

# North Carolina Pest News

Departments of Entomology and Plant Pathology



Volume 26, Number 3,  
April 29, 2011

## CAUTION !

*The information and recommendations in this newsletter are applicable to North Carolina and may not apply in other areas.*

**Stephen J. Toth, Jr.,**  
editor

Dept. of Entomology,  
North Carolina State  
University, Box 7613,  
Raleigh, NC 27695

(919) 513-8189 Phone  
(919) 513-1114 Fax  
steve\_toth@ncsu.edu

Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. North Carolina State University and North Carolina A&T State University commit themselves to positive action to secure equal opportunity regardless of race, color, creed, national origin, religion, sex, age, or disability. In addition, the two Universities welcome all persons without regard to sexual orientation. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

## In This Week's Issue . . .

<b>ANNOUNCEMENTS AND GENERAL INFORMATION</b> . . . . .	<b>1</b>
• Landscape Professional Field Day Scheduled for May 18 in Raleigh	
<b>FIELD AND FORAGE CROPS</b> . . . . .	<b>2</b>
• Cotton Thrips Tips	
• Expectations for Other Cotton Insects	
• Cotton Pest Management Resources for the 2011 Growing Season	
• Are Cereal Leaf Beetles Fashionably Late?	
<b>ORNAMENTALS AND TURF</b> . . . . .	<b>4</b>
• Oak Apple Galls Appealing	
• Predatory Stink Bug <i>Euthyrhynchus floridanus</i>	
• Predatory Ground Beetle <i>Calosoma</i>	
• Crane Flies	
• Eastern Juniper Bark Beetles	
• Springtime Fall Cankerworms in Cabarrus County	
• Azalea Bark Scales	
• Seedcorn Maggot Flies – Dead, But Still Alive	
• Lecanium Scales on Oaks	
• Juniper Scale Crawlers are Active	
• Magicicada Brood XIX	

See current and archived issues of the *North Carolina Pest News* on the Internet at: [http://ipm.ncsu.edu/current\\_ipm/pest\\_news.html](http://ipm.ncsu.edu/current_ipm/pest_news.html)

## ANNOUNCEMENTS AND GENERAL INFORMATION

### Landscape Professional Field Day Scheduled for May 18 in Raleigh

The 2011 Landscape Professional Field Day, co-sponsored by the North Carolina State University's College of Agriculture and Life Sciences and North Carolina Nursery and Landscape Association, Inc., will be held on

**NC** State University  
A&T State University  
**COOPERATIVE  
EXTENSION**

Empowering People • Providing Solutions

Wednesday, May 18, 2011 at the JC Raulston Arboretum and Horticulture Field Laboratory, Beryl Road, Raleigh, North Carolina. Additional information, including a preregistration form, is available at [http://ipm.ncsu.edu/current\\_ipm/11PestNews/11News3/2011landscapefieldday.pdf](http://ipm.ncsu.edu/current_ipm/11PestNews/11News3/2011landscapefieldday.pdf).

## **FIELD AND FORAGE CROPS**

From: Jack Bacheler, Extension Entomologist

### **Cotton Thrips Tips**

With cotton planting now underway in scattered areas of North Carolina, most producers have already selected their thrips management strategies. Options will primarily include carefully deploying limited Temik supplies or moving entirely to seed treatments. As we mentioned earlier, our past replicated tests have demonstrated that all of the seed treatments are very similar in their degree of thrips control. Based on our last three years' survey data, probably less than 20% of our cotton acreage has escaped a foliar application for thrips following the use of a seed treatment. The exception has usually been: 1) either an unusual combination of adequate soil moisture and warm temperatures during the last week of April and the first three weeks of May (unusual); or 2) on cotton planted after about May 18 to 20.

In addition to Gaucho Grande, Cruiser, and the nematode- plus thrips-active products Avicta Duo and Aeris, Acceleron is being offered on Deltapine varieties in 2011. At this time, because the active ingredients and their amounts in Acceleron-treated seed are the same as the above treatments, we would expect to find similar thrips control with the thrips only and the thrips plus nematode-active versions of Acceleron. Each of the manufacturers of the seed treatments, Bayer, Syngenta and Monsanto, will use a different fungicide base, however. Hopefully, research undertaken in the next few years can shed light on the amount of disease protection offered by these products under cool wet conditions.

