaria reactions as well.

Contact can be made with the early instars by walking beneath or even close to the
food tree. Touching the trunk of the tree when later instars are present is sufficient to
come into contact with the poisonous hairs. Touching the affected area of the skin
and then touching an unaffected area often leads to a spread of the problem. The
silken shelters and shed skins can cause reactions months after the larvae are no
longer present.

Symptoms can also be experienced from touching the mature moths. In April 1982
while two kilometres offshore from Port Keats, NT I handled the yellow female moth
of this species attracted at night to light and inadvertently touched the region of my
left eye. The eye region became itchy within a few minutes and soon became very
itchy and uncomfortable and started to swell. After one (1) hour the eye swelling
completely obscured the vision in the eye, and the eye area was still swollen,
although not itchy, twelve (12) hours later.

On another occasion I awoke with itchiness on a bunk well out to sea, and observed
an extensive urticarial rash on my trunk. An examination of the sheets revealed a
moth of this species, and removal of the moth was sufficient to avoid further
problems.

Young children have been observed with appreciable swelling around the eyes, ears
and throat areas, and some with appreciable reactions have required medical
attention.

P. Mackey (pers. com) reports itchies for days after touching the moths.

Remedy
- Avoid food trees in urban or bush settings, particularly if there is evidence of fresh
  skeletonising or partly eaten leaves.
- Remove trees in urban sites or destroy larvae at resting stage at the base of the
  food trees by the application of a residual insecticide to the trunk or leaves of the
tree and by wrapping loose bagging impregnated with insecticide at the base of the tree. Burn the area around the base of tree during the day when the caterpillars are resting.

- Do not have outside fluorescent or incandescent white lights on after sundown in problem areas or when moths are active.
- Do not touch the yellow moths.
- Do not sleep or sit under lights when the moths are attracted to the lights.
- Wash affected clothes or skin well with soap and water.
- Apply soothing lotions such as Stingose, Calamine Lotion or papaya creme. Antihistamine medications may be required for severe or generalised reactions. Medical advice should be sought for severe reactions.

Reference

Bag-shelter Moth or Processionary Caterpillar

Identity

Family Thaumetopoeidae

*Ochrogaster lunifer* Herrich Schaffer (formerly *Teara contraria*) (Identified by L. Radunz 3/7/80)

Food plants

Collected by P. Whelan 5/4/82 Berrimah NT and 19/3/82 Howard Springs NT on *Planchonia careya* (F. Muell.) R. Knuth, (Cocky Apple). The same species was found in a bag shelter on *Eucalyptus terminalis* F. Muell. on Victoria River Downs NT (P. Whelan May 1980).

Appearance

The mature larvae are relatively large and black, with a long hairy appearance. The female moth is a relatively large pale brown moth, with a brown abdomen and a cream coloured terminal end. The forewings have two small rectangular white patches centrally on the wing.

Biology

The main food plant is the Cocky Apple. It is particularly common on this tree in the wet season across the Top End of the NT. The eggs are laid on the new leaves with a covering of scales from the tip of the moth abdomen. Young larvae feed on the top surface of the leaf and leave a skeletonised appearance. Older larvae eat the whole
leaf and the leaves look extensively damaged. The older larvae form a silken bag in which they harbour during the day and in which shed skins and excreta accumulate. The bag increases in size and can reach the size of a basketball. On an occasion when the nest was broken open on the ground, the larvae formed a processionary column and climbed back up the tree. The larvae pupate singly in the ground near the food tree.

Medical effects

While collecting larvae, I contaminated the palm of my hand and fingers. The palm was very itchy after ten (10) minutes and continued to be itchy for at least two (2) days. There were still red areas on the palm 1 cm square after two (2) days and the area was sore as if a fine splinter was inside the skin.

The hairs and skin can be airborne after disturbance of the nest. Contact with the bag can cause extensive urticaria and intense itching for at least a number of hours, even in bags where the larvae have long gone. Contact with the female moth and egg masses will also cause reactions.

Remedy

- Avoid food trees in urban or bush settings, particularly if there is evidence of fresh skeletonising or partly eaten leaves.
- Remove trees in urban sites or destroy larvae at resting stage at the base of the food trees by residual application of insecticide to the trunk or leaves of the tree and by wrapping loose bagging impregnated with insecticide at the base of the tree. Burn the area around the base of tree during the day when the caterpillars are resting.
- Do not have outside fluorescent or incandescent white lights on after sundown in problem areas or when moths are active.
- Do not touch the pale brown moths.
- Do not sleep or sit under lights when the moths are attracted to the lights.
- Wash affected clothes or skin well with soap and water.
- Apply ice pack or soothing lotions such as Stingose, Calamine Lotion or papaya creme. Antihistamine medications may be required for severe or generalised reactions. Medical advice should be sought for severe reactions.

