BYGL Newsletter

June 5, 2014

This is the 10th 2014 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.

Authors for 2015: Amanda Bennett, Pam Bennett, Joe Boggs, Jim Chatfield, Julie Crook, Erik Draper, Gary Gao, Denise Johnson, Jacqueline Kowalski, Ashley Kulhanek, Cindy Meyer, Amy Stone, Nancy Taylor, Marne Titchenell, Danae Wolfe, and Curtis Young.

Plants of The Week »

* Annual - Vinca or Rose Periwinkle (Catharanthus roseus)

The secret to success with vinca is that it doesn't like cold feet, therefore, don't plant it until the soil warms up! This sun-loving, heat-loving annual doesn't tolerate cold soils and if it sits in cold, damp soils for a prolonged period of time, it might end up with root rot. Ohio gardeners tend to push the envelope and plant this one too early in the spring along with other bedding plants. For best results with Vinca, plant in late May in the central Ohio area.

Almost all cultivars of this plant, except for the spreading ones, grow in a mound about 1’ tall and as wide. The colorful flowers last all season, hanging on until a hard frost. Flowers come in pink, white, red, salmon, and a combination of these colors (white with red eye, etc.). The glossy green foliage has few pest issues. They can be used in a perennial border, as bedding plants, and in containers. The vining or trailing varieties (Mediterranean and Cora Cascade) are excellent for hanging baskets, hanging over the edge of a container planter, or as a ground cover. Once these plants are established in the garden, they are super-easy to maintain with very few pest problems. They provide lots of color all season in the full hot sun.

For More Information:
Missouri Botanical Garden Kemper Center for Home Gardening information on Catharanthus roseus
University of Illinois Extension Gardening with Annual information on Vinca
http://urbanext.illinois.edu/annuals/directory_detail.cfm

* Perennial - Amsonia or Blue Star (Amsonia tabernaemontana)

Blue star is in full bloom in central Ohio gardens and is one of the easiest perennials to grow. One nice feature of this plant is that it gives a garden 2 seasons of interest, late spring bloom as well as a nice golden fall color. The other great feature is that it's deer resistant. Blue star thrives in average well-drained garden soil in the full hot sun (it tolerates some drought). If the soil is extremely fertile, the plant will have a taller and floppier habit. It can tolerate light shade but will also have a floppier habit thus requiring staking.

Blue star has a rounded, mounded growth habit and gets around 1 - 3’ tall and about as wide depending on the cultivar. The clusters of star-like blue flowers appear atop leafy stems in late May and early June and last about 2 weeks. ‘Blue Ice’ is a cultivar that grows around 2 - 3’ tall. Use blue star in masses in the front or center of the perennial bed.
For More Information:
Missouri Botanical Garden Plant Finder information on Amsonia tabernaemontana
http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx
Cornell University Home Gardening Growing Guide on Willow Blue Star
http://www.gardening.cornell.edu/homegardening/scence68d.html

* Woody - Bottlebrush Buckeye (Aesculus parviflora)*

As many buckeyes and horsechestnuts are passing their period of intense floral beauty, a later-blooming buckeye is coming into its own. Bottlebrush buckeye is not our state tree or our state shrub, but it is one beauteous buckeye. It is not yet in bloom in northern Ohio, but what southern Ohio now appreciates is making its way phenologically northward. Creamy white 4-petaled flowers with red stamens in lovely panicles, layered tiers of branches with 5 - 7 leaflet palmate leaves. As Michael Dirr quotes W.J. Bean in Dirr's *Manual of Woody Landscape Plants*, "No better plant could be recommended as a lawn shrub." As Dirr adds, it is a great plant even without the June flowers, but enjoy its great glorious bloom period, its horizontal branching habit, its clean (virtually no *Guignardia* leaf blight disease) leaves, and cool little misshapen buckeye fruits. Bottlebrush buckeye takes a while to establish, but plant in groups for a great effect - check out the mature and most wonderful and dense bottlebrush buckeye grove (about 10’ in height) with many seedlings underneath at Dawes Arboretum near Newark.

* Vegetable - Cucumber (Cucumis sativus)*

Cucumbers are a warm weather crop that is easy to grow in full sun and in fertile, moist soil. They prefer a soil pH between 6 and 6.5 or slightly acidic. Cucumbers do not like cold weather so direct sow seeds when soil temperatures are above 70F and evening air temperatures do not dip below 60F. Plant seeds 1 - 1.5” deep, spaced 2” apart and provide 5 - 6’ between rows so the vines can spread. If seeds are started indoors, take care not to disturb the taproot when transplanting. To thin cucumbers, cut or pinch rather than pulling seedlings which can damage the roots of other plants. They are heavy feeders and the addition of nitrogen fertilizers mid-season is recommended.

Cucumbers come in a variety of shapes, sizes and colors and can be eaten raw or pickled. Select the varieties that best suit your garden size and desired use. If you have limited space try a compact variety such as Salad Bush or Bush-Pickle. The Marketmore 76 is disease resistance, dark green and uniform in size while the Burpless is a hybrid that is ready to harvest in 62 days and is great for slicing and grows well on a trellis.

Cucumbers are subject to several pests and diseases including striped or spotted cucumber beetles, aphids, squash vine borer, bacterial wilt and powdery mildew. Good management practices of rotating crops, spacing plants for good airflow, watching and removing insects as well as good sanitation practices of removing infested plants and destroying old plant material will help increase and extend your harvest.

