

CLEMSON UNIVERSITY

~ URBAN ENTOMOLOGY EXTENSION & RESEARCH ~

Palmetto Pestalk July 2004 Newsletter¹

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Last year, my wife and I were co-presidents of our high school band booster club. Over the course of our tenure, we presided over many fund raising events, competitions, concerts, band room renovations and the appointment of a new band director. It was nice to serve, but I was *really* happy when our term was over, and I could go back to being a helper. When the current presidents asked me to just be in charge of the props for the marching band I said "Sure!" "Compared to being president, that will be a piece of cake."

I soon obtained my assignment. Build a puzzle. The puzzle should have about 16 colorful pieces and must stretch 10 yards by 10 yards (if you do the math, that means each piece would be about 7.5 feet x 7.5 feet). It must be strong enough that the entire color guard can stand on the puzzle at the end of the show but also light enough that each piece can be carried by a color guard girl. The puzzle must be durable to last through all of the practices and competitions until November without cracking, bending or breaking. The pieces must also not blow off the field in a wind and must be able to be removed within three minutes after the band is done performing. The budget for making the puzzle must not exceed \$500.

I started by tenure as "prop-boy", by cruising the home center stores. I became an expert on all types of materials including foam board, veneers, flooring, roofing, duct tape, PVC pipe, adhesives, fabric and play mats. I searched high and low for quality materials that were cheap. I removed cars and made my garage into a giant puzzle factory. I made prototype pieces and jumped up and down on them in the backyard to see if they would bend or break. I made other pieces and asked my kids to hold them and dance around like they were in the color guard. (My son refused this task.) After two months of my quest for the perfect giant puzzle, I came to the conclusion that it couldn't be done. I was ready to abdicate my role as prop-boy and return to the easy job of being president.

In the end, I was right and I was wrong about my conclusion. The puzzle couldn't be done under all of the initial criteria and it couldn't be done only by me. Compromises had to be made and I needed help to design and build the puzzle. Fortunately, after several brain-storming meetings, sharing great ideas and making compromises such as increasing the budget and decreasing the size, we are building a giant puzzle that should work great for the band.

Pest control can be a puzzle. Many of you are often dealing with difficult accounts or control situations where you can't make all of the pieces fit. It might be an old account that has had an increasing number of call-backs. Perhaps you are dealing with a pest you've never encounter before; or your tried-and-true

control techniques don't seem to be working as well as they used to. When you get stuck trying to figure a solution to your puzzle, don't be afraid to get advice from others. Use your contacts and resources at Clemson, the SCPCA and the NPMA. More importantly, dialogue with pest control professionals in your company or area. And where can you find many professionals that may have the answer you need? Look to your own regional pest control association and if you're not a member, *join*. It might make a perfect fit.

Residual Resin Bees

In the July/August 2003 issue of Pestalk, I wrote an article on Resolving Resin Bees. Well, to quote a movie cliché, "They're back!"

Giant resin bees (*Megachile sculpturalis*) are exotic bees native to Japan and eastern Asia. They were first reported in the United States from North Carolina in 1994. Since then they have spread across the Carolinas and much of the Southeast and this year they appear to be more numerous than ever. Resin bees are a type of leaf-cutting bee. They are called giant because they are considered large for a leaf cutting bee. They collect resin from plants to seal the wooden cells where they lay their eggs. They will also use plant sap and even mud to make a home for their larvae. While they don't chew into wood to make their egg cells, they will use carpenter bee holes that have not been treated or plugged. Thus homeowners and pest control professionals see them around structures and think

they are just an unusual looking carpenter bee.

A behavior of resin bees that have had several of you call me are the antics of the males. Similar to other bees and wasps, males collect in large numbers in an area where they are likely to find females with which to mate. You may have accounts that are currently serving as a resin bee singles bar. And like other males in the bee/wasp families, they can't sting. All they can do is buzz around and try to act tough.

If you haven't done so already, refer to the article in the 2003 July/August issue of Pestalk for more detailed information or visit the following web site at Auburn University for a fact sheet on resin bees: www.ag.auburn.edu/aaes/communications/highlights/fall00/bee.html. You may find that you don't need to treat for resin bees, but rather get homeowners to finally plug their carpenter bee holes.

