The gloworm

Mississippi State University Extension Service

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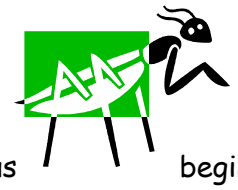
The Mississippi State Fair is in full swing and the 4-H Village is in operation in the Trade Mart on the Fair Grounds in Jackson. We had 25 collections submitted for display. They look pretty good this year! There are a number of `Clover bud' collections from 5 to 7 year olds. That's great! I really appreciate the work each young person does in putting their collections together. Some work harder than others and it is reflected in the collections presented – thus, some white, some red and some blue ribbons get awarded each year. Of course moms and dads get into the act, as well, and we realize that their help is necessary. As children get older, adult input is less. All of you who submitted collections to various fairs and shows are to be commended. THANKS!

We also had the Regional Linnaean Games at the Mid South Fair on September 24. The Senior Tennessee team won by default, we had no other senior teams come for competition. There were 5 junior teams in the competition for the junior crown and it was hotly contested. Two Arkansas Teams (Howard and Pike Counties) and 3 Mississippi Teams (Desoto, Marshall and Tishomingo Counties) fought for the crown. Desoto County, Mississippi, took first place, Pike County, Arkansas was second and Tishomingo was third. All of the teams are winners and all are to be congratulated for their study and accomplishments. Hopefully, we can find competition fun and fulfilling. Once again, moms and dads work hard to make this event successful. THANKS!

Dr. John Hopkins (AR) and Dr. Scott Stewart (TN) have helped with the games and continue to be interested in seeing 4-H entomology flourish in our three states. If you have suggestions for projects or improvements don't hesitate to pass them on! We'll do our best to accommodate and work with you. We also thank Mrs. Jerrie Bullock of the Mid-South Fair for all her assistance in getting the Linnaean Games off the ground and in helping us to get good sponsors.

At this time of year many of us  begin to see the Praying Mantis. A number of young people tell me they look for them early each year so they can capture them and keep them as pets for the next month or so. They usually don't live much longer than the end of October, but they are fun to catch and keep.

The praying mantis is quite unique among insects. With a movable head, compound eyes, raptorial limbs that can regenerate when young, wings for flight, ears for hunting and evading predators, and mysterious cryptic behavior, the mantis is a curiosity, to say the least.

The praying mantis derives its name from the Greek "mantis" meaning diviner or prophet. The name has also become interchangeable with "preying," due to its fierce predatory behavior. They are also known informally as "soothsayers," "devil's horses," "mule killers," and "camel crickets" since their saliva was erroneously thought to poison farm livestock. It has been a popular figure in many different cultures, and the subject of rich mythology. Here in the U.S. they were thought to spit in eyes and blind people and even kill horses In France, people believed a praying mantis would point a lost child home. In Arab and Turkish cultures a mantis was thought to point toward Mecca. In Africa they were thought to bring good luck if they landed on a person, and could even restore life to the dead. Europeans believed they were highly reverent to God since they always seemed to be praying. In China nothing cured bedwetting better than roasted mantid eggs.

There are an estimated 1500-2200 different species of mantids. The greatest diversity of mantids is found in tropical regions. Africa supports some 880 species, Asia 530, Oceania 165, the Americas 410, and Europe 24 species. In North America there are 20 species, 8 of which are in Arizona. They range in size from 1 cm to 25 cm's. The three most common species in North America are the European (Mantis religiosa), Chinese (Tenodera aridfolia sinesis), and Carolina (Stagmomantis Carolina) mantis. The Chinese and European mantids were introduced in the late 1800's coming in on ships carrying nursery stock plants.

The life of a mantis begins in the spring and lasts to the fall. Mantids begin life emerging from an "ootheca", an egg sack, when spring temperatures are sufficiently warm. The young hatch all at once or in batches over a period of weeks. The mantis nymph resembles a miniature adult without wings, and typically measure 4mm in size. Some species emerge from the ootheca single file from an exit tube,

others break from the nearest egg cell wall. They drop from the elevated ootheca from a single silk strand. Mantis undergoes gradual metamorphosis from nymph to adult. Nymphs will molt six to seven times before adulthood, when the old skin is shed off, to be replaced by larger skin. The process is carried out by attaching the old skin to a rough surface, often a stick, with a secreted glue-like substance. The critter then chews an opening, creates a tear in the top of the thorax and down the back, and wriggles free of the dead skin. Many times leg casings don't open up and nymphs die, unable to kick free the old skin. Mantid nymphs are voracious feeders, and immediately begin feeding, often on each other, as soon as they drop from the ootheca. They continue to grow until the mating season in late summer when they are adults. The female will often devour the male as part of the mating ritual. In actuality this only occurs 5-31% of the time and it occurs most often because the female is hungry and a mate's head provides an instant source of energy for her.