For More Information:
Cornell Home Gardening Growing Guide
http://www.gardening.cornell.edu/homegardening/scene65b.html
Growing Cucumbers in Minnesota Home Gardens
University of Illinois Extension
http://urbanext.illinois.edu/veggies/cucumber.cfm

* Weed - Bush Honeysuckles (Lonicera spp.)*

Bush honeysuckles are in bloom across northeast Ohio. Often considered an ornamental shrub, exotic bush honeysuckles are able to escape cultivation and spread into natural areas, where they threaten native plants and wildlife.

There are 3 common invasive bush honeysuckle species in Ohio, TARTARIAN (*L. tatarica*), AMUR (*L. maackii*), and MORROW
In addition, Tartarian honeysuckle can cross with morrow honeysuckle to produce a hybrid called BELLA (L. x bella). The best way to differentiate between the species is by looking at the flower and leaf characteristics. Leaves are 1 - 3.5" long, arranged opposite along the stem, and toothless. Amur honeysuckle leaves have a pointed tip, while morrow and tartarian are oval to egg-shaped. Fragrant, tubular flowers appear in pairs along the stem throughout spring and early summer. Round berries, often red, appear in clusters mid-summer through early fall.

As a general rule of thumb, exotic bush honeysuckles tend to be one of the first shrubs that leaf out in early spring and one of the last shrubs to lose its leaves in late fall (similar to other invasive shrubs). While birds and other wildlife may eat honeysuckle berries, research has shown that this food source does not provide adequate nutrition for wildlife when compared to native food sources. Perhaps the most menacing characteristic of exotic bush honeysuckles is the plant's ability to crowd out tree saplings in the forest understory. As large trees die and create canopy gaps, invasive shrubs outcompete native trees to fill in the empty space. Over time, this changes the structure of Ohio's forests.

To control bush honeysuckles, young saplings can be pulled in early spring when the ground is still wet. For larger plants, cut the shrub to a short stump and apply herbicide directly to the cut stem. Foliar spraying can be effective, but be sure to spray only undesirable plants. Spraying in late fall after native plants have gone dormant is recommended. Always follow label recommendations.

For More Information:
Controlling Non-Native Invasive Plants in Ohio Forests: Bush Honeysuckle
http://ohioline.osu.edu/for-fact/pdf/0068.pdf

Don't Guess, Send Samples to the CWEPPDC!

Did you know that Ohio State University Extension has a clinic that can help you determine what is ailng your plants and crops? The C. Wayne Ellet Plant and Pest Diagnostic Clinic (CWEPPDC) is a diagnostic facility specializing in the identification of plant diseases, plant health issues, and insect-related problems. The Clinic offers a broad spectrum of low cost testing for residential and commercial clients to identify pests and cultural/environmental related plant health issues. Experienced diagnosticians collaborate with specialists in plant pathology, entomology, and horticulture and crop science.

The CWEPPDC is able to provide diagnostic and support services utilizing the latest in research and education that only a large academic university can provide. The clinic serves a wide variety of clientele. From greenhouse growers, farmers, arborists, nursery producers, landscape managers, pest control operators, to fruit and vegetable growers, the CWEPPDC can help. Clients are empowered with diagnostic results and educational materials to be able to understand the problem and to be able to implement appropriate management measures.

The clinic is a founding member of the Ohio Plant Diagnostic Network (OPDN), which is a member of the National Plant Diagnostic Network (NPDN). NPDN is a nationwide consortium of diagnostic laboratories that enhances agricultural security by rapidly detecting and monitoring pests and pathogens. The OPDN facilitates the unifying of diagnostics, research, and outreach activities from all over Ohio into one organized and effective communication tool for the betterment of Ohio and the nation.

For More Information:
C. Wayne Ellet Plant and Pest Diagnostic Center
http://ppdc.osu.edu/

Meet the Educator

Meet Jacqueline Kowalski, Agriculture and Natural Resources Extension Educator for Cuyahoga County and BYGL contributor. Before joining OSU Extension in September of 2011, she worked for the University of the Virgin Islands and the Government of the Virgin Islands Department of Agriculture with small acreage vegetable and fruit producers.

In her role in Cuyahoga County she works primarily with urban farms, community gardens and develops agri-science activities for youth. She is a true believer in the potential of small farms and feels fortunate to be with Ohio State University Extension and Cuyahoga County at a time when regional and local food systems are gaining more traction in the state. She also feels that Cleveland is a great place to be.
In BYGL 2014-08 (05/22/14), we reported that HAWTHORN LACE BUG (*Corythucha cydoniae*) and OAK LACE BUG (*C. arcuata*) were becoming evident on their hosts in southern Ohio. This week, Dave Shetlar noted that a number of other lace bugs are also appearing in Ohio landscapes and now is the time to make control applications if obvious damage is to be prevented later in the season. Additional lace bugs that landscape managers should be monitoring for include: SYCAMORE LACE BUG (*C. ciliata*); WALNUT LACE BUG (*C. juglandis*); BUCKEYE LACE BUG (*C. aesculi*); and BASSWOOD LACE BUG (*Gargaphia tiliae*). These lace bugs as well as hawthorn and oak lace bugs confine their feeding activity to the lower leaf surfaces of their host plants.

