The Gloworm

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Cool weather came back for just a few days, but maybe now it's going to go away again for a while. We can expect some more cool days for sure, because we always get `blackberry winter' in May, but I hope that the threat of extremely cold days is past. It's time to get collecting and getting ready for the on-slaught of all the six legged critters. The May/June beetles have already begun to fly and are coming to lights at night fairly well. I've also seen some long-horned borers already this spring and we continue to be over-run by crane flies. Mosquitoes are also making their presence known, especially in areas where there has been a lot of rain and water is standing. The sulfur butterflies are in evidence as one lady told me last week that she had them feeding on her cabbage. It's also the time of year to leave the outside lights on and attract the larger moths. Luna, Cercropia, and other royal moths come readily to lights this time of year and can be easily collected. Many of these (females) will lay eggs for you if you will hold them in a large paper grocery bag for a day or so. These large moths do not feed as adults. Examine their heads closely and you will see there is NO feeding tube (proboscis).

When termites are swarming - you've had your warning!

In the pest realm, we've already had numerous calls about termites this spring, so now would be a good time to collect winged forms of those critters, they can be found emerging from infested wood on warm days, some even inside houses. Here's what happens: during late winter or early spring, colonies produce large numbers of the reproductive caste, which swarm on warm days. These black, winged termites are the stage most commonly seen, since the other castes do not willingly expose themselves to light. Winged termites are attracted to light, and when they emerge within buildings, they swarm about doors and windows. After crawling or fluttering about for a short time, the termites break off their wings and locate a mate. Each pair attempts to locate moist wood in contact with the soil to start a new colony, but few succeed. Although they alarm the homeowner and can be a nuisance, no damage is done by the winged forms. Termite swarms can occur throughout the year, but are most commonly seen between the months of February and May.

Termites feed upon old roots, tree stumps, fallen tree limbs and branches on the ground, and similar materials. **They are beneficial when they aid in reduction of wood and similar cellulose products into compounds that can be used again by other living organisms**. Occasionally termites attack living plants, including the roots of shrubs and trees. In buildings, they feed on cellulose materials, such as structural wood, wood fixtures, paper, books, cotton, and related products.

After a termite colony matures, which requires from 2 to 4 years, swarmers are produced. Swarming usually occurs during the daylight hours, usually after a rain. Environmental factors such as heat, light and moisture trigger the emergence of swarmers. Each species has a definite

set of conditions under which it swarms. The number of swarmers produced is proportional to the age and size of the colony. Both male and female swarmers fly from the colony and travel varying distances. They are extremely weak fliers; wind currents usually carry those that travel any distance. Only a small percentage of swarmers survive to develop colonies; the majority fall prey to birds, toads, insects and other predators. Many also die from dehydration or injury.

A pair that survives lands and immediately seeks cover under rocks or other materials. The pair makes a very small nest before mating. Initially, the new queen termite lays only a few eggs. The male, or king, remains with the female because periodic mating is required for continued egg development.

Eggs are not deposited continuously; in fact, only a few hundred are deposited during the first year. In subsequent years, the young queen grows larger and lays more eggs. Larvae hatch from the eggs within several weeks and are cared for by the new king and queen. The larvae molt into pseudergate workers, and then into presoldiers or brachypterous nymphs. The colony stabilizes when the queen reaches maximum egg production. If the queen dies, secondary reproductives take over the queen's duties.

The maximum size of a colony depends on such factors as location, food availability and environmental conditions, especially temperature and moisture. Some colonies remain small; others contain up to several thousand individuals.

New colonies form when the old colony produces swarmers or when groups of termites become isolated from the main colony and establish subcolonies. This is called colony splitting. These subcolonies may exist independently or reunite with the main colony.

Subterranean termites derive their nutrition from wood and other material containing cellulose. . Subterranean termites cannot digest cellulose directly. They depend on large numbers of one-celled animals (protists) living in the termite hind gut to break down the cellulose to simple acetic acid, which termites can digest. Worker termites and older nymphs consume wood and share their nourishment with the developing young, other workers, soldiers and reproductives.

Termites are very attracted to odors of wood-decaying fungi that, through the decay process, make the wood easier to penetrate. In some instances, the fungi provide a source of nitrogen in the termite diet.

Moisture is important to subterranean termites, which have very little resistance to dehydration. To survive, they must maintain contact with the soil (their primary moisture source) or other above-ground moisture sources, such as in structures with defective plumbing or guttering.

Subterranean termites also must protect themselves from temperature extremes and attack by such natural enemies as ants and other insects. Termites foraging for food above ground protect themselves with shelter tubes, which are sometimes called mud tubes (Fig. 4). Worker termites build the tubes from particles of soil or wood and bits of debris held together by salivary secretions. The tubes may be thinly constructed or large and thick-walled to accommodate many termites moving vertically between the soil and the food source.

This construction material also is found lining the galleries built in wood being attacked and aids in identifying termite-damaged wood. Shelter tubes often are used to bridge masonry or other objects, allowing termites access to a food source (wood) above ground.
Portions of the above information were taken from extension publications by Texas A&M and Penn State University.

Happy Buggin'

Michael Williams

Announcements

Linnaean Games

Interest in Linnaean Games is also beginning to heat up again. Remember it takes 4 to make a team and counties may field two teams if they get enough participants. **Each team needs to submit 25** (or more) **questions before May 1, 2003.** The questions are used to make up the contests so the more questions you submit the better the chances of seeing some of your questions in the contest. June will be here before you know it, so get busy. Manuals may be requested through your county office. If they don't have them on hand we can send some out to them - just have them call MSU Entomology. The games also have cash awards attached to them!

Contests

In order to prepare for entomology contests at 4-H Club Congress and at Project Achievement Days in 2003, 4-Hers should practice pinning and labeling insects. We will have actual specimens for 4-Hers to work with. They will also be expected to identify the specimens to common name and Order. Insects included in the contest will come from the Insect Study sheets, available on the web http://www.msstate.edu/Entomology/4-H/STUDYSHT.html and through the county office.

ATTENTION: YOUNG PEOPLE - TEACHERS - PARENTS
ALL WHO ARE INTERESTED IN ENTOMOLOGY!!!!
THE MISSISSIPPI STATE ENTOMOLOGY DEPARTMENT PRESENTS:
Entomology Camp #1 on June 8-12 Wood College, Mathiston, MS
Entomology Camp #2 on July 20 - 24, 2003
Leroy Percy Park, Hollandale, MS

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!!!!

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

Adults are encouraged to enroll for the camp!!! Out of state campers are also welcome!!!!!
Enrollment is limited and will be on a first come basis.
Mail individual applications along with $35.00 deposit to reserve your place to:

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

5 day Entomology Camp costs : $135.00

Charges include room/board, t-shirt and miscellaneous supplies - deposit is not refundable after May 1,2003 for camp #1 and June 15, 2003 for camp #2, deposit is applied to camp costs.

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

Indicate t-shirt size: **S M L XL XXL __ _____Other** (Circle one)

Name: _____

Address: _____

City:_____ State:_____ Zip:_____
County:_____ Age:_____Gender:_____

Telephone _____ email:_____

4-H rules and guidelines apply.

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