BUCKEYE YARD AND GARDEN LINE 2013-17
07/25/13

From:  Amy Stone (Lead editor and contributing author) and Julie Crook (Co-editor and contributing author).

Pam Bennett, Joe Boggs, Jim Chatfield, Erik Draper, Denise Ellsworth, Gary Gao, Denise Johnson, Ashley Kulhanek, Tim Malinich, Cindy Meyer, Amy Stone, Marne Titchenell, Danae Wolfe, and Curtis Young (Contributing authors).

Buckeye Yard and Garden Line (BYGL) enhanced with photos and links is available online at: [http://bygl.osu.edu]. Become a fan of the BYGL on Facebook at [http://www.facebook.com/OSUBYGL] or follow the BYGL on Twitter at [http://www.twitter.com/OSubygl].

This is the 17th 2013 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

In This Issue:

1. PLANTS OF THE WEEK: Annual (Zinna); Perennial (Hibiscus or Common Mallow); Woody (Canadian Hemlock); Vegetable (Summer Squash); and Weed (Teasel).
2. HORT SHORTS: Hotel for Pollinators; Come to The Gateway Garden Jubilee, Springfield, Ohio; Quality and Sample Size Makes a Difference.
3. BUG BYTES: Chigger Challenge; Strafing Horseflies; Baldface Hornet Nests Becoming Apparent; Oak Gall Gazetteer; Sowbug Killer Spider; Gypsy Moth Update; and Asian Longhorned Beetle Update.
4. DISEASE DIGEST: Cedar Quince Rust.
5. TURF TIPS: White Grub Prediction; Buzz-Bombing Beetles Buzz-Bomb Ohio (Green June Beetles); and Red Velvet Ant (Cow Killer Ant).
6. INDUSTRY INSIGHTS: Emerald Ash Borer Confirmed in Tuscarawas County; Warm Season Spider Mite Madness; and Get Your Green Industry Fix Webinar: August 14.
7. WEATHERWATCH: Weather Update.
8. COMING ATTRACTIONS: Diagnostic Walkabout for the Green Industry; Thousand Canker Disease of Walnut Workshop; Green Industry Summer Session in NW Ohio; Ohio Turfgrass Foundation (OTF) Research Field Day; Youth Scientist Adult Education Class; Ohio Plant Diagnostic Workshop; Name That Tree; Why Trees Matter Forum.
9. BYGLOSOPHY.

APPENDIX - ADDITIONAL WEBSITE RESOURCES.

1. PLANTS OF THE WEEK.

*ANNUAL - ZINNIA (Zinnia hybrids). Zinnias have been grown in Ohio gardens for many years and still remain popular. There are around 20 species of zinnias but only a few are cultivated for garden use. *Zinnia elegans* or common zinnia, was used in early gardens for cut flowers because of the stem height and large flowers. The downside to this group is their susceptibility to powdery mildew. The upside is that they are extremely easy to grow from seed.

Many of today's hybrids have been developed with disease resistance in mind. The 'Profusion' and 'Zahara' cultivars have performed quite well in the field trials at the Gateway Learning Gardens in Springfield, Ohio. Very little leaf spot and no powdery mildew have been observed.

Zinnias tolerate full hot sun and are very drought tolerant. In fact, the hotter and drier the weather, there is a decreased possibility for diseases to develop. In addition, provide adequate spacing with the plants to allow for good air circulation. Heights of the hybrids are anywhere from 1' - 3' and are equally as wide. Many of the newer hybrids keep blooming all season and don't require deadheading. The blooms start in the early spring and are red, yellow, cream, pink, orange and scarlet. Zinnia blooms are also very attractive to butterflies.

*PERENNIAL – HIBISCUS OR COMMON MALLOW (Hibiscus moscheutos). When these perennials begin to bloom, people take notice. You can't help but see these dinner plate-sized blooms in the perennial border, even though the
blooms are short-lived. Each bloom lasts a day and then drops; however, many more blooms are there to take its place. The blooms begin in late July and last through much of August in central Ohio. Bloom colors are reds, pinks, white and mixed.

The plants can also be quite large, depending on the cultivar. 'Lady Baltimore' is 4'-6' tall and almost as wide. Give them plenty of space to fill in. The foliage is normally green except for cultivars such as 'Kopper King' which has copper-colored foliage that holds up nicely all season. The flowers on this plant are white with a touch of pink and a large red blotch in the center.

Provide ample water for these plants as they don't like dry soil. If the soil dries out, blooms will drop. They like full sun to part shade. Japanese beetles also love these plants so if beetle populations are high, consider management options. If populations are minor, hand-picking and squashing works great!

*WOODY - CANADIAN HEMLOCK (Tsuga canadensis). Robert Frost noted: The day the crow shook down on me, the dust of snow from a hemlock tree, has given my heart a change of mood, and saved a part of a day I had rued. But it is not just colder climes in which hemlock shows its grace. It is a wonderful woodland and landscape plant for Ohio, one of our best plants for hedges, a graceful specimen tree when we provide some root protection from wind and heat in early years before they self-mulch, and a real concern relative to the encroachment of hemlock woolly adelgid into Ohio. Enjoy dwarf hemlocks such as the Sargent weeping hemlock, white needled hemlocks such as 'Gentsch White', and remember what John Updike wrote in his poem "Planting Trees":

At the back of our acre here, my wife and I, freshly moved in, freshly together, transplanted two hemlocks that guarded our door gloomily, green gnomes a meter high. One died, gray as sagebrush next spring. The other lives on and some day will dominate this view no longer mine, its great lazy feathery hemlock limbs down-drooping its tent-shaped caverns resinous and deep. Then may I return, an old man, a trespasser, and remember and marvel to see our small deed, that hurried day. So amplified, like a story though layers of air told over and over, spreading.

