

CLEMSON UNIVERSITY

~ URBAN ENTOMOLOGY EXTENSION & RESEARCH ~

Palmetto Pestalk December 2003 Newsletter¹

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Sounds, smells and sights make powerful memories. Have you ever been driving and a song comes on the radio that you haven't heard in years? Many times it will make you think of a time, place or person you associate with the song. Whenever I hear "Crocodile Rock" by Elton John, I think back to high school days and driving my dad's ugly '67 Nova--an gold Chevy--on snowy days in New Jersey. And almost any Billy Joel song can make me think of college.

Smells do the same thing. Put a pumpkin pie in the oven and I have memories of Thanksgivings past. A whiff of a fir tree, and I have Christmas on my mind. And how many times have you seen a woman sniff a newborn's head and make a comment about when her kids were young?

Some of our most memorable moments come from images. An old little league photo, a snapshot of your grandparents, or a photo of your senior prom can all bring a flood of memories.

Not all memories are pleasant, but all memories are important. Memories are markers and guideposts for our lives. Without memories, every moment would be new and every error could be repeated.

In a recent article in the *American Entomologist* titled "A Stinging Commentary" by May Berenbaum, she wrote about the ability of bees, wasps and other venomous arthropods to make memories. Dr. Berenbaum referenced research about scorpions and how they can make a prevenom. Scorpion prevenoms are high in salts and small proteins that alter the way nerves work so it will cause intense pain. So rather than waste perfectly good and metabolically "expensive" venom on very large critters like humans, scorpions can use metabolically "cheap" prevenom to get their point across: LEAVE ME ALONE!

Honeybees can take the whole making-a-memory process one step further. When they sting you with their complex venomous soup of chemicals, they throw in a small protein called apamin. Pharmacologists studying apamin have found that it can enhance memory, learning, and even reverse amnesia. So not only does the bee's sting cause immediate pain, it adds apamin to make sure you'll remember the pain for a long, long time!

Sounds, smells and sights make powerful memories. What do you remember when you hear a bee's buzz, smell honey or sight a yellow and black insect winging your way? I may remember to head to the safety of my car and hope the oldies station is playing Crocodile Rock. *Source: May Berenbaum, A Stinging Commentary,*

American Entomologist,
Summer 2003.

Courage, Character And Curve Balls

Are you ready to make a memory at the 45th Annual South Carolina Pest Control Association Winter Meeting? Once again, it will be held at the Adams Mark Hotel in downtown Columbia on February 10 - 12. The theme will be Courage, Character and Curve Balls. Our motivational speaker will be Jose Alvarez. Baseball fans will remember Jose as a pitcher with the Atlanta Braves in the 1980's and 90's. In 1988, the Braves organization voted him their most valuable pitcher, the same year he led the Braves in appearances (70). Now a resident in the Greenville area, Jose has a lot to share about courage, character and curve balls. His motivational talk is titled "Winning: A Champion's Vision."

We'll also have a lot to share with our line-up of other speakers. Manager sessions will include topics on "Wage and Benefits" by Ms. Jeanne McSwain, "Marketing Tips" by Mr. Brad Filson, "Risk Management" by Mr. Michael Weisburger and "Writing Contracts" by Mr. Fred Cliff. General pest control technicians will have many sessions including topics such as "Cockroach Bait Aversion" by Dr. Dini Miller, "Pantry Pest Problems" by Dr. Pat Zungoli, "Fire Ant Control" by Dr. David Oi and "Commercial Rodent

Control” by Mr. Donny Oswalt. Folks involved with wood destroying organisms will have a chance to attend a number of sessions including “Borates” by Dr. Janet Kintz, “What Causes Retreats” by Mr. Vince Parmen and “New Technologies in Termite Control” by Dr. George Rambo.

Over the last few years, our Thursday afternoon workshops have been poorly attended, so this year we’ll be trying something new. Late Thursday morning, we’ll finish all of our formal sessions and break for a series of roundtable discussions. The roundtable discussions will focus on some of the managerial, general pest and wood destroying topics we covered during the meeting. Each topic will have a moderator to facilitate discussion, but the general format will be open and relaxed to encourage all attendees to participate in a discussion. Participants can choose any roundtable they wish to attend and can participate in more than one discussion.

More details concerning the roundtables will be provided in your packet once you have registered. Please take a moment to look at the entire program and details for registration enclosed in this issue of Pestalk.

White-Footed Ant Found in SC

Tim Davis, a County Extension Agent and Area Wide Imported Fire Ant Specialist was recently invited to consult concerning a suspected fire ant problem at a public facility in Columbia. Tim did not find a fire ant problem but he did collect a species of ant previously not

recorded in South Carolina. The new intruder was *Technomyrmex albipes*, commonly known as the white-footed ant.

Tim has made additional inspections of the site and believes that the white-footed ants are currently restricted to the structure where they were found. White-footed ants are well established in several South Florida counties. Records indicate that some of the plants used in the facility were purchased from nurseries in infested Florida counties. Currently, there are no quarantines on white-footed ants.

The white-footed ant is a single node ant. They are similar in appearance to odorous house ants, but they are generally darker in color with light-colored tarsi (feet). White-footed ants are exotic pests and have recently been increasing in status as a structural nuisance pest, even though they have been documented in Florida since 1922. Colonies can be very large, with up to a million individuals. Large colonies have multiple queens and intercastes that are like workers but can produce viable eggs like a queen. White-footed ants usually nest in multiple outdoor locations, often under objects in yards or at the base of trees.

