

*BUG CAMP No. 2 will be at on campus at
the University of Southern Mississippi in
Hattiesburg July 13 – 17*
(see inside)

The Lepidopterist Society
is Coming to Town!

Go to the museum page <<http://mississippientomologicalmuseum.org.msstate.edu/>> and click on the t-shirt design pictured below for conference information. While you are on the museum's site be sure to check out the museum's education resources. We still have space for teachers, agents and naturalist who want to participate in the concurrent teacher workshop. A partial agenda is included in this issue.



Lepidopterist Society Teachers Workshop

Tentative and Partial Agenda

June 24 (Tuesday)

8:30- 9:10 John Acorn (Edmonton, Alberta). Welcome from President, Lepidopterists Society. Why Lepidoptera made me a "Nature Nut."

9:10 – 9:50 Edda Martinez (Mississippi Entomological Museum) – Night flying butterflies and day flying moths – a survey of the major groups of Lepidoptera.

9:50-10:05 – break

10:05-10:40 – Todd Gilligan (Colorado State University) - Scales on my head and ears on my belly – anatomy of Lepidoptera.

10:40 – 11:00 – Richard Brown (Mississippi Entomological Museum) - Woolly bears, Cut worms, and Measuring worms – caterpillars galore.

11:00 – 11:45 William Connor (Wake Forest University) Behavior of Lepidoptera – acoustic and chemical communication

11:45 – 12:00 – questions, discussion, announcements

12:00 - 1:00 – lunch

1:00 – 3:30 – field trip to Noxubee NWR – collecting butterflies and caterpillars

4:00 – 5:00 - preparing specimens, rearing caterpillars.

5:30 – 7:30 – Lepidopterists' Society Reception

8:00 – 9:30 – Field trip for collecting moths at Osborn Prairie.

June 25 (Wednesday)

8:15 – 5:00 – Posters and presentations by members of society at Bost Extension Center

6:00 – 9:00 – BBQ at Noxubee Environmental Ed Center (followed by blacklighting)

June 26 -27 (Thursday and Friday)

Workshop continues in Clay Lyle Entomology Bldg with David Held, John Guyton, and Mike Williams

Bug Camps 2008

Crows Neck – we have never camped at Crows Neck however we expect to find some different and interesting insects lurking there. This will be the highest elevation camp and we may find **scorpions** and **Japanese beetles**. Dr. Held's graduate research was on Japanese beetles and we have had to monitor his activities to make sure he did not release these in south Mississippi. That said he is liable to dance a jig each time he finds one – and that may be worth seeing.

USM – not too many details yet but we hope to make another collecting trip to the Crosby Arboretum and Dr. Guyton will probably do a flip in the pitcher plants! If we are lucky we will find some pitcher plant moths or their caterpillars.

It is Almost Firefly Season

We can always know that 'spring has sprung' by the appearance of daffodils and azaleas in full bloom. We know it's time to begin planting when we hear the whip-poor-will give its plaintive cry. Summer has arrived when the fireflies begin to flicker in the dark spots of the lawn or pond bank. I've heard quite a few folks say recently that they have not seen as many fireflies as they remember from years gone by. There probably are fewer now than in the past and one reason is pollution - light pollution! Night lights may interfere with the ability of the critters to communicate with one another – thus no courtship ritual, reduced mating and fewer glow worms.



So SAVE A FIREFLY – TURN OFF THE LIGHTS!

There are a large number of different species of fireflies. Dr. J.E. Lloyd is probably the foremost expert on fireflies. His writing and descriptions of the communication behavior are well worth reading if you like fireflies.

Light production is primarily used to locate other individuals of the same species for reproduction. Many species are distinguished by the unique courtship flash patterns emitted by flying males in search of females. *Photinus* females generally do not fly, but give a flash response to males of their own species. Some female fireflies are known for mimicking the mating flashes of other fireflies for the sole purpose of predation. Target males are attracted to what appears to be a suitable mate, and are then eaten. For this reason the *Photuris* female is sometimes referred to as "femme-fatale".



All fireflies glow as larvae. Bioluminescence serves a different function in lampyrid larvae than it does in adults. It appears to be a warning signal to predators, since many firefly larvae contain chemicals that are distasteful or toxic.

Fireflies tend to be brown and soft-bodied, but they are beetles with leathery Elytra. Most of the females are similar in appearance to males, but some are 'larviform' looking like the immature glow-worm. These females can often be distinguished from the larvae only because they have compound eyes. The most commonly known fireflies are nocturnal, though there are numerous species that are diurnal. Most diurnal species are non-luminescent, though some species that remain in shadowy areas can produce light.



A few days after mating, a female lays her fertilized eggs on or just below the surface of the ground. The eggs hatch 3-4 weeks later and the larva feed until the end of the summer. The larvae are called glowworms. The term glowworm is also used for both adults and larvae of some species. In some Lampyrids, such as the common European glowworm, only the non-flying adult females glow brightly and the flying males glow only very weakly and intermittently.

