

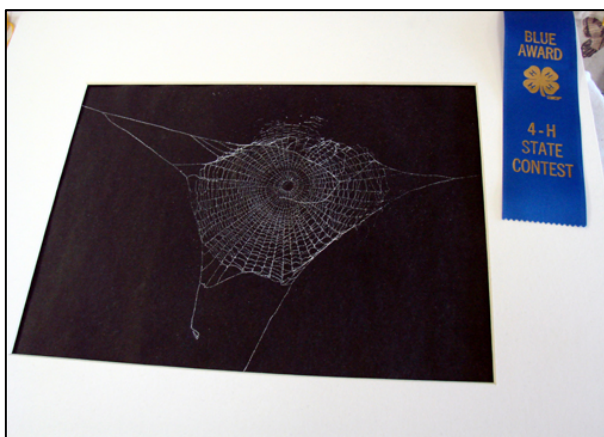
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## Camp Dates and Location are set for 2008!!

We are headed for Crow's Neck of the Woods June 14 - 19, 2008 for Camp. Crow's Neck is in Tishomingo County in the NE corner of the state. You can check out the facility and grounds at [www.crowsneck.org](http://www.crowsneck.org). We are looking forward to sampling a new community of insects. We will likely make a couple excursions to collect off site as well. We have a few new pieces of equipment including some more lights for camp this year thanks to our participation in forest insect training. There will be a couple of new activities this summer - watch for updates in the Gloworm. This year we had to increase camp costs to \$225 per camper. This is considerably higher than last year but the cost of everything has gone up! Despite this increase, camp is still less than \$60 per day for food, lodging, and activities.

Exhibit and Photo Salon Entries Were Outstanding!



Photos of artwork taken by Cheri Abraham

We had 44 entries in the contest this year. The entries were on display and judging in conjunction with the Mississippi Entomological Association meeting in October.



The people I spoke with were amazed at the talent and creativity of the artists. The collection is now on display in Clay Lyle Entomology Bldg on campus at MS State University if you want to see it. Entries included poetry, photographs, drawings, short stories, models and dioramas, and more including an insect collection made from leaves, rocks, and other natural objects. Plan now to complete a project for next year.

**Did insects bring down the levees in New Orleans?** I recently

attended a meeting where Dr. Gregg Henderson, LSU entomologist, was speaking about this. A summary of the ongoing research and debate can be found at:

<http://katrinacoverage.com/2006/02/06/levee-tests-gnaw-at-termite-expert.html>

Gregg's research team found that 73% of the failed joints in the London Ave. Canal were infested with either Formosan termites or imported fire ants. Army Corp of engineers officials refute that the holes made by these insects lead to failures.

Henderson and his team are now using ground penetrating radar to evaluate and detect infestations around other levees. D.Held

**The 225 Million Year War (part 2 of 3) by Dr. John Guyton**

[If you missed the first installment of this series, check out the November Gloworm and all the past editions of the Gloworm at MSUCares.com under the 4-H\ youth projects].

**The battlefield is set-** The battleground's appearance is pastoral with aphids grazing like cattle on leafs with their heads down and their posteriors in the air. The females periodically squeeze out a wrinkled baby that stretches, extends its antenna and then hunkers down to begin feeding. Aphids only produce females until the end of summer when males are useful for fertilization, ensuring a pool of genetic variability and lineage perpetuation. The battle for energy begins with the ladybugs

hard landing on the leaf with their legs absorbing the shock. They immediately begin licking their chops as they dispense a liquid over their razor-like mouthparts and begin chomping on the nearest aphid. It continues from aphid to aphid until it is almost to full to fly!

**Become a War Correspondent**

It is not easy to beat CNN's live coverage but you can actually bring a skirmish into your living room by collecting a leaf with aphids and a few ladybird beetles! With a dissecting scope you may be able to watch the young homopterans' developing inside the mom's translucent body and live birth. Make careful observations and write an article for the school newspaper or the Gloworm describing your observations. - Dr. John Guyton (Note: It's still not too late to make observations. Check the terminal parts of butterfly weed for brightly colored aphids and enjoy!-D.H.)

**A Sophisticated Counter Attack-** Now the aphids are not without their strategies and advanced weaponry. Aphids are clones and can sacrifice a lot of their numbers without losing their genetic codes, developed over the eons. Aphids, under ideal conditions, could produce billions of progeny in a season elucidating their ability to sacrifice pawns and rapidly develop new chemical defenses. As a population, they are the primordial survivors and have developed elaborate strategies and chemical communication systems. When an attack begins they

inject a chemical signal into the plant's phloem to instruct others to gather closer or circle their wagons. A second chemical message alerts the others to begin producing drops of a compound they use like sticky-traps to glue ladybirds' feet in place. A volatile compound in this glue evaporates and warns aphids that are not on-line (not currently extracting energy from a leaf), of impending danger thus synchronize all of the resident aphids' defenses. Aphids have exhaust pipes, or cornicles, on their posterior through which chemical warnings alert others to the need for urgent evasive action.