*VEGETABLE – SUMMER SQUASH (Cucurbita pepo). Summer squash is a tender, warm-season vegetable that comes in a variety of shapes and colors and can be grown throughout the United States anytime during the warm, frost-free season. Summer squash differs from winter squash because it is harvested before the rind hardens and the fruit matures. It grows on bush-type plants that take up relatively little space and does not spread like the plants of winter squash. A few healthy and well-maintained plants will keep producing right up to frost.

Summer squash can be divided into 4 groups. Yellow summer squash have long, thin fruits that can be straight or crook necked. Zucchini types are also long and cylindrical, often dark green but some are yellow and even white. Patty pan squash are disc-shaped with scalloped edges and the colors range from green to yellow to white. Mideast or Cousa varieties usually have pale green skin and are shorter and thicker than zucchini.

Direct sow 4 or 5 seeds 1/2" - 1" deep in hills 3' - 4' apart; hills will warm and drain earlier in the season. When the plants are 2" - 3" tall they should be thinned to 2 or 3 vigorous plants per hill. In rows, sow seeds 4" apart in rows 4' - 5' apart. After germination plants should be thinned to one plant every 12" - 24". Squash grow rapidly this time of the season and are usually ready to pick within 4 to 8 days after flowering. For best quality they should be harvested when small and tender. Most elongated varieties are picked when they are 2" in diameter and 6" - 8" long. Patty Pan types should be harvested when they are 3" - 4" in diameter.
*WEED – TEASEL (Dipsacus fullonum).* Teasel is in bloom currently around the state. We highlighted this plant earlier in the season when it was in the rosette stage. Common teasel can reach 6’ - 7’ in height and is primarily a weed of roadsides, pastures, hayfields and occasionally turfgrass. This weed is found throughout the United States. The biennial plant is most recognized for its cone-shaped, purple, clustered flower, which is produced during the second year of growth. In the rosette stage leaves are oval to round in shape, can have scalloped teeth, and have a wrinkled appearance. Also, in the rosette stage, due to its wrinkled appearance, it is commonly mistaken for thistle, common burdock or broadleaf dock. The stem and flowers become woody and persist through the winter.

2. HORT SHORTS.

A. HOTEL FOR POLLINATORS. There are 4000 species of native bees in North America. Their ecosystem function as pollinators is crucial, but their habitats are changing. By providing NATIVE BEE HOUSES (bee hotels, bee condos, pollinator houses etc.), homeowners and landowners can provide shelter and nesting sites for an assortment of native bees and enhance their populations.

Tunnel-nesting bees make up 30% of the 4000 species. These bees need small tunnels, hollow stems, or woodborer galleries in dead wood to create their nests. They create cells within the existing tunnel to lay and protect their eggs. In nature, these bees often find homes in snags (dead standing trees), but in our manicured landscapes, dead and dying trees are rarely left alone. Luckily, a large tree is not necessary. Bee houses are increasingly available to purchase, but it is easy to make your own.

To create a bee condo, drill various-sized, dead-end holes (between 3/32" and 3/8" bits) into untreated wood or a log to provide appealing housing for these pollinators. Holes should not go all the way through the wood, and be relatively smooth. Smaller holes should only go 3" - 4" deep while larger holes (over 1/4") should be 5" - 6" deep. When setting up these "condos" in your yard, holes should face east or southeast and be sheltered. Stem nesting bees prefer the hollow of various grassy stems such as reeds, berry canes, bamboo and teasel. Bundles of hollow reeds and bamboo or protected paper tubes can make excellent homes for these bees. Like those made in wood, the tunnels should have a dead-end and be laid horizontally and sheltered. The two designs can be stacked together to create a hotel for bees of all sorts, or scattered separately through the landscape. Regular maintenance of the condos is recommended to keep bees healthy. Replacing tubes and wood often will help reduce diseases that affect pollinators.

Recently, bee hotels have been installed at several sites in Lucas County as a result of the pollinator mini-grant through the OSU Department of Entomology and the assistance of local bee keeper, Master Gardener Volunteer and Ohio Certified Volunteer Naturalist Karen Wood. The sites include the Lucas County Fairgrounds, the Toledo Botanical Garden and a local community garden – Magyar Garden.

B. COME TO THE GATEWAY GARDEN JUBILEE IN SPRINGFIELD, OHIO. On August 3, 2013, OSU Extension, Clark County and the Master Gardener Volunteers of Clark County will hold the final Garden Jubilee at the current location (4400 Gateway Blvd., Springfield, Ohio). More on this later!

The event is from 8:30 a.m. - 1:30 p.m. and is held rain or shine. It's free to the public and features more than 800 different types of plants on display in various themed gardens. In addition, the Loosely Strung Band will play during the day and hot dogs, drinks and popcorn will be served. Vendors will be on hand with garden-related items and MGVs will be giving demonstrations throughout the day. For information on the event as well as a schedule of demonstrations go to: [http://go.osu.edu/gardenjubilee](http://go.osu.edu/gardenjubilee)

The Gateway Learning Gardens have been in cultivation since 1996 and have been used as a teaching tool as well as has developed into a tourist attraction for the area. More than 25,000 people have visited the gardens. The gardens are free and open to the public during daylight hours. This is the last Jubilee at this location as the Clark County Extension office is moving this winter and the gardens will be moved in the future. The Jubilee will resume when the new site is up and running.