Reference


The Cocky Apple Stinging Caterpillar

Identity
Family Limacodidae
Thosea penthima Turner  (Identified E.D. Edwards 24/5/00)

Food plants
Collected from Planchonia careya  (F. Muell.) R. Knuth, (the "Cocky Apple or Billy Goat plum") in Darwin 12/3/82 and Terminalia ferdinandiana the "Kakadu Plum" in Darwin, March 1982 by P. Whelan and W. Kelton.

Appearance
A pale yellow and light green larvae with an oval flattened appearance with numerous protuberances along each side and two rows of protuberances dorsally. The moth is light brown and of medium size with a thin dark line transversely across the forewing.
Biology
The main food plants are *Terminalia ferdinandiana* and *Planchonia careya*. Infested trees or shrubs usually have the appearance of eaten leaves but there may be only a few larvae on each tree. Pupation occurs in a relatively hard parchment-like ovoid cocoon between or on leaves, with a flattened portion at the site of attachment to the leaf. Exposure is often from walking with bare legs through regrowth of annually burnt or cleared *Eucalyptus* woodland, in the early to mid wet season when small shrubs of *Planchonia careya* or *Terminalia ferdinandiana* are usually present.

Medical effects
Contact with the caterpillar to the rear of my thigh resulted in a sharp painful burning sensation which intensified after fifteen (15) minutes with a muscle ache. The ache was reduced after twenty-five (25) minutes with a continuous burning sensation. After one (1) hour, there was a mild burning sensation which had subsided by one and a half (1 1/2) hours. I have experienced a number of very sharp and painful stings from these species.

Remedy
- Avoid food trees in urban or bush settings, particularly if there is evidence of fresh skeletonising or partly eaten leaves.
- Remove trees in urban sites or destroy larvae at resting stage at the base of the food trees by residual application of insecticide to the trunk or leaves of the tree and by wrapping loose bagging impregnated with insecticide at the base of the tree. Burn the area around the base of tree during the day when the caterpillars are resting.
- Do not have outside fluorescent or incandescent white lights on after sundown in problem areas or when moths are active.
- Do not touch the light brown moths.
- Do not sleep or sit under lights when the moths are attracted to the lights.
- Wash affected clothes or skin well with soap and water.
- Apply ice packs or soothing lotions such as Stingose, Calamine Lotion or papaya creme. Antihistamine medications may be required for severe or generalised reactions. Medical advice should be sought for severe reactions.

Reference
River Red Gum Cup Moth (locally) or Mottled Cup Moth (CSIRO common name)

Identity

FamilyLimacodidae

*Doratifera vulnerans* (Lewin) (id. P. Mackey 28/6/82)

Food plants

Collected from *Eucalyptus tetrodonta* (F. Muell.), *(Darwin Stringybark)* in Darwin 16/3/82 by P. Whelan.

Also collected in Darwin, March 1982 by P. Whelan from:

- *Eucalyptus miniata* A. Cunn. ex Schauer *(Woolybutt)*.
- *Leptospermum longifolia* (C.T. White & Fronin) S.T. Blake, *(Weeping Ti Tree)*.
- *Melaleuca* species *(Paper bark)*.
- *Eucalyptus camaldulensis* Dehn., *(River Red Gum).*
Appearance

The larvae are bright colourful larvae with an overall light purple appearance with light green lateral edges with patches of yellow edged with black in the dorsal “saddle” with a characteristic hump at each end with 4 rosettes of stout black tipped stinging spines at each end. The four (4) rosettes of stinging barbs at each end are partly retractile. There is a row of light green stinging protuberances along each side. The moth is small with light and dark brown patterns on the forewings with pale ends and rear edges.

Biology

The main food plant in the Darwin area is *Eucalyptus camaldulensis* and less commonly on *Eucalyptus miniata* and *Eucalyptus tetrodonta*. The larvae feed on the younger leaves and are primarily present during the wet season when the food trees are actively growing. Pupation occurs in a hard ovoid shaped cocoon which is attached sessile to the smaller branches of the food tree. After the moth emerges, the cocoon loses its top but remains firmly attached to the twigs as a small smooth grey cup resembling a small eucalypt fruit capsule.