The most interesting component of white-footed ant colonies is the feeding behavior. Rather than exchange food orally (know as trophallaxis) between castes like most ants, white-footed ant workers, intercastes and queens produce trophic eggs. Trophic eggs are special eggs that serve only as a food source for the queens and intercastes in the colony. Since

food is not exchanged orally, toxic baits will only kill the workers that feed on them. Thus a colony can not be eliminated by only using baits.

The Department of Plant Industries has been notified about the discovery of white-footed ants in South Carolina. A monitoring and control plan for the known infestation of white-footed ants is being formulated. The fact that the white-footed ant is primarily tropical and was detected early leads to an optimistic outlook that this pest will not be the next “fire ant.” I’ll keep you posted as more information develops. *Source: Tim Davis, Clemson Extension and Field Guide for Structure Infesting Ants by Stoy Hedges, 1998.*

How To Avoid Baldfaced Hornet Memories

We started this newsletter about how stinging pests can make a memory. One of the largest wasps homeowners confront every fall and early winter is the baldfaced hornet. Known for large nests and defensive nature, baldfaced hornets are impressive and often misunderstood.

Contrary to the name, baldfaced hornets are not hornets. They are one of the many types of yellowjackets. The baldfaced hornet is often confused with a similar sized wasp, the European hornet, which is the only true hornet in North America. In nature, baldfaced hornets are valuable because they kill many pests including flies and caterpillars. It is only when their nests are located near areas of human activity that they pose a threat.

Baldfaced hornets are different from other yellowjackets because of their white-and-black pattern as opposed to the more typical yellow-and-black pattern. The most notable feature of this wasp is the white or "baldface" head. They also have three white stripes on end of their body. Compared to yellowjackets, baldfaced hornets are very large. Adult workers vary in size, but average about 3/4 inches long. Queens are usually only a little larger than the other wasps in the colony.

Baldfaced hornet colonies consists of one queen, many female workers, and a few males. Only queens survive the winter. During spring (April-June), queens emerge from protected sites, such as stumps, logs, and under loose bark. Once she finds a good location, the queen begins construction of a paper nest, lays eggs, and collects insects to feed to her young. After the first generation of wasps have completed development and emerge as winged adults, they assume the duties of nest construction and care for the colony.

After a few months, colonies often have about 400 workers, but can vary in size from 100-700 workers. Between July and September, new queens and males are usually produced. The males and queens leave the nest, mate and the new queens find a suitable protected site to overwinter until the following spring. The original queen and workers die after the males and future queens leave the nest. In most cases, abandoned nests are not reused and often decompose during the winter. Nests that have been reused have only

been observed in more tropical areas of North America.

Bald faced hornet nests often hang in trees and shrubs and go unnoticed until the leaves have dropped in the fall. Nests can also be built on eaves of buildings, on windows, in attics or on other artificial structures. They are often pear or egg shaped and can be as large as 14 inches in diameter and over 23 inches in length. Nests are constructed of multiple layers of hexagonal combs, similar in shape to those of honeybees and covered in a mottled gray paper envelope. The raw materials for the "paper" are obtained from vegetable fibers, such as rotten or weathered wood, dead plants, or even man made materials such as cardboard and newspaper. The fibers are chewed and mixed with saliva to form a pulp which is then formed into place by the wasps.

The sting of a baldfaced hornet is similar to most other social bees and wasps. A typical reaction includes immediate pain and/or swelling at the sting site. Other sensations may include burning and itching. For some individuals the initial swelling may become painful and may increase to affect a larger area. One unique behavior of baldfaced hornets is their ability to squirt venom from the sting into the eyes of an intruder. The venom causes immediate watering of the eyes and may cause temporary blindness in humans.

Most social wasps vigorously defend their nests from perceived threats. Baldfaced hornets are known for their defensive behavior. People are often stung when they accidentally stumble upon

a hidden nest or when the nest is located in areas adjacent to homes or places where there is human activity. It is when nests are located close to areas with human activity or there is a medical threat to persons who may be allergic that control is warranted.

Effective control involves treating the nest. The nest should be located during daylight hours but treatment should occur at night if possible when all of the baldfaced hornets are in the nest and their activity is greatly reduced. Lights used to illuminate the nest should not be held by a person. Stand the light source toward the nest but away from the person treating. Thick protective clothing, including boots, gloves, hats and eyewear should be worn to guard against stings.

There are many types of insecticides that will kill baldfaced hornets. Generally, aerosol sprays labeled for wasps and hornets, that shoot a stream of insecticide at least 20 feet, are a good choice. Many aerosol products contain materials useful in getting a quick "knockdown" while others contain foaming agents that expand within the nest to spread the insecticide, minimizing the number of wasps escaping from the nest. Insecticidal dusts can also be applied into the nest, however they may take several hours to achieve the desired result and require the applicator to get close to the nest.

When treating, a sufficient volume of insecticide should be applied directly into the nest entrance to ensure thorough coverage. Once the insecticide has been introduced, it is helpful to leave the nest

intact for a few days to allow time to kill all the workers and any newly emerging wasps in the nest. When control has been achieved, the nest should be removed, placed in a sealed plastic garbage bag and properly disposed. Nests treated with insecticides should not be kept for display purposes.

Sometimes pest control professionals collect apparently abandoned baldfaced hornet nests in the winter to display in their offices or give to science programs at schools. These nests make great displays, but be careful when you collect them. Just last week, I collected a baldfaced hornet nest on campus that had no workers or queens present. I brought the nest into my office and after two days, I had young hornets emerging from the nest. I took the opportunity to get some nice specimens for our insect collection, but your local school or office personnel may not be so pleased to be greeted by hornets at their desks. If you collect a nest, freeze it for several days to make sure you kill any baldfaced hornets still developing inside before you put the nest on display. Remember, baldfaced hornets often do not make for good memories.

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

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