Curing Cicada Killers

I get many calls from folks in the mid- to late summer from people encountering large wasps with distinctive bands of white and yellow on black bodies. At times there are numerous wasps, maybe 20, 30 or 40 at a time flying a few feet from the ground in a frenzied back and forth flight. These mean looking creatures are stingless male cicada killers. They hover over the ground this time of year hoping to mate with the few large female cicada killers in the area. Many females are an 1.5 inches long with a three inch wing span. The females can sting, but rarely do unless they are provoked.

Cicada killers are solitary wasps but when they first emerge from their earthen incubation chambers, the males will cluster and fight with each other while

establishing territories. Once females begin to emerge, the males will attempt to capture them and mate. The males will make every attempt to defend their territory against any invader, including people, so even though they are stingless they will fly at people and scare most folks half-to-death!

Each female has her own burrow. The burrows are dug in well drained sites. They prefer sandy or bare soils, but will also construct burrows in areas where the grass is kept very short. They can be a real problem in playgrounds and parks where sand has been installed for sports or around playground equipment. They are also a problem around sand traps, tees, and greens on golf courses.

Cicada killers hunt annual or dogday cicadas in trees. When a cicada is spotted, the wasp zooms in and attempts to sting the cicada. The sting paralyzes the cicada. The cicada will utter a buzzing shriek until it becomes paralyzed. Once the cicada becomes motionless, the wasp will carry the cicada to a high point in the tree and attempt to fly back to her burrow with the heavy load. While larger wasps may be successful on the first attempt, smaller wasps may need to repeat the process several times.

At the burrow, the wasp places the cicada in a side chamber and lays an egg on it. The egg hatches, and the wasp larva feeds on the body fluids of the paralyzed cicada (yum). Development is completed within two weeks and the wasp larva forms a cocoon. The winter is spent in the larval stage and pupates the following spring and emerges as an adult in July or August. Adult emergence

coincides with the emergence of annual cicadas. Isn't that cool?!

In most cases, control of cicada killers is not necessary. Left alone, they will not harm people. However, when the burrows are in an area where there is a high risk of someone getting stung, control may be needed. The best approach is to treat the individual burrows with an insecticide formulated for outdoor turf/ground applications. Dusts are usually the most effective when applied in the burrows the females are using. As the females enter or leaves the hole the dust will adhere to her body and kill her. Without the females, the males will leave and eventually die. For long term control, good thick ground covers or healthy grass will help deter future cicada killers from nesting in the same location. *Source: Clemson Insect Information Fact Sheet, IIS/TO-15 by Clyde Gorsuch.*

Mighty Midges

If you have clients with a home or business near a pond, lake, or a slow moving stream, you may have gotten calls about swarming mosquitoes. After visiting the site, you may have determined that the pests were not mosquitoes but some other type of small fly. It is very likely that they are midges.

Midges belong to the family of flies called Chironomidae and there are about 800 species in North America. They should not be confused with other small biting flies, called punkies, no-see-um's, sand flies, black gnats or biting midges in the family Ceratopogonidae. Midges differ from mosquitoes and biting midges in that they have a much shorter snout known as the proboscis. They also differ from biting midges in that biting midges tend to hold their wings

flat over their body and midges hold their wings roof-like over their body. Midges are soft-bodied and range from 1/32 to 1-3/8 inch in length. They have long legs and antennae that are either feathered (females) or bushy (males).

Since midges do not bite, they are considered "nuisance" flies. (They are listed in the non-biting fly section of the NPMA Field Guide.) Midges are attracted to light and they often congregate on window screens or around porch or building lights and street lights in the summer. In some situations, where midge swarms are thick, allergic reactions from breathing in these insects have been noted. Swarms also are known to cause traffic hazards because the number of swarmer can be very high. Most of the swarms are made up of male midges listening for the wing beat of a female.

