From: Curtis E. Young (Lead editor and contributing author) and Jim Chatfield (Co-editor and contributing author).

Pam Bennett, Joe Boggs, Jim Chatfield, Julie Crook, Erik Draper, Denise Johnson, Jacqueline Kowalski, Ashley Kulhanek, Cindy Meyer, Amy Stone, Nancy Taylor, Marne Titchenell and Curtis E. Young (Contributing authors).

BYGL is available online at: http://bygl.osu.edu, a website sponsored by Dr. Tim Rhodus, Professor and designed by Ernest Witney, Systems Manager, Horticulture and Crop Science, Ohio State University as part of "Horticulture in Virtual Perspective." The online version of BYGL has images associated with the articles and links to additional information.

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 27th 2015 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.

PLEASE MAKE A CONTRIBUTION TO KEEP THE BYGL RUNNING! If you value the information we provide in the BYGL and want the newsletter to continue, we need your help! The Ohio State University (OSU) provides significant resources for producing the BYGL, but we do not receive funding necessary for full support. If we do not receive sufficient funding through your contributions, we will need to consider all options including discontinuing the BYGL.

To support the BYGL, visit the OSU BYGL gift site: http://go.osu.edu/byglsupport.

You can make a corporate gift or personal gift and you can give one time or monthly. You can also make your gift a "Tribute" contribution in honor or in memory of someone. The default contribution is $100; however, you can click any of the boxes under "Select a gift amount." Or, you can select to "Enter a gift amount" to contribute any amount.

If you have any questions about giving to support the BYGL or to support OSU, please contact Jennifer Heller (heller.4@osu.edu), the Director of Development for the OSU College of Food, Agricultural and Environmental Sciences with your name and contact information. Jennifer's cell phone number 614.975.1317 and she will be more than happy to speak with you.

*******************************************************************************

BYGL LATE SEASON NOTICE. As the days shorten, so will the BYGL...in frequency, not length. There will be NO BYGL next week (October 15, 2015). The BYGL will return the following week (October 22, 2014) for one final fall howl, and then it will retreat to its doghouse for a long winter nap.

*******************************************************************************

In This Issue:

1. PLANTS OF THE WEEK: Annual (Angel-wing Begonia); Perennial (Toad Lily); Woody (Ginkgo); Vegetable (Garlic); and Weed (Goosegrass).
2. HORT SHORTS: Fall Clean Up for a Healthier Spring Landscape! and Pruning Deciduous Trees and Shrubs.
3. BUGBYTES: Oak Treehopper; Guilt by Association; and Primitive Wasps Probing Trees.
4. DISEASE DIGEST: Fungus Amongus; Sampling: From the Ground Up - and Down; and And Even the Plant Does Not Tell the Whole Story.
5. TURF TIPS: Crane Flies on the Wing.
6. INDUSTRY INSIGHTS: Highlights from the Annual Bluegrass-Buckeye BYGLive!
7. WEATHERWATCH.
8. COMING ATTRACTIONS: Emerald Ash Borer University (EABU); Northwest Ohio Landowner Conference: Natural Resources at Home; The OSU Green Industry Short Course, The Ohio Turfgrass Foundation Conference and Show, and Trees on Tap Programs; and Tri-State Green Industry Conference.
9. BYGLOSOPHY.

APPENDIX - Additional Website Resources.

1. PLANTS OF THE WEEK.

*ANNUAL - ANGEL-WING BEGONIA (Begonia hybrid). Here today and quite beautiful and maybe gone tomorrow! This final annual plant of the week selection is highly susceptible to frost and within a few days, may be turned to mush in some parts of the state. Right now in central Ohio, they are truly outstanding, showing some of the best color of the season. Before focusing on this particular type of begonia, let's look at how the begonias are divided into various groups according to their habits. The most commonly recognized type is the fibrous-rooted forms or wax begonias (B. semperflorens-cultorum). These include series such as 'Cocktail', 'Super Olympia', 'Varsity', and 'Ambassador' among others. The next group is the tuberous forms (B. tuberhybrida-cultorum) and are usually recognized by their beautiful single and double blooms. Rex begonias (B. rex-cultorum) with their incredibly cool and colorful foliage and the cane-stemmed forms (B. X argenteoguttata) or the angel-wing begonia are the final two groups. All can be used in landscapes or containers, depending on the desired effect.

Predictably, angel-wing begonias have leaves that resemble the shape of angel wings. They are classified as the cane-stemmed forms because their stems are long and bamboo-like. The flowers tend to be somewhat pendulous. Flowers are usually white, pink, and red, depending on the cultivar. The foliage can be green, speckled, or bronze, again, depending on the cultivar.

Angel-wing begonias can grow in full sun or shade. In the shade, the foliage will be a much deeper green color and the leaves larger and more succulent. In the sun, the foliage will be a bit faded, smaller and a little tougher to withstand the sun. Plants can get anywhere from 3 - 4' tall depending on the cultivar. 'Dragon Wing's is a popular cultivar that has been on the market for several years. The only challenge with this plant is that due to the taller cane-like stem growth, the plants can be susceptible to wind and breakage from people bumping them, etc. Another cultivar, 'Baby Wings' is a little shorter with a more compact growth habit, getting to around 12" tall and as wide.

Begonias are tough plants for the hot summer, but as mentioned above, they are not tolerant of frost. So, enjoy them while they last!

