UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **June 19, 2020**

In This Issue...

IPMnet
Integrated Pest Management for Commercial Horticulture

extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems **(include location and insect stage)** found in the landscape or nursery to sklick@umd.edu

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Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
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Lots of Holes In Oak Leaves

By: Stanton Gill

We are receiving a lot of emails from arborists reporting that their customers have erratic shaped holes forming in the leaves, but no caterpillars have been detected. Joe Boggs of Ohio State University recently posted a note saying that they are seeing an unusually high number of cases of damage on oak foliage from an insect called the oak shothole leafminer (*Japanagromyza viridula).* In 2019, UMass Plant Diagnostic Laboratory received an increased number of samples. They commented that they were seeing a large increase in oaks with damage from this insect. We believe it may be responsible for a lot of the damage to oak foliage of which pictures are being sent into our CMREC lab.

The oak shothole leafminer is considered native to the United States, although very little is known about this species and other agromyzid leaf miners. To add to this one, an Asian species has been accidently introduced into the United States. They are found throughout the eastern U.S. from Maine to Georgia, and likely the entire eastern half of the United States. Based on samples submitted to the UMass Plant Diagnostic Laboratory, damage to individual trees from the shothole leafminer and anthracnose is severe in some cases.

Adult female flies feed on red and white oak buds just as they are opening and until the newly developing leaves are approximately 2" in length. The holes created in the leaves are no more than about 1 3/4" long. The adult fly's mouthparts are unable to pierce the newly developing leaf tissue. It uses its ovipositor to cause enough damage so any fluids leaking from the leaf can then be lapped up. The injured area turns brown and dries, eventually forming a small disk which often remains attached to the expanding hole in the leaf.

As the leaves grow in size, the damage from these flies enlarges, and the holes are described to be approximately six times the size of the original injury created by these tiny flies, which are themselves about 1/10" in length. Occasionally, the female fly will lay an egg in the leaf tissue.

Joe Boggs, OSU Extension, posted this note this week in Ohio: "The leafmining larvae (maggots) produce “blotch mines" by consuming interior leaf tissue between the upper and lower epidermis. This causes the upper and lower leaf surfaces to delaminate; a tell-tale symptom of leafmining activity."

Oak shothole leafminer damage on a tree in Ohio
Photo: Joe Boggs, OSU Extension

Active blotch mines are usually most evident in May. Once larvae complete their development, they leave their mines and drop to the soil where they pupate and spend the rest of the summer and the winter. There is one generation per season, so there will be no more flies to produce additional damage this season.

The good news the damage is probably not that detrimental to a mature tree. In a nursery it may impair sale of the tree to a customer. Joe Boggs reported an increase in the amount of dmage over the least 4 years. We have received in over 13 pictures of oaks with this damage, mainly on red oaks. The weather may have been ideal for this insect during 2020 spring season.


A close-up of an oak leaf with heavy damage from oak shothole leafminer
Photo: Submitted via a landscape company

Clearwing Moth Borer and Ambrosia Beetle Activity

By: Stanton Gill

My baited pheromone trap for clearwing moth borers (Sesiidae) continues to pull in large numbers of *Podosesia syringae*, called the lilac/ash borer this week. This borer attacks lilac and ash in Maryland. It has been reported in other states to attack sycamore, viburnum, willow, and fruit trees such as apricot, cherry, peach, and plum. Generally, we see male flight activity in May and a little into June, but with the cool weather they appear to be extending their flight time this year. Also, due to the cool weather, I have not pulled in any peachtree borers, *Synanthedon exitiosa*, yet. We will let you know what happens when it warms up a bit late, next week.

Ambrosia beetle counts continue to drop in our alcohol taps. On the Eastern Shore, Andrew Ristvey is also finding low counts in his trap. Brian Dahl at Pope Farm reports finding a lot of hits this week in the baited alcohol bolts. So, adult females are still drilling into trees this week.

