



The glowworm

1 November 2006

Volume XIV No. 10

Fire ants and their natural enemies

One way insects become pests is when they enter a new area where they have no natural enemies. Take for instance, mole crickets, Japanese beetles, and especially fire ants. Don't get me wrong fire ants and many other ants serve a wonderful purpose in the world. They are great predators feeding on a number of pests in the landscape-especially in the lawn. However, fire ants sure can sting and really cause problems for folks that are allergic.

Everyone reading this has at least one memory of being attacked by these critters. Fire ants in Mississippi are now being 'bitten back'. There were two interesting presentations at the recent meeting of the Mississippi Entomological Association (MEA). Both presentations investigated natural enemies (pathogens and parasites) for use against fire ants in Mississippi. The one parasite of particular interest to me is the phorid fly-more commonly known as the decapitating fly. This fly (seen at left) was introduced to the U.S. for control of fire ants and is now the subject of behavioral studies at the National Center for Physical Acoustics at Ole Miss. Dr. Tim Fink leads a project to explore the hunting behavior of this fly. At the MEA meeting, Dr. Fink showed video of these flies in action. Special equipment allowed them to record video at 10,000 frames per second and playback the video at different speeds to observe even individual wing beats! To give you some perspective, motion pictures are shot at about



| Common name | Wing beats per sec |
|------------------|--------------------|
| Mosquito | 988-1046 |
| Phorid fly | 422 |
| Honeybee | 250 |
| House fly | 190 |
| Hummingbird moth | 85 |
| Hummingbird | 52 |
| Dragonfly | 38 |
| Pierid butterfly | 12 |

30 frames per second, the speed where our human eyes cannot detect the individual frames. If you think that is interesting, look at the wing beat frequency information. This small fly beats it's wings 422 times per second and this is double that of a house fly and >10 times that of a dragonfly. Here are more interesting facts about this fly: It is attracted to the pheromone or chemical signal produced as fire ants swarm from the nest. This signal lets the flies know there are plenty of

ants around to attack. It is also believed that these flies size up ants by flying sideways and using its own body as a measuring stick! The fly can find ants, size them, and attack all in a matter of milliseconds or seconds. The 'attack' involves one or more jabs of the ovipositor into the thorax of the ant-but only one egg is deposited. The maggot then grows inside and decapitates the ant as it pupates in the head.

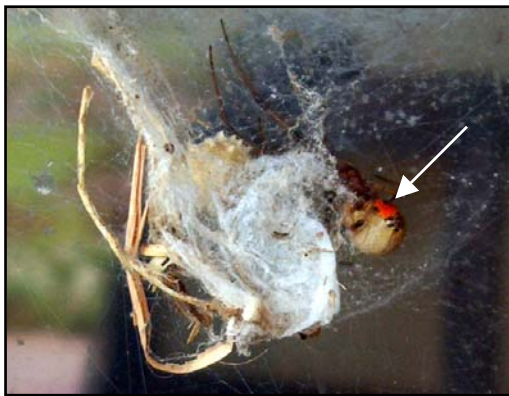
Next spring as the ant mounds begin to swell like small volcanoes out of your lawn, try disturbing a few mounds and look for small dark colored flies (will appear as gnats) flying around the swarm of ants. If the flies are present, watch the ants. Ants that are attacked 'stagger' after being successfully attacked by the fly.



photo Samuel Porter/USDA

Brown Widow Spiders may be in your neighborhood!

Recently, Dr. Blake Layton, MSU Entomologist, confirmed an infestation of Brown Widow spiders in the northern part of Mississippi. I have been receiving calls about this species since late July and August on the coast. Study the picture of this spider and contact me if you see this venomous spider in your neighborhood. I really want to know how many counties in the state are infested. BUT BE CAREFUL! This is a widow spider with venom that is just as potent as its sister species the



Black Widow. The Brown Widow is obviously brown but has an orange hourglass on the underside of its abdomen (versus a red one on the black widow). This spider may not be in the wood pile like the Black widow, instead it will form a web around the outside of your kitchen window! The egg case is spiny like the fruit of a sweetgum tree. The spiders are generally timid but will defend their territory and their egg case. Please forward your collection information or sightings to me by email (david.held@msstate.edu). Voucher specimens or digital pictures are also welcome.

Dr. David Held and Dr. John Guyton

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

THE MISSISSIPPI STATE ENTOMOLOGY DEPARTMENT PRESENTS ENTOMOLOGY CAMP:

Camp #1: June 17–21 – Plymouth Bluff Environmental Camp, Columbus

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.

Camp #2: July 15–19 –Plymouth Bluff Environmental Camp, Columbus

This camp is for **adults** (teachers, college students, youth leaders) that are looking for a unique learning experience. The camp will be also be taught by professors from the Entomology Department at Mississippi State, but will be available for college credit at Mississippi State University or CEU credits for teachers! This camp will include:

- Lecture and field collecting components that cover ecology, behavior, and taxonomy of insects
- Field identification and use of keys for family level identification of pinned specimens
- Field collecting methods

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

I will be attending CAMP Session #_____. Indicate 1 or 2, please!

Indicate t-shirt size: Small _____ Medium _____ Large _____ XL _____ Other _____

All shirt sizes are measured in adult sizes, the vendor does not handle children's sizes

Name: _____

Address: _____

City: _____

State: _____ Zip: _____ County: _____

Age: _____ Gender: _____

Telephone _____ email _____

I am interested in: CEUs or credit hours.

For adults attending Camp #2, please check the appropriate box above if you need CEU credits or wish to take the course for credit.

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, 2007 for camp #1 and June 15, 2007 for camp #2, deposit is applied to camp costs.

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