Creatures of the Night

Story and Photos
By Michael R. Jeffords

From dazzling to drab, the moths of Illinois are as fascinating as the stars.

I was a fortunate child. As Illinois author Stephen Lyons has said, "Rare is the time when we can quiet our inquisitive minds sufficiently and enjoy the present tense. Rarer still is knowing which quick hours in a long life will be the kind of precious touchstones we will draw on in later life."

At age 9, I found such a touchstone. While trekking home from school one warm day in May I encountered the most wonderful creature I had ever seen.

North America's largest moth, the Cecropia, can reach 6 inches in width.

"Surely this must be a first," I thought. "No one could ever have seen such an animal before." A giant moth was hanging somewhat uncomfortably from a metal turnbuckle holding up a power pole along the tree-lined street that led from school. I coaxed the large red, brown and white moth onto my finger, put it in my lunch bag, and hurried home to find out what I had. It turned out to be

Its bright color and spined tubercles projecting from the body wall of the 1-inch stinging rose caterpillar warn potential predators of poisonous qualities.

Seen hovering over flowers, with wings beating rapidly, bumblebee sphinx moths, also called clearwing moths (above), often are mistaken for hummingbirds or bees. The gray tussock moth larva (right) is a relative of the gypsy moth. Its long hairs can cause allergic reactions in some people.

a female cecropia moth, newly emerged, and, as the book said, the most common giant silk moth in Illinois. While I had not made a monumental discovery of a new species, I was forever hooked on insects, and that moth became the focal point for my new insect collection and ultimately led to my present career as an entomologist.

This article, however, is not about me, but about this most remarkable group of creatures, mostly nocturnal, called moths. In reality, moths are members of the insect order Lepidoptera. Wordwide there are some 150,000 species. In Illinois, we have, using a conservative estimate, at least 2,000 different species. These range in size from the aforementioned giant, the cecropia, to minute, nearly microscopic jewels called microlepidoptera. These beauties can only be appreciated with the aid of a strong magnifying glass.

The order Lepidoptera contains the well-known butterflies, but by far the largest group is the moths. What's the difference? Butterflies are diurnal (active during the day), they cannot fold their wings together and lay them across their backs, and they have knobbed antennae. Most moths are nocturnal (active at night), fold their wings like a tent over the body and have feathery or thin, unknobbed antennae. While the great majority of moths are drably colored, quite a few sport really spectacular patterns, including the giant silk, sphinx and underwing moths, just to name a few.

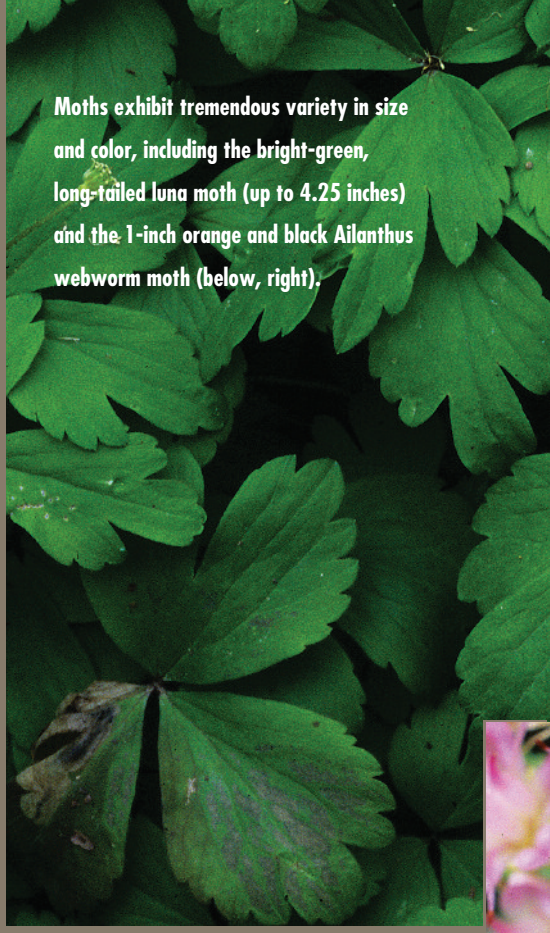
Illinois has many different moth families, but they all share a basic life cycle. Females lay eggs on an appropriate food plant; the larvae hatch to feed and molt several times; when full grown, the larvae either spin a cocoon, burrow into the soil or find some other sheltered place and molt into the pupal stage. They can either spend the winter in this form or emerge during the same season. Adult female moths then release a chemical called a pheromone to attract a mate, and the whole process begins anew.