Author: Pamela J. Bennett; bennett.27@osu.edu

*PERENNIAL - TOAD LILY (Tricyrtis hirta). This is one of the coolest of the cool perennial flowers that you might see and it shows up in the fall. It is not a plant that will make you stop in your tracks when you are looking at a perennial garden from a distance - however, if you stop to "smell the roses" as they say, you will enjoy the flower. This is a great plant to grow in the shade as well as for fall interest. It grows in average well-drained soil, however, it does prefer moist shade over dry shade.

The beautiful lily-like flowers appear at the tips of the stems in September and last until a hard frost. They are usually white with purple or pink spots on the flowers petals and are about 1" in diameter. The
plants can grow to around 2 - 3' tall and as wide, with upright, arching stems. They spread by underground stems (stoloniferous) if they are happy and can create a nice patch in the shade garden.

Author: Pamela J. Bennett; bennett.27@osu.edu

*WOODY - GINKGO (Ginkgo biloba). Ginkgo or maidenhair tree is an ancient and extraordinary tree. It is known as a "living fossil" as its lineage stretches back in time 250 million years. It is the sole survivor of an ancient group of trees. Ginkgo remains virtually unchanged today and represents the only living bridge between 'higher' and 'lower' plants (between ferns and conifers). As a landscape tree, ginkgo offers several appealing characteristics such as its uniquely two-lobed, somewhat leathery, fan-shaped, rich green leaves with diverging (almost parallel) veins, spurred limbs from which the leaves are produced, spectacular golden-yellow fall coloration, and its tendency to drop almost all of its leaves in a very short period of time. This nearly synchronous leaf-drop is typically initiated by a sudden drop in temperature. On a calm day, quiet day after the leaf-drop starts, it sounds like a gentle rainfall as the leaves fall from the tree in a nearly continuous cascade. The leaves pile up in a dense layer beneath the tree producing a golden carpet on the ground and sidewalks.

Ginkgo is a deciduous gymnosperm with male and female reproductive structures housed on separate trees. Male reproductive structures that produce the pollen are catkin-like cones found amongst the leaf bases on the tips of the spurs on the limbs. Female ovules are paired round structures borne on petiole-like stems. The male ginkgo is the desired specimen to be planted in landscapes. The female ginkgoes are less desired as the fleshy, fruit-like structures that they produce generate a putrid, vomit-like smell as they mature and decompose. Unfortunately one cannot tell with certainty whether they have a male or female until the tree reaches the age of 20 - 35 years. This is the age that the tree must reach before it begins to reproduce. Nurseries producing ginkgoes for landscape purposes typically produce their stock from vegetative cuttings from a known male tree. If one produces their stock from seeds, they have a 50/50 chance that the tree will be a male or a female. Ginkgoes can be extremely long-lived; the oldest recorded individual being 3,500 years old.

Ginkgoes are medium to large stately trees that are wonderful in the landscape, providing one has the male version! Male cultivars such as 'Autumn Gold', 'Lakeview', and 'Princeton Sentry' are some of the more popular selections. Gingko trees grow to around 50 - 100' tall. Ginkgoes are easily grown in moist, deep, well-drained sandy soils in full sunlight but are extremely adaptable to a range of stressful conditions, including both alkaline and acidic soils and compacted soils. They are also tolerant of saline conditions, air pollution and heat. They are used quite often as a street tree as the can take adverse growing conditions such as the strip between the street and sidewalk. Ginkgoes have no serious insect or disease problems. They are usually slow growing, with initial growth being somewhat sparse.

Author: Curtis E. Young; young.2@osu.edu

*VEGETABLE - GARLIC (Allium sativum). October is the time to plant garlic for next year's harvest. Garlic, a perennial bulb, is in the lily family (Alliaceae) along with onions, chives and leeks. The BYGL 2015-10 (June 11, 2015) discussed the bonus of garlic scapes; cloves were harvested mid-July to August and now, planting begins.

Care should be taken in preparing your garden bed for planting garlic. A sunny, well drained and weed-free area is essential for healthy clove production. Soil should be loamy, well drained with organic matter added. A soil pH of 6.5 to 7.0 is preferred but garlic tolerates other levels. Fertilize prior to planting, based on your soil test results. Separate individual cloves from the main bulb and plant each 1 - 2" below the soil and 4 - 6" apart; rows should be 12 - 18" apart. Water well. Provide a good cover of mulch to protect from freezing; remove mulch in the spring. Cloves planted in the fall have time to develop roots before the ground freezes. They obtain the required chilling process in the soil and are in place in early spring to continue developing vegetation and larger bulbs.
Garlic is divided into two categories - hardneck and softneck. Softneck varieties which have a longer storage life are generally grown in warmer climates such as California. They may develop a bitter taste when grown in our region. The hardneck varieties are better suited for cold winters and have a milder flavor and a shorter storage life. In Michigan State University trials the hardneck varieties German White and Music provided good yields. In this same trial, the Polish Softneck garlic had good production, excellent storage life and a hot flavor. Be sure to research what varieties grow best in your area and purchase cloves from reputable dealers; inspect them for damage and disease prior to planting.

Although garlic has few problems, it is susceptible to the same pests as onions - onion thrips, onion maggot and bulb mites. They are susceptible to diseases such as - basal rot, white rot, downy mildew, botrytis rot and pink rot. Rotating crops and providing good air movement and well-drained soil will help avoid these issues.

Garlic can be planted in the spring, if bulbs are properly stored, but yields will be smaller.

Author: Denise M. Johnson; johnson.2924@osu.edu

*WEED - GOOSEGRASS (Eleusine indica). Goosegrass is a warm season annual that is often found growing in areas where turfgrass stands are thin. Pam Bennett reported that she is fighting this unwanted plant in her garden areas where she has quite the bumper crop in 2015. In either situation, goosegrass can survive under hostile conditions so much so that Amy Stone has observed this grass growing in a heavily compacted driveway.