Cherry Laurel and Scale Problem

By: Stanton Gill

We received a cherry laurel sample this week with what the grower thought was a scale insect. It was on dwarf cultivars of 'Otto Luyken' or 'Schipkaensis'. After he called and before the sample was submitted, I thought it would be just another sample of cherry laurel infested with white prunicola scale, which commonly infests cherry laurel. Before he sent a sample, he sent in a close-up photo. The picture was a little fuzzy and appeared to be raised up like a lecanium scale. I called him back and asked how many were on the leaves and he said it varied from two to up to 8 on a leaf, always on the underside of the foliage. Lecanium scale shows up on a lot of plants, so I thought we may have a problem that was new to me. I drove up to the nursery and took several samples and brought them back for examination under the dissecting scope. They were not scale and certainly not lecanium scale. I then sent the leaf samples to Karen Rane to see if the raised areas of plant tissue were caused by a foliar disease. She called back to say it was not disease. She then did a popular literature search and found an article by JC Chong on cherry laurels and the red glands that form on the undersides of the foliage that look a lot like a soft scale insect. The article pointed out that cherry laurels have 2-8 glands on the underside of the leaf blade base near the midrib. These swollen glands are red colored and raised giving the appearance of being abnormal, but this is part of the plant.

Now, horticulturists can have a good laugh at entomologists and pathologists who focus on insects and diseases and sometimes overlook plants with unusual characteristics as part of the plant structure.

These red glands form naturally on cherry laurel
Photos: Brad Schott, Schott's Nursery

Real Problems on Cherry Laurel

By: Stanton Gill

Many a time, I have asked nursery owners why they grow cherry laurel and the answer is "it sells really well". I have asked landscapers why they use this plant so much and the most common answer is "it is deer resistant". This plant is tolerant of alkaline soils, dry and poor soils, pollution, and heavy pruning. It is moderately tolerant to salt, but is intolerant of heavy fertilization. It has a rapid growth rate with competitive roots. This plant makes a good screen for shaded areas and can be severely pruned. This plant also works well as a specimen plant. So much for the good qualities.

A heavy population of white prunicola scale on *Prunus* 'Okame'
Photo: Marie Rojas, IPM Scout

This plant has viral and fungal disease problems, as well as insect problems. I will leave the leaf spot disease to David Clement and Karen Rane to discuss. It is attacked by peachtree borer (adults are not flying yet) and white prunicola scale is the biggest problem os which we receive samples every year.

At this time, we are now in the settled 1st instar stage of white prunicola scale. This is the 1st generation of the year and it is important to control it now before the 2nd and 3rd generations are active later this summer and fall when populations can build to highly damaging levels. The systemic Altus (Bayer Company) can be applied as a soil drench or Dinoteruan (Safari or Transtect). The insect growth regulators Talus and Distance work well at this stage of development. Do not wait on this scale, because it will continue to build up with each generation until the plant is covered and dying.

I will cover peachtree borer in later June when the adults of this insect start flying.

San Jose Scale

By: Stanton Gill

We are seeing an uptick in samples of an armored scale called the San Jose Scale, *Quadraspidiotus perniciosus* (Comstock). Don't be fooled by the common name – it is not originally from California or even from America. It originated in China but was introduced into Southern California back in the early 1870s on peach trees that were imported. By the 1890s, it had spread to all parts of the United States. It was transported on fruit trees being moved around by nurseries and uniformed horticulturists. In many nurseries, growers have started growing larger fruit trees to sell to customers who want full size fruit trees. With this influx of trees that are grafted, several are slipping through that have low populations of this armored scale on the trunk or branches. Several nurseries have submitted samples to our CMREC lab with branch samples loaded with female scales present on them.

San Jose scale overwinters as third instar females, and crawlers usually occur in late May in most years. In 2020, I did not see crawlers until last week on June 10. Many are now settled 1st instars. There is a second generation in July – August and a third one in September giving this scale plenty of chances to increase a population on plants in a single year. Control options are the same as mentioned for white prunicola scale.

Girdling Roots

By: Karen Rane

Jason Hipp, arborist with Deeply Rooted Tree Care, sent in photos of a declining Norway maple, and the series of photos tell the story. The photo of the entire tree shows the typical thinning crown of a declining tree, but you can also see that the trunk has no natural flare at the base. The bark is sloughing off of a section of the lower trunk (Figure 2) and there are a number of girdling roots at the base (Figure 3). The loss of bark could be related to a previous injury (this tree does not have a mulch ring around the trunk, so damage from mowers or string trimmers is a likely issue).

Figure 1. Declining Norway maple
Photo : J. Hipp

The best management for girdling roots is prevention. Proper planting is the key. Some girdling roots develop when containerized nursery stock outgrows the container and roots cannot spread. Bare root trees can develop girdling roots if they are "twisted" into a planting hole that is too small for the root system to be spread out at planting.