Egg laying takes between three to five hours and can occur in as little as one day after mating. The ootheca hardens into a paper mache type substance that prevents predators from eating them. The amount of eggs laid varies among species, but it is usually between 30 and 300 eggs per ootheca. A female mantis is capable of laying up to 22 ootheca, depending on food intake. After laying their eggs, the female mantis will usually live about 2 weeks.

References: Praying Mantids
http://insect-world.com/main/mantodea.html
Sargent, Kevin D. A, The Praying Mantis FAQ.@ Praying Mantis Central
http://home5.inet.tele.dk/crypto/furman.html (1996)
http://insected.arizona.edu/mantidinfo.htm

Happy Buggin,

Michael R. Williams, PhD
Extension Entomologist

European Mantis

Carolina Mantis

Chinese mantis

Dr. John has been working to get things back to normal, he sent in the collectors report for August 26-27. Many ***Gloworm*** readers were also affected by the recent storms, some directly, like the Guytons. Our best wishes and prayers go out for all who have had loss and we hope that we can all get back to `normal' some time soon.

Volunteers and Teachers Mini-Bug Camp Insect Report

There was nothing shabby about the adults that participated in the adult bug camp. Earlier this summer we collected an average of 428 insects per day (21 orders during the entire camp) and at the adult camp, where more time was spent in classroom sessions, 426 insects in 15 orders were reported collected. We also missed a few reports by campers who left early to batten down their hatches before Katrina arrived. The number of insects collected by order is reported below.

We will still take late reports of the number of insects you collected, by order, but for now the collectors par excellence include Tim Needham, Denise and Todd Willis and Phillis Pellegrin who collected insects in 9 orders! If they were a little younger that would almost be a Fair ready collection! Kim Southworth, Judy Spurgeon and Tracy Traweek were close behind reporting 8 orders! Pricilla and Carl Lilly and Jeff Wilson collected 7 orders. Susan Lott, Marilyn Lindsay-Boles and Laurie Moss reported 6 orders collected. Other collectors reporting excellent results included: Sherry Wenta, Dell Chapman, Ethel Comby, Cyndy Jones, Carol Sicila, Mary Baldwin and George Alexander. Congratulations and thank you for reporting your insects collected.

We began collecting this information more as a curiosity but have discovered that campers who regularly report insects collected by order quickly learn the orders and their characteristics. It was good to hear several agents and volunteers comment they did not know what a particular insect was, but they knew its order.

Lately we have been noticing that different camps collecting can be associated with an abundance of specific insects. The June Bugs at Kings Arrow Ranch were so plentiful that hundreds could have been collected. In fact, so many were collected by a few campers we set a moratorium at 5 of the same kind of insect per camper! At the agent and volunteer mini-camp it seemed plant hoppers and cicadas were the easiest vouchers to collect.

Blattaria	3	Hymenoptera	34
Coleoptera	111	Isoptera	1
Dermaptera	1	Lepidoptera	158
Diptera	12	Mantodea	1
Ephemeroptera	1	Orthoptera	26
Hemiptera	22	Neuroptera	10
Homoptera	44	Odonata	1

Trichoptera 1

Total 426 insects in 15 orders

Announcements

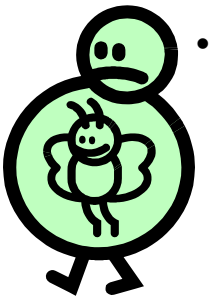
- Camp Dates have been set for 2006. The first camp will be at Wall Doxey State Park, near Holly Springs June 18 –22, 2006. Second camp will be on July 17-21 with the final location TBA. A registration form will go out shortly after January 1.

- Fall garden day at Crystal Springs, Oct 14-15. We'll have a butterfly tent up and be sharing information about butterfly gardens, Come help us spread the good word about BUGS!

- The x drive X:\Entomology\4-H Entomology Display boxes has pictorial examples of a 4-H Insect Collection Display Box. Extension Agents in Mississippi have access to this resource. We're also arranging to place these pictures on the WEB pages at http://msucares.com/4h_Youth/4hentomology/index.html

- 4-H Day at the Mississippi State Fair is set for October 15.

- Mississippi Bee Essay contest is due January 15, 2006. Title of the essay is **Honey bees in Art and Culture.** Rules for the contest may be seen at http://msucares.com/4h_Youth/4hentomology/bee_essay_contest.html



- If you have entomological artwork and would like to show it off, we will have an entomological art exhibition at the Clay Lyle Building on campus at Mississippi State during the Mississippi Entomological Association meeting during the first week in November. Send or bring it to Dr. M. Williams, Entomology Department, by October 28, 2005. Insect photographs will also be accepted. We'll also take adult submissions.