Goosegrass can sometimes be confused with crabgrass, another annual grass. The two plants can be distinguished by looking at the seedheads. Goosegrass contains multiple florets per spikelet, compared to crabgrass, which has a single floret on each spikelet. Another feature of goosegrass is that it forms a tight rosette with a silver-colored center.

Control of goosegrass can pose a challenge because it germinates much later than crabgrass. Germination can be 4-6 weeks later than crabgrass. Pre-emergence herbicides applied for crabgrass early in the spring often break down and sometimes do not give adequate control by the time goosegrass begins to emerge. Because of this, split applications with pre-emergence herbicides may be more effective according to Dr. Dave Gardner with OSU's Department of Horticulture and Crop Science. Fenoxaprop-ethyl (Acclaim) may be used for post-emergence control and best results will be achieved if applied earlier in the season when the plants are still young. MSMA is also used for goosegrass control in the Ohio. When using any pesticide, be sure to always follow label directions.

Author: Amy Stone; stone.91@osu.edu

2. HORT SHORTS.

A. FALL CLEAN UP FOR A HEALTHIER SPRING LANDSCAPE! Fall is an important time in landscape maintenance. Many pest problems and diseases encountered this season may survive until next season on or in plant debris. Cultural practices completed prior to the beginning of winter will ensure a healthier landscape for next spring.

Some of the fall crops can still be left in the garden for a while, however warm season vegetables are about done for the season. Remove all annual vegetable plants from garden beds in order to prevent overwintering insects and diseases. Diseased plants should not be composted unless the compost pile reaches temperatures that kill the pathogen; bag this material and place in the trash. Compost should be added to improve garden soil for next spring.

Take advantage of the autumn sunshine and spend some time in your annual and perennial beds. Annuals should be pulled out of the ground with the roots included. Dead stems and foliage should be
pruned on most perennials and wildflowers. Of course, this task is garden specific as some people prefer to leave certain herbaceous ornamentals such as tall grasses uncut to enjoy their winter interest. Seed heads of *Achillea* (yarrow), echinacea and rudbeckia and other perennials are also important food sources for many of our overwintering bird species. Fall is also a great time to divide perennials and plant new perennials. Applying 2” of organic mulch to these newly planted perennials will help retain the soil temperature to encourage root growth and prevent heaving of plants over winter’s freeze and thaw cycles. Tender bulbs and tubers such as tuberous begonias, cannas and dahlias should be dug up and stored after the first frost.

Be sure to take advantage of other great sources of organic material abundant this time of the year. Rather than disposing of fallen tree leaves just run the lawn mower back and forth mulching the leaves into the lawn. You can also put the shredded leaves directly into your garden or compost bin.

Fall is also an excellent time to do corrective pruning of your trees and shrubs. Corrective pruning encompasses removal of dead, damaged, or diseased branches and the elimination of limbs that may be causing structural problems. Structural problems include branches that may be rubbing, those that are growing back to the center of the tree, and those with abnormally narrow crotch angles. As leaves drop from deciduous woody plants, it is easy to inspect and identify defects in your trees and shrubs. When not obscured by foliage it is easier to see canker formations, rubbing branches, splits or cracks in wood. Putting your garden to bed this fall is just as important as any other growing chore you perform throughout the season.

Author: Julie S. Crook; crook.46@osu.edu

B. PRUNING DECIDUOUS TREES AND SHRUBS. Pruning can be done to achieve many goals in the landscape such as encouraging flowering; directing overall shape; managing pest problems; thinning; and rejuvenation just to name a few. No matter what your goal may be, the appropriate timing for “making-the-cuts” will help determine the optimal time to prune.

Winter can be a great time to tackle this maintenance practice proactively. It can be easier to see the overall plant structure, especially without leaves camouflaging main branches and lateral limbs. A simple word of warning is - if one prunes a spring-flowering shrub such as Koreanspice viburnum (*Viburnum carlesii*) now or this winter will decrease the number of blooms it will have next spring. Spring-blooming plants have already set their flower buds for next year and pruning these plants now or in the winter will remove those buds. Other plants that would be similarly impacted include lilac, forsythia, serviceberry and crabapples. These types of trees and shrubs should have been pruned shortly after they had bloomed in the spring.

Pruning cuts should be made just above a bud. Flush cuts, a cut made directly next to the main trunk or larger branches should be avoided. You will want to look for the collar and prune just on the outside of this area. And, it is no longer recommended to follow pruning cuts with a pruning paint.

It is a great idea, especially if you are relatively new to the pruning scene to take before and after photos, and then revisit the plant about every six months to see the reaction of the plant to the pruning cuts that you made. It can be a tremendous learning experience. You will likely see many examples of being spot-on, but there can be the occasional example of a pruning decision that you might be able to improve upon the next time.

So, head out to the garden and enjoy the therapy that pruning can provide...it can be truly cathartic!

Author: Amy Stone; stone.91@osu.edu

3. BUGBYTES.
A. OAK TREEHOPPER. Participants in this week’s 18th Annual Bluegrass-Buckeye BYGLive! held at Gainesway Thoroughbred Stallion Farm in Lexington, KY, came across oak treehoppers (*Platycotis vittata*) on a mature pin oak. This treehopper is one of the more colorful members of the Membracidae family and may appear as two color forms: stripped and mottled. Both color forms sport a similar color motif of scarlet red on gray with the stripped form having red longitudinal stripes on a gray background and the mottled form having red or blue spots on a gray background. Nymphs of both color forms have abdomens covered in black and white bands with red highlights on the lower edges.

