The gloworm

1 September 2007 Volume XV No. 6

This edition of the Gloworm is somewhat longer than past editions because we haven't had one in a while and have some important information you should know. Inside, you will learn about barklice in oak trees, insects as craftsmen (or more appropriately craftswomen), and a unique caterpillar that is active now in MS.

Also calls are coming in to the Entomology Department about the Insect Photo Salon and Art Exhibition. So, the last pages of this edition of the Gloworm have the rules and submission instructions for the contest this year. We haven't yet decided on the prizes for this year but first prize *may be* a scholarship to the 2007 Entomology Camp! So, get out there and take photos or write short stories or poetry that feature insects and get your submissions in before the October deadline.

Hickory horned devil found!

Hickory horned devil larvae are active now! This specimen, nicknamed Spike, was collected by Marleigh Savell, 3rd grade student and budding entomologist, of Vancleave, MS. Although not uncommon in

MS, finding a hickory horned devil is still a great feat! The larva will mature into a reddish-colored regal moth that some of you may have in your collections. Congratulations on a great find Marleigh!

Entomology Camp Online….

Dr. Tim Groman has established a website for camps beginning with the 2006 camps. If you want to see what happened at the June 2007 camp visit, www.bugcamp.org.

Barklice in live oaks trees

Barklice are so unique they have their own order (Psocoptera – promounced SO-COP-TUR-A). These insects are an annual source for anxiety for some homeowners along the coast. There are two forms, winged and non-winged, that can be present. The winged forms are often in an interesting aggregation on the bark of trees (seen as the dark spot on the water oak trunk). If you poke at them, they will move in a 'herd' up or down the trunk. The winged forms are typically not as great source of anxiety for homeowners as are the non-winged forms. That is because the non-winged forms are often associated with extensive webbing on the trunks of live oaks. Let me give an example. A person walks out of their front door one morning to see their 300 year old live oak trees covered in light-colored webbing. The first thing that typically enters their mind is some sort of caterpillar-like fall webworms commonly often observed making webs in pecan or sweetgum trees. This phenomenon often prompts calls to county extension offices or conversations among neighbors. Sometimes these web-making barklice are mistakenly referred to as webspinners. Although webspinners

(order Embiidina) are present in MS and do live inside silken tubes, they are not the culprit in this instance.
Barklice are harmless grazers. I typically refer to them as 'bark cattle' eating lichens, moss, or other simple plants from the bark of host trees. They do not cause damage unless someone considers the webbing as aesthetically damaging. When I get these calls I usually suggest they leave them alone. If someone wants to control them I typically recommend they mix a dilute solution of dishwashing soap and spray the bark. The soap solution will run down the bark eliminating any barklice that might be hiding. Dr. Held

The Craftswomen of the Insect World or Swiss Army Insects
Insects are master craftswomen and construct durable homes of clay, paper, silk, sticks, pebbles and wax. The wasp (*Ammophila*) may have been the first animal to use tools. After laying an egg and provisioning the burrow with food, she seals its entrance and taps the soil firm with a small pebble. A list of insect body modifications and accessories, representing a comprehensive tool chest, reads like an overview of a Swiss Army knife's functions! Insects perfected the skills of tunneling, masonry, air conditioning, paper manufacturing, insulating, carpentry, and agriculture thousands of years before *Homo sapiens* discovered fire. And the principal workers are typically the females! Bee hives, ant hills, paper wasp nests and hornets nests are constructed by female workers. A very brief overview of their skills, or crafts, follows.

- The mud dauber uses its mandibles to help scoop up a dollop of mud that, with the front legs, are used to carry it back to its nest. It then uses its jaws and head to shape the mud into cells in the nest.

- The aptly named carpenter bee drills long tunnels into wooden boards and stocks them with spiders for her eggs' sustenance when they hatch. She uses saliva and wood chips from the tunnel to

create a "door" between each egg cell and to seal the tunnel. The first egg to hatch is the last laid in the tunnel.

- Caddis-worms use their jaws to construct underwater cabins of sticks and pebbles that they bind together with silk. An amazing observation is that these chambers are typically constructed in swift flowing streams. One caddisfly (Hydropsyche) produces a fine silken seine or net to trap its food.

- Bee hives are sophisticated mini-cities that contain a honey factory, brood chamber, queen's quarters, public school with services including air conditioning, air delivery of food, cell construction, and hive maintenance and waste disposal. The wax city products include: wax, honey, bee bread, bee glue or propolis and royal jelly.

- Bees may be the most interesting craftswomen with pinchers on their hind legs, between two joints, that are used to cut sheets of wax during comb construction. Small notches in the front legs, surrounded by bristles, are used to clean the bee's antennae after dancing around in flowers. Bees also had pockets, or pouches, before the marsupials! They store pollen in saddlebag like pouches on the outside of the hind legs for transport to the hive. Upon arriving at the hive, after a successful hunt, bees use sign language, or the figure 8 bee waggle dance to describe where they have found good nectar sources and how far away they are.

