



Elk Lick Echo

A Newsletter of Floracliff Nature Sanctuary

Summer 2014

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Observing Metamorphosis with Caterpillars

The insect order Lepidoptera is a large group, but easily recognizable as it's comprised of the butterflies and moths we all know. All butterflies and moths undergo complete metamorphosis, meaning their life cycle includes four stages: egg, larva, pupa, adult. Many species in this group are associated with particular host plants, which the larvae need to survive. The butterflies and moths find the host plants through chemical cues. On the leaves of the host plants are where you can spot eggs that have been laid by adult females and subsequent caterpillars feeding on the foliage.

An activity that we have all enjoyed over the last year at Floracliff is raising caterpillars of giant and spicebush swallowtail butterflies, monarch butterflies, and cecropia moths. It has also provided an enjoyable and educational experience for us and our visitors, allowing a glimpse into a world that is easily overlooked. It's an activity that is relatively easy, but does have a few requirements for the successful development of butterflies and moths. This includes a closed container with adequate air flow, a closed-top vase or container with water to keep the host plant fresh and the caterpillar safe from falling in the water, and twigs for pupation (unless the container is mesh).

Before touching or rearing any caterpillar, it is best to know what species it is and what it requires. Some caterpillars have hairs or spines that can sting and some have more complicated requirements for pupation, such as a layer of soil. In general, it's best to handle them as little as possible to avoid disturbing them during molting and passing on diseases. We also recommend getting permission from the landowner and not moving caterpillars from one region to another, as this may transfer pathogens and diseases between populations and affect the genetics of the species.

Once the caterpillar is ready to pupate. Caterpillars of moths spin a cocoon while caterpillars of butterflies molt a final time to form a chrysalis. Depending on the species and the time of year, pupation may last days, weeks, or months. During the summer months, swallowtails and monarchs will emerge in 10-14 days. The cecropia moths have one generation a year, overwintering in their cocoon. Witnessing their emergence and watching them fly off is the final reward of the life cycle and makes us look forward to finding the next generation of eggs and caterpillars.

To provide habitat for caterpillars, butterflies, and moths in your backyard, we recommend planting a variety of host plants such as milkweeds, spicebush, pawpaw, wafer ash, oaks, and cherries. A great resource for identifying and learning more about the region's caterpillars is *Caterpillars of Eastern North America* by David L. Wagner. At Floracliff, we'll be hosting a caterpillar program on Saturday, September 13th, to look for caterpillars along the trail and demonstrate how to raise them successfully. Please see details on page 3.



L-R: cecropia caterpillar and moth, giant swallowtail caterpillar and butterfly, monarch caterpillar and butterfly.

Help us save on printing and postage costs by receiving your newsletter via email and in color! Send an email to info@floracliff.org and include your name and address so that we can make the changes. Thank you!

Fauna Focus: Cope's Gray Treefrog (*Hyla chrysoscelis*)

By: Laura Baird



A male Cope's gray treefrog calls during mating season.

The Cope's grey treefrog is considered fairly large for its kind at a mighty 5 cm long. Its skin is rough, warty and mottled in shades of gray and green. Like all treefrogs, they have large toepads that excrete a sticky mucous to aid in climbing. It has orange splotches on its hindlegs, leading to its Latin name, *chrysoscelis*, which translates to 'gold leg'. During the breeding season the males can be identified by their dark throats.

Cope's gray treefrogs can be found singing and breeding from May to August around shallow, fish-free ponds. They lay a cluster of 10 to 40 eggs which hatch in about five days. They undergo metamorphosis in 6 or 7 weeks and move to land, although they do not reach reproductive maturity for two years.

This description also applies perfectly to another species called *Hyla versicolor*, the gray treefrog. The two are virtually indistinguishable with an overlapping range. In the field, they can only be told apart by their calls - *H. chrysoscelis* has a faster, higher-pitched call. The two were thought to be the same species until recently, when genetic testing revealed that *H. versicolor* has an extra set of chromosomes. It is believed that the *H. versicolor* evolved from *H. chrysoscelis* during the last ice age, when two populations became separated. Although they are now reunited, they do not seem to interbreed. Because the two species are so identical, the exact range of either is not yet known. At Floracliff, only *H. chrysoscelis* has been documented.

