

Kids' KOrner

Spiders Use Scent to Lure Moths

WASHINGTON — At night the woods are full of glowing eyes, sticky webs, spiders hanging in midair, walking sticks, owl flies, moths, and other flying things.

That's the way biologist Mark K. Stowe likes it.

Just after dusk he slips into the stillness of the Devil's Millhopper, a thickly forested state park in northern Florida, near Gainesville. Equipped with a headlamp, he usually stays until dawn looking for certain kinds of spiders that come out only at night and lurk on the underside of leaves.

At first glance they look like other members of their ancestral family, the orb weavers. But they're different. They gave up spinning the traditional web a long time ago.

Mimicking Moths

Instead, these spiders get all the food they need by luring male moths. Somehow during the course of evolution they developed the remarkable ability to mimic the sex attractant odors of female moths. They capture and live on male moths exclusively.

"Sometimes I've watched as many as four moths at a time struggle against the wind, apparently to compete with each other to get to the female," Stowe says. Instead, they meet a deadly fate: one of two genera of spiders, *Kaira*, "the snatchers," and *Mastophora*, "the bola hurlers."

To catch their prey, *Kaira* spiders hang upside down from a silk trapeze line with their legs outstretched and snatch moths out of the air.

The *Mastophora* spiders use a front leg to fling a short line of silk with a droplet of glue on the end. The glue instantly sticks to the wings of an approaching moth, and

the tethered prey is hauled in, wrapped in silk, and eaten.

"I've never seen a moth break away from a successful spider strike," says Stowe. "That glue has physical properties that man would be hard pressed to reproduce. Also, the bola line can stretch out up to six times its original length and absorb some of the energy of the moth's struggle."

It is unusual for spiders to attract their prey, and even rarer for them to exploit the sexual signals of another insect to do it, says Stowe.

"Unlike the typical orb weavers, which catch anything that happens to fly into their webs, these spiders don't wait for insects to arrive by chance. Not that they're fussy, but all the are able to catch is moths."

Hunt by Night

Their better mousetrap is geared to the moths' nocturnal activities and can net them up to eight moths a night, depending on size. Some spiders can snare moths that are twice their own body length.

Both the trapeze and the bola represent evolutionarily reduced orb webs. The spiders, which are found only in North and South America, must periodically re-spin these webs throughout the night.

Stowe, who won first prize in an eighth-grade science fair with a project on spiders, is now completing his doctoral work on *Kaira* and *Mastophora* spiders at Harvard University. His field research is partially supported by the National Geographic Society.

To witness all this activity, Stowe must turn off his headlamp and use special infrared viewing equipment. Moths do not display normal sex attraction behavior in even the dimmest of visible light.

Vibrations from the approaching moths prompt the spiders to flick the bola or grab out with their legs. To make things harder for the spiders, the same response can also be elicited by such diverse stimuli as human humming and a jet plane passing overhead.

— Dinosaurs have come and gone, but the horseshoe crab is still around, and its looks have hardly changed over the past 300 million years. Only a few other creatures, most notably the cockroach, look so much like their ancient ancestors.

— Some pet tortoises are said to have excellent vision and strong loyalties, says International Wildlife magazine. Tortoises can recognize their owners from a distance, while ignoring strangers.

— Bats have been extremely valuable in scientific research that aids mankind. Research on bats has contributed to development of navigational aids for the blind, new vaccines, artificial insemination and birth-control methods, and to studies of aging and space biology.

— The saying, "rain is good for fishing," is true. Insects may be knocked into a lake or stream by wind or raindrops, which brings insect-eating fish, such as bluegills, to the surface, where it's easier for people to catch them. Raindrops also break up the smooth surface of the water, making it harder for fish to see people fishing.

— Only the sturdy caprepter bee can lift the flap of the Brazil nut's

flower to get at the pollen, says International Wildlife magazine. Without the bee, the plant could not reproduce, and Brazil would lose an important economic crop.

— In the fall, even the tamest buck deer can turn mean enough to charge humans with their hardened, pointy antlers, especially if the buck hasn't found a doe to mate.

— The African lungfish can live out of the water for months at a time because, in addition to gills, it has an air bladder, an organ that works much the way lungs do.

— Each person in the United States uses about 90 gallons of water a day for cleaning and gardening; two more are used for drinking and cooking, National Geographic World reports.

— Hawaii's island of Kauai is the last home of the nearly extinct 'o'o, a forest bird whose yellow feathers once were used to make the cloaks of the Hawaiian chiefs.

— People have been going up in balloons for 200 years, National Geographic World says. In 1783, the first balloonist drifted 5½ miles over Paris during a 25-minute ride, a flight that was witnessed by a well-known American diplomat, Benjamin Franklin.

4-H'ers Win

Entomology Awards

FARM SHOW — Pennsylvania 4-H'ers won awards for some unusual exhibits at this year's Farm Show. Nestled in a corner of the Farm Show building were the entomology exhibits. Here are the results:

- ... Club Members
 1 Edward Royer Lebanon 2 Tammy Messier Furnace 3 Brian McClue Covington
 Second Year 4-H Club Members
 1 Becky Tice Mainsburg 2 Linda Beatty Home, 3 Pam Ross Marion Cr
 Third year 4-H Club Members
 1 Michael Dwyer State College 2 David Beatty Home Emily Ross Marion Ctr
 Fourth and Fifth Year 4-H Club Members
 1 Sylvia Royer Lebanon 2 Brian Petro Furnace 3 Lewis Beatty Home

First calf is born

Farm Show — A spanking new Jersey heifer calf was delivered Sunday at 10:30 p.m. to Mar De Prince Minnie, a three-year old cow owned by Mar De Farm, Newburg. The sire is "Belles Merry Rudolph."

The first arrival at the 1984 Farm Show is owned by Mark Deaven. The Deaven Family milks a herd of 40 Jersey cows.

COLOR THIS!

- | | |
|-------------|---------------|
| 1. BLACK | 6. ORANGE |
| 2. LT. GREY | 7. GREEN |
| 3. YELLOW | 8. LT. BROWN |
| 4. DK. GREY | 9. LT. BLUE |
| 5. BROWN | 10. LT. GREEN |

PROBOSCIS MONKEY—ONE OF THE STRANGEST LOOKING ANIMALS OF ALL THE MONKEY KINGDOM IS THE PROBOSCIS OR TRUNK MONKEY OF BORNEO. THIS ANIMAL HAS A RED-ORANGE NOSE 3 INCHES LONG, AND HANGS DOWN LIKE THE TRUNK OF AN ELEPHANT. THIS NOSE WILL CONTINUE TO GROW IN THE MALE FOR AS LONG AS HE LIVES.



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