



The glowworm

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Summer is almost gone and I still have a million things I want to do, including catch some more insects. I think this has been the coolest summer I can remember in Mississippi, in fact the temperatures currently are like we usually see in early October, cool in the morning and hot up in the day. We always get questions about how this affects the insect populations and there is some feeling that this year we have seen fewer butterflies and I know many of the farmers have seen fewer pest insects. So I guess we have to take the good with the bad and go with them. Collecting is still very good and should get better. For those who have really wanted to see preying mantises this summer, now is the time to really look for the adults. The immatures have developed wings and molted to their final stages by now. If you catch a mantis, and keep it for a pet, it'll eat almost any other insect you place in the cage with it. Remember they won't live much past mid-October, no matter how well you care for them, but if you're lucky they will lay an egg case (ootheca) which can be held until spring and you'll have 100's of baby mantises!

We went ahead and set dates for the 2005 camp sessions, we've not established the locations yet, but dates are set. First camp will be June 19 to 23 and second is July 17 to 21, 2005. We are currently looking for good sites for the camps, so if you have suggestions or know of a great 'buggy' place drop us a line! We hope to have locations set by the October newsletter time.

There are a number of other dates which need to also be noted for 4-Hers, especially in Mississippi. Collections should be almost ready for display as many of the counties and districts are conducting fairs and exhibit days now. Get that collection in for display and judging, it's important to show it! The Mid-South Fair, in Memphis, opens on September 23 and they will accept collections for display from 5 states. We'll also have the 4-H Regional Linnaean Championships on 4-H day at the fair. We have a full compliment of teams from Mississippi and Arkansas and hopefully some from Tennessee, as well! It's fun and educational, as well. The Mississippi State Fair in Jackson is in early October, another place to display your collection and other project work. 4-H Day at the Mississippi Fair is October 16. We'll be giving out some *Zophobus morio* at the fair this year. What's that? Well, you'll have to come see and get your very own! The Bee Essay is also available for participants again this year, see the flyer on the back page.



Our good friend, Dr. Jerome Goddard, has a new book out and I am reading it to my grandkids, they love it! The title is 'You gonna touch that? – disgusting facts about bugs.' It's available at Xlibris.com or on Amazon. If you enjoy hearing Jerome talk, you can almost hear him talking when you read this one. He's found another way to help us all learn about a few of the 'creepy crawlies' which are around us.

Can you identify this?

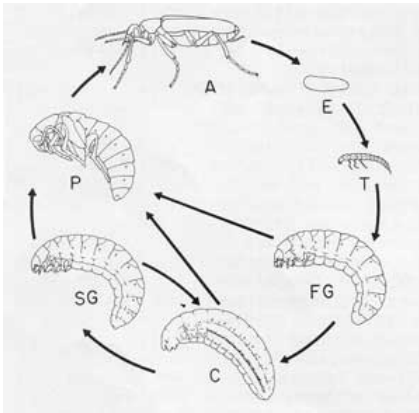
Featured insects



Though there are several members of this family that can cause damage to plants, the Striped and Gray Blister Beetles are the most common. The adult stage causes the damage; not the larvae. The beetles tend to move in swarms and can cause a great deal of defoliation but may not stay in one area for very long. Blister beetles pass the winter in a pseudopupa stage and then go through a final molt in the spring. After a short period of activity, the larva enters the true pupal stage with the adults emerging midsummer.

Blister beetles have long, slender bodies with a relatively large head. These insects release a caustic substance when crushed that can raise blisters on the skin. A few adults are nocturnal; but most are diurnal or show no distinct diel cycle. Since adults are gregarious and often highly colored, they tend to be conspicuous. However, except for first instar larvae (triungulins) frequenting flowers or clinging to adult bees, larval blister beetles are seldom seen. So far as known, all larvae are specialized predators. Larvae of most blister beetles enter the nests of wild bees, where they consume both immature bees and the provisions of one or more cells. Those of some Meloinae, prey on the eggs of grasshoppers. A few larvae evidently prey on the eggs of other blister beetles.

Eggs are laid in masses in the ground or under stones or on the food plants of adults. Larval development is hypermetamorphic, with four distinct phases.



Blister Beetle Life Cycle

A = adult, E = egg, T = first instar or triungulin, FG = first grub phase, C = coarctate phase in instar six or seven, SG = second grub phase, P = pupa

In the first instar or triungulin (T) phase the larva reaches its feeding site on its own or is carried there by an adult bee, to which the larva attaches from a flower. After feeding, the larva molts to become scarabaeiform and enters a period of rapid growth (first grub phase, FG) that lasts until the end of fifth or sixth instar. In some species that prey on bees the FG larva uses only a single cell; in others it digs into nearby cells and devours their contents. In Meloinae the fully fed FG larva generally excavates a chamber apart from the feeding site. In instar six or seven, the larva typically becomes heavily sclerotized and immobile (coarctate phase, C). In this phase the critter degenerates and respiration is reduced to an extremely low level, permitting survival for more than a year, if necessary. When development resumes the muscles regenerate and the larva molts to once again become scarabaeiform (second grub phase, SG); at this point it may or may not excavate a pupal chamber. Most species pass the winter or dry season as coarctate larvae; a few do so as diapausing eggs, triungulin larvae, or adults. Adults commonly live three months or more. Females typically mate and oviposit periodically throughout their adult lives

Blister beetles receive their common name from the ability of their hemolymph to produce blistering on contact with human skin. Hemolymph is often exuded copiously by reflexive bleeding when an adult beetle is pressed or rubbed. Blisters commonly occur on the neck and

arms, as the result of exposure to adult beetles attracted to outdoor lights at night. General handling of adults seldom results in blistering unless the hemolymph contacts the relatively thin skin between the fingers. Unless extensive, medical treatment beyond first aid for blistering on humans is probably not necessary. The blistering on the individual shown in the photograph, while uncomfortable, was not painful. The blisters soon diminished on their own.

[human blistering](#)



The blistering agent is cantharidin. Cantharidin or cantharides (dried, pulverized bodies of adult beetles) was once employed extensively in human and veterinary medicine, primarily as a vesicant and irritant and is still used in the U.S. as the active ingredient in a proprietary wart remover. Taken internally or absorbed through the skin, cantharidin is highly toxic to mammals. There is an extensive literature dealing with its reputed aphrodisiacal properties and numerous reports of human poisonings, both accidental and deliberate.

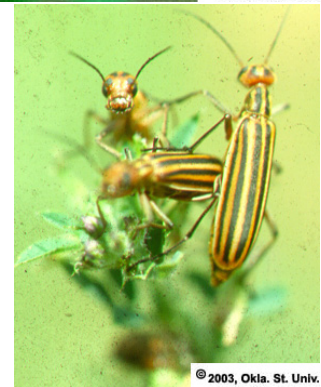
In at least some species, female beetles receive large quantities of cantharidin from males during copulation. In any case, females incorporate the material in a coating applied to the eggs. Horses are extremely sensitive to poisoning from consuming these insects in hay. Cases of fatal poisonings of valuable horses in many states by ingestion of blister beetles trapped in baled alfalfa hay make horse owners extremely cautious about purchasing hay from areas where the beetles are found.



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Pictures and information were obtained from various sources on the internet.



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Happy Buggin'

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