This native treehopper may be found feeding on both deciduous and evergreen oaks. Although it uses its piercing-sucking mouthparts to extract fluids from the xylem, the feeding damage appears to cause little harm to the overall health of its oak hosts. The most obvious damage occurs during oviposition with females using their sharp ovipositors to insert eggs into the xylem. Oviposition scars look like miniature versions of those produced by periodical cicadas. Heavy oviposition scarring by oak treehoppers may cause significant stem dieback on young trees, but noticeable damage is seldom apparent on larger trees.

However, finding the treehopper on a pin oak in Lexington did cause some concern because the region has suffered a significant loss of mature oaks to BACTERIAL LEAF SCORCH and the bacterium responsible for the disease, *Xylella fastidiosa*, is known to be spread from tree to tree by both leafhoppers and treehoppers. Indeed, the pin oak with the oak treehoppers had been confirmed to be infected with the leaf scorch bacterium. However, oak treehopper has not yet been implicated in aiding and abetting the spread of the bacterium. The bacterium has never been found in the gut of this treehopper.

Author: Joe Boggs; boggs.47@osu.edu

B. GUILT BY ASSOCIATION. Just because an insect or even a group of insects may be spotted on a damaged plant does always mean that the plant was damaged by that insect. This statement is to emphasize the importance of getting a positive identification of the discovered insect before taking an action that may not be necessary or even harmful to a "good" insect. Although some are of the opinion that the only good insect is a dead insect, there are certainly many beneficial insects to be found in our landscapes.

Curtis Young reported getting a request from a fellow Extension Educator for an identification of an insect that was reportedly damaging a shrub in a client's landscape. The client said that the shrub was covered by the "bug" that was brought to the Extension office, and that the bug was eating the foliage off of the plant. The educator thought that the insect looked somewhat like a ladybug (beetle), but it did not make sense that the ladybug would be eating the foliage. The client insisted that the bug was eating the foliage. A phone call was made to Curtis for confirmation...description over the phone did not work. Finally, a digital image was sent via cell phone. Conclusion - the insect was indeed a lady beetle, *Coleomegilla maculata*.

*C. maculata* is commonly called the spotted lady beetle, pink spotted lady beetle, twelve-spotted lady beetle, cornfield lady beetle or *C. mac*. This lady beetle does not eat the foliage of plants, it is one of the good insects, and it was not the reason that the leaves of the shrub in question had holes in them. No pesticide was needed in this situation and if a pesticide had been recommended and used, it would have resulted in the loss of a population of beneficial insects.

Why were these lady beetles on this plant in such large numbers? As with other species of lady beetles, the spotted lady beetle aggregates to spend the winter in common hiding spots. These lady beetles were gathering on the shrub in question before they headed for the overwintering site. Curtis reported observing similar lady beetle activity on several large oak trees in Van Wert, Ohio. Typically, behaviors such as aggregating before overwintering is stimulated by the change in photoperiod experienced in the fall (i.e. longer nights and shorter days). The overwintering site might have been in a hole in a tree that was standing nearby, under a loose flap of bark, or under leaf litter and debris at the base of the plant.
Although there may have additionally been some prey (aphids, scales, etc.) that the beetles may have been feeding on the plant as well; this was likely a bedtime snack before a long winter's nap.

Moral of this story is, "Identify before you spray!" Obviously a different take on the saying, "Look before you leap!" Otherwise one could be doing more damage than good.

Author: Curtis E. Young, young.2@osu.edu

C. PRIMITIVE WASPS PROBING TREES. In BYGL Issue 2015-21 (8/27/15), it was reported that giant ichneumon wasps (*Megarhyssa* spp.) were observed ovipositing in trunks of dead and dying trees. These wasps are parasites of the more primitive wasp, the PIGEON TREMEX HORNTAIL (*Tremex columba*). This week, Curtis Young reported observing the horntail adults being present on dead and dying hardwood trees. One tree was a white oak that had been struck by lightning earlier this spring. The tree has a wide debarked channel from the top of the tree (60+') to the root flare. The horntail was ovipositing into the bared wood. Another tree at a different location was a dying red maple. Curtis observed at least 8 females on the trunk of this tree. The owner of the tree never saw them until Curtis pointed them out. One of the bizarre things about these observations was seeing one to several of these female horntails hanging by their ovipositors on the trunks...dead. Apparently they did not have enough energy left in them to pull their ovipositors free from the trunks once they were done. Some were complete insects, while others were partial remains after having been eaten by other animals.

The larvae of the pigeon tremex horntail are wood borers that tunnel through the heartwood of the dead and dying trees. Their tunnels may become blemishes in lumber if the trees are used for that purpose.

An interesting twist to this wood boring wasp is that the larvae are assisted by a fungus to extract their nutrient needs from the wood through which they are tunneling. The adult female wasp not only inserts eggs when she probes a host tree, she also deposits spores of a fungus that she has stored in her body. The fungus is called the MOSSY MAZE POLYPORE, *Cerrena unicolor* (synonymy = *Daedalea unicolor*). As the fungus begins to grow in the wood, it produces cellulose, the enzyme to breakdown cellulose into glucose. The wasp larva eats the wood that has been softened by the fungus and also contains the glucose released by the fungus. The fungus produces a white rot of the tree trunk that weakens the structure of the tree. The larvae develop slowly taking nearly a year to complete their development.