Lace bugs (Hemiptera; family Tingidae) use their piercing/sucking mouth parts to suck juices from their host plants. Their feeding produces tiny yellow or whitish leaf spots (stippling) that may coalesce to produce large, yellow-to-copper colored areas on leaves, and early leaf drop. Early feeding symptoms may appear as distinct 0.25 - 0.5" diameter spots on the upper leaf surface. It is speculated that the circular stippling pattern is produced by first instar nymphs feeding around the egg clusters from which they hatched. This peculiar leaf stippling pattern is particularly evident with basswood lace bugs on silver linden; the dark green upper leaf surface highlights the spots. Lace bugs also deposit unsightly hard, black, varnish-like tar spots of excrement onto the lower leaf surface as they feed. Most lace bugs have multiple generations per season; their damage builds with each succeeding crop of new bugs.

Buckeye lace bugs are confined to their namesake host. Oak lace bugs may be found on both red and white oaks. Walnut lace bugs are usually found on black walnut and butternut, but may occasionally be found on linden. Sycamore lace bugs feed on their namesake host as well as London planetree. Basswood lace bugs should more accurately be called "Tilia lace bugs" since they may be found on several species in the *Tilia* genus. Typical landscape hosts include silver linden (*T. tomentosa*) and littleleaf linden (*T. cordata*). Hawthorn lace bugs have the most cosmopolitan palate and will feast on a variety of rosaceous plants as well as a few plants outside of the rose family. They are commonly observed on their namesake host as well as *Cotoneaster* and *Amelanchier*.

Lace bugs can be managed using contact insecticides including horticultural oils and insecticidal soaps as well as "standard" insecticides such as pyrethroids (e.g. bifenthrin). However, thorough coverage to the underside of the leaves is required and multiple applications of oils and soaps are usually needed since they have no residual activity. Soil and bark applied systemic neonicotinoids have also been shown to be effective and they protect trees for a longer period of time. Of course, applicators must read and follow insecticide label directions to maximize efficacy while minimizing potential negative impacts.

For More Information:
OSU Extension Fact Sheet
Penn State Entomology Fact Sheet
http://ento.psu.edu/extension/factsheets/lace-bug

Rusty Baldcypress

Damage from the "warm-season" BALDCYPRESS RUST MITE (*Epitrimerus taxodi*) is becoming evident on its namesake host in southwest Ohio, perhaps owing to a recent spate of above average temperatures. This is a so-called "free living" eriophyid mite (family Eriophyidae) in that it does not live inside plant structures such as galls. Instead, these mites can be seen on the surface of baldcypress foliage.

However, eriophyid mites are unique among other mites both in their size and anatomy. While most mites can be clearly seen with a 10x hand-lens, 40x magnification is required to clearly see eriophyid mites. Most mites are round to oblong in their body shape and they have four pairs of legs that extend laterally from the sides of their body. Eriophyid mites are cigar-shaped and they only have two pairs of legs that extend from the front of their body. No other mite has only two pairs of legs at any stage in their development.
Thus far, baldcypress rust mite damage is appearing as a subtle off-coloring of the foliage. High magnification will reveal sunken areas on the needles caused by the mites using their fang-like mouthparts (chelicerae) to rasp away the epidermis of individual cells to extract the cell contents. As the feeding damage continues, affected foliage will eventually become orangish-red and the symptoms may be mistaken for damage caused by lack of water, particularly on newly planted trees. Heavily infested trees often suffer premature defoliation. The key to preventing severe damage is early detection.

Unlike spider mites, eriophyids can be controlled with many standard insecticides including carbaryl (e.g. Sevin). Certain pyrethroid insecticides such as bifenthrin (e.g. Talstar) are also effective, as well as the miticide abamectin (e.g. Avid). Baldcypress is extremely sensitive to horticulture oils; their use is not recommended for control of eriophyid rust mites.

### Eriophyid Erineum Patches

Several BYGLers reported observing the unusual handiwork of eriophyid mites that produce ERINEUM PATCHES on the leaves of a number of landscape trees in Ohio including beech, birch, linden, and maple. The felt-like erineum patches are often described as plant galls; however, there is a debate as to whether the patches should be considered "true galls." They appear to arise like scar tissue from leaf cell damage caused by mite feeding activity rather than by a gall-maker exuding chemicals to direct plant growth. Regardless, as the patches turn colors from green to red, gold, or silver, then to brown, they become very noticeable and are often mistaken for leaf spot or rust diseases.

The eriophyid mite *Acalitus fagerinea* produces erineum patches on American beech. Although the patches are located on the upper leaf surface, they cause a dimpling of the lower leaf surface beneath the patch. Erineum patches in southwest Ohio are currently light green to a brilliant yellow; they will eventually become golden then rusty red to reddish brown later in the season. The mite *A. brevitarsus* generates pinkish-red erineum patches on the upper leaf surface of birch leaves. These patches in the southwest part of the state are currently silvery-white with slight overtones of pink.

Two different eriophyid mites produce erineum patches on sugar maple. *Eriophyes elongatus* generates patches on the upper leaf surface that are deep crimson red; they are currently greenish-white. *E. modestus* produces silvery colored patches in the forks in the leaf veins on the lower leaf surface of sugar maple leaves. The eriophyid *E. tiliae* generates a very similar looking silvery erineum patch on the lower leaf surface of lindens.

Whether or not erineum patches should be considered plant galls, they do have one thing in common with most galls. The patches are seldom so severe as to cause significant injury to the overall health of their host trees. Thus, control recommendations are not necessary.