C. QUALITY AND SAMPLE SIZE MAKES A DIFFERENCE. Just a friendly reminder, that when submitting samples for diagnostics, the quality and size of the sample being submitted does make a BIG difference. The better the sample, often, the better the results or diagnosis. Individual leaves and "dead brown stuff" are usually not useful in the diagnostic
Samples that include a transition from good to bad are typically recommended. Pictures can also be good supporting documentation and can assist in telling the story of what is happening, especially when the concern involves large established plant material.

3. BUG BYTES.

A. CHIGGER CHALLENGE. Several BYGLers noted that chigger encounters are on the rise in central and southern Ohio. Chiggers are a type of mite (Acarina: Trombiculidae) with an unusual life cycle. The chigger life stage that bites humans and animals is the six-legged "larval" stage that hatches from eggs. All other life stages (nymphs and adults) have eight legs. Both the nymphs and adults feed on insects.

Contrary to popular belief, chiggers do not burrow into the skin. Instead, they stay on the surface of the skin and crawl to the base of a hair follicle to feed. Once settled, the larva injects the skin with digestive fluids using its piercing, sucking mouthparts (capitulum), and then they ingest the resulting "cell puree". Some people are highly sensitive to the chigger's feeding activity, and their skin will swell and surround the larva. This often kills the chigger, and the dead larva found within the swollen skin gives rise to the misconception that chiggers burrow into the skin.

Chiggers are usually associated with spring and early summer; however, they can undergo three generations per year in warm climates. To avoid being the victim of chiggers, avoid walking through brushy areas or wear long white pants with the socks pulled over the pant legs. Insect repellents such as DEET can help to ward off chiggers. It takes several hours for the chiggers to settle, so bathing immediately after hiking in weedy areas can significantly reduce the number of bites. Calamine lotion and similar products will help to reduce itching and the risk for subsequent skin infections.

B. STRAFING HORSEFLIES. Curtis Young and Joe Boggs reported that HORSE FLIES (Tabanus spp.) are on the wing in western and central Ohio, respectively. There are several species of horse flies in Ohio ranging in size from 3/8" - 1 1/8" in length. All are aggressive and vicious biters, but the bigger ones are particularly menacing. Female horse flies require blood meals to be able to produce eggs. When she finds a host, the female uses her sharp, knife-like mouthparts to slash upon a wound in the skin; the mandibles of large horse flies are powerful enough to cut through tanned leather! After opening a wound, the female injects saliva that has anticoagulation properties and she then laps up the free flowing blood. The bite is extremely painful, and blood continues to flow from the wound even after the female finishes feeding.

Horse flies have specialized vision that allows them to see heat; they literally use thermal imaging to locate their hosts. The flies are also able to track large moving objects, particularly dark colored objects, even while the flies are in fast flight. Taken together, their visual acuity allows them to effectively zero in on large, savory, warm blooded animals like cows, deer, people, and of course, horses. Unfortunately for the flies, their visual perception may also cause them to be fooled. A dark colored moving car that has been warmed by the summer sun looks to a horse fly like a dark, galloping horse! Horse flies swarming around moving cars can lead to catastrophic consequences ... for the flies ... with the last thing passing through the fly's minds being their rear ends.

There are a number of things you can do to keep yourself off the horse fly menu. If possible, avoid horse fly habitat. Their larvae feed on decaying organic matter in moist soil, so horse flies are frequently found in swamps or near streams and ponds. If you can't avoid their habitat, schedule your activities to avoid the flies. Horse flies are active during the day; they can't find their hosts at night. So, evening pool parties will be free of horse flies. If you must venture into horse fly habitat during the day, remain alert and take precautions. Most flies are silent flyers while horse flies produce a loud, buzzing sound. When you hear the buzz, locate the fly because horse flies love to land stealthily for a quick bite. However, avoid running; remember that horse flies are attracted to moving objects! Wear light clothing; dark clothing is like wearing an "eat here" sign. Finally, while insect repellents that contain DEET or picaridin may provide some protection, horse flies are very good at finding unprotected skin. Long sleeves, long pants, and neckerchiefs can help to thwart the flies.

C. BALDFACED HORNET NESTS BECOMING APPARENT. Baldfaced hornet (Dolichovespula maculata) nests are becoming large enough in Ohio to be noticeable. Taxonomically, baldfaced hornets aren't true hornets (genus Vespa); they're lumped in with yellowjackets (genera Vespula and Dolichovespula). However, baldfaced hornets practice an unusually devastating stinging behavior that is not shared with yellowjackets. Rather than landing and stinging, the hornets fly full speed at the source of their irritation and just before they reach their target, they tuck their abdomen under
their body so their stinger is pointing forward. They literally drive their stinger into hit their hapless victim. People often describe a hornet's sting as feeling like they were hit by a bullet!

Baldfaced hornets share their nesting behavior with other yellowjackets, as well as with paper wasps. They construct their paper nests by using their powerful mandibles to first scrap fibers from exposed wood and then mixing the fibers with their saliva. The resulting paper extruded from their mouths is light weight but strong and water repellent. The paper may also be multicolored reflecting multiple sources of the wood fibers. Baldfaced hornet colonies only last one season in Ohio. The workers and old queens in the current season's nests will freeze to death during the winter and the current season's nests will never be reused. Only the new queens formed later this season will leave the nests to spend the winter alone in a protection location; these are the queens that will initiate new nests next season.