In the almost unimaginably complex web of life, plants have developed strategies to protect themselves from these warring marauders and the warriors have developed counter measures. Not wanting to fight a war on all fronts (ladybugs and the plant), aphids will walk around on a leaf tasting its surface and sensing it with their

sophisticated antennae. This allows the aphid to size up the plant before it begins feeding. Food quality is one item assessed but, more importantly, the aphid detects the plant's chemical arsenal. After sizing the opposition, it can retreat or begin to drill into the leaf and extract energy in a posture reminiscent of oil derricks. Aphids have also developed chemicals that exert a degree of control over the plant. These salivary compounds not only force the plant to keep channels of communication and nutrition open, but force it to



work faster to provide all the materials and energy they need to make babies. Several hundred synchronized aphids are required to supply enough of these plant controlling chemicals. An aphid can make a baby a day and the baby can start producing babies the very next day! The development of parthenogenesis, or the ability of virgin females to produce young was an incredible army building strategy, as was viviparity, the production of live young bypassing the egg stage! In just 14 days one aphid can give rise to 1300 and in one growing season. An aphid-infested plant's routine is co-opted and chemically forced to go into overdrive to produce the additional nitrogen, energy and minerals needed to sustain an aphid colony/army. Aphids working the underside of leaves can cause the leaf to curl around them as protective housing and others cause woody plants to develop protective galls. One root feeding aphid had an arrangement with a fungus to provide shelter. There are several species of social aphids that live in galls or bamboo and have a cast of soldiers that remain in the nymph stage, without molting or growing, that dispatch predators with stylets or grasping legs and horns and some can deliver a painful bite. The soldiers have been observed to destroy predators' eggs.

## 2008 Bee Essay Contest Deadline: January 15, 2008!



This year's topic is: "Results of Honey Bee Pollination in My Community". Complete rules, details, and sources of information are available at [http://msucares.com/4h\\_Youth/4hentomology/bee\\_essay\\_contest.html](http://msucares.com/4h_Youth/4hentomology/bee_essay_contest.html)

Essays should be 750 to 1000 words and typed. Completed essays should be sent to Dr. Clarence Collison, Entomology and Plant Pathology Department, Box 9775, Mississippi State, MS 39762-9775. They need to be postmarked no later than 15 January, 2008. The state winner will be sent to the national contest. We have had national winners from Mississippi in the past so send in your entries. Good luck!

### **Past Entomology Camps are Online....**

Beginning with the 2006 camp, Dr. Tim Groman has established a website to archive the activities from camp. If you want to see what happened at the 2006 and 2007 camps visit, [www.bugcamp.org](http://www.bugcamp.org).

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## **Calendar of Events for 2008**

January-Bee Essay Contest  
May-Camp registration deadline  
June-Entomology Camp  
October-Photo Salon and Art Exhibit

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### **ATTENTION: TEACHERS – PARENTS ALL WHO ARE INTERESTED IN ENTOMOLOGY!!!!**

THE MISSISSIPPI STATE ENTOMOLOGY DEPARTMENT PRESENTS ENTOMOLOGY  
CAMP:

**When and Where: June 15–19 –Crow's Neck Environmental Camp**

This camp is for **adults and youth** (over age 10) **who want to learn about insects** from experts. The camp will be taught by professors from the Entomology Department at Mississippi State, and will be educational and fun!!!!

- Learn how to collect, identify, and preserve insects!
- Learn about unique critters you've never seen, yet they live all around you!
- Make an insect collection with help from the experts!

**4-H rules and guidelines apply.**

**Mississippi State University  
4-H Entomology Camp Registration Form**

Indicate t-shirt size: Small \_\_\_\_\_ Medium \_\_\_\_\_ Large \_\_\_\_\_ XL \_\_\_\_\_ Other \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ County: \_\_\_\_\_

Age: \_\_\_\_\_ Gender: \_\_\_\_\_

Telephone \_\_\_\_\_ email \_\_\_\_\_

I am interested in:  CEUs or  credit hours.

Please submit a **separate copy of this form for each camper** - be sure to indicate the session the camper will be attending.

**Certification of health is required - so camp physicals are in order**  
Mail individual applications along with **\$60.00 deposit** to reserve your place to:

**Entomology Camp  
MSU Entomology Department  
Box 9775  
Mississippi State, MS 39762**

Charges include room/board, t-shirt and miscellaneous supplies. Pins and insect boxes can be made available for an additional cost. Deposit is not refundable after May 1, 2008. Deposits are applied to camp costs.

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**Enroll now!! Out of state campers are welcome!!!!  
Enrollment is limited and will be on a first come basis.**