### **Expectations for Other Cotton Insects**

With most cotton seed still to be planted, observations about what kind of a "cotton insect year" that we can anticipate would be largely speculative. Corn planting seems to be spanning a longer period of time, perhaps resulting in a more extended bollworm moth flight. The size of the flight is another matter and will be best determined in June by determining the percentage of field corn ears infested with corn earworms in different regions of the state. Weather models so far suggest that thrips flights could be on the late side this year. The potential for stink bug damage to cotton is often higher during wetter seasons and lower during droughty seasons. Also, the expression of the fungal pathogens vectored by stink bugs tends to be greater during wet harvests and less with dry fall weather. Much of our "crystal balling" of upcoming insect threats is dependent on upcoming weather patterns, both here and to our south, and is therefore difficult to predict. It will not be long before cotton insects tip their hand, however.

### **Cotton Pest Management Resources for the 2011 Growing Season**

- Weekly Cotton Teletip Updates: 1-800-662-7301 (for North Carolina residents only)
- Weekly Pest Patrol Cotton Insect Updates: 1-877-285-8525 (state updates: Virginia to Texas)

- Weekly .mp3 Cotton Insect Hotline Tapes, with scripts: <http://ipm.ncsu.edu/cotton/insectcorner/radio/index.html>
- Light trap captures (July through early September; also archived from 1999-2010): <http://ipm.ncsu.edu/cotton/insectcorner/blacklight/>
- Cotton Scouting Schools: dates and locations posted beginning in mid-June

From: Dominic Reisig, Extension Entomologist

### **Are Cereal Leaf Beetles Fashionably Late?**

Most growers have treated, purportedly for cereal leaf beetle, in the state and a few are continuing to do so by tank-mixing in a pyrethroid insecticide with a fungicide. I have heard various iterations of the statement “it’s not a question of if cereal leaf beetles will show up, but when.” We have been getting some reports from northern areas that growers are seeing cereal leaf beetles appear in areas that they weren’t before. What is going on? Based on sampling from a large-scale statewide survey and a new degree day model, being developed in conjunction with researchers at Virginia Tech University, I believe that cereal leaf beetles are following their normal pattern and are not late. Here is my logic.

In the next to last week of April, fields in the southernmost part of North Carolina had almost no adult cereal leaf beetles, some larvae and very few eggs. Looking at fields farther north, there were a few more adults, some larvae, and more eggs. This seems reasonable as there have been more degree days to speed development of the cereal leaf beetle in the lower latitudes.

There have been some fields in the state in which adults were around, eggs were laid and larvae hatched. When we returned to sample the next week, there were very few eggs and larvae around. What happened? Research has shown that population abundances can be impacted by rain. We have had some severe weather events that I think have impacted population abundances. Also, there seem to be a fair number of ladybird beetles in some untreated fields. These factors might be having an impact or there might be other things causing mortality.

Upon returning to the same fields the next week, adult cereal leaf beetles had returned to some, some eggs were laid and some larvae hatched. I think this describes the situation in which growers and scouts are seeing cereal leaf beetles in areas where they had not seen them before. If you track these fields over time, the populations just aren't there or appear to be holding steady. Then you notice something is there. I don't think that cereal leaf beetles are any later, I just think we're catching the middle to the tail end of a normally developing population (Fig. 1; assume the northernmost populations in North Carolina are developing two weeks behind South Carolina in 2010).

Finally, based on a new degree-day model being developed by researchers at Virginia Tech University, the 2010 larval population of cereal leaf beetle peaked at 341 degree days. This occurred on April 27, 2010 at the Tidewater Agricultural Research and Extension Center in Suffolk, Virginia. The mark of 341 degree days occurred on April 23, 2011 at the same location. As a result, cereal leaf beetle populations have most likely peaked and are declining in 2011 North Carolina wheat.

I would wager that greater than 75% of our growers have treated wheat with an insecticide this spring. I would also wager that less than 5% of these were justified. I can personally attest to many cases where a

grower treated a population well below threshold (e.g., 5 larvae per 100 tillers). Remember that the threshold is 25 eggs per larvae per 100 tillers. South Carolina’s threshold is 50 eggs per larvae per 100 tillers. Although thresholds should fluctuate with commodity price, we already have a conservative threshold in the state, even with high wheat prices. I think the issue here is a combination of high wheat prices (more to spend on crop inputs), prompting from chemical dealers, and a group-think phenomenon where one grower treats and the neighbors follow.