Midges are one of the most abundant insects in aquatic habitats and develop through the four stages of their life cycle in and around water. First, adults lay thousands of eggs in gelatinous masses on the surface of water or aquatic vegetation. These eggs then sink to the bottom where they hatch into larvae in 3 days to a week. The larvae burrow through the mud and build tubes to live in while they consume organic matter and other bottom debris. Most midge larvae have hemoglobin in their blood. As the larvae continue to grow and develop, the hemoglobin causes them to turn red. The larval midge stage lasts from 2 to 7 weeks depending on environmental conditions. At the end of this period, the larvae become pupae, and 2 to 3 days later, the pupae rise to the surface where they emerge and become adults. The adults are not known

to feed at all, and so they do not live more than 3 to 10 days. Their primary role as an adult is to reproduce.

Complete control of midges is impossible, and even partial control can be impractical and undesirable.

Chemical applications in aquatic habitats would harm non-target organisms along with the midges. Non-chemical methods such as reducing runoff from urban and agricultural operations that produce food for midges is more practical. Some success in controlling midges has been reported by stocking smaller bodies of water with catfish, carp and goldfish at a rate of 150-500 pounds of fish per acre of water. If your client decides to use this method be sure that he or she selects a type of fish that will feed on the bottom of the water where the larvae live.

The easiest method to reduce the nuisance of swarms of midges when the population is high, is to keep lights off for approximately 45 minutes after sundown since 90% of the activity will occur before that time. If your client needs to continue lighted outdoor activities when midges are swarming, it is helpful to locate light sources away from the home or area of activity, such as on a pole and direct the light back toward the area that your client wants illuminated. If large numbers of adults get into indoor areas, appropriate space sprays or ULV applications can quickly provide knock down; but the best long term control strategy would be to use exclusion and habitat alteration. *Source: pending Clemson Insect Information Fact Sheet, senior authors: Amy Gibson and Patricia Zungoli.*

Chiggers In Spanish Moss?

I recently received a question as to whether chiggers live in Spanish moss hanging in trees. If you search the Internet, you'll find many references that they do. I have also heard from many folks that chiggers live in Spanish moss, but I've never found any credible supporting evidence for this supposed fact. Even though chiggers that attach to humans (there are several species) are common on lizards and skinks, including those that can climb trees, it is not likely that the mites would be living in the hanging moss as part of their life cycle. The adult mites would have to live in the moss and deposit their eggs there for the larvae (chiggers) to be present and attach to passing vertebrates. And if a chigger were attached to a lizard that climbed a tree and the chigger fell off, it would molt into the next non-biting stage of the life cycle.

It would be interesting to find Spanish moss with chiggers actually living in it, and not just stories from what adults were told when they were growing up. Perhaps when people collect Spanish moss, they are standing at some point under a tree or in an area where chiggers are located. When they experience the chigger bites after collecting the moss, they connect a line between two dots. Thus, getting chiggers when collecting Spanish moss may be correlated but not associated directly. Maybe this is an area for a future study? Anyone want to collect some Spanish moss? *Source: In collaboration with Gary Mullen at Auburn University and Robert Bellinger at Clemson University.*

Termite Schools Ready To Go

The termite schools are just around the corner. The first

Apprentice Termite Technician (ATT) will be held August 18 - 19 with a second ATT on October 13 - 14. The Master Termite Technician programs will be on September 22 - 23 and November 10 - 11. If you haven't registered yet but still want to attend one of these programs, contact Jackie Ellis at 864/656-5048 or by email at jells@clemson.edu. Hurry, the available spaces are filling fast!

Mid-Atlantic Conference

Normally in this issue, I cover the most recent Mid-Atlantic Pest Control Conference, summarizing talks and showing photos. The Mid-Atlantic Conference is sponsored by the National Pest Management Association in conjunction with the state associations from North Carolina, South Carolina, Virginia and West Virginia. The meeting this past July, was held at Wrightsville Beach in North Carolina. Due to an unscheduled medical event, with a happy ending (not a baby), I was unable to attend the conference and I was not able to get a Clemson representative to attend the conference in my stead at the last minute. Next year, I fully intend to be healthy and attend the 2005 Mid-Atlantic Conference.

¹Note: This newsletter is a regular submission to Palmetto Pestalk.

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