### Seeing Red...Again!

Last season, we reported the appearance in late-May to early-June in Ohio of huge numbers of tiny, fast-moving bright red mites scurrying around in sunny locations on picnic tables, patios, sidewalks, concrete retaining walls, and on the outside walls of homes and buildings (BYGL Issue 2013-10 (06/06/13)). In fact, large gatherings of these mites were observed in a number of Midwestern, eastern, and southern states. The mites have been tentatively identified as *Balaustium murorum* (family Erythraeidae). The mites have no approved common name; however, they are sometimes referred to as "concrete mites," or "pavement mites," based on locations where the mites tend to congregate.

This week, Dave Shetlar and Joe Boggs reported that concrete mites are again appearing in central and southern Ohio, respectively. Whether the numbers rise to the same population densities observed last season remains to be seen. The mites prey upon other mites as well as small insects and are capable of supplementing their meat diet with pollen. Indeed, research conducted at Wittenberg University (Springfield, OH) revealed that the mites often start the season as pollen-feeders and switch to becoming predators later in the season as more prey becomes available.
Concrete mites are sometimes mistaken for CLOVER MITES (*Erythraea praetiosa*) which are entirely herbivorous and occasionally appear in large congregations to become a nuisance pest by invading homes in the spring and fall. In fact, some web images that are labeled as being clover mites are actually images of concrete mites, or some other *Balaustium* species. The legs and bodies of concrete mites are always bright red. Although the coloration of clover mites varies from reddish-green to very dark red, they are never bright red. Also, clover mites do not zip around; they just mill around making inaudible mooing sounds since they only feed on plants.

It is unclear why concrete mites appear in large numbers in sunny locations in the spring. However, the mass gatherings appear to be highly seasonal and short-lived. Thus, even if their numbers swell this spring, the onslaught will quickly subside. However, Dave noted that if there is a substantial risk that large numbers could spoil an outdoor event involving an abundance of white clothing, such as a spring wedding, the mites may be suppressed with a surface application of a pyrethroid insecticide such as products containing bifenthrin (e.g. Talstar).

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**Porch Lights Shed Light on Cockroaches**

**PENNSYLVANIA WOOD COCKROACH (*Parcoblatta pennsylvanica*)** males are appearing at porch lights in southwest Ohio and occasionally finding their way into homes. The males measure around 1” in length and are blackish-brown. The edges of their thoracic shield, which is located just behind the head, as well as the margins of the forward half of their wings are transparent to slightly yellowish in color. The males have fully functional wings and are very good fliers. However, adult females are unable to fly; they only have "wing pads" which makes them look like female ORIENTAL COCKROACHES (*Blatta orientalis*), also known as “water bugs.”

Wood cockroaches are very different from other cockroaches. They are much less secretive compared to other cockroaches and are active both day and night. Unfortunately, the males have a distinct attraction to outdoor night lights which may bring them to homes. Fortunately, these cockroaches will not take-up residence in buildings. Both the adults and nymphs feed on decaying organic matter and are commonly found in rotting logs.

The cockroaches may be inadvertently brought into homes in firewood or males that are attracted to night lights may zip into homes through open doors or windows. In either case, this cockroach is only considered a nuisance pest; there is no need to dispatch them with an insecticide. If errant males or females are found in a home, they will not hide which makes easy targets for the "cockroach stomp" ... which also produces the disgusting side-effect of the "cockroach smear and scrap.” While simply shepherding the occasional wayward wood cockroach outside may be far less dramatic, it is also less messy.

For More Information:
- Penn State University Entomology FactSheet
  [http://ento.psu.edu/extension/factsheets/pennsylvania-wood-cockroaches](http://ento.psy.edu/extension/factsheets/pennsylvania-wood-cockroaches)
- Iowa State University Entomology Insect Information Notes
  [http://www.ipm.iastate.edu/ipm/iiin/woodcoc.html](http://www.ipm.iastate.edu/ipm/iiin/woodcoc.html)

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**Watch Out for "Skeeters"**

BYGLers have reported being bombarded by mosquitos this year. It wouldn't be summer without an itchy bite or two, but we can take steps to reduce populations around our homes. Mosquitoes require water to develop. Adult mosquitos will lay eggs in standing water or in areas that are prone to pooling water. To reduce mosquitos in your immediate area, eliminate mosquito-breeding sites such as wheel barrels, buckets, watering cans, pots, tire swings, or similar cup-shaped vessels where water and rain can accumulate, including kiddie pools. Change bird bath water regularly. Inspect your gutters to ensure water is draining properly. Water can settle in gutters providing enough water and organic matter for larva, known as "wigglers," to develop. With the rain and flooding this year, full gutters and standing water may abound, so take a time to walk around the property to inspect for likely breeding areas.
For standing water that cannot be drained, such as ornamental or garden ponds, or retention ponds, a product called Bti (a bacteria, Bacillus thuringiensis var. israelensis) can be used to treat for mosquitoes. It comes in a pellet form and can kill the mosquito larva in less than 12 hours when following the label properly. Read and follow all labels when using any pesticide product. Consult an expert or your county health department before treating any water source that is used for home drinking water. Other products may have varying degrees of effectiveness. Be conscious consumers when investigating so-called "too good to be true" mosquito products.

Mosquitos are generally most active at dusk and dawn. Insect repellants and protective clothing at these times of day may help reduce bug bites. Products containing diethyl toluamide (DEET) are known to be effective skin repellents when outdoors. Other non-DEET products exist including active ingredient picaridin and oil of lemon eucalyptus. Follow all label instructions. Remember that repellents will wear off with time and are not fool-proof, but will provide temporary relief from bites.