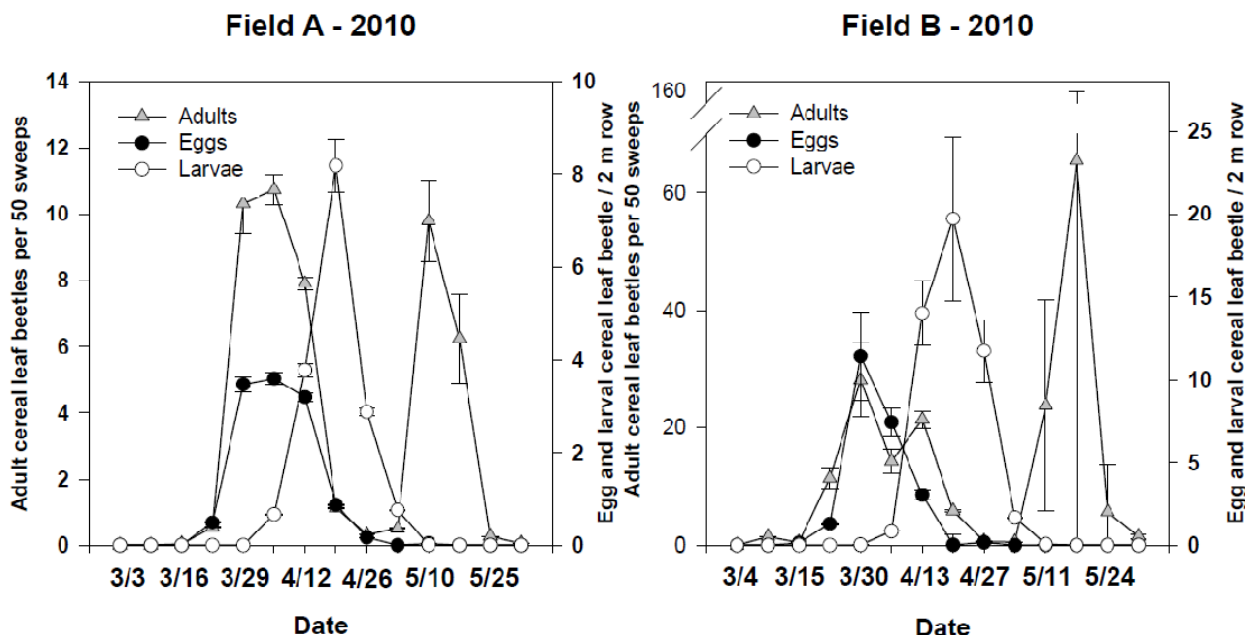


Fig. 1. Cereal leaf beetle densities in two 2010 South Carolina wheat fields. Cereal leaf beetle has a single generation in a year. Note the distinct peaks and dips in the population abundances as adults enter wheat fields to lay eggs, the eggs hatch to larvae, and the larvae pupate into adults. The larval stage is damaging to wheat. Data from Francis Reay-Jones, Clemson University.

In conclusion, cereal leaf beetle populations have developed normally in 2011, although many populations across the state appeared to undergo some heavy mortality. Cereal leaf beetle abundances are likely on the decline. Treatment for stink bugs in wheat is not recommended except when population densities are profuse (see the article in the April 22, 2011 *North Carolina Pest News*). If you haven’t put on an insecticide yet, but are considering it, please scout your wheat before you make the decision. The odds are that it is unnecessary.

## ORNAMENTALS AND TURF

From: Steve Bambara, Extension Entomologist

### Oak Apple Galls Appealing

Oak-apple gall wasps form large spherical galls on the leaves or leaf petioles of various red, black and scarlet oaks. These galls are up to two inches in diameter, green tinged with red when fresh, and gradually turn brown (Fig. 1).

Another common golf ball-sized gall on oak is the wool sower gall (Fig. 2). Distinct and unusual fuzzy plant growth is induced by the secretions of the grubs of a tiny gall wasp, *Callirhytis seminator*. If a fresh wool sower gall is held in a plastic bag out of the sun (so it will not get too hot), within one to three weeks the tiny, harmless gall wasps will emerge. The wool sower gall is specific to white oak and only occurs in the spring. Pulling the gall apart exposes small seed-like structures. The gall wasp grubs develop inside these structures. (This gall is also called the oak seed gall.) Wool sower galls are not abundant and don't cause harm to white oaks. For more information on these galls, see *Ornamentals and Turf Insect Note No. 5* at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/trees/note05/note05.html>.



Fig. 1. Oak apple gall in later stage. Image by Steve Bambara.



Fig. 2. Wool sower gall, early stage. Image by John Meyer.

