

# CLEMSON UNIVERSITY

## ~ URBAN ENTOMOLOGY EXTENSION & RESEARCH ~

### Palmetto Pestalk January 2005 Newsletter<sup>1</sup>

*Dr. Eric P. Benson*  
*Urban Extension Entomologist*  
*Department of Entomology*  
*Clemson University*  
*(864) 656-3111*  
*fax: 656-5065*  
*e-mail: ebenson@clemson.edu*

The hole was too big to photograph in one shot. I was also surprised by the light. I am used to subways reaching their destination underground, in darkness. Our trip ended in a hole filled with daylight. This was a trip I had made many times before in the 1970's and 80's on the Port Authority Trans-Hudson (PATH) subway. Back then, the destination from New Jersey was deep underground, beneath the World Trade Center (WTC). The destination was the same, but everything was different.

My daughter and I were visiting New York during Thanksgiving after spending the holidays with family. I hadn't been back since 9/11. I had read that the subway was reconnected to the WTC site in November 2003 and I was interested in visiting Ground Zero.

I have never found a construction site more moving. Throughout the PATH station and on the surrounding construction fences were photos of the WTC before and after the terrorist attacks. Across the street at Saint Paul's Chapel, built in 1766, was a sign showing where a giant sycamore tree was killed as it was struck by flying I-beams from the collapsing towers,

saving the church from destruction. Saint Paul's is also the place where exhausted fire fighters found rest shortly after the attack and where thousands of visitors now find a connection to that fateful day.

When it was time to return to New Jersey and ride the PATH train back into darkness I looked up at the glassy Freedom Tower being constructed next to Ground Zero. It is already one of the highest buildings on the south end of Manhattan. I stopped and took a picture of my daughter with the Freedom Tower and Ground Zero behind her. I told her this photo would be one to show her grand kids some day. "Tell them you were here," I said, "and tell them of your memories today so neither you, nor they, should ever forget."

What do the terrorist attacks on September 11, 2001 have to do with pest control? A lot. For example, within days of the attack, the New York City Department of Health worked with pest control companies to conduct surveys of the WTC blast zone and surrounding areas of lower Manhattan to assess the impact of the blast on rodent activity. City officials worked with PCOs to abate conditions conducive for rodent harborage.

The effects have also impacted South Carolina. Bioterrorism and agroterrorism have now become serious concerns. Bioterrorism is the use of biological agents to intentionally produce a disease or

toxic effect on people or the environment. Agroterrorism involves the malicious use of biological agents or toxins as weapons against the agricultural industry, food or water supply. Clemson University Regulatory and Public Service Programs are now playing a key role with other SC state agencies in protecting against the use of pesticides, fertilizers, disease and other biological agents as a means of terrorism.

On the personal side, many of us have friends, neighbors or colleagues that have been called to serve military duty in the Middle East. Some will not be coming home. Like a strange trip out of a dark tunnel into the light, their service and sacrifice is something that we, nor our children should ever forget.

#### **Winter Meeting February 8 - 10**

The 46<sup>th</sup> Annual South Carolina Pest Control Association Winter Meeting is just a few weeks away. The theme this year is Piloting Pest Management and will highlight a memorable motivational talk by a SC National Guard Pilot on Wednesday morning, February 9<sup>th</sup>. As we go to press, we still can not tell you who the speaker will be due to unknown status of potential speakers being called to active duty.

In addition to our National Guard guest, we'll have a super lineup of speakers including Dr. Bobby Corrigan, a respected

authority on rodent control. Dr. George Rambo will tackle new development in termite control and the “whys and hows” of developing protocols. Dr. Harold Harlan will be speaking on wood destroying fungi and will conduct a session on bed bug control.

Many other great speakers will round out our sessions, including an ant and wood destroying organism identification lab and open discussion sessions. Overall our Piloting Pest Management Program should be a high flying program that you’ll not want to miss. Please take a moment to look at the entire program and details for registration enclosed in this issue of Pestalk. Please register by Friday, January 28, 2005! You can contact Jackie Ellis at 864/656-5048 or by email at [jells@clemson.edu](mailto:jells@clemson.edu) if you have any questions about registration or the program. See you in Columbia!

### **Winter Musters Cluster Flies**

During the fall, many flies may enter homes. They usually are unwelcome visitors, especially when they plan to stay for the duration of the winter. One common type of fly is called a cluster fly, which many of you have probably encountered.

Cluster flies are similar in appearance to houseflies, but they are larger, nonmetallic and dark gray in color. They have golden hairs on their bodies. Cluster flies enter homes and structures one at a time and may begin to collect throughout the house in swarms. In large numbers, cluster flies may seem like a swarm of bees.

Once inside, these flies occupy many places in the home, such as nooks, dark corners, beneath curtains, and in the angles of walls. Also, they will rest under the edges of closets, in hats, and behind pictures or furniture. Cluster flies usually are found in the upper portions of the house, especially the attic. During sunny days many of them may be in clusters on window sills trying to find their way outdoors.