In some instances, small girdling roots can be removed, but extreme care is necessary to avoid damaging the trunk. The fine roots supported by the girdling root provide water and nutrients to the tree, so removal of more than one or 2 girdling roots would "disconnect" much of the tree's root system, causing additional stress. The basal wound and the significant dieback in this maple make it unlikely that the tree will recover its ornamental value, even if girdling roots are removed. Any tree with evidence of possible basal wood decay should be evaluated for hazard potential.

Figure 2. Loss of bark and dark discolored inner bark tissue at base of declining maple.
Photo: J. Hipp

Figure 3. Several girdling roots visible at the base of the trunk
Photo: J. Hipp

New Invasive Wasp Found In Colorado and Quebec

Whitney Cranshaw, Colrado State University, recently posted this note on an invasive wasp entering the United States: "Since we have a bit of a theme of invasive wasps, I would like to throw in one more to watch for, a new mud dauber *Sceliphron curvatum* https://bugguide.net/node/view/1711334. This is an insect that is presently broadly found in our state - on both sides of the Continental Divide. And from what I can tell the only places in North America where it is known to occur are Colorado and Quebec. Which doesn't seem right since normally all our invasive species dribble in from areas to the east (e.g., emerald ash borer, Japanese beetle) or west (e.g., elm seed bugs).

But it does attract a fair amount of attention, because it loves to nest in tracks/channels around windows. And the shape of the nest cells is very different from the black-and-yellow mud dauber, *Sceliphron caementarium*, since it makes separated individual nest cells, not a clump of cells. So perhaps it is being seen, but not always recognized, because the nest cells look more like what one gets from a potter wasp.

We have a gray literature fact sheet on this at: https://webdoc.agsci.colostate.edu/bspm/InsectInformation/FactSheets/AsianMudDauber.pdf with it being tentatively called the "Asian mud dauber" (not sure how the Common Names committee will go for that). Best I can tell it goes after smallish spiders that actively hunt on plants, like certain jumping spiders and longlegged sac spiders."

Gypsy Moths

Elaine Menegon, Good's Tree and Lawn Care, found gypsy moth damage on a blue spruce in Ephrata PA this week. The larvae in most areas are likely in the later instar stages so it is too late in the season to control them. Monitor the trunks of trees later in the season for egg masses which should be removed and destroyed if accessible.

This blue spruce was damaged by gypsy moth larvae feeding. Look for gypsy moth egg masses later in the season. Photo: Elaine Menegon, Good's Tree and Lawn Care

Sycamore Anthracnose in 2020

Phil Normandy, Brookside Gardens, sent an email regarding London plane trees and possible cultivar variation in relation to sycamore anthracnose infection:

"A banner year for this, as you know. I wanted to offer some observations regarding London Plane. We have 2 seedlings (yes, seedling) LPs next to my office. They were grown from Ellis Island trees as part of a Bartlett promotional item. They weren't as bad as sycamore, but were bad enough. We also have the cv. Yarwood here. Nearly completely untouched. It resembles the sycamore parent more than the other one, and has the advantage of forming white bark to the ground at a young age. And fast, like most of them.

Have you heard what the performance of other cvs. has been this year? Thinking, Columbia, Liberty, Exclamation (Morton Circle). I despise Bloodgood and think it should cease being grown as it is a hot mess by September, but I confess I don't know about its anthracnose performance. Perhaps some comparisons might be in order to list here?"

Is anyone seeing differences in the cultivars of London plane? Please let us know at sgill@umd.edu.

This Londonplane 'Yarwood' has had minimal infection by sycamore anthracnose this year Photo: Phil Normandy, Brookside Gardens

Cypress Twig Gall

Marie Rojas, IPM Scout, found cypress twig gall midge on *Taxodium distictum* in Gaithersburg this week. This gall is formed by a fly in the family Cedidomyidae. These galls seldom cause enough damage to warrant control. If the aesthetic appearance of the tree is an issue, then prune out the galls.

Cypress twig galls can look unsightly but rarely impact the overall health of the tree Photo: Marie Rojas, IPM Scout

Gloomy Scale

Marie Rojas, IPM Scout, reported that crawlers of gloomy scale were active on the trunks of *Acer rubrum* this week in Gaithersburg. This armored scale is commonly found on maples, but it is also reported on several other woody plants including dogwood, sweet gum, poplar, catalpa, black locust, willow, and grape. Talus or Distance applied at crawler stage should give control.