### Predatory Stink Bug *Euthyrhynchus floridanus*

*Euthyrhynchus floridanus* is not a pest stink bug, but one that feeds on other insects. It is very colorful, yet different in both adult (Fig. 3) and nymphal stages (Fig. 4).



Photo by Stephen B. Bambara  
Fig. 3. *Euthyrhynchus floridanus* adult. Image by Steve Bambara.



James Ward  
Fig. 4. *Euthyrhynchus floridanus* nymphs. Image by James Ward.

Normally we don't see this until later in the season, but we have had a report already this spring. This is one of the more attractive stink bug adults with three orange spots on a dark, metallic blue-black background. These insects overwinter as adults probably in some dry, sheltered location. Eggs are laid the following spring. The eggs hatch 19 to 33 days later. Nymphs of *Euthyrhynchus floridanus* take a long time to develop through five stages (40 to 67 days). New adult females wait 5 or 6 days before mating and the eggs are laid 23 to 67 days later. Total developmental time for this species is much longer than for plant-feeding stink bugs.

Nymphs are metallic blue-green with red and are highly aggregated. They even attack larger prey in concert. Apparently, aggregation behavior allows them to successfully attack prey too large to be subdued by a single nymph. Sometimes the adults aggregate with nymphs, although when times get hard these bugs sometimes feed on smaller individuals. When the bugs jab their prey with their proboscis, they inject a toxin that slowly immobilizes the prey. *Euthyrhynchus floridanus* bugs have an unusual wagging behavior in which the bug rocks its body from side to side while it grips the substrate firmly with its feet. This is thought to be a defensive behavior. Some other predaceous stink bugs feed on plant tissue when insect prey is not available. Plant feeding is not reported for *Euthyrhynchus floridanus*.

### Predatory Ground Beetle *Calosoma*

Beetles in the genus *Calosoma* are called caterpillar hunters. They are among the largest in the Carabidae ground beetle family. Adults and larvae are active predators. *Calosoma sycophanta* is a large, metallic green beetle (Fig. 5) that was imported from Europe to New England for the biological control of the gypsy moth in 1905. The larva feeds day and night, consuming 50 caterpillars during its two-week developmental period. The adult will eat several hundred caterpillars during a life span of two to four years. There are also several native species of *Calosoma*. (from the *Midwest Biocontrol News*). We have had several reports of these insects already this spring.



Fig. 5. *Calosoma sycophanta*. Image from the Pennsylvania Department of Conservation and Natural Resources.

### Crane Flies

Periodically, the public will inquire about "those large mosquitoes." They are usually referring to crane flies. Crane fly larvae live in wet areas and can grow to be quite large. They are rarely a pest to anything. The adults are very fragile creatures and may be seen resting on the sides of a house or under an overhang. Occasionally, they make it into a house. They cannot bite and will usually die with 24 hours once inside. They can be gently relocated outdoors or ignored and swept up later. They are frequently missing appendages (Fig. 6). For additional information, see the following web sites:

<http://www.ces.ncsu.edu/depts/ent/notes/O&T/lawn/note129/note129.html>

<http://blog.insectmuseum.org/?p=2391>



Fig. 6. Crane fly adult. Image by Matt Bertone.



Fig. 7. *Phloeosinus dentatus* bark beetle. Image by J. R. Baker.

### Eastern Juniper Bark Beetles

A sample of eastern red cedar (*Juniperus*) containing bark beetles was recently sent from Carteret County. The eastern juniper bark beetle, *Phloeosinus dentatus* (Fig. 7), usually attacks eastern red cedar, but it also infests arborvitae and even infests Leyland cypress. These small, blackish-colored beetles bore into the tree and then bore upward with the grain. Eggs are laid in short galleries that extend upward from the entrance hole. Infestations are usually found in cut, broken or fire damaged trees. The eastern juniper bark beetle also attacks red cedars infested with *Heterobasion annosum* fungus. Together, infested trees of all sizes succumb. The beetle/disease correlation is not clearly defined. Keeping trees in a healthy, unstressed condition should help. Protective bark sprays are less than highly effective against the beetles. For more information, see the following web sites:

[http://www.cals.ncsu.edu/course/pp728/heterobasidion/heterobasidion\\_annosum.html](http://www.cals.ncsu.edu/course/pp728/heterobasidion/heterobasidion_annosum.html)

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_1/juniperus/virginiana.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_1/juniperus/virginiana.htm)