Baldfaced hornets are considered beneficial insects despite their painful stinging behavior. Like other yellowjackets and many wasps found in Ohio, hornets are highly accomplished predators. They seek out soft-bodied insects including caterpillars and sawfly larvae and use their powerful mandibles grind-up their victims into insect puree. The insect-mush is fed to the grub-like hornet larvae housed in paper cells within the hornet's nest. A hornet's nest can have a considerable impact on the local caterpillar pest population including bagworms; the flimsy silk bags offer little protection from the hornet's gnashing mandibles. Thus, efforts to control hornets should be limited to nests that present a clear and present danger to homeowners.

D. OAK GALL GAZETTEER. Joe Boggs reported that a number of wasp galls are now apparent on oaks in Ohio. While most insect galls on oaks are produced under the direction of either gnat-like wasps in the family Cynipidae, or by tiny midge flies in the family Cecidomyiidae, over 3/4 of the oak galls are produced by the wasps.

Some notable cynipoid oak galls currently on display include: the spiky SPINY OAK GALLS formed on the upper leaf surface by Acraspis prinoides; the shaggy-looking HAIRY OAK GALLS produced on the upper leaf surface by A. villosa; the grape-like CLUSTERED MIDRIB GALLS formed on the lower leaf midrib by Cynips dimorphus; the snow white, bristly, descriptively named BRISTLE OAK LEAF GALLS produced on the lower leaf surface by Neuroterus quercusverrucarum; the tiny, suction cup-like OAK BUTTON GALLS produce by N. umbilicatus; the small, fuzzy, ball-like gall sometimes called the "FUZZY OAK BALL GALL" that's produced by the wasp, N. verrucarum; and the rounded, reddish-brown OAK BUD GALL formed by the cynipid wasp, N. vesicular, hijacking a normal oak bud.

As with the vast majority of the plant galls in Ohio, these wasp galls cause little to no harm to their oak hosts. Indeed, Joe continually claims they add ornamental value to their tree hosts. However, beauty is in the eye of the beholder. Joe reported the he received an e-mail message with images of bristle oak leaf galls from a nurseryman in Ohio. While these galls form on the lower leaf surface, they produce noticeable brown spots on the upper leaf surface at the points where the galls attach to the leaf. Also, heavily galled leaves may become distorted and misshapen; certainly not desired appearance for nursery plants. Unfortunately, there is almost no research on gall suppression with insecticides. Fortunately, as with most gall-makers, populations of the bristle oak leaf gall-maker tend to cycle dramatically from year-to-year. A year with heavy galling is typically followed by a year with almost no galls.

E. SOWBUG KILLER SPIDER. Curtis Young reported that sowbug killer spider (Dysdera crocata) was found in northwest Ohio.

The sowbug killer spider, also known as the woodlouse hunter, is an invasive species from Europe. It grows to approximately 1/2" in length and has a cream abdomen and red cephalothorax (head) and legs. It’s preferred hiding spot is under wood or bark, but can make their way into houses where humidity is high, such as basements. It feeds almost exclusively on sowbugs (also known as pillbugs, roly-poly, potato bug or woodlouse) using its huge fangs to pierce the armored exoskeleton. These large fangs can be alarming to homeowners and, while the bite is painful, it is not known to cause serious medical problems. It is sometimes confused with the brown recluse, but its venom is not toxic to humans. The bites have been reported as intensely itchy.

F. GYPSY MOTH UPDATE. There have been reports of gypsy moth infestations across the state, especially heavily in northwest Ohio. Adult activity is winding down quickly in Lucas County as reported by Amy Stone and other ENLT Team members who met in Oak Openings Metropark last week. Now is the time to begin scouting for egg masses to determine what management options should be implemented for 2014. One management option would be to apply to the Ohio Department of Agriculture (ODA) for consideration to be part of the Suppression Program in the spring on next
year. Information about the gypsy moth and the management activities of the ODA in this area can be found at [http://www.agri.ohio.gov/divs/plant/gypsy/gypsy-index.aspx].

G. ASIAN LONGHORNED BEETLE UPDATE. Only one week remains until Tree Check Month kicks off. You are probably asking, what is Tree Check Month? Well, USDA-APHIS is looking for help in getting as many eyes as possible to look for and report suspect Asian longhorned beetle (ALB) infestations during the month of August. Early detection is crucial to find and stop the ALB. Here are five quick things you can do to help spread the word about Tree Check Month 2013:

- Post the Tree Check Month badge on your website and/or social media pages.
- Share our PSA video with others.
- Dedicate a social post to August as Tree Check Month — #TreeCheck2013.
- Invite a group to go on a tree check walk to look for signs of infestation.
- Go on an ALB Hunt! by checking out additional information on the ALB website.

Efforts to eradicate ALB in Ohio continue in Bethel, Ohio. As of July 13, 2013, 525,957 trees have been surveyed. The number of ALB infested trees is 10,024. Nine thousand five hundred forty-nine infested trees have been removed. Fifty-nine high risk trees have been removed. Treatments began on June 17, 2013. Since that time, 13,211 high risk host trees have been treated.