This red maple is heavily infested with gloomy scale - the scale blends in well with the bark

Bagworms

We continue to receive reports of bagworms hatching. Heather Zindash, IPM Scout, found them on white pine in Poolesville on June 15. Marie Rojas, IPM Scout, found them on *Platanus* 'Exclamation' in Gaithersburg on June 16. Check where you have infestations or susceptible plants such as arborvitae, spruce, and Leyland cypress. Bagworms are also found on deciduous trees and herbaceous plants, but the damage is usually less evident.

Control: It is best to control them while they are still small. Check to make sure eggs have hatched before making any treatments. Bt (Dipel, Caterpillar Attack), Spinosad (Conserve) or Acelepyrn will all give good control of young larvae.

Monitor plants such as white pine for bagworm hatch at this time of year
Photo: Heather Zindash, IPM Scout

Bagworms are also found on deciduous trees like this London planetree
Photo: Marie Rojas, IPM Scout

Lady Bird Beetles

Marie Rojas, IPM Scout, reported that she is seeing a lot of lady bird beetle activity this week. Activity of ther predators, such as wheel bugs and praying mantids, has also been reported recently. When monitoring for insect pests, also check for predators to help determine whether control measures are necessary.

This lady bird beetle larva is feeding on Japanese maple scale
Photo: Marie Rojas, IPM Scout

This lady bird beetle is laying eggs on a tuliptree leaf
Photo: Marie Rojas, IPM Scout

Introduced Pine Sawfly

Heather Zindash, IPM Scout, found introduced pine sawfly larvae feeding on white pine on June 15 in Poolesville. There are several generations in Maryland. Look for cocoons on needles, twigs, and bark of host trees and nearby trees.

Control: Monitor plants for predator activity. Spinosad and horticultural oil are several options if control is needed.

White pine is the preferred host of introduced pine sawflies
Photo: Heather Zindash, IPM Scout

Oriental Beetle, *Anomala orientalis* Order: Coleoptera; Family: Scarabaeidae
By: Paula Shrewsbury and Nancy Harding

The first adult oriental beetles of the season were observed earlier this week (6/14) in Bowie and Columbia landscapes feeding on perennial flowering plants. The average accumulated degree days (DD) in Bowie and Columbia on June 14th was **951 DD**. Oriental beetles are native to Asia and were first detected in the U.S. in CT in 1920. However, they did not appear to spread or become a pest problem until the 1970's. Its current distribution in the U.S. includes most of the eastern states extending west to Ohio.

Fig. 1 Adult oriental beetle. Note the diagnostic characteristics: mottled brown color pattern, clubbed antennae with the club sections spread apart, and the spines on the legs. Photo: P.M. Shrewsbury, UMD

Oriental beetles are in the same family as Japanese and other scarab beetles. Adults are similar in size and shape as Japanese beetle adults, about ½ inch long and are oval in top view, but their color pattern is different. Oriental beetle adults vary in color. Their color patterns range from solid black to metallic with black and brown markings on their wing covers, to almost a completely pale brown. They have clubbed antennae and the 3 segments of the "club" appear branched when the segments are spread out. It can be quite striking if you take a close look (Fig. 1). The eggs are small and spherical and laid in the soil. Oriental beetle immatures are white grubs and are almost identical to those of Japanese beetles, that is, C-shaped and creamy white grubs that grow to almost ¾ inch long (Fig. 2). However, they can be distinguished by the parallel rows of setae on the raster (hair pattern at the end of the abdomen) visible only with a hand lens.

**Fig. 2 Oriental beetle white grubs feed on the roots of plants like many other white grub species.
Photo by M.J. Raupp, UMD**

The adult Oriental beetle begins to emerge in mid-June (about 1-2 weeks before Japanese beetle adults emerge) and may continue to emerge into September. They feed and mate after emergence. Adult oriental beetles feed mainly on flowers and sometimes foliage of wide range of flowering perennial plants causing defoliation and some browning of flower petals (see images (Fig. 3 & 4) and click here to see a video of beetles feeding). Adult beetles feed on almost any flowering plant, but are particularly attracted to daisies, roses, hollyhock, phlox, and petunias. In most years, their feeding damage is not extensive enough to warrant control measures. After mating, females burrow 2 to 4 inches into the soil and lay eggs. Females prefer well-watered and irrigated soils, although dryer sites may also be infested. Eggs cannot develop in extremely dry soil. White grubs have 3 instars and feed in the top few inches of soil on roots of turf grass as well as dead organic matter. If populations are high enough, feeding can result in drought stress and death of grass.