### Springtime Fall Cankerworms in Cabarrus County

I'm a little late with this notice, but thought I'd still mention it. Fall cankerworms (Fig. 8) are small "inchworms" that hatch in the spring and are fond of young oak and maple foliage. Fall cankerworms have three prolegs while spring cankerworms have only two at the end of the abdomen. Caterpillars emerge and consume foliage at some time in March and feed through April. The city of Charlotte has been the major center of this population since 1987, for unknown reasons. Cabarrus County also reported a small outbreak again this year. Durham County had a suspected report, too. Natural controls, which regulate outbreaks in uninhabited forests, have not been effective in reducing fall cankerworm populations in this urban environment. Charlotte has a large number of mature willow oaks that provide an almost unbroken canopy over much of the city.

Control strategies for fall cankerworms involve mostly trunk banding (Fig. 9) for flightless female moth trapping in **November through December** as flightless female moths crawl up the tree. Pesticide sprays in the spring with *B.t.* or other foliage protectors can be used, but are expensive on large trees. See <http://www.forestpests.org/southern/fallspringcankerworm.html> on the web for additional information.



Fig. 8. Fall cankerworm larva. Image by E. Bradford Walker (<http://bugwood.org>).



Fig. 9. Sticky bands on trees in Charlotte. Image by G. Keith Douce, University of Georgia (<http://bugwood.org>).

### Azalea Bark Scales

An infestation of azalea bark scales (Fig. 10) was recently reported from Wilson County. Heavily infested plants may appear chlorotic and unthrifty. The bushes are often covered with sooty mold, a black fungus that grows in the honeydew excreted by the azalea bark scales as they feed. Eventually twigs may die back. Adult females and eggs are protected inside the egg sac from most pesticides. The key to control is treatment in late spring and late fall when the nymphs are present. Horticultural oil sprays should work while crawlers are present, which is about now. Retreatment may be necessary. Orthene is another choice. Imidacloprid as a soil drench at the base of the plant should be effective. This may also occur on rhododendron. For more information, see the following web sites:

<http://www.ces.ncsu.edu/depts/ent/notes/O&T/specificplants/note134/note134.html>

[http://www.ncsu.edu/project/pestmngt3/AG189/html/azalea\\_bark\\_scale.HTML](http://www.ncsu.edu/project/pestmngt3/AG189/html/azalea_bark_scale.HTML)



Fig. 10. Azalea bark scales. Image by James R. Baker.



Fig. 11. Dead seedcorn maggot flies on stem. Plant Disease and Insect Clinic image by R. Boylan.



---

### Seedcorn Maggot Flies – Dead, But Still Alive

This week we have received several reports about dead flies on branches (Fig. 11). It is an unusual sight and may cause undue concern to gardeners. These flies are adults of seedcorn maggot (*Delia platura*), which is sometimes a pest of agriculture. Seedcorn maggot flies are grayish-brown in color and about one-fifth of an inch in length. The legs are black and there are bristles scattered on the body. Some seedcorn maggot flies become infected with a live fungus of the genus *Entomophthora*. Infected flies are swollen and have pinkish bands on the abdomen. Sometimes, gray *Entomophthora* spores are visible on the fly and on the substrate nearby. This fungus apparently causes the flies to land on protruding objects such as any twigs, clotheslines, and fence posts. The flies cling there and usually die in the afternoon as their abdomens swell with fungal strands inside.

Early the next morning, the fungal spores are released into the air while the humidity is high. The spores infest other seedcorn maggots. Although the fungus-infected flies appear to be damaging the plant, these adult flies are harmless. The seedcorn maggot is found throughout North Carolina. Seedcorn maggots feed primarily on decaying organic matter, but sometimes infest the seeds and seedlings of berries or vegetables. The dead, fungus-infected flies are sometime abundant on the dead twigs of dogwood and crape myrtle in the spring. For more information, see *Ornamentals and Turf Insect Note No. 20* on the Internet at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note20/note20.html>.

From: Steven Frank, Extension Entomologist

### Lecanium Scales on Oaks

Oak lecanium scale (Fig. 12) is one of the largest soft scales in our area. Scales are brown and rounded reaching 6 mm in diameter. As soft scales, lecanium scales produce honeydew that can cause sooty mold on oaks or plants below. It primarily infests oaks trees. Large populations can reduce growth and vitality especially in newly planted trees.