Medical effects

Larvae were tested for reaction by touching lightly on the forearm with the point of contact being one of the apical groups of stinging spines.

There was an immediate very sharp painful sting. A sharp throbbing pain started after a few seconds and lasted for approximately five (5) minutes. A white raised wheal of 1 square cm. appeared within a few seconds with a surrounding reddened area 1 cm. wide. After fifteen (15) minutes the site was no longer painful. The whole area (9 sq. cm.) was raised and reddish after forty-five (45) minutes. After two (2) hours there was no pain and while no longer red, there was a large 5cm x 5cm raised swelling on the forearm.

Remedy

- Avoid food trees in urban or bush settings, particularly if there is evidence of fresh skeletonising or partly eaten leaves.
- Remove trees in urban sites or destroy larvae at resting stage at the base of the food trees by residual application of insecticide to the trunk or leaves of the tree and by wrapping loose bagging impregnated with insecticide at the base of the tree. Burn the area around the base of tree during the day when the caterpillars are resting.
- Do not have outside fluorescent or incandescent white lights on after sundown in problem areas or when moths are active.
- Do not touch the small brown moths.
- Do not sleep or sit under lights when the moths are attracted to the lights.
- Wash affected clothes or skin well with soap and water.
• Apply icepacks or soothing lotions such as Stingose, Calamine Lotion or papaya creme. Antihistamine medications may be required for severe or generalised reactions. Medical advice should be sought for severe reactions.

Reference
The Stringy Bark Itchy Caterpillar

Identity

Family  Lymantriidae

_Euproctis stenomorpha_ Turner. Id. by RV Southcott. South Australia.

Food plants

Collected by P. Whelan from _Eucalyptus tetrodonta_ F. Muell. (“Darwin Stringybark”) from a school in Darwin 1974 and forwarded to David Lee at SPHTM Sydney and at Howard Springs, August 1981. Also collected infrequently and at very low density on other trees including mango and black wattle (_Acacia auriculiformis_).

Appearance

A hairy chocolate brown larvae with black tufts of short hairs in two rows along the body. There is a patch of 4 larger black tufts just behind the head region with a narrow medial white longitudinal patch centrally on the dorsal abdomen.

The moth has a black appearance, with pale yellow sections at the start of the hind wings and a prominent tuft of orange hair at the terminal end of the abdomen. The female is approximately twice as big as the male.

Biology

The main food plant is the Darwin Stringybark. The larvae are found primarily in the wet season and early to mid dry season on mature trees. During the day, the later larval instars harbour at the base of the Stringybark tree in cracks in the bark, beneath partly shed bark or amongst debris at the base of the tree. The last instars pupate in these sites, as well as in the nearby vicinity and have been observed pupating on rafters, under termite caps of houses, under seats, and other sheltered areas near the food trees. The larvae spin a silken cocoon and the last larval skin remains inside the cocoon.
Medical effects
The reaction of urticaria and extreme itch can occur by handling the larvae, the pupal cocoon, or even just touching the bark of the tree. If an affected tree bark is handled, there can be a transfer of hairs via the hands to the other parts of the body. Rubbing and scratching can spread the urticaria affected area.

Dr. Scattini, in Katherine has reported a rash all over the back of a victim after urticaria had subsided (pers com.).

Other reports of reaction with severe swelling of the face, especially around the eyes and swelling of the throat and generalised reactions are believed to be due to this species or the Freshwater Mangrove Itchy Caterpillar.

Remedy
- Avoid touching the bark of Darwin Stringybark, caterpillars or moths
- Remove trees in urban sites or destroy larvae at resting stage at the base of the food trees by residual application of insecticide to the trunk or leaves of the tree and by wrapping loose bagging impregnated with insecticide at the base of the tree. Burn the area around the base of tree during the day when the caterpillars are resting.
- Do not have outside fluorescent or incandescent white lights on after sundown in problem areas or when moths are active.
- Do not touch the black moths.
- Do not sleep or sit under lights when the moths are attracted to the lights.
- Wash affected clothes or skin well with soap and water.
- Apply ice packs or soothing lotions such as Stingose, Calamine Lotion or papaya creme. Antihistamine medications may be required for severe or generalised reactions. Medical advice should be sought for severe reactions.

Reference