Control: Feeding by adult oriental beetles is usually not significant enough to warrant control. Sometimes, the white grub's appetite for the roots of annual and perennial grasses as well as fully grown nursery stock and even containerized plants can sometimes cause serious damage. To control oriental beetle grubs, apply an insecticide labeled for turf or ornamental plants.

For additional information go to: https://content.ces.ncsu.edu/oriental-beetle

and

http://bugoftheweek.com/blog/2019/6/10/blossom-busters-oriental-beetle-anomala-orientalis

Fig. 3 Feeding damage (holes and brown spots) on the flowers of coneflower by adult oriental beetles. Photo by P.M. Shrewsbury, UMD

Fig 4. Feeding damage (defoliation) on the foliage of coneflower by adult oriental beetles. Photo by P.M. Shrewsbury, UMD

Four-lined Plant Bug

David Keane found four-lined plant bugs and damage on elderberry and peppers in Frederick this week. This plant bug has only one generation per year early in the season. These plants bugs are finishing up their feeding activity for the season. They have a wide woody and herbaceous plant host range.

Four-lined plant bugs are finishing up their feeding activity for the season Photo: David Keane

Clematis Blight

By David L. Clement

Clematis die-back and blight is caused by *Phoma clematidina* (formerly *Aschochyta*). The first symptoms are leaf spots that progress into the stem tissue causing girdling. The stems wilt and die which also gives this disease the common name of clematis wilt. In landscapes, the infection can often occur near the base of the plant. Prune and remove dying stems and prune for better air circulation. Clematis cultivars in the viticella group are more resistant.

Clematis blight causes stems to wilt and die
Photo: David Clement

Exobasidium Galls on Azalea

Michael McWilliams, Maxalea, Inc., found exobasium galls on azaleas in Timonium on June 14. We have been receiving reports of these galls periodically this spring. For more information see Karen Rane's article on these galls in the May 29, 2020 IPM Report.

Exobasidium galls do not impact the overall health of the plant so control is usually not necessary
Photo: Michael McWilliams, Maxalea, Inc.

Japanese Beetle Adults

We received our first report of a Japanese beetle adult. Ginny Rosenkranz found one on corn in Salisbury on June 17.

Adult activity of Japanese beetles is getting started now
Photo: Ginny Rosenkranz

Boxwood Spider Mites

Mark Schlossberg, ProLawn Plus, Inc., found boxwood spider mites active on plants in Owings Mills on June 17. There are several generations a year. Boxwood spider mites prefer European, common, and English boxwoods. Mite feeding causes a yellow stippling or streaking appearance on leaves. In heavy infestations, entire leaves may turn mostly yellowish white and drop prematurely.

Control: Control light summer infestations with a 1 to 2% insecticidal oil or soap sprays. For heavy infestations, use residual or foliar absorbed miticides. Reduced risk miticides including bifenazate (Floramite), spirotetramat (Kontos), and spiromesifen (Forbid) are labeled against mites.

Tapping foliage over a piece of white paper is an effective way to monitor for boxwood spider mites
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Guttation on Crape Myrtle

Marty Adams, Bartlett Tree Experts, sent in a photo of guttation on crape myrtle. Sap oozed out of the leaves and crystallized. Guttation usually occurs when humidity and soil moisture are at high levels. It is often noticed early in the morning.

The white 'blobs' at the leaf tips are crystallized sap that oozed out of the leaves most likely when moisture levels were high
Photo: Marty Adams, Bartlett Tree Experts

Cuckoo Wasp

Nancy Woods, MNCPPC, spotted a cuckoo wasp this week. Female cuckoo wasps lay their eggs in the nests of other wasp and bee species. The cuckoo wasp larvae feed on the egg or larvae of the host species or the food stored in the nest.