- Paper wasps tear wood fibers from dead trees or weathered wood. They (she) chews this into a pulp with saliva before adding it, as a thin layer of paper to the nest. On hot days wasps carry water to wet the paper of their nest. Evaporative cooling then cools their

nest! Honey bees huddle to conserve heat in the winter and vibrate their wings to cool their hives in the summer.

- Some insects have even learned how to coopt trees into building their homes according to their designs and provisioning them with a garden! Insects have found many plants useful for their gall homes. Goldenrod and oak trees are frequent choices.

- Collectively, ants have the largest Swiss Army knife with the most functions. So, only a few examples of their craftswomenship will be mentioned. Adult ants do not produce silk, however they have learned to grasp their silk-producing larvae, in their jaws, and use them like bobbins to stitch leaves together. Leaf cutter ants carry the leaf sections to special rooms in their nest cavities for use as a growth medium for their mushrooms, or fungus. When they move they carry enough of the fungus, in their mouths, to innoculate another garden when they settle again. Other ants herd aphids for their honeydew. Harvester ants use pebbles to close the doors to their nest at night and remove them early the next morning.

- It is easy to imagine where early potters got the idea for jugs when you examine potter wasp nests. Their smaller than marble size nest with flared openings is also the shape of a common clay vessel in our history.

There are so many more insects, than other animals, you would expect them to collectively have more tools on their Swiss army knife!
Dr. Guyton

Messing With the Mud Daubers

Carefully watch the construction of a mud daubers nest. Once they have the masonry finished they will provision the nest with paralyzed spiders. Now, the mud daubers brain works in a linear fashion without feedback loops. Once the process of constructing and provisioning the nest has

begun, it must be completed in sequence. If, for example, all the provisions were removed just as the nest was being closed the mud dauber would continue to seal it, not cognizant of its futility.

The mud daubers will readily use mud you have prepared for them in the construction of their nests. Each day prepare a different color mud by using different minerals or colorings. Those that build organ-pipe like nests, with the chevrons are particularly attractive. Just make sure the mud is not too watery. Dr. Guyton

3rd Annual 4-H Art Exhibition and Photo Salon

October 25 – November 30, 2007
All Entries must be received by October 19, 2007

All submissions, photo, art and prose and poetry, will be exhibited at the Mississippi Entomological Association meeting October 25–26, 2007 and then in the foyer of Clay Lyle Entomology for the month of November.

Adults are invited to submit entries to the 4-H Entomological Art Exhibition and Salon. Please indicate `Adult' in the age slot!
Please send or bring submissions to:

4-H Art Exhibition and Photo Salon
Clay Lyle Entomology Building
Box 9775
Mississippi State, MS 39762

RULES

Rules for Exhibition Photos:
All photo exhibit entries must be submitted by October 19, 2007 to 4-H Entomology Art Exhibition, Clay Lyle Building, Box 9775, Miss State, MS 39762. Photos may be digital or traditional.

Combined Rules (digital and traditional)

- The 4-H member must photograph all entries submitted. The 4-H member does not have to be enrolled in the photography or the entomology project areas.
- No more than 5 entries per individual should be submitted. All entries must have an entomological theme.

Traditional 35 mm Camera –

- For traditional film camera: Mount the regular size print (3" x 5" or 4" x 6") on **8 x 10 inch** white poster board
- Do not mat or cover the front of the poster board or picture in any way.
- On the back of the poster board include title of print, photographer's name, address (including city, state and zip code), **4-H age**, **Under the address please print your county name.**

Digital Camera –

- You must submit an 8" x 10" (photographic) prints in a clear 8" x 10" or 8.5" x 11" page protector. In order to show the most detail in your final print. **Take your final edited image file to a film processor (such as Wal-Mart or Walgreens) to be printed, rather than printing the photo with an ink-jet printer.**
- On the back of the 8" x 10" prints, using a sticker or peel-off label, print or type: the title of print, photographer's name, address (including city, state and zip code), 4-H age. **Please print the county name under the address.** Do not write this information directly on the back of the prints as it will ruin the 8" x 10" prints.

Photographs will be returned to exhibitors when the public exhibition closes in December.

Rules for Art submissions:

All art should have an entomological theme but may take any form desired by artist.

- Paintings and drawings should be mounted on mat board for display.
- Each piece of art should be identified by a `title' and the artist's name, address, including county, and age. Sculptures or other objects should have a tag attached with the above information.
- Submissions should be designed for display.

Art will be returned to exhibitors when the public exhibition closes in December.

Rules for Prose and Poetry Submissions:
All Prose or Poetry should have an entomological theme but may take any form desired by artist.

- Prose or poetry should be typewritten, double spaced, in at least a size 12 font.
- They submission should be included in a clear plastic folder and should have the title and author's name on the front.
- All submissions should have the author's name, address, and age.

Selected submissions will be reprinted in the *Gloworm* newsletter and possibly other locations. The submissions will not be returned.