For More Information:
University of Kentucky Factsheet
http://www2.ca.uky.edu/entomology/entfacts/ef005.asp
Penn State Factsheet
http://ento.psu.edu/extension/factsheets/mosquitoes
Mosquito Pest Management Bulletin 641
http://ohioline.osu.edu/b641/index.html

Honeylocust Plant Bug

Honeylocust plant bug (Diaphnoecoris chlorigis) is a true bug in the family Miridae and a key pest of honeylocust (Gleditsia triacanthos). These insects are bright green both as nymphs and as adults, and the nymphs have a tiny yellow to orange spot in the middle of the abdomen between the wing buds. The nymphs may be confused for aphids due to their size and color, however the plant bug's nymph is extremely mobile, not hesitating to run up the arm of anyone inspecting a branch (and maybe delivering a bite-like prickle with its beak-like mouthpart).

The damage caused by the honeylocust plant bug will begin very early in spring caused mainly by the nymphs and will remain evident all season. The bug uses a piercing-sucking mouthpart, similar to a straw, to suck out plant juices of the developing and newly emerged leaf tissue. Damage includes yellow spots that will turn brownish, curling and cupping of leaflets, stunted growth, and twisted growth that can often be confused with chemical damage. It appears the tree can withstand multiple years of this type of damage, however, plant stress from other issues (drought, rot, infection etc.) could compound the effects. Yellow-leaf cultivars of honeylocust are more susceptible to honeylocust plant bug damage. Planting heartier, darker-green foliage varieties may help.

Previous BYGL articles (BYGL Issue 9607 (05/16/1996); BYGL Issue 0005 (05/04/2000)) have documented the connection between treating plant bugs and subsequent explosions of honeylocust spider mite populations (refer to BYGL Issue 9607 (05/16/1996); BYGL Issue 0005 (05/04/2000)). Use caution when deciding to treat for this, or any pest, to ensure it is a necessary treatment and to manage potential subsequent pest explosions. The label is the law. Make sure to follow all label instructions when using insecticides for any pest, ensuring that the chemical is labeled for both the pest and the host plant to be treated. A high-pressure spray of water into the foliage may be a helpful non-chemical option to dislodge large populations of feeding plant bugs from the leaves.

For More Information:
Penn State factsheet
http://ento.psu.edu/extension/factsheets/honeylocust-plant-bug

Death of a Tiger

Even though we have covered SIX SPOTTED TIGER BEETLES (Cicindela sexguttata) (BYGL Issue 2014-03 (04/17/2014)) and BEE MIMIC FLIES (BYGL Issue 2014-04 (04/24/2014)) already this year, Curtis Young made an observation this past weekend that justifies a second look at both at the same time. Both types of insect are predatory and are considered biological control.
agents/beneficial insects. With this in mind, one could easily slip into thinking that these insects do only good things. However, nature is not that altruistic. While walking in a Miami County Park, Curtis observed many six-spotted tiger beetles and a few BUMBLE BEE MIMIC ROBBER FLIES (**Laphria thoracica**)

moving in and out of the shrubs beside the trail. In an instance, a robber fly swooped in over his shoulder and nailed a tiger beetle in mid-hop. The robber fly with its prize impaled with its mouth parts landed on foliage of a nearby plant. The tiger beetle never knew what hit it and it was dead shortly thereafter.

When it comes to predatory insects, they are not overly finicky about who or what they eat. An example of one of these predators would be the seven-spotted lady beetle (**Coccinella septempunctata**)

that consumes aphids of many different species (e.g., pea, cowpea, green peach, potato, corn leaf, and melon aphids) both as a larva and an adult. They also eat the eggs and larvae of other insects, such as stinkbugs, asparagus beetles, and European corn borers. Adults will feed on pollen to gain extra fat for overwintering. When there is food scarcity, it is not uncommon for lady beetles to become cannibalistic and eat their own larvae and eggs.

There are also several examples of predators eating other beneficial insects including predators eating predators. One of the worst offenders is the praying mantis. The praying mantis will eat just about anything that it can capture as it flies in front of its face. Apiarist don't particularly care for praying mantises because they will sit in front of a bee hive and snatch and eat honey bee after honey bee as they return from foraging. Spined soldier bugs have no reservations about making a meal of a lady beetle larva. Spiders will likewise consume other predators if they can be captured. Thus, we have to remember, nature is nature and often nature is brutal. If we are not careful, we can forget this fact and only think about the "good side" of nature when we are dealing with particular subjects such as beneficial insects.

For More Information:

University of Kentucky Critter Files - Tiger Beetles
http://www.uky.edu/Ag/CritterFiles/casefile/insects/beetles/tiger/tiger.htm

University of Kentucky Critter Files - Robber Flies
http://www.uky.edu/Ag/CritterFiles/casefile/insects/flies/robber/robber.htm

University of California Davis IPM Webpage
http://www.ipm.ucdavis.edu/PMG/NE/coccinella_septempunctata.html

University of Kentucky Critter Files - Praying Mantids
http://www.uky.edu/Ag/CritterFiles/casefile/insects/mantids/mantids.htm

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**Balsam Twig Aphid**

Curtis Young reported finding populations of aphids feeding on the new candles of WHITE SPRUCE (**Picea glauca**). After conferring with Dave Shetlar, the aphid was identified as a balsam twig aphid (**Mindarus** spp.). Balsam twig aphids are of greatest concern in Christmas tree plantations growing fir trees for sale, especially BALSAM (**Abies balsamea**) and FRASER FIRS (**A. fraseri**). The species that is most commonly cited as the cause of problems in production areas is **M. abietinus**. However, the species found on the white spruce may be one of the other **Mindarus** species found in North America. Potentially, since there might be more than one aphid that may be identified as the balsam twig aphid, it may explain why collectively their host range not only includes true firs, but also some spruce and junipers.