This brightly colored cuckoo wasp feeds on other wasp and bee species
Photo: Nancy Woods, MNCPPC

Beneficial of the Week

By: Paula Shrewsbury

Carolina mantids are hatching from their ootheca (egg case) this week

This week Steve Black (Raemelton Farm) sent pictures of **Carolina mantids** hatching from their overwintering ootheca (egg case) at his nursery (see image). This is a very exciting biological event so be sure to search plants in hopes of observing mantids hatching. Mantids are in the order Mantodea, which contains over 2,400 species from 15 families. That is a lot of mantid diversity! Phylogenetically, praying mantids are closely related to cockroaches and termites. It is hard to think that mantids and roaches are related! In Maryland there are 3 species of praying mantids that are common. They are the Carolina (*Stagmomantis carolina*), a native species of mantid that ranges from NJ south to FL and west to AZ; the Chinese (*Tenodera aridifolia sinensis*) which was imported into PA in the 1800's; and the European (*Mantis religiosa*), another exotic mantid that was first detected in NY and is now widespread east of the Miss. and north to Canada.

This week I want to focus on the native Carolina mantid. My graduate student, Maddie Potter, and I are conducting a study where we are searching ornamental plants for egg cases of insects. This past week at Raemelton Farm we have found numerous ootheca of Carolina mantids (see images) on several different tree species. The ootheca is a styrofoam-like structure deposited by the female mantis in the fall on a branch or trunk of a tree. All of the Carolina mantid ootheca we found have been on the trunks of trees where they camouflage quite well. Mantids overwinter in this oothecal structure. Within the Carolina ootheca there may be 50 to 200 eggs. Now that warmer weather is here and prey are abundant, the mantids are hatching out of their ootheca (click here to see a video of mantids hatching, by M.J. Raupp, UMD). Baby Carolina mantids emerge

An ootheca (egg case; ~ 1–1.5" long) of the native Carolina praying mantid on the trunk of an ornamental cherry tree found about a week ago. This is an unhatched ootheca, but note there are several "holes" in the ootheca indicating that parasitoids of mantids have emerged from the ootheca.
Photo: P.M. Shrewsbury, UMD

An ootheca (egg case) of the native Carolina praying mantid on the trunk of a tree found yesterday in Adamstown, MD. Baby mantids have just emerged from this ootheca. Note the small (<1") mantid on the tree trunk and the whitish-tan matter that is present on the ootheca after the mantids hatch out.
Photo: Steve Black, Raemelton Farm, Adamstown, MD

from the ootheca (see image) and begin to search for food. Most mantids are sit-and-wait or ambush predators. They sit very still on a branch, often camouflaged by their color, and will move with lightning speed reaching out and grabbing prey, who unknowingly wonder too close, with their spiked raptorial legs. Adult females are about 2–2.5" long and have non-functional (cannot fly) wings that cover ¾ of their body (see image). Adult males are slightly small and have functionel wings that cover their entire abdomen. Mantids have very good vision, important for locating prey. They have 2 large compound eyes each made up of 10,000 ommatidia. The front of eye, known as the fovea, have the greatest visual acuity and provides resolution needed to identify potential prey. The periphery or edges of eye perceive motion. If you watch a mantid you will see it rapidly move its head as it track a prey item to keep it in its optimal line of vision. Mantids are generalist predators and eat many types of prey items. Young or small mantids eat small flies, crickets, and sometimes each other (part of the circle of life). Large mantids capture and eat other large insects that are pests of gardens, but they sometimes eat beneficial insects including pollinators such as bees, butterflies, flies, beetles and, yes, there are accounts of them capturing and eating humming birds, in addition to lizards and frogs. Mantids have predators of their own (birds, bats, lizards, frogs, and more) and very diverse methods to avoid being eaten. Many species of mantids have evolved an organ to detect sound, an ear so to speak, on the underside of their thorax. Mantids use this ear to detect ultrasonic "chirps" emitted by hunting bats. When a night flying mantid detects the signals of a hungry bat, it evades the bat by quickly diving to the ground. Most mantid species are cryptically colored providing camouflage in their preferred habitat. For example, flower mantids mimic flowers and catch pollinators who come to feed on nectar and pollen. Very tricky! Ghost mantids mimic dried leaves. Many mantids, like stick insects, have a "rocking" behavior which mimics the movement of vegetation in the breeze.

An adult of the native Carolina praying mantid that will be present later in the season. Adult females are 2-2.5" long.
Photo by M.J. Raupp, UMD

Although mantids can be voracious predators they are not particularly known for being good biological controls against pest insects. This is due to their diverse diet that includes non-pest insects. However, a landscape that has mantids in it is usually considered to be a "healthy" ecosystem.