Eggs are present now under adult scale covers indicating crawlers will emerge in the next week or so or may be emerging now in your area. The crawler stage should be targeted for best efficacy. On trees small enough to treat the foliage, horticultural oil can be used. On larger trees, a systemic insecticide such as dinotefuran can be applied as a drench or trunk spray. This scale is not easily eradicated and optimal control measures are still unclear. It is attacked by many parasitoids and predators that can reduce scale abundance if protected from insecticides. For more information, see the following web site: <http://www.fs.fed.us/r8/foresthealth/pubs/oakpests/p32.html>.

### Juniper Scale Crawlers are Active

The juniper scale, *Carulaspis juniper* (Fig. 13), attacks some of the most commonly used plants in ornamental landscapes, including all juniper species but also cypress species and false cypress. There is one generation per year in which females fill up their armored cover with eggs in spring from which crawlers hatch and look for new feeding sites. Infestations can lead to foliage that becomes yellow or brown and generally less lustrous than normal. Large infestations can cause the tips of branches to die and the plant to become sparsely foliated. Isolated infestations can be pruned off of plants. Natural

---

enemies will often keep scale below damaging thresholds. However, in environments where natural enemies are not abundant control may be necessary. Horticultural oil will smother crawlers. Other chemicals such as dinotefuran (Safari), acetamiprid (TriStar), pyroproxifen (Distance) and others can be used to manage infestations. More information on armored scale management can be found at: <http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note157/note157.html>.



Fig. 12. Oak lecanium scales. Image by James R. Baker.



Fig. 13. Heavy infestation of juniper scale on Leyland cypress. Adult females are white and round with a yellow center and resemble a fried egg. Image by Steve Frank.

From: Al Cooke, Agricultural Extension Agent, Chatham County

### **Magicalada Brood XIX**

I have recently seen at least one cicada (in Chatham County) and have had several more telephone calls about cicadas this week. It is well known among cicada watchers that Brood XIX of the 13-year cicada is primed to hatch. It was reported in Georgia last week and in Greensboro as recently as April 27 (I had a local report via electronic mail on April 25). While we don't normally expect them to show up until a little later, I strongly suspect that the cicada reports are accurate and that Brood XIX, perhaps the largest brood of *Magicalada spp.*, is arriving. What that means depends on whether and how you appreciate the real world even if it's loud enough to drown out your TV – what a pleasant thought!

Cicadas are relatively large insects with transparent wings held tent like over the body. Some cicadas show up every year, usually in late summer. Then we have the curious periodical cicadas (Fig. 14) that show up in certain areas every 13 or 17 years. After the immature cicada spends all those years in the soil, it crawls out to latch onto some solid object and complete its maturation by splitting its skin and emerging as an adult.

The adults are “hungry” but have little interest in food. Rather, the males will start to sing loudly for the females – sort of like the troubadours of the middle ages (sort of). The lucky females will soon be splitting the bark on young twigs of deciduous trees on which to lay eggs (Fig. 15). This damage to the twigs may cause some of them to die, but the injury is usually inconsequential. When the eggs hatch in 6

to 8 weeks, the young larvae burrow into the soil where they will spend most of their lives. The brood that is emerging now burrowed down in 1998. Remember them? Remember what you were doing to the tunes of The Cicadas in '98? Enjoy them again, because they won't be back until 2024.



Fig. 14. Periodical cicada. Image by James R. Baker.



Fig. 15. Cicada oviposition scars in stem. Image by James R. Baker.

Meanwhile, it is neither practical nor desirable to do anything about them. The damage done to healthy trees is minimal. For trees or shrubs that are young, recently planted, or of unusual value, they may be protected with fine netting such as mosquito netting or with repeated applications of an insecticide such as Sevin. But it's probably better to just sit on the porch in the afternoon with your favorite beverage and enjoy the music. For some of us older geezers it may be the last chance to hear Brood XIX. But we hope you younger folk will help continue an old tradition. People, do still have porches don't you? It's a good time to set a pattern for the summer. Spend time on the porch listening and watching something that doesn't have an on/off switch.

For more information about cicadas, visit the following web sites:

<http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note17/note17.html>

[http://insects.ummz.lsa.umich.edu/fauna/Michigan\\_Cicadas/Periodical/Index.html](http://insects.ummz.lsa.umich.edu/fauna/Michigan_Cicadas/Periodical/Index.html)

[http://magicicada.org/magicicada\\_xix.php](http://magicicada.org/magicicada_xix.php)

*Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by North Carolina State University, North Carolina A&T State University or North Carolina Cooperative Extension nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical. For assistance, contact an agent of North Carolina Cooperative Extension.*