The **Mindarus** twig aphids produce copious amounts of honeydew which collects in little round balls often covered with the waxy, white flocculent produced by the aphids. The honeydew supports the growth of black sooty mold which can cover plant material below the feeding colony. The honeydew also attracts ants and bees. It was the accumulation of honeydew that caught Curtis’s attention. The new candles on the white spruces had an unusual silvery appearance to them due to the honeydew that remained suspended between the needles.

In fir trees grown for use as Christmas trees, the most important damage caused by the balsam twig aphid's feeding is the curling over and twisting of the new needles. This distortion of the needle remains in the growth and reduces the aesthetic value of the tree.

For More Information:
BYGLers also ran into a number of other insect pests this week including:

During this week’s BYGL CarmenConnect conference, Curtis Young wowed BYGLers with a great image of an EYED CLICK BEETLE (*Alaus oculatus*). This relatively large (1 1/2" long), black beetle is speckled with white to creamy white markings all over its body. Of course, their most striking feature are two, large false-eyes on top of the prothoracic shield just behind the head. The eye-like markings are responsible for the specific epithet, *oculatus*, which is Latin for "having eyes." Click beetles (family Elateridae) are so-named because of the audible "click" made by a bio-mechanism that allows these entomo-acrobats to flip into the air; a handy trick should a click beetle find itself flat on its back. Click beetle larvae are called "wireworms" because their long, thin, segmented worm-like bodies have hardened (sclerotized) exoskeletons making them look like wires. Some wireworms are serious pests feeding on the roots of a range of agricultural crops. However, eye-click beetle larvae are serious predators; they voraciously consume a range of insect pests including the larvae of wood borers. Adults apparently feed on nectar and are most often found in or around forests.

Ashley Kulhanek showed BYGLers an image of another fascinating denizen of Ohio forests: the GOLDEN-BACKED SNIPE FLY (*Chrysopilus thoracicus*). This is a beautiful fly and both the common and scientific names are highly descriptive. The top of the thorax (= the "back") is covered in highly reflective golden colored hairs; "*Chrysopilus*" means "golden hair." The fly’s body and wing veins are bluish-black and the abdomen has lateral white markings. Little appears to be known regarding the fly’s life-style. The adults have been observed visiting the flowers of a number of native plants, including elderberry, fueling the speculation that they are feeding on nectar and/or pollen. The larvae live in the soil where it is believed they consume decaying organic matter; however, some reports indicate they may also opportunistically feed as predators on soft bodied insects. Regardless, while the name "snipe" may invoke memories of night time summer camp expeditions to hunt for a mythical creature; daytime hikers in the woods of Ohio don't need to look far to see the real thing … wrapped in a golden fleece.

Windshield Wipes

BYGLers also ran into a number of other insect pests this week including:

During this week’s BYGL CarmenConnect conference, Curtis Young wowed BYGLers with a great image of an EYED CLICK BEETLE (*Alaus oculatus*). This relatively large (1 1/2" long), black beetle is speckled with white to creamy white markings all over its body. Of course, their most striking feature are two, large false-eyes on top of the prothoracic shield just behind the head. The eye-like markings are responsible for the specific epithet, *oculatus*, which is Latin for "having eyes." Click beetles (family Elateridae) are so-named because of the audible "click" made by a bio-mechanism that allows these entomo-acrobats to flip into the air; a handy trick should a click beetle find itself flat on its back. Click beetle larvae are called "wireworms" because their long, thin, segmented worm-like bodies have hardened (sclerotized) exoskeletons making them look like wires. Some wireworms are serious pests feeding on the roots of a range of agricultural crops. However, eye-click beetle larvae are serious predators; they voraciously consume a range of insect pests including the larvae of wood borers. Adults apparently feed on nectar and are most often found in or around forests.

Ohio Christmas Tree Manual Available on eStore

The Ohio Christmas Tree Producers Manual is an educational resource for landowners who are contemplating entering Christmas tree production and/or marketing business for the first time. It can also be a tool for experienced growers who wish to improve their cultural and marketing practices. Topics covered in this bulletin include marketing and business planning; soil basics; site layout and preparation; species and cultivars; planting; weed, pest and disease control; wildlife damage and management; and shearing.

Several BYGL writers have also played a key role in the authorship of The Ohio Christmas Tree Producers. Authors include: Joe Boggs, Jim Chatfield, Mike Hogan, Hannah Mathers, Kathy Smith, Dave Shetlar, and Curtis E. Young.

The bulletin also includes an outline of business operation issues to consider, such as permits, regulations, record keeping, taxes and insurance. This 100-page book includes diagrams, illustrations and color photos and is available for purchase on the website: [http://estore.osu-extension.org/productdetails.cfm?SKU=670NR](http://estore.osu-extension.org/productdetails.cfm?SKU=670NR). The cost of the publication is $47.50.