The larvae, if they were not parasitized by the giant ichneumon wasps, pupate inside of the galleries just beneath the bark. The new adults emerge about a month after pupation. The adults chew round (3/16 - 1/4" in diameter) exit holes through the bark. The adult horntail is 1 1/4 - 1 1/2" in length. They are brown in color with dark brown wings; abdomens of females are also marked with yellow bands. Both males and females have a short horn protruding from the top of the abdomen for which they named. Females have a 3/8" long, thick tail extending from the bottom of the abdomen that is a sheath inside of which the ovipositor is stored.

Author: Curtis E. Young; young.2@osu.edu

4. DISEASE DIGEST.

A. FUNGUS AMONGUS. This past weekend there was a lively event about decomposition at the Secrest Arboretum of the Ohio Agricultural Research and Development Center in Wooster. It was the Fall Foray of the Ohio Mushroom Society; very laid-back (OMS). They ate meals, including fungi, at some great Wooster restaurants and had potlucks. They forayed out into the constant rains Saturday at Secrest and at Wooster Memorial Park. They talked both macrofungi (such as mushrooms) and microfungi (such as microscopic plant pathogenic fungi, including *Penicillium* fungi both of medicinal and edible forms = think *Penicillium roquefortii*) and overall reveled in the Tales of the Kingdom Fungi. Here are a few highlights:
Walt Sturgeon is a mushroom expert, fresh off a presentation on Appalachian Macrofungi and here to lead this Ohio event, overseeing the Fungal Lineup, which involves discussion for participants of all the fungi they brought in from their outdoor forays during the day Saturday. There were deadly poisonous destroying angels (Amanita bisporigera) and then there were choice edibles (for some) such as the honey mushrooms (Armillaria mellea). Edible for some, Walt pointed out, because one of the first lessons for those who want to eat the mushrooms they collect is that even for the mushrooms that books and friends list as edible, the reality of mushrooms is that each of us is a little different relative to what is digestible and non-toxic. Even if a mushroom is listed as edible, always start with small amounts to see how it agrees with you and your unique biological digestive system.

Identification of mushrooms is ever tricky, with one stage of the mushroom looking different from another stage, such as before and after the cap expands to its full width. And the colors - fly agaric (Amanita muscaria) may be orange-red, or sulfur-yellow, or snow-white. In addition, as mushrooms decay they look different. Yes, mushrooms which often live on decayed organic matter as saprophytes, do themselves decay, as bacteria and other fungi speed along their own decomposition, along with insects that chew on mushroom flesh. We had a specimen at the foray of a giant puffball (Claviceps purpurea) that looked like an old decayed skull. This giant mushroom starts out small, grows to giant misshapen soccer-ball size that is okay eating early on, with slabs of white flesh sautéed with garlic and butter, but then eventually becomes a mass of literally trillions of puffy grayish-black spores and then slime, edibility at that point being nil. We collected a past-its-prime specimen that looked like a very old pock-marked human skull.

Fly agaric (Amanita muscaria) was probably the most collected specimen of the day, and was extremely common in colonies of a dozen or so under fir and birch trees at Secrest Arboretum. You may also find it in lawns this time of year, starting out as little egg-like structures, but emerging into their prototypical mushroom shape. This mushroom has quite an interesting profile: it was used mixed with milk as a fly insecticide in medieval times, it is a mild but unreliable hallucinogen - probably the mushroom referenced in Alice in Wonderland, and it is poisonous, but rarely causing deaths. It is mycorrhizal, developing “fungus roots” on pines and other conifers, helping the plant roots gather soil minerals. The warts on the mushroom cap are remnants of the universal veil present in mushroom development; they are easily rubbed off the cap, helping with its identification as an Amanita species.

Honey mushrooms (certain Armillaria species) were also quite commonly collected and their profile is fascinating as well. The Armillarea mellea honey fungus produces hardened mycelial structures called sclerotia which give this fungus the name of shoestring fungus. It is pathogenic on many trees and shrubs, especially if they are stressed. You have almost certainly seen these “shoestrings” on fallen trees and hardened from whitish mycelial mats under tree bark on decaying trees. This fungus is also parasitized by the Entoloma abortivum fungus, resulting in this Entoloma species becoming misshapen (the aborted entoloma or the hunter’s heart mushroom) and oddly, in the process becoming more palatable. It is also for many a choice edible. It can be distinguished from Amanita species, many of which are deadly poisonous, in that Armillaria does not have the cup-shaped structure (volva) at the base of the mushroom stalk, and Armillaria does have this cup.

Always beware, though, some Armillaria species other than the honey mushrooms are poisonous, and some are poisonous just for you and certain other individuals. To add to the variability and to the story, one related species, Armillaria solidipes, may be the largest organism in the world! Not the mushroom, but its underground mycelial network, on Oregon example of which is estimated to cover 3.4 square miles and with an estimated age of over 2400 years.

We say colonies when we talk about those fly agarics and other mushroom cluster, but almost certainly all of these “colonies” are originating from single fungal individuals which are represented by the asexual strand-like mycelial forms of the fungus, the undergrown or within-wood much larger mass of the fungus which occasionally fruits sexually when two strains of the mycelia come together. That is why picking mushrooms never really makes them go away; the mycelium endures to reproduce another day. There is ever a fungus amongus.
B. SAMPLING: FROM THE GROUND UP - AND DOWN. Nancy Taylor of the PPDC reminds sample-senders to the Clinic of collecting as much of the whole plant as possible. A case in point: She received an arborvitae sample earlier this year in which *Phyllosticta* leaf spot, a relatively minor problem was diagnosed. Such leafspots on arborvitae, *Pestalotiopsis* leaf spot is another, will not kill or significantly damage plants. The sender recently sent a sample that included roots: *Armillaria* root rot was found. Now, that is serious, and only with those root samples was a diagnosis of the real problem on the arborvitae determined. To paraphrase a popular saying: *Leaf spots in; leaf spots out.* To get as much of the real story as possible, send as much of the sample as possible.