The translucent, bright-green larva of the Polyphemus moth becomes a reddish-brown moth with a wingspan that can reach 5.5 inches.

Some moths resort to mimicry and flash large, intimidating eyespots to frighten predators.

While moths are certainly some of the most commonly encountered crea-

Moths exhibit tremendous variety in size and color, including the bright-green, long-tailed luna moth (up to 4.25 inches) and the 1-inch orange and black Ailanthus webworm moth (below, right).



tures in Illinois—witness the activity around a street light in midsummer—few people pay them much mind unless the occasional chance encounter sends them scurrying to the nearest phone or extension office for details of a "once-in-a-lifetime" encounter.

Over the length of my career as an entomologist, I've had a remarkable array of questions and observations posed.

"I've got giant green worms eating my tomatoes and they are covered with white eggs!" (Explanation: Tomato hornworm larvae, the immature stage of a sphinx moth, have been parasitized by tiny wasps, the "eggs" are the wasp cocoon.)

"There's this giant, ugly web in my cherry tree and caterpillars marching all over my sidewalk! (Explanation: Eastern tent caterpillars weave a large, silken nest and forage out from it to feed.)

Larva of the royal walnut moth are commonly called hickory horned devils (above). The adult phase is pictured on the bottom right corner of page 15.

And my all-time favorite, "I've got dragons eating my hickory tree!" (Explanation: The larvae of the royal walnut moth, called hickory horned devils, can reach six inches in length and sport an impressive, harmless arsenal of spines, hooks and knobs. It doesn't take many of these ravenous lepidopteran behemouths to defoliate a tree.)

Moths also intrude upon the lives of humans in various unwanted ways. Those tiny, pesky creatures that flutter from a seldom-opened closet have likely made a meal of your best woolens. The larvae of the family Tineidae love to eat natural fibers. The sudden death of your prized zucchini plant was caused by the burrowing activity of the squash vine borer, the larvae of a quite beautiful moth in the family Sessiidae that resembles a wasp. And ask any farmer about moths and you will get a litany of woeful creatures—corn earworm, black cutworm and European corn borer.

By and large, though, moths live lives, as Thoreau so aptly stated, "of quiet desperation." They exist in relative

Larva of the 1-inch, colorful gaura moth (below) feed on the plant for which it is named. Plume moths (right) are usually small in size with fringe on their hind wings.

obscurity, hoping to avoid becoming part of the food chain before they can reproduce. Nothing makes a migrating spring warbler or a breeding pair of wrens happier than frequent encounters with these luscious, lepidopteran tidbits. In fact just about every creature that calls itself a carnivore will make a meal of moth larvae, given the chance.

How, then, do any moths survive to reproduce? Over the eons, moths have developed an impressive array of defenses that enable them to survive as mostly tasty members at the base of nearly all food chains. Members of the family Arctiidae, however, have distasteful chemicals in their bodies and are warningly colored to alert potential predators. Members of several families have larvae covered with impressive spines, many tipped in poisonous compounds, that give even the most aggressive predators pause. But by far the most effective strategy is simply to disappear into the background, or appear as something that is not edible. Some moths resembles dead leaves, twigs or bird droppings, while others resort to mimicry and flash large, intimidating eyespots to frighten predators, or have brightly colored hindwings that disappear under the forewings when the creature lands, thus foiling the pursuer.

Studying these creatures of the night sky can be an endlessly fascinating, lifelong pursuit, and many talented amateur lepidopterists across the state and country have contributed greatly to our knowledge of these remarkable creatures.

Excellent guides for helping in the identification of moths are the *Field Guide to the Silkmoths of Illinois* by John K.Bouseman and James G. Sternburg, *The Moth Book: A Guide to the Moths of North America* by W. J. Holland Moths, or A *Field Guide to Moths of Eastern North America* (Peterson Field Guide) by Charles V. Covell.

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