Calico Scale Crawlers

Calico scale (*Eulecanium aceris-rum*) eggs began hatching late last week in southwest Ohio. Egg hatch is predicted when the accumulated Growing Degree Days (GDD) reaches 748. Joe Boggs reported observing first instar nymphs (crawlers) on heavily infested honeylocusts, lacebark elms, and hawthorns. Double-sided sticky tape placed on the stems of infested trees is often recommended to monitor for scale egg hatch. However, Joe noted that while first instar calico scale crawlers are certainly tiny, the yellowish-tan, oval-shaped crawlers can be easily seen with an unaided eye as they crawl about on the stems.
The crawlers eventually migrate to the underside of leaves where they attach themselves to leaf midveins. The crawlers retain their yellowish-tan coloration, but at this stage they become somewhat flattened. The crawlers feed by inserting their piercing-sucking mouthparts into leaf vein phloem vessels. Like the adult females, the crawlers are also prolific producers of honeydew. The sugary, sticky liquid rains down upon infested tree branches, understory plants, sidewalks, parked cars, etc., and frequently becomes colonized by black sooty molds to create an unsightly mess. As fall approaches, the crawlers will move to stems where they overwinter.

Calico scale is a non-native "soft" scale which means mature scales are protected by a soft shell. Their common name is derived from the starkly contrasting calico pattern of black-and-white markings on the hemispherical-shaped shells of mature females. However, once eggs begin hatching, the shells quickly become reddish brown, then dark brown, and collapse like deflating balloons. Dead females may remain attached to stems for 1 - 2 seasons. Calico scale is parthenogenetic meaning there are no males. Crawlers arise from unfertilized eggs and each female may produce 3,500 - 4,500 eggs. Consequently, infestations can expand rapidly even though there is only one generation per season.

Calico scale can infest a wide variety of deciduous trees. Indeed, researchers at the University of Kentucky documented 16 host species in six plant families. Common landscape hosts include buckeye-horsechestnut, crabapple, cherry, dogwood, elm, hawthorn, honeylocust, magnolia, maple, redbud, sweetgum, witchhazel, and zelkova. As with many soft scales, calico scale seldom kills established hosts. However, the collective feeding activity of high populations of adults as well as crawlers can cause branch dieback and the stress associated with sap loss can make heavily infested trees more susceptible to opportunist pests such as tree borers.

Unlike many other soft scales, horticultural oil applications will have little effect on calico scale. Although more insecticide efficacy trials need to be conducted to provide better guidance on products that will consistently provide effective control, anecdotal accounts indicate that a bark applied or soil drench application of dinotefuran (e.g. Safari) made once all crawlers have settled onto leaves may suppress scale populations. Dave Shetlar also noted that foliar or trunk applied acetamiprid (TriStar) made using the application same timing may also reduce the scale population.

For More Information:
Penn State Extension FactSheet
http://extension.psu.edu/plants/green-industry/news/2013/calico-scale

**Fletcher Scale**

Although fletcher scale (*Parthenolecanium fletcheri*) is commonly associated with yews and arborvitae - it is sometimes called "arborvitae soft scale" - this parthenogenetic (no males) soft scale may also infest junipers, hemlock, cypress, and baldcypress. Indeed, several Extensioneers reported receiving samples over the past few weeks of baldcypress suffering from heavy Fletcher scale infestations.

Adult females are hemispherical-shaped to slightly elongate and range in color from yellowish brown to tan to dark reddish-brown. They are usually found clustered towards the ends of the stems of their host plants where they may be mistaken for buds by the casual observer. Their coloration and location may make them difficult to detect allowing infestations to become heavy. Fletcher scale looks very similar to a number of other soft scales including EUROPEAN FRUIT LECANUM (*Parthenolecanium corni*); however this scale is largely confined to deciduous trees while Fletcher scale infests conifers.

Fletcher scale has one generation per year and overwinters as second instar nymphs on stems. The nymphs begin feeding in the spring and rapidly mature into parthenogenetic females. Heavy honeydew production occurs during this time with the sticky liquid quickly becoming colonized by black sooty mold to give the inner stems and foliage of heavily infested trees an unsightly blackened appearance. Eggs hatch when the accumulated GDD reaches 730 and first instar nymphs (crawlers) immediately migrate towards the ends of branches to seek feeding sites where they insert their piercing-sucking mouthparts into phloem vessels. The yearly movement of crawlers towards the ends of branches explains why higher concentrations of this scale occur on the most recent growth.

As with other soft scales, the collective feeding activity of high populations of adults as well as crawlers can cause branch dieback and the stress associated with sap loss can make heavily infested trees more susceptible to opportunist pests. Fletcher scale is susceptible to horticultural oil applications made using the dormant rate against overwintering nymphs.
Topical applications of pyrethroid insecticides targeting settled crawlers in mid-summer have also proven to be effective although repeat applications may be necessary and these contact insecticides may also suppress beneficial insects important for providing natural control. Soil applied systemic insecticides (e.g. dinotefuran, imidacloprid) have also been shown to suppress settled crawlers and will have limited impact on beneficials. Of course, applicators must read and follow label directions for all insecticide applications including horticultural oils. Particular attention should always be given to warnings regarding potential damage to targeted plants.

For More Information:
Penn State Extension FactSheet
http://ento.psu.edu/extension/factsheets/letcher-scale

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**WeatherWatch**

**Weather Update**

The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from January 1 - June 4, 2014, with the exception of the soil temperatures which are readings from Wednesday, June 5, 2014 at 5:05 a.m.

Since our last BYGL conference call on Tuesday, May 27, 2014, some areas of the state have received rain, while nearby areas remained dry. The scattered storms that moved through Ohio brought inches of rain at one time - usually in a short period of time. Curtis Young reported that fields in his area looked like lakes because of the standing water as a result of the precipitation that fell quickly. Even though there was an overabundance of rainfall experienced in some areas, each of the weather stations highlighted as part of BYGL are reporting below average precipitation year-to-date totals.