C. AND EVEN THE PLANT DOES NOT TELL THE WHOLE STORY. Nancy Taylor reports another tale from the world of plant disease: of *Fusarium* wilt of chrysanthemum. This is a serious problem for growers and a reminder of the need for vigilant sanitation. A grower was trying to control this disease just with fungicides, but alas disinfecting growing environments is also necessary. Not only is landscape fabric a source of contamination of soil particles infested with *Fusarium* (try power-washing away particles), but even emitters have been found to harbor the pathogen between crops; scrub and disinfest.

5. TURF TIPS.

A. CRANE FLIES ON THE WING. Curtis Young and Joe Boggs reported that the annual fall emergence of CRANE FLIES (*Tipula* spp.; family Tipulidae) is now underway in western and southwest Ohio, respectively. These delicate, long-legged insects look like giant, mutant mosquitoes; a startling image outside of a sci-fi movie. Fortunately, crane flies do not possess mosquito-like piercing-sucking mouthparts, so they do not bite. However, clouds of crane flies billowing above lawns can be a real nuisance. The flies may look like a flock of miniature birds flittering up from the turf and flying a short distance to alight again.

Adults usually appear in Ohio landscapes during two peak periods. Some species produce a heavy adult emergence in the spring while other species generate adults in the fall. The larvae of most species feed on decaying organic matter in the soil, and they especially appreciate areas that are continuously moist. Some larvae of crane flies, called leatherjackets, develop in the soil beneath turfgrass. The larvae of most species of crane flies found in Ohio feed on organic matter in the soil and thatch layer, especially in moist to wet areas in lawns. Like the adults, these legless maggots occasionally appear en masse spilling onto driveways or sidewalks. Such a dramatic appearance may signal that the lawn has a serious thatch problem. However, the species found in Ohio cause no damage to the turfgrass.

The same cannot be said for two non-native European species that have found their way to parts of the northeastern U.S. and eastern Canada. Larvae of the EUROPEAN CRANE FLY (*Tipula paludosa*), and the MARSH CRANE FLY (*T. oleracea*) feed on the roots, crowns, and blades of living grass plants; both can cause serious damage to turfgrass. Both of these non-native species may appear at the same time as fall emerging native species. The European crane fly has one generation per season with adults on the wing in late August through much of October. The marsh crane fly has two generations with adults appearing in late April through May and again from mid-September to around mid-October.

Both of the non-native crane fly species have a distinct cream colored band on the leading edge of their wings. This feature distinguishes them from native species which have light to dark brown bands on the leading edges of their wings. Fortunately, only the marsh crane fly has been found in Ohio and populations appear to remain confined to the northeast part of the state. However, turfgrass managers
throughout Ohio should remain vigilant, particularly in the northern part of the state. Marsh crane flies are very good flyers have a history of spreading quickly from points of introduction.

Author: Joe Boggs; boggs.47@osu.edu

6. INDUSTRY INSIGHTS.

A. HIGHLIGHTS FROM THE ANNUAL BLUEGRASS-BUCKEYE BYGLIVE! Joe Boggs provided highlights from the 18th Annual Bluegrass-Buckeye BYGLive! held this past Monday at Gainesway Thoroughbred Stallion Farm in Lexington, KY http://www.gainesway.com/ . At the top of the list was recognition for the program's co-hosts: Larry Hanks (Pampered Properties, Lexington, KY) and Phil Douglas (Director of Horticulture, Gainesway). Kudos to Larry and Phil!

The day was divided into four educational events: an update on THOUSAND CANKERS DISEASE and ASIAN LONGHORNED BEETLE in Ohio by Joe; a viewing of thoroughbred horses lead by James Cannon, Assistant Stallion Manager; a tour of the farm and a horticulture overview lead by Phil; and updates provided by University of Kentucky researchers and diagnosticians including Carl Redman (Entomology), Nicole Ward Gauthier (Plant Pathology) and Sara Long (Plant Pathology). It was a full day packed with lots of information!

Gainesway was established in 1962 by John R. Gaines of Gaines Pet Foods fame who is credited with founding the Breeders' Cup race. Gaines also founded the National Thoroughbred Association, a precursor to the National Thoroughbred Racing Association. The farm was purchased in 1989 by South African winemaker Graham J. Beck who continued to build upon Gaines' legacy to make Gainesway a world leader in thoroughbred breeding. Beck passed away in 2010 and leadership for the farm is now in the able hands of his son, Antony Beck.

Currently, Gainesway encompasses over 1,500 acres and is the largest contiguous horse farm in the Lexington area. Coupled with guiding a very successful horse farm, the Beck family also has an intense interest in horticulture. This was evident by the stunning landscapes and diversity of plant materials. Indeed, in 1998 Gainesway became the first thoroughbred horse farm in the world to earn Arboretum status with the American Association of Botanical Gardens and Arboreta, now the American Public Gardens Association (APGA). Ryan and his staff continue to expand the gardens with around 1,600 new trees and shrubs planted each year. Notable plantings include a Magnolia Collection, Azalea Collection, Conifer Collection, and Oak Collection which is one of the largest in the U.S. with 70 oak species.