4. DISEASE DIGEST.

A. CEDAR QUINCE RUST. Cedar quince rust (pathogen: Gymnosporangium clavipes) is one of the three common rust diseases in Ohio in which the fungal pathogen cycles back and forth between certain junipers and plants in the rose family = Rosaceae (most notably, apples/crabapples, hawthorns, and quinces.). The most common rosaceous landscape host for cedar quince rust in Ohio is hawthorn. With this rust disease, what you see on hawthorn is not the orange to red leaf rust symptoms on upper leaf surfaces and the signs of the fungus as spore masses coming out the undersurface of the leaves. Instead, what you see with cedar quince rust is fungal pustules with masses of microscopic spores coming out of the fruits (haws) and stem cankers/galls. En masse this sign of the pathogen is quite spectacular, but usually not considered too much of a health problem for the hawthorn tree. Typically, the main concern for homeowners is the tracking in of orange spores onto light-colored carpets after the spores pile up on the sidewalk or entryway after blowing or falling from the hawthorn tree. Nevertheless, in at least one landscape noted last week in northeast Ohio, the blackened charcoal-like defunct galls from previous years (the fungus does not survive on the hawthorn and instead cycles back to juniper, but the damage remains) and the fresh, new infestations from this year appeared to be so severe that the plants are at least "horticulturally dead", no longer effective in the landscape, and will be replaced by crabapples that show little susceptibility to this disease, at least in Ohio.

5. TURF TIPS.

A. WHITE GRUB PREDICTION. Dave Shetlar reported that he is predicting a "good year" for white grubs in many areas of Ohio. His prognostication is based on several observations. First, as reported in BYGL 2013-13 (06/27/13), localized JAPANESE BEETLE (Popillia japonica) populations have been very heavy in some areas of the state, particularly in southern and northeastern Ohio. Dave noted that in some cases, the actual beetle population densities may be underestimated with adults spending an inordinate amount of time being less visible as they mate and lay eggs rather than feeding on plants where they are more easily observed.

Second, adult populations of both the NORTHERN MASKED CHAFER (Cyclocephala borealis) and the SOUTHERN MASKED CHAFER (C. lurida), two of our other common "white grub producing" beetles, have been very high this season, particularly in the central and southern parts of Ohio. Indeed, Joe Boggs reported that an inordinate number of northern chafers came to his porch lights earlier in the season followed now by an equally dramatic number of southern chafers. The onslaught from both beetles has made evening porch sitting a challenging endeavor!
Finally, soil moisture has remained high throughout the state, and has almost constantly been recharged. Both Japanese beetles and the masked chafers lay dehydrated eggs that must absorb water from the soil in order to develop, so wet soil conditions support a greater egg hatch which means more white grubs. Time has just about run out for applying one of the standard grub control products such as imidacloprid (e.g. Merit), thiamethoxam (e.g. Meridian, Maxide), clothianidin (e.g. Arena), or chlorantraniliprole (e.g. Acelepryn). However, dinotefuran (e.g. Zylam) remains a viable option since the recommended timing for applying this insecticide for white grub control is early August.

B. BUZZ-BOMBING BEETLES BUZZ-BOMB OHIO. Joe Boggs reported that GREEN JUNE BEETLES (Cotinus nitida) have commenced their annual terrorizing of backyard gardeners, golfers, sunbathers, small pets, etc., as they buzz golf courses and lawns in southern Ohio. These large, metallic green beetles tend to emerge en masse. Their large size, coupled with an audible "buzzing" sound, and low level flight plan (cruising at about 2' - 3'), may induce panic with individuals unfamiliar with this insect. Indeed, there have been reports of this beetle causing picnickers to flee feasts, pool loungers to lunge, and golfers to fail to stay the course. The beetles have great entertainment value!

Historically, these buzz-bombing beetles have generally confined their barbarity to the southern part of Ohio. However, Dave Shetlar reported that in recent years, these menacing marauders have begun appearing in large numbers in the central part of the state, and this year, Amy Stone brought a specimen to Dave that she collected in Toledo! Dave noted that this may be a case where the historical precedes the hysterical. These beetles were observed in 2006 in Tuscarawas County, and a specimen in the OSU Entomology collected was gathered in Cleveland in 1920.

Adults feed on tree leaves as skeletonizers, or they may be found on ripening fruit. Fortunately, they rarely cause significant plant injury, but they may seriously damage fruits. Adults seek out turf with high levels of organic matter (e.g. thatch) in which to lay eggs. Lawns covered with partially composted manures have also been found to be highly attractive to the adults and they may burrow into cool compost piles, under decomposing manure, and into decayed mulch. It has been speculated that this attraction to decomposing organic matter explains why large numbers of adults will assail certain lawns, while ignoring neighboring lawns. Dave noted that the beetles he spotted in central Ohio last year were cruising over rose beds mulched with poorly composted manure.

Unlike other white grubs affecting turfgrass, green June beetle grubs create vertical burrows 10" - 12" into the soil, and they remain closely associated with these burrows. The grubs venture out at night to feed on thatch and other organic matter, and occasionally they find their way onto driveways, sidewalks, and into swimming pools, especially after heavy rains. Indeed, the huge grubs appear to practice their backstroke by employing an unusual method of travel ... they crawl about on their backs! Despite their large size, green June beetle larvae seldom cause injury to turf equal to that caused by other white grubs.