Weed of the Week

By: Chuck Schuster

Common yarrow, *Achillea millefolium*, is a perennial weed that can be found throughout most of the United States. Common yarrow has a fibrous root system and reproduces by way of rhizomes and seed. Stems will reach a height of twenty-four inches in unmanaged areas, with finely divided fern-like leaves, which will be covered with hairs (photo 1). The stems are unbranched and have grayish green to white hairs. The basal leaves will be attached with a petiole. The leaves on the stem are attached to the stem without petioles. Leaves on the stem will be up to six inches in length and one inch wide. The seedling will develop into a distinct rosette with hairs that will be found lying flat against the leaf surface. Flowers are white or pink in color, with five to ten rays and a yellow disk center on the top of the stem in flower clusters. The flowers occur in flat-topped clusters and each flower will be one eight to one quarter inch in diameter. This weed prefers sites with poor fertility with shallow soils. Maintaining fertility and a dense turf stand is a useful cultural method of preventing this weed from becoming established or becoming a problem. Some may try to think this plant is poison hemlock, but they are different. Notice the different leaf structure in photo 3 which is poison hemlock. The flowers on poison hemlock are true umbel flowers (photo 4). Yarrow is also a smaller plant, growing about 2-3 feet in size, whereas hemlock can grow to heights of 5-8 feet in height.

Control of common yarrow in turf can be achieved using one of several post emergent products. A tank mix of 2, 4-D with triclopyr or dicamba works well, triclopyr alone will control it also. Fiesta can be used to limit this plants growth in turf. *Please be aware that the June 3, 2020 court rulings on some dicamba products does not change the registration on products used in turf care.* This weed will take more than one application to control. In landscape settings glyphosate is very effective. Prizefighter will control this plant but will require several applications as it is a perennial.