Fauna Focus: Common Whitetail (*Libellula lydia*)

By: Josie Miller



The male common whitetail can be identified by its thick, white abdomen.

Belonging to the order Odonata, dragonflies are an ancient group of insects that have existed since before the time of dinosaurs. Considered beneficial, dragonflies are predators that help to control insect populations. They undergo incomplete metamorphosis, the three stages of which are egg, nymph (or naiad), and adult. The naiad stage is spent underwater where they feed on aquatic organisms including mosquito and fly larvae and sometimes even small fish. They molt several times during this part of their life cycle, shedding their skin each time in order to grow. They breathe through gills located in their abdomen that are also used to propel themselves quickly through water. The naiad completes its final molt after crawling onto vegetation above the water's surface, thus beginning the adult stage of the lifecycle. Adult dragonflies are agile fliers able to move in all direc-

tions. Additionally, they have large compound eyes for nearly 360 degree vision and are able to see a wider spectrum of colors than humans.

Present throughout the United States, one of the most often observed dragonflies is the Common Whitetail (*Libellula lydia*) which belongs to the Skimmer family (Libellulidae). Skimmers are so named because of the female's habit of skimming the water surface where she lays her eggs while in flight. The Common Whitetail male can be recognized by his thick, chalky white abdomen and wings with broad black bands across the middle. The female differs markedly in that she has a brown abdomen with angled yellowish to white dashes on the sides. Her wings have black patches at the base, midpoint, and tip, lending her a similar look to the Twelve-spotted Skimmer. Common Whitetails are perchers, tending to make brief flights, and spending more of their time perched horizontally on the ground, logs, and rocks, or obliquely low on plant stems. Male Whitetails can be observed raising their abdomens in flight as an aggressive display toward other males.

Many thanks to those who donated in the last quarter:

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Schedule of Events

All events require advance registration. Cost is \$5 per person or \$12 per family unless otherwise noted. Most hikes last 2-3 hours. Call 859-351-7770 or email bjames@floracliff.org to register or get more information.

Programs and Hikes

Unless otherwise noted, all hikes are rated moderate to strenuous in difficulty due to narrow trails, uneven terrain, changes in elevation, and distance.

Wednesday, July 16th @ 1:00 p.m.: Fabric Sunprints and Tree Identification

A program for naturalists of all ages, we'll find and identify leaves and other objects to make sunprints on fabric that is light sensitive. The majority of the program will be held in and around the nature center.

Wednesday, July 30th @ 10:00 a.m.: Creek Walk

Join Floracliff staff on this trek to Elk Lick Creek to look for macroinvertebrates, amphibians, reptiles, and more.

Saturday, September 13th @ 3:00 p.m.: Caterpillar Hunt

Join us for this leisurely program as we look for caterpillars and discuss their connections to their host plants. The total hiking distance will be less than a mile.

Saturday, October 4th @ 1:30 p.m.: Fall Wildflowers

This hike to Elk Lick Creek will feature the last blooms of the season such as goldenrods, asters, and lobelia.

October 10th & 11th: Geology of Central Kentucky and the Palisades Field Studies Workshop

Led by Dr. Stephen Greb of the University of Kentucky, this workshop will focus on the geology and paleontology of central Kentucky. Morning sessions will cover topics including: geologic principles, geologic mapping, paleontology, and the geologic history of central Kentucky. Field trips will include Floracliff and other locations in the Palisades. The cost is \$50, which covers two days of instruction and educational materials.

Weed Warrior Days - free!

Saturday, September 6th, 10 am - 1 pm

Saturday, October 4th, 10 am - 1 pm

Volunteer activities will involve assisting with the removal of exotic plants from the preserve. This is part of an ongoing effort to protect our native species and we rely on the help of volunteers. Please call ahead to register and receive more information at 859-351-7770. If you are interested in helping out on any other day, give us a call and we can work something out!

**THE MARY E.
WHARTON NATURE
SANCTUARY AT
FLORA CLIFF**

P. O. Box 21723
Lexington, KY 40522

Phone: 859-351-7770
Email: info@floracliff.org
Web address: www.floracliff.org

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Address correction requested