C. RED VELVET ANT (A.K.A. COW KILLER ANT). Velvet ants (family Mutillidae) are not ants (family Formicidae); they're more closely related to wasps. Their common name comes from the velvety appearance created by the short, densely spaced hairs that cover the entire bodies of both the males and females. Males have wings and are good flyers, while the females lack wings. Female velvet ants are solitary and may be found crawling across the ground. They look like hairy ants; however, unlike our native ants, velvet ants have a functional stinger.

There are a number of species of velvet ants in the U.S. with most species living in the desert southwest. All species are brightly colored, presumably to advertise their stinging personality. The species most commonly encountered in Ohio is Dasymutilla occidentalis. Measuring around 3/4" in length, this is one of the largest velvet ants found in the world. Owing to their size, this velvet ant packs a stinging punch similar to that of a baldfaced hornet. In fact, their painful sting is responsible for their alternate common name of the "cow killer ant." However, it is speculated that this intimidating common name is less associated with the potential for these wasps to lay-low bovine, and more likely associated with the painful surprise when someone gets stung by one of these "ants". There are no records of these wasps ever killing cow.

Cow killers range in color from deep red to orangish-red. Their legs are shiny black and they have a black transverse band across their abdomen that is connected by a thin longitudinal black band to a "black belt" at the constriction between their abdomen and thorax. Like all velvet ants, the cow killer lays its eggs on the larva of a ground nesting bee or wasp. Their favorite menu item is the larvae of the CICADA KILLER WASP (Sphecius speciosus). Once the cow killer female locates a cicada killer's burrow, she digs into the larval chambers and lays a single egg next to each wasp larva. Once the eggs hatch, the cow killer's larvae consume the cicada killer's larvae. Cicada killer populations were very high last season
in Ohio, particularly in the southwest part of the state, as they are again this season (BYGLs 2012-18, 08/02/12; 2013-16, 07/18/13). Consequently, cow killer populations appear to be unusually high this season and they have an abundance of food for a new generation.

6. INDUSTRY INSIGHTS.

A. EMERALD ASH BORER CONFIRMED IN TUSCARAWAS COUNTY. An adult emerald ash borer (EAB) has been submitted and confirmed from Tuscarawas County, Ohio this week. The insect was found in Newcomerstown, Ohio and submitted to United States Department of Agriculture (USDA) for confirmation. Samples need only be submitted from counties not currently known to be infested. Information, including the link to the Specimen of Determination form, can be found on the Ohio Department of Agriculture's (ODA) website at [http://www.agri.ohio.gov/divs/plant/eab/eab-index.aspx].

B. WARM SEASON SPIDER MITE MADNESS. Dave Shetlar reported observing damaging populations of a number of warm season spider mites (family: Tetranychidae) in central Ohio. Dave noted that high mite populations were occurring on plants that had not been treated with a neonicotinoid insecticide. This class of insecticides has been implicated in producing spider mite outbreaks. Heavy spider mite infestations included: MAPLE SPIDER MITE (Oligonychus aceris); HONEYLOCUST SPIDER MITE (Platytetranchus multidigituli); LINDEN SPIDER MITE (Eotetranychus tiliarum); EUROPEAN RED MITE (Panonychus ulmi); and of course the most notorious of the mites, the TWO-SPOTTED SPIDER MITES (Tetranychus urticae). Most of these mites have relatively limited host ranges and may only feed on the host highlighted by their common names. However, the European red mite and the two-spotted spider mite are found on a wide variety of plant hosts.

Dave noted that he was surprised at the high mite populations since warm season mites typically do best during periods of high temperatures with little to no rain. While recent temperatures have certainly been favorable for mite outbreaks, there has been no lack of rain. Dave speculated that these spider mites gained protection from being washed from their hosts by their location on the underside of leaves. Apparently, OAK SPIDER MITE (O. bicolor), which lives on the upper surface of leaves has not been as lucky.

As their common name implies, spider mites are indeed related to spiders (Class Arachnida). Although immature spider mites pass through a six-legged larval stage, adults have eight legs. They also have a pair of piercing mouthparts, called chelicerae, just like spiders. However, while spiders use their chelicerae to pierce meat items (e.g. insects), spider mites use their piercing mouthparts to stab epidermal leaf cells. The mites then feed on the cell contents the ooze from the wound. The death of individual plant cells causes spider mite damage to first appear as minute yellow spots, called "stippling," on the upper leaf surface. As the spots coalesce, the damaged leaves may appear "washed out" or bronzed colored. Be aware that there are other leaf-feeding pests, such as lace bugs, that also produce stippling and leaf bronzing. True to their common name, spider mites can also produce webbing, a classic sign of two-spotted spider mite activity.

Spider mites may be managed using cultural, biological, or chemical tactics. If infested plants are small, an effective cultural control method is to periodically wash the mites down with a coarse stream of water. Remember to focus the water on the undersides of leaves. Biological controls include releasing predatory mites; however, Dave noted that it is probably too late in the season with spider mite populations being too high for predatory mites to be effective. Still, infested leaves should be closely inspected using a hand lens to determine whether or not the cavalry has already ridden to the rescue. Predatory mites are usually brightly colored; they may be white, yellow, orange, and sometimes red. Since they're meat eaters, they are highly mobile. Indeed, predatory mites sometimes look spastic as they whirl in circles in search of prey. Rapid moving mites are typically predators (Roar!); slow-moving mites are usually plant-feeders (Moo!)