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For More Information:
OARDC Weather Stations
http://www.oardc.ohio-state.edu/centernet/weather.htm

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**Growing Degree Days (GDD)**

GDD is a measure of the daily maximum and minimum temperature and directly relates to growth and development of plants and insects. The GDD of any zip code location in Ohio is estimated using the GDD of ten OARDC weather stations and available on the web at: [http://www.oardc.ohio-state.edu/gdd/].

The range of GDD accumulations in Ohio from north to south is 512 to 817. Following is a report of GDD for several locations around Ohio as of end of the day of June 4, 2014: Painesville, 512; Cleveland, 559; Toledo, 613; Canfield, 576; Findlay, 623; Van Wert, 636; Wooster, 611; Coshocton, 701; Columbus, 771; Springfield, 747; Dayton, 752; Cincinnati, 796; Ironton, 815; Portsmouth, 817; and Piketon, 808.

To put these GDD accumulations into perspective, the following is an abbreviated listing of plant and insect species with their respective phenological event and average GDD accumulations at which these events occur. Due to variations in weather, temperature, humidity, etc., these events may occur a few days earlier or later than predicted by the average GDD. By looking at a city, town, or village nearby on the above list, or visiting the above web site, one can see what is
approximately taking place in the landscape.

Smokebush, first bloom, 501; catawba rhododendron, full bloom, 503; white fringe tree, full bloom, 517; arrowwood viburnum, first bloom, 534; American yellowwood, first bloom, 546; bronze birch borer, adult emergence, 547; multiflora rose, first bloom, 548; black locust, full bloom, 548; emerald ash borer, adult emergence, 550; American holly, first bloom, 556; mountain laurel, first bloom, 565; potato leafhopper, adult arrival, 568; juniper scale, egg hatch, 571; common ninebark, full bloom, 596; American yellowwood, full bloom, 599; arrowwood viburnum, full bloom, 621; multiflora rose, full bloom, 643; northern catalpa, first bloom, 675; black vine weevil, first leaf notching due to adult feeding, 677; Washington hawthorn, full bloom, 731; calico scale, egg hatch, 748; greater peach tree borer, adult emergence, 775; rhododendron borer, adult emergence, 815; northern catalpa, full bloom, 816; and mountain laurel, full bloom, 822.

For More Information:
- Growing Degree Days and Phenology for Ohio
  http://www.oardc.ohio-state.edu/gdd/
- Understanding and Using Degree-Days
  http://ohioline.osu.edu/sc165/sc165_14.html

### Coming Attractions

#### Chainsaw Safety Workshops

As the emerald ash borer marches across Ohio, it has left millions of dead ash trees - and a cleanup challenge for land managers, foresters, and homeowners. That's why the Ohio Woodland Stewards Program is co-sponsoring two upcoming workshops on chainsaw safety with the Ohio Forestry Association (OFA). Dead ash trees often must be cut down for safety reasons, especially around homes and buildings or in public places. Both workshops meet at Ovalwood Hall on Ohio State University's Mansfield Campus, 1760 University Drive, Mansfield, Ohio.

- As a reminder for those who signed up for the first workshop, it is tomorrow! CSAW ("Chainsaw Safety Awareness That Works")-Custom, 8:00 a.m. to noon, June 6, 2014 covers basic chainsaw safety and operation. Participants will practice cutting an already downed tree. Registration is $50.

- The second workshop, CSAW-Level 1 Training, 8:00 a.m. - 5:00 p.m., June 20, 2014 takes an advanced look at chainsaw safety, felling techniques, and personal protective equipment. Participants will fell a tree while guided by an instructor. Registration is $100 for OFA members and $150 for non-members. The deadline to register is June 16, 2014. Details and a link to register are at http://go.osu.edu/hvZ.

#### Southwest Ohio BYGLive! Diagnostic Walk-about

The third 2014 Southwest Ohio BYGLive! Diagnostic Walk-About will be held on Monday, June 9, at the Stanley M. Rowe Arboretum, 4600 Morehouse Rd., Indian Hill, 45243. We will start at 12:00 pm. and walk-about with our host Chris Daeger looking at plants, plant pests, diseases, and other points of considerable interest until 3:00 pm.

This monthly hands-on training series for Green Industry professionals provides the following training credits: ISA Certified Arborist CEUs; ONLA OCNT credits, and Landscape Architecture Continuing Education System (LA CES) CEU's for Landscape Architects. Visit the following website for more information including registration information as well as driving directions: http://hamilton.osu.edu/topics/horticulture/byglive-diagnostic-walk-about

**August 27 - Pesticide Safety Training**

New Commercial Applicators and Training Servicepersons, August 27, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at http://pested.osu.edu

**September 24 - Pesticide Safety Training**

New Commercial Applicators and Training Servicepersons, September 24, 2014. Core and Trained Serviceperson trainings
are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at http://pested.osu.edu

Wood-Destroying Insect Inspection Training, October 8, 2014
Mandatory training is required for applicators becoming licensed in commercial Category 12. Recertification credit is available. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about this event, check out the PestED website at http://pested.osu.edu

Byglosophy

"So nat'ralists observe, a flea
Hath smaller fleas that on him prey;
And these have smaller fleas to bite 'em.
And so proceeds Ad infinitum." - Jonathan Swift

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