The life cycle of cluster flies is short, spanning only a few months. They lay single eggs in cracks in soil, during the summer. The eggs hatch within three days and the emerging maggots (larvae) are parasitic on earthworms. The maggot stage lasts 13 to 22 days and the pupal stage lasts 11 to 14 days. Outdoors, adult cluster flies primarily are found around fruit and flowers

Cluster flies are nuisance pests. They are not destructive and do not harm humans or damage homes. Problems are most noticeable during the springtime when the flies begin to emerge in large numbers to exit the structure.

There are no practical means of controlling cluster flies. The best way to prevent them from entering the home is to use exclusion methods such as window screens, screening around attic vents, and weather stripping around doors and windows. If cluster flies do gain entry into a home, you or your client can use a vacuum to physically remove them. Be sure to discard the vacuum bag in a sealed container and place in an outside receptacle. If cluster fly numbers are so large that

insecticide applications are necessary, only spray where flies may enter the home, and where the flies are harboring. *Source: Clemson University Insect Information Sheet HS-33, Michael Vickers lead author.*

### **Species, Species, Species**

Location, location, location is the mantra of the real estate industry. Species, species, species should be the mantra for the pest control operator (PCO). The identification of an insect or related pest is the first step in determining whether it should be controlled and in obtaining recommended control measures. Clemson University provides identification assistance when it is needed. A good specimen and supporting information are essential for pests to be correctly identified. Unfortunately, we get many specimens poorly preserved for identification.

County Extension offices furnish information on what is necessary for properly collecting, preserving, and shipping specimens and the supporting information that should be included. For a fee of \$10, the county offices can submit samples for you. If you decide to submit samples on your own, there are several steps you should take.

### **Preserving And Packaging**

In general, most insects should be preserved immediately after collection. Several specimens should be included if possible. Most specimens can be killed and preserved in glass or plastic jars containing 70 to 90-percent ethyl or isopropyl (rubbing) alcohol. Do not send insects in water.

Large, fragile insects such as butterflies and moths should be

killed in a freezer and stored in a crush-proof container without alcohol. Tissue paper gently placed around the specimens will keep them from being damaged in the mail.

Pests on plants such as mites, thrips, aphids, scale, and other very fragile insects should be sent in on the diseased plant. These insects are easily damaged by removal from the plant, and their appearance on the plant as well as damage symptoms may be very important for accurate identification.

If possible, small caterpillars, grubs, and maggots should be sent live in a plastic bag with some of the host material. It may be necessary to rear some of these to the adult stage for positive identification. Place the plastic bag in a container that will not be crushed in the mail. Other types of insects can be kept alive if they are placed in a small, loosely capped container with a slightly moistened paper towel or a cotton swab moistened with a drop of water.

The following information should be included for each sample submitted:

- Name of collector.
- County and nearest town.
- Date collected.
- Where found, such as host plant, animal, or location in a building. If the host was a plant or animal, give the stage of growth. If the specimen was found on a person,

provide the person's name and phone number.

- Degree of infestation (heavy, medium, light) and type of damage.
- Insecticide used for control and results if appropriate.

**Electronic Images.** It is becoming more common for individuals with digital cameras to send images of specimens by email. This can greatly speed the process of determining the type of specimen and the appropriate control measures if needed. However, identification of insects and related arthropods from electronic images can be challenging. Being three-dimensional, many important characters used to identify insects can be out of focus in an image with limited depth of field. For example, the number of parts on the antennae, placement of hairs and spines on the body, shape of the mouthparts and the number and shape of veins in the wings may all be needed to key an insect to species. It may not be possible to capture all the necessary key characters to fully identify a pest. Fortunately in some situations, the species of a pest may not be necessary to make an appropriate control recommendation.

Before imaging an insect or related arthropod for identification, you should determine the level of identification you feel you need. For example, when concerned about a specific species such as a brown recluse spider or Formosan termite, it may be more

efficient to mail the sample by the traditional process so a detailed identification can be made. In addition, you will probably need to mail small arthropods such as mites, larval ticks and minute flies. For more general identifications, large specimens or identifications with pressing time constraints such as structural pests delaying a home sale, digital images may work well.

The following guidelines are designed to help you make decisions about imaging insects, related arthropods and the damage they cause.

- Whenever possible, lay a simple ruler or common item such as a penny so the relative size of the specimen can be determined.
- When possible, take an image of damage or nests. Photograph damage where it interfaces with "normal" plant tissue, lumber, food products, etc.
- Use a contrasting background color to the specimen. If in doubt, default to a light gray background.
- Use an intensity of light that best depicts the accurate color of the specimen.
- When many pests are present, take an image of several specimens in one frame.

- Attempt to select the best preserved specimen to provide a close-up image of the entire top, bottom and head. When imaging the head, try to get the base of the antennae, eyes and mouth in focus. For specimens flattened side-to-side, such as fleas, a side view will be needed.

*Source: Clemson University Insect Information Sheet HS-22.*

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<sup>1</sup>Note: This newsletter is a regular submission to Palmetto Pestalk.

For information concerning this publication contact:

Tom Gochnaur  
9721 Dunbarton Drive  
Columbia, SC 29223  
Phone: 803-788-6699  
Fax: 803-788-9698  
Email: teegee342@aol.com.