A miticide may need to be applied if predator populations are nonexistent and spider mite populations are high. Most miticides labeled for the targeted host will be effective. However, Dave cautioned that two-spotted spider mites have presented management challenges in recent years with various populations rapidly developing resistance to miticides. He recommended using spiromesifen (e.g. Judo) or abamectin (e.g. Avid) for two-spotted spider mites to reduce the chances of a control failure due to miticide resistance.

C. GET YOUR GREEN INDUSTRY FIX WEBINAR: AUGUST 14. We had a great Webinar session on powdery mildew disease, Ginkgoes, the Great Lakes Early Detection Network Application for Androids and iPhones, bagworms,
Japanese beetles, and mushrooms in turfgrass during the last Webinar. Next up: Wednesday, August 14, 8:00 - 8:50 a.m. Join OSU Buckeye Yard and Garden Line (BYGL) experts for this Ohio Nursery Landscape Association's Green Industry Webinar then. If you have questions about registering, contact ONLA at 614-899-1195 or 800-825-5062.

7. WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from July 1 - 24, 2013, with the exception of the soil temperatures which are readings from Wednesday, July 24, 2013 at 5:20 p.m.

Warm weather, record rainfall, and cooler temperatures all described the weather this week. The week started off very warm while cooler temperatures came in later. Flash flood warnings were issued in central Ohio on Monday as rain continued to fall. Each weather station continues to record above normal precipitation in July.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashtabula</td>
<td>NE</td>
<td>81.8</td>
<td>65.7</td>
<td>4.24&quot;</td>
<td>2.2&quot;</td>
<td>59.60/66.28</td>
</tr>
<tr>
<td>Wooster</td>
<td>NE</td>
<td>84.0</td>
<td>66.3</td>
<td>6.27&quot;</td>
<td>3.3&quot;</td>
<td>73.08/73.68</td>
</tr>
<tr>
<td>Hoytville</td>
<td>NW</td>
<td>84.3</td>
<td>66.4</td>
<td>8.7&quot;</td>
<td>3.1&quot;</td>
<td>68.05/72.88</td>
</tr>
<tr>
<td>Columbus</td>
<td>Central</td>
<td>85.1</td>
<td>68.1</td>
<td>6.13&quot;</td>
<td>3.8&quot;</td>
<td>77.73/76.94</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>85.9</td>
<td>67.1</td>
<td>4.27&quot;</td>
<td>3.0&quot;</td>
<td>79.44/77.89</td>
</tr>
</tbody>
</table>

For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm].

8. COMING ATTRACTIONS.

A. DIAGNOSTIC WALKABOUT FOR THE GREEN INDUSTRY. Diagnostic Walkabout for the Green Industry series is once again occurring around Ohio this summer. ONLA, AGI and OSU Extension will be hosting 4 more events in 2013: August 1, Stan Hywet Hall and Gardens, Akron; August 15, Toledo Botanical Garden; September 12, Inniswood Metro Gardens, Westerville; September 26, Sunset Memorial Park, North Olmsted. Pre-registration is required and class size is limited to 30 per class. ODA, ISA and OCNT credits available. For registration, location and pesticide credit information see: [http://www.onla.org].

B. TCD WORKSHOP – REGISTRATION DEADLINE FRIDAY, JULY 26. On Wednesday, July 31, 2013, a workshop will be held in Hamilton, Ohio to discuss THOUSAND CANKER DISEASE ON WALNUT. The program will be held at the Butler County Extension and include both an indoor and outdoor portion. Information, including a flyer about the workshop can be found on the Woodland Stewards website at [http://woodlandstewards.osu.edu/]. The workshop runs from 9:00 a.m. - 3:45 p.m. Registration cost is $20.00 per person. Questions about the program can be directed to Kathy Smith at 614-688-3136.

C. GREEN INDUSTRY SUMMER SESSION IN NW OHIO. This year's event will be held on Wednesday, August 7, 2013 beginning at 11:00 a.m. on the campus of Owens Community College's Toledo Campus. Registration information can be requested by contacting Lee Richter at [richter.71@osu.edu]. Speakers and topics include: Matt Ross (Edible, Native Plants and Becoming Green in the Green Industry) and Chris Foley (Pest Diagnostics) of Owens Community College; Nancy Taylor (Plant Diseases We Have Known and What’s New in Plant Diseases), Kathy Smith (Native Trees and Invasive Control of Non-Native Plants), Mark Koenig (Basic Pesticide Safety and Water Quality and Licenses, Records, and Review) Greg Meyer (A Calendar Year of Turf Diseases and The Problem of Phosphorus), Curtis Young (Leaf Miners and Boring Insects), and Amy Stone (Invasive Insects) of OSU Extension; and Laura Deeter (Container Gardening and Perfect Plants for an (Im)Perfect Garden) of ATI. OCNT, ODA, and ISA credits are available.

D. OHIO TURFGRASS RESEARCH FIELD DAY. The field day will be held at the OTF Research and Education Facility, 2710 North Star Road, Columbus, Ohio on Wednesday, August 7. There will be two tracks – golf turf and sports/lawn. Registration information is online at [http://www.ohioturfgrass.org/events/event_details.asp?id=326289].