Fireflies overwinter (some species for several years) during the larval stage. Some do this by burrowing underground, while others find places on or under the bark of trees. They emerge in the spring. After several weeks of feeding, they pupate for 1 to 2.5 weeks and emerge as adults. The larvae of most species are specialized predators and feed on other larvae, earthworms, snails, and slugs. Some species are very specialized feeders. The diet of adults is variable; some are predatory, while others feed on plant pollen and nectar.

Information for this article was gleaned from Wikipedia en.wikipedia.org/wiki/Firefly and pictures were taken from UGA –Bugwood Network -<http://www.bugwood.org/index.cfm>

Karen's 4-H Bee Project

The bee population in the state has been affected by a problem called colony collapse disorder. Hives with the disorder go from a healthy colony with a large adult bee population to an empty hive with the queen and baby bees abandoned by the drones and workers in the space of a few weeks.

Entomologists are unsure of the cause, but suspect stress caused by chemicals, diseases from mites, and a lack of pollen caused by summer drought conditions. All of these stresses can affect the immune system of the bees. They get weak, sick, and die.

In Mississippi, many crops farmers grow depend on bee pollination. More than 250 million dollars worth of Mississippi's agricultural crops depend on bees. About one out of every three bites of food you eat comes from a food likely pollinated by a bee. When colony collapse disorder happens, beekeepers can lose up to 90% of their hives.

How Can Your Family Help the Bees

Plant what bees like. Add some melons and sunflowers to your garden this year.

Let some plants grow, like privet hedge and sumac trees, to give bees pollen.

Don't be afraid of the bees. The things that sting most are wasps, yellow jackets, and hornets. They are not attracted to bee-friendly plants

Eliminate garden pesticides. These can also be bad for humans, and they kill the good insects like bees and butterflies.

Join the 4-H bee-friendly project and count the different bees that visit your family garden this year. We need your data to help entomologists learn where the bees are.

There are many species of native bee species in Mississippi– too many to identify in one project. So we are using the bees you are most likely to see. You may observe a group of bees that look different. If so, take a digital picture and email it in.

Take the pictures below with you to help you identify the native bees! Pick a sunny day when it is not windy. Bees are most active in the morning. Find the bee-friendly plants in your yard, neighborhood, park, field, woods or garden.

Or plant some bee friendly plants this summer and look for bees as they begin to bloom. Count the bees coming to one plant or one kind of plant.

It is very difficult to take a picture of a moving insect. It is easier to take a picture while a bee is on a bloom collecting pollen. The picture of bees you see below are in an insect collection. Can you see the pins holding the bee? You can learn how to collect insects on the MSU extension website. mscares.com/4h_Youth/4hentomology/faqindex.html
Email your bee pictures to: 4hbee@ext.msstate.edu

FAQ's of the Mississippi 4-H Bee-Friendly Project

Why the need to count bees? To learn where our native bee populations are active and which bees are most actively working to pollinate.

How long should I count the bees? It is not how long you count, what matters is the kinds of bees you see on one kind of plant.

How can I count many bees buzzing around a group of the same kind of plant? Active bees flying in and out will be harder to count. Count the number and kind that you are able to see, and write "plus more." Count a group of plants such as a hedge of holly bushes as one plant. If you have sunflowers and zinnias growing around your holly bushes, report all of these plants.

Why do I need to report the GPS coordinate of the plant? The coordinates are needed to make a map.

How many times should I count the bees? Once you report the bees visiting one plant, report for this same plant only when you see a different kind of bee visiting.

Is this a scientific research project? No. It is a 4-H GIS mapping project that will share information with researchers.

Where do I send my information? To your county extension office before November 1.

Be sure to include the following when submitting data:

Name: _____ County: _____

Telephone: _____ Email: _____

Due: November 1, 2008

Use the pictures on this page to identify the bees you observe and report them.

Some of Mississippi Pollinators



Honey Bee <i>Apis mellifera</i>	Small black bee with white pollen baskets <i>Melissodes bimaculata</i>	Metallic blue bee <i>Osmia chalybea</i>	Metallic green bee black & yellow abdomen <i>Agopostemon</i> sp. ♂
Bumble bee <i>Bombus impatiens</i>	Large black bee with orange pollen baskets <i>Svastra</i> sp.	Black bee with Orange belly <i>Megachile Xylocopoides</i>	Metallic green bee <i>Agopostemon</i> sp. ♀

Bee Observation Report					
Bee	Date	Time	Number Observed	GPS Coordinates or Address	Plant, If Known
Honey Bee					
Small black bee with white pollen baskets					
Metallic blue bee					
Metallic green bee with black and yellow abdomen					
Bumble bee					
Large black bee with orange pollen baskets					
Black bee with orange belly					
Metallic green bee (solid)					