Photo 1

Photo 2

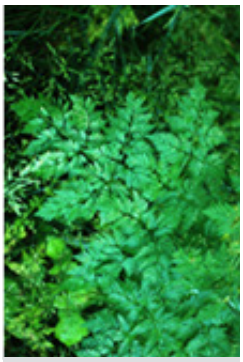


Photo 3

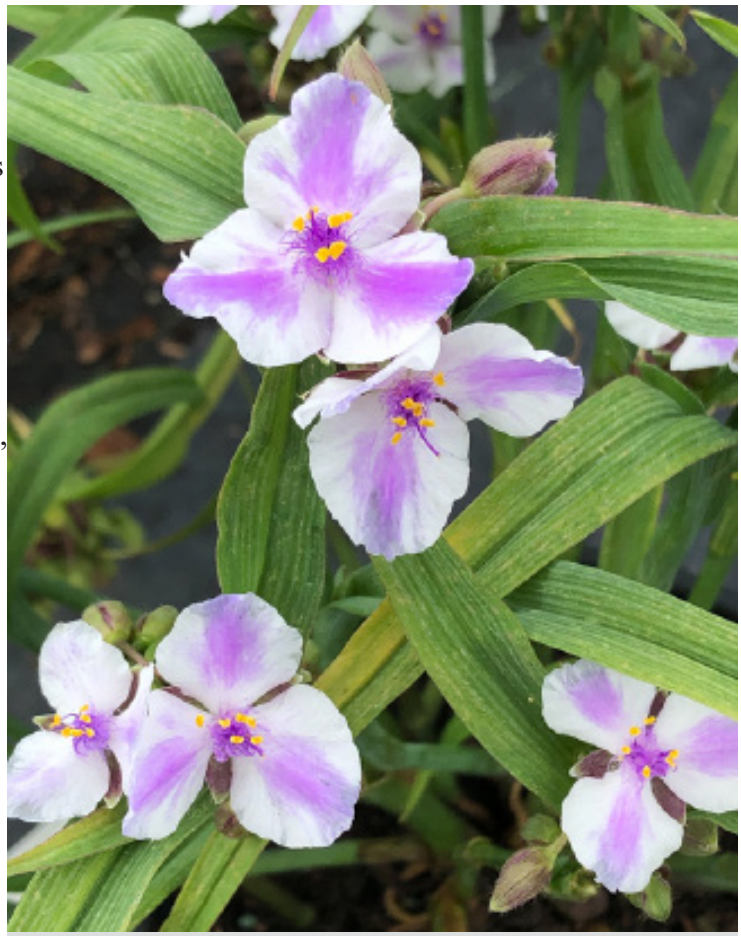
Photo 4

Photos: Chuck Schuster, UME-Retired

Plant of the Week

By: Ginny Rosenkranz

Tradescantia x *andersoniana* 'Bilbury Ice' is a native herbaceous perennial that has a fun common name of spiderwort. According to one source, the plants are so named because if the stems are cut, a thread-like secretion is released that when dry looks like a spider's web. The other common name of widow's tears is due to the way that as the flowers fade they become almost translucent. 'Bilbury Ice' is a new cultivar that is more compact, growing 18 – 20 inches high and wide, and is said to be more drought tolerant than the species. The foliage of this monocot is long and thin, about 16 inches long and has a tendency to die back after bloom, so don't be afraid to trim it back after flowering. It will come back with clean foliage later in the summer. Plants are cold tolerant in USDA zones 5- 9 and prefer to grow in full sun to partial shade and moist well drained soil. The flowers last for just one day, but with so many buds, the plant seems to be in constant bloom for up to 8 weeks starting in May through June and into July. The 3-petaled flowers of 'Bilbury Ice' create a triangle of pure white blossoms with a central splash of bright lavender, lavender sepals and bright yellow anthers. Flowers are self-cleaning so deadheading is not needed. No disease or insect pests were listed, just the sad looking foliage after the plants spend so much energy blooming.



Tradescantia 'Bilbury Ice' isa compact cultivar that grows to 18-20 inches
Photo: Ginny Rosenkranz

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (DD) this week range from about **797 DD** (Aberdeen) to **1209 DD** (Reagan National). The Pest Predictive Calendar tells us when susceptible stages of pest insects are active based on their DD. Therefore, this week you should be monitoring for the following pests. The estimated start degree days of the targeted life stage are in parentheses.

- Calico scale – egg hatch (714 DD)
- Oak lecanium scale – egg hatch (789 DD)
- Japanese maple scale – egg hatch 1st gen (829 DD)
- European elm scale – egg hatch (831DD)
- European fruit lecanium scale – egg hatch (940 DD)
- Mimosa webworm – egg hatch 1st gen (1002 DD)
- Japanese beetle – adult emergence (1056 DD)
- Fletcher scale – egg hatch (1105 DD)
- Indian wax scale – egg hatch (1145 DD)
- Cryptomeria scale – egg hatch 1st gen (1190 DD)
- Cottony maple scale – egg hatch (1194 DD)

See the Pest Predictive Calendar for more information on DD and plant phenological indicators (PPI) to help you better monitor and manage pests.

Degree Days (as of June 17)

Aberdeen (KAPG)	797
Annapolis Naval Academy (KNAK)	956
Baltimore, MD (KBWI)	1036
Bowie, MD	1100
College Park (KCGS)	978
Dulles Airport (KIAD)	989
Frederick (KFDK)	964
Ft. Belvoir, VA (KDA)	1063
Gaithersburg (KGAI)	909
Greater Cumberland Reg (KCBE)	798
Martinsburg, WV (KMRB)	832
Natl Arboretum/Reagan Natl (KDCA)	1209
Salisbury/Ocean City (KSBY)	1043
St. Mary's City (Patuxent NRB KNHK)	1163
Westminster (KDMW)	987

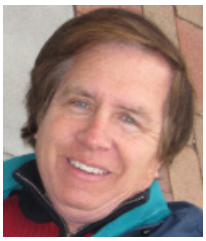
Important Note: We are using the Online Phenology and Degree-Day Models site. Use the following information to calculate GDD for your site: Select your location from the map Model Category: All models Select Degree-day calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

Climate and Sustainability Webinars, 2020
Dr. Sara Via, Professor & Climate Extension Specialist, University of Maryland, College Park
Every other Wednesday, June 17 – Aug. 26, 3:30pm

June 17, 2020 Healthy soil: What is it and why is it the basis of regenerative agriculture, gardening and landscaping?
July 1, 2020 Regenerative gardening: Successful and sustainable climate victory gardens
July 15, 2020 Regenerative landscaping
July 29, 2020 What can the pandemic teach us about being (un)prepared for climate change and other global disasters?
Aug. 12, 2020 The power of individual choice: what can individuals do to combat climate change and how much difference will it make?
Aug. 26, 2020 Climate change is bad for your health

See the brochure for more information and a link to register.

CONTRIBUTORS:



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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.