E. YOUTH SCIENTIST ADULT EDUCATION CLASS. OSU Extension, USDA Forest Service, Ohio Woodland Stewards, and the Ohio Environmental Protection Agency- Ohio Environmental Education Fund are sponsoring an adult
education class August 8-9, 2013. This class will showcase a new hands-on curriculum being developed for youth to learn about invasive species utilizing their own neighborhoods, school yards, and local parks. This curriculum fulfills newly revised State science curriculum standards. The program will be held at the OSU Mansfield campus and includes lots of hand-on activities! Information about the workshop can be found on the Woodland Stewards website at [http://woodlandstewards.osu.edu]. The workshop runs from 9:00 a.m. Thursday through 3:00 p.m. Friday. Registration cost is $225 with Graduate Credit or $50 without graduate credit. Deadline for registration is July 31, 2013. Questions about the program can be directed to Cindy Meyer at 513-887-3722.

F. OHIO PLANT DIAGNOSTIC WORKSHOP. This is the first notice for the 81st (or so) running of the Ohio Plant Diagnostic Workshop, to be held on September 4 at the Secrest Arboretum of Ohio State University’s Wooster Campus. This program, sponsored by OSU’s Extension Nursery Landscape and Turf Team, the Ohio Nursery Landscape Association and the Davey Tree Expert Company is a full day of hands-on diagnostic samples and walks, and updates by OSU’s Joe Boggs, Francesca Peduto, Nancy Taylor, Curtis Young, Erik Draper and Jim Chatfield, and all the assembled experts. Registration information is forthcoming, but get September 4 on your calendar if you want to learn, teach, and catharse about landscape, treescape, nursery and greenhouse plant health problems, from beetles to blights to botany.

G. NAME THAT TREE WORKSHOP. Join fellow tree IDers on September 27, 2013 at the Secrest Arboretum of Ohio State University’s Ohio Agricultural Research and Development Center in Wooster, Ohio. We will be conducting a Name That Tree Workshop sponsored by the OSU Extension Woodland Stewards and Nursery Landscape and Turf Teams, combining tree ID from both sides now, from woodland species to landscape cultivars. You can register online at woodlandstewards.osu.edu. It will be a full day of indoor and outdoor sessions at the Jack and Deb Miller Pavilion and the Arboretum plantings. Cost is $35. Also check out all the other great Woodland Stewards programs listed on the site.

H. WHY TREES MATTER FORUM. The annual Why Trees Matter Forum, after a year’s hiatus, returns to Ohio State and Wooster, Ohio this Autumn on Wednesday, October 16. Details will be forthcoming re registration, but you will be sure to learn a great deal about the multiple benefits of trees and the practice of learning and teaching about these benefits. We will discuss the latest on i-Tree benefits, the OSU Arbo-Charrette Program, the Tree Campus USA program of the College of Wooster, updates on the pervasiveness of invasiveness in our urban and woodland forests (including the new Great Lakes Early Detection Network smartphone app. We will also highlight Wildlife and Trees, in a much-anticipated talk by Marne Titchenell of the OSU School of Environment and Natural Resources. Green ink your calendar.

9. BYGLOSOPHY. "Chop your own wood and it will warm you twice." – Henry Ford

APPENDIX - ADDITIONAL WEBSITE RESOURCES:

Ask a Master Gardener Volunteer (Consumer Gardening Questions)
http://mastergardener.osu.edu/ask

Buckeye Turf
http://buckeyeturf.osu.edu

Emerald Ash Borer Information
http://ashalert.osu.edu

Growing Degree Days and Phenology for Ohio
http://www.oardc.ohio-state.edu/gdd/

Hungry Pests Website
http://www.HungryPests.com

Ohio State University Department of Horticulture and Crop Science Plantfacts http://plantfacts.osu.edu/web/

Ohio State University Extension Master Gardener Volunteer Program
http://mastergardener.osu.edu
The C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC)
http://ppdc.osu.edu/

USDA APHIS Beetle Buster Website (Asian Longhorned Beetle)
http://www.beetlebusters.info/

USDA APHIS Beetle Detective Website (Asian Longhorned Beetle and Emerald Ash Borer)
http://beetledetectives.com/

Following are the participants in the July 23rd conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Jim Chatfield (Hort and Crop Science); Julie Crook (Hamilton); Erik Draper (Geauga); Francesca Hand (Plant Pathology); Denise Johnson (State Master Gardener Volunteer Program), Ashley Kulhanek (Medina); Cindy Meyer (Butler); Dave Shetlar (Entomology); Paul Snyder (ATI); Amy Stone (Lucas); Nancy Taylor (PPDC); Danae Wolfe (Summit); and Curtis Young (Van Wert).

BYGL is available via email, contact Cheryl Fischnich [fischnich.1@cfaes.osu.edu] to subscribe or to unsubscribe. Additional fact sheet information on any of these articles may be found through the OSU FactSheet database [http://plantfacts.osu.edu/web].

BYGL is a service of OSU Extension and is aided by support from the ONLA (Ohio Nursery and Landscape Association) [http://onla.org; http://buckeyegardening.com] to the OSU Extension Nursery, Landscape and Turf Team (ENLTT). Any materials in this newsletter may be reproduced for educational purposes providing the source is credited.

BYGL is available online at: [http://bygl.osu.edu], a website sponsored by the Ohio State University Department of Horticulture and Crop Sciences (HCS) as part of the "Horticulture in Virtual Perspective." The online version of BYGL has images associated with the articles and links to additional information.

Where trade names are used, no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to race, color, religion, sex, age, national origin, sexual orientation, gender identity or expression, disability, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension and Gist Chair in Extension Education and Leadership. TDD No. 800-589-8292 (Ohio only) or 614-292-6181.