



The glowworm



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Entomology or Bug Clubs Suggested Activities

I recently had an enjoyable conversation with Bug Camper Kathy Armstrong—a volunteer with the Attala County Bug Club. She was seeking some ideas for weekly meetings. And having just finished Eisner's *For the Love of Insects*, I had a few thoughts.

So, for those of you with bug clubs, what about selecting an "order" of the month and googling up a few activities? Type in the order and other words like experiment, activity, or fun facts. That should give you a starting point. Start an insect zoo. Google up insect pets and dig in! There is so much variety I am sure you will find just the right pet. The best place to find them is not the pet store, but the back yard.

To get your creative juices flowing we have a few suggestions, by order.

Isoptera - Experiment with a termite circus. The traditional termite circus is a one ring act but I bet with a little imagination you can have them climbing the wall and crossing bridges! They find a pheromone in some blue ink very interesting and will follow your pen wherever its ink leads. It may take a little experimenting to find the right blue ink.

Neuroptera - antlions or doodlebug larvae are easy to keep and maintain in an aquarium with several inches of sand. And they love ants. They will dig burrows that look like volcanoes and when an ant tries to walk across it you will discover who really invented pitfall traps!

Hymenoptera - ants, bees and wasp. Old timers will tell you that if you paint your porch ceiling sky blue paper wasp will not build their nest there. Sounds like a good summer experiment for someone who has problems with wasp nests on their porches. Mississippi has a lot of different kinds of ants. Why not start an ant collection and see how many you can find. I read that ants will not cross a pine resin line. Find a resinous old tree and collect some pine resin. The next time you see a parade of ants across the porch draw a line across their path. Can you box them in?

Dr. John

Featured Insect: Damselflies



Campers may remember our trip to the Old Cove last year. This secluded location was home to many interesting plants (remember Lelia taking notes in her notebook) and insects. One insect that caught my attention was the Black-winged damselfly. I observed them again on a recent trip to the Silver River area of Florida.

Dragonflies and damselflies make up the Order Odonata. Damselflies are typically smaller and less nimble at flying than dragonflies. Damselflies typically hold their wings parallel to their body whereas dragonfly wings are perpendicular. Damselflies like dragonflies are predaceous and hunt insects as they fly. Adult damselflies emerge in the spring and live for a few weeks or a few months.

Adults fly mainly during the day when they eat and mate. Damselfly females deposit their eggs in submerged or floating vegetation or directly in the water. Once the eggs hatch, the nymphs (naiads) live completely in the water as skillful hunters. One tool of their craft is called a labial mask-this appendage on the head acts like the tongue of a frog snaring prey and drawing it back to the mouth. Damselfly nymphs develop through 10 or more instars (stages between molts) and have three appendages (gills). Gills of dragonfly naiads are internal. The benefit of having an internal gill for dragonflies is clear if you ever try to catch one in the water. The internal gill holds water that can be rapidly expelled when they need to escape from a fish or turtle.



In the U.S. and Canada, there are about 161 species of damselflies in 8 families (three of them more common). Most species have only one generation per year. The three common groups of damselflies are: spreadwings (pictured at right above), broad-winged (black-winged damselflies), and narrow-winged (pictured at left above). These represent three different families within the Order Odonata like skimmers and darners represent two families of dragonflies. It is interesting to speculate whether these differences in wing holding make a difference in speed to take flight or hunting success among different species. That is another trait of damselflies; not very many people study them so the field is open to new investigators!

Something Extra to Bring to Bug Camp this Summer

1. Bring your bug pets.
2. Begin looking for a good insect show and tell and be prepared to share it in the five minutes before a meal.

You can email us if you have an idea you want to run by us.

Book Review by Dr. John

Thomas Eisner's incredible book, *For the Love of Insects*, (in hardback only \$29.95; The Belknap Press of Harvard University, ISBN 0-674-01181-3) is another must read for young entomologists or budding naturalists. As a teaser, we will publish a series of great stories from its pages over the next few *Glowworms*. For the price, this is a sure to please birthday or Christmas present! Looking for a good summer read for students with a little time on their hands? This is it! I suspect they will be inspired to spend a little more time investigating nature after a couple chapters. I know I am. It looks like a textbook, feels like a textbook but it does not cost or read like a textbook.

Tip for Biology Teachers - Quit Pithing Those Frogs, Decapitate a Roach!

Thomas Eisner in his incredible book, *For the Love of Insects*, describes a technique for using decapitated roaches instead of pithed frogs (frogs whose brains had been destroyed by scrambling with a pin) to demonstrate reflex behavior. These brain dead frogs would scratch themselves when a drop of acid was placed on their back. Headless roaches, in true headless horseman of *Sleepy Hollow* fame, remain viable for days. When any part of a headless roach's body was brushed with formic acid, a cleansing reflex is triggered.

Quotes to Note

"People who claim they don't let little things bother them have never slept in a room with a single mosquito."

David Held, PhD
Extension Entomologist

John Guyton, Ed.D.
Extension Specialist

**ATTENTION: YOUNG PEOPLE –
TEACHERS – PARENTS ALL WHO ARE INTERESTED IN ENTOMOLOGY!!!!**
THE MISSISSIPPI STATE ENTOMOLOGY DEPARTMENT PRESENTS:
Entomology Camp #1 on June 18-22 – Wall Doxey State Park, Holly Springs
Entomology Camp #2 – July 16-20 –Christian Service Camp, Newton

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!

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 **\$60.00 deposit** to reserve your place to:

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

5 day Entomology Camp costs: \$160.00

Charges include room/board, t-shirt and miscellaneous supplies - deposit is not refundable after May 1, 2006 for camp #1 and June 15, 2006 for camp #2, deposit is applied to camp costs.

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 _____

email address is very helpful in quick communication

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

2006 4-H Entomology Calendar

April – May County contests

**Insect collections
Visual Presentations
Judging and Id
Linnaean Games**

30 May – 1 June – 4-H Congress

**Insect collections
Visual Presentations
Judging and Id
Linnaean Games**

13 – 16 June Project Achievement Days

**Insect collections
Visual Presentations
Judging and Id
Linnaean Games**

18-22 June Entomology Camp

Wall Doxey State Park

15 July Linnaean Superbowl

Jackson Horse Show

16 – 20 July Entomology Camp

Mississippi Christian Services Camp, Newton, MS