Of course, Gainesway remains a premier Kentucky horse farm, and it has been and continues to be the home of an impressive collection of thoroughbred stallions. Notable stallions viewed by the group included Tapit, America's second leading sire in 2011 and leading sire in 2014 and 2015 based on total earnings. He commands a stud fee of $300,000 and became "acquainted" with 138 mares in 2015. BYGLive! participants learned that his fee is not paid until an industry standard for foal viability is met which is known as Live Foal Stands and Nurses (LFSN). The industry average for failing to meet the LFSN standard is around 3 - 5% per year. In other words, the owners of the stallion receive payment for his services 95 - 97% of the time. However, this industry's average was seriously threatened in 2001.

In May, 2001, a condition called Mare Reproductive Loss Syndrome (MRLS) appeared on horse farms in central Kentucky that produced an alarming and costly rise in spontaneous abortions. Farms in the region suffered an early fetal loss rate of between 25 - 35% with some farms experiencing a loss rate as high as 60%. MRLS reappeared in 2002 although at a slightly lower rate. However, the losses from MRLS to the horse industry in central Kentucky for the two years totaled more $425 million. MRLS posed a very serious threat to the economic health and sustainability of the thoroughbred industry in Kentucky because the cause remained a mystery.
However, as the result of some extraordinary scientific super sleuthing by researchers at the University of Kentucky, the MRLS case was cracked. The entire story is fascinating and as Joe contended, worthy of a book. At the very least, it spawned an interesting discussion at the BYGLive! program with input from James Cannon who experienced the entire event first hand.

The detective work began during the spring of 2001 when it was noted that MRLS occurred as central Kentucky was experiencing an outbreak of EASTERN TENT CATERPILLAR (Malacosoma americanum) (ETC). Caterpillars returned in 2002 but at a lower population density; MRLS also occurred at a lower rate. A possible connection between ETC and MRLS was posited early on; however, no one could determine exactly how ETC was affecting the mares. Thoroughbred horses are notoriously picky eaters; they would not eat hairy caterpillars!

However, researchers made a breakthrough when they focused attention on the nature of the hairs covering the caterpillars. During outbreaks, huge numbers of ETC will crawl from their defoliated host trees in search of pupation sites. It was observed that as the caterpillars crawled across pasture grasses, they will shed some of their sharp, barbed hairs (setae). It was the jettisoned hairs not the hairy caterpillars that were being consumed by the pregnant mares.

Under high magnification, the setae were found to be solid at the barbed tip and hollow at the base. Researchers found that certain bacteria normally found in the horse's digestive tract will accumulate in the hollow base. Studies showed that when the setae find their way into the gut of a pregnant mare, the barbed points allow the setae to penetrate the gut lining and pieces of setae along with hitchhiking bacteria can then enter the horse's blood stream. While the infectious setae have little effect on the pregnant mares, their subsequent penetration of the placenta has disastrous consequences for the developing fetus. In essence, the fetus dies from blood poisoning (septicemia) with the end result being MRLS.

ETC prefers to feed on members of the rose family; particularly on cherry. Once horse farms focused their attention on cutting down the primary hosts of the caterpillars and changing their plant selection criteria to exclude ETC hosts, the incidence of MRLS ebbed dramatically. Of course, this meant the removal and exclusion of many members of the rose family with many farms destroying huge black cherry trees growing near their horse pastures. However, the MRLS book is not entirely closed. James noted that the syndrome still occurs where farms are not remaining diligent in addressing the ETC challenge both in Kentucky and other states.

Author: Joe Boggs; boggs.47@osu.edu

7. WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from October 1 - 7, 2015, with the exception of the soil temperatures which are readings from Wednesday, October 7, 2015 at 11:05 p.m.

Temperatures have dropped a bit, but it is fall and expected. Many parts of the state did receive rain last Saturday, but the windy and wet day did not total significant amounts. Pam Bennett reported that Clark County remains extremely dry, only picking up about 1/10” of precipitation from the weekend rain event. A similar amount was received in the Toledo area reported by Amy Stone.

<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>60.5</td>
<td>47.8</td>
<td>0.32&quot;</td>
<td>1.2“</td>
<td>68.40/68.67</td>
</tr>
<tr>
<td>Wooster</td>
<td>NE</td>
<td>64.4</td>
<td>47.0</td>
<td>0.33”</td>
<td>0.6“</td>
<td>68.05/66.82</td>
</tr>
<tr>
<td>Hoytville</td>
<td>NW</td>
<td>66.2</td>
<td>50.1</td>
<td>0.04”</td>
<td>0.6“</td>
<td>73.49/69.02</td>
</tr>
<tr>
<td>Columbus</td>
<td>Central</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*/</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>67.3</td>
<td>50.1</td>
<td>0.39”</td>
<td>0.4“</td>
<td>71.16/69.09</td>
</tr>
</tbody>
</table>
*Weather data collected at the Columbus weather station was being displayed incorrectly when this week’s information was being summarized for BYGL.

For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/newweather/](http://www.oardc.ohio-state.edu/newweather/)

**Author:** Amy Stone; stone.91@osu.edu

8. COMING ATTRACTIONS.

A. EMERALD ASH BORER UNIVERSITY (EABU). Here is a great way for the latest information about the emerald ash borer (EAB), while not leaving your home or office. The fall schedule of EABU online sessions have been scheduled. The sessions offered as a result of a Forest Service project last approximately one hour and are free. You can participate in the live version of the sessions on the dates listed below, or view all recorded sessions by visiting the regional EAB website at [www.emeraldashborer.info](http://www.emeraldashborer.info). Here is a listing of the upcoming webinars and the session presenters:

* Thursday, October 15, 11:00 a.m. EST; Manage EAB, or Manage the Forest?; Mark Abrahamson, Minnesota Department of Agriculture

* Thursday, October 29, 11:00 a.m. EST; Walnut Twig Beetle and Thousand Cankers Update; Matt Ginzel, Purdue University

* Thursday, November 12; 11:00 a.m. EST; Biological Control of EAB: Putting in into Perspective; Roy van Driesche, University of Massachusetts

* Thursday, December 3, 11 a.m. EST; Fringe Tree and EAB Infestation Update; Don Cipollini, Wright State University

Recent recorded sessions include:

* Great Lakes Restoration Initiative; Jill Johnson, Midwest Forestry Coordinator, USDA Forest Service

* Effects of EAB Treatments on Pollinators; Reed Johnson, Ohio State University’s Ohio Agriculture Research and Development Center (OARDC)

For more information, or find other recorded sessions on the EAB or other selected invasive species, check out the regional EAB website at [www.emeraldashborer.info](http://www.emeraldashborer.info).

B. NORTHWEST OHIO LANDOWNER CONFERENCE: NATURAL RESOURCES AT HOME. Join us on Saturday, November 14, 2015 for a day filled with presentations and conversations about a variety of natural resource based topics. Everything from woodlands and wildlife to ponds and pollinators are on the agenda. If you are a landowner interested in the woods, water, and wildlife on your land, this conference is for you. Registration is $40 per person and includes morning snacks, lunch and materials. Register now at [http://woodlandstewards.osu.edu](http://woodlandstewards.osu.edu).

C. THE OSU GREEN INDUSTRY SHORT COURSE, THE OHIO TURFGRASS FOUNDATION CONFERENCE AND SHOW, AND TREES ON TAP PROGRAMS. Mark your calendars now, as these shows will be here sooner than you think. The event will be moving back to the Columbus Convention Center in 2015 and will be held on December 8 - 10, 2015, with the addition of a special tree program on Monday, December 7, 2015. Details on over 100 educational programs and a wide array of certification credits will be coming throughout the BYGL season. We are happy to acknowledge the robust support of the Ohio Turfgrass Foundation for their financial and other aid of the educational efforts of the OSU Extension Nursery Landscape and Turf (ENLT) Team, a group of Extension Educators and OSU
Specialists that brings to you a range of programs including field diagnostic walkabouts (such as BYGLive! in southwest Ohio) and diagnostic workshops as well as help with horticulture problem troubleshooting, numerous publications, and of course, the BYGL.

A key speaker for both the Trees on Tap program and the tree care track of the Green Industry Short Course will be Dr. Ed Gilman of the University of Florida Environmental Horticulture program. Ed is Professor of Urban Trees and Landscape Plants and his research and educational efforts focus on tree care practices such as the effect of tree pruning on tree biology, production practices and landscape establishment, root pruning, and irrigation and fertilization practices. He is reason enough alone to attend the conference.

D. TRI-STATE GREEN INDUSTRY CONFERENCE. Save the date for the 2016 Tri-State Green Industry Conference on February 4, 2016 at the Sharonville Convention Center, 11355 Chester Rd., Cincinnati, OH 45246. The Tri-State Green Industry Conference is a collaborative effort between Ohio State University Extension, Purdue Extension, University of Kentucky Extension, Cincinnati State Technical and Community College, and the Cincinnati Zoo and Botanical Garden. It features a variety of high quality education and training for professionals in the areas of Annuals & Perennials, Garden Center & Greenhouse Innovation, Tree & Shrub Care, Turfgrass Management, Sustainable Landscaping, Emerging Ideas & Issues, Sediment & Erosion Control and General Pest & Disease Management and also features a vendor trade show. Pesticide recertification credits for Ohio, Indiana and Kentucky will be given, OCNT training credit is available, ASLA CEUs are available and CEUs will be available for ISA Certified Arborists.

For more information visit: http://hamilton.osu.edu/program-areas/agriculture-and-natural-resources/horticulture/2016-tri-state-green-industry.

9. BYGLOSOPHY.  
"October gave a party;  
The leaves by hundreds came,--  
The Ashes, Oaks, and Maples,  
And leaves of every name.  
The sunshine spread a carpet,  
And everything was grand;  
Miss Weather led the dancing;  
Professor Wind, the band....  
The sight was like a rainbow  
New-fallen from the sky...."  - George Cooper, "October's Party"

APPENDIX  
ADDITIONAL WEBSITE RESOURCES:

Ask a Master Gardener Volunteer  
http://mastergardener.osu.edu/ask

Buckeye Turf  
http://buckeyeturf.osu.edu

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

National Plant Diagnostic Network and First Detector Program  
https://www.npdn.org/first_detector
Growing Degree Days and Phenology for Ohio
http://www.oardc.ohio-state.edu/gdd/

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

Ohio Pesticide Safety Education Program
http://pested.osu.edu/

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

Ohio State University Extension Bee Lab
beelab.osu.edu

Ohio State University Extension Master Gardener Volunteer Program
http://mastergardener.osu.edu

Ohio Woodlands Stewards Program
http://woodlandstewards.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 October 6th conference call: Pam Bennett (Clark); Joe Boggs
(Hamilton); Jim Chatfield (Hort and Crop Science); Julie Crook (Hamilton); Denise Johnson (Master
Gardener Volunteer Program); Amy Stone (Lucas); Nancy Taylor (CWEPPCD); and Curtis E. Young
(Van Wert).

BYGL is available via email, send requests to subscribe at bygl@osu.edu. Additional fact sheet
information on any of these articles may be found through the OSU FactSheet database
http://plantfacts.osu.edu/web.

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.

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis.
For more information: http://go.osu.edu/cfaesdiversity.