Trumpet Vine

Knowledge for the Community From Loudoun County Extension Master Gardeners

Spring 2021

Volume XVII, Issue 2 www.loudouncountymastergardeners.org

LOUDOUN COUNTY EXTENSION MASTER GARDENER LECTURE SERIES

FREE AND OPEN TO THE PUBLIC, 7 P.M. VIRTUAL. See CALENDAR FOR LINK.

APRIL 1, WHY SAVE SEEDS? A VIRTUAL TALK BY VCE LOUDOUN MASTER GARDENERS, HOSTED BY RUST LIBRARY.

JUNE 3, CULINARY HERBS, PEGGY RICCIO, GARDEN WRITER, SPEAKER, AND BLOGGER.

AUGUST 5, BULBS AS COMPANION PLANTS, BECKY HEATH, BRENT AND BECKY'S BULBS.

OCTOBER 7, PUTTING THE GARDEN TO BED, NORMALEE MARTIN, MASTER GARDENER.

DECEMBER 2, WINTER DECORATIONS AT COLONIAL WILLIAMSBURG.

For more information, visit our website at loudouncountymastergardeners.org.

Visit us on Facebook: Extension Master Gardeners of Loudoun County, Virginia.

Those Annual Spring Weeds

Early spring, when the soil is moist and soft, is an ideal time to identify and possibly remove weeds. It's the best time to pull up those non-native plants that have escaped from beds—Japanese pachysandra, vinca, English ivy. These have got to go. But some annual spring weeds you may choose to ignore; they are at the end of their life cycle. They are emerging, blooming, and will die off in late spring. They can't survive hot, dry weather. So it's up to you to decide whether to battle these weeds or to coexist with them. If you choose to battle any of these, do it now. The key is to keep them from going to seed. Mow, pull, or dig--anything to keep the flowers from maturing and producing thousands of seeds.

Hairy Bittercress.

Common Chickweed.

Speedwell (*Veronica* spp).

Speedwell is a small lawn weed, the flower is pretty, and I have not seen it grow in quantity. Common chickweed is a good early pollinator for bees, chickens love to eat it, and you can eat it too. While not notably flavorful, it is full of vitamins and nutrients. It can be eaten raw in salads or cooked.

Hairy bittercress is my nemesis. It starts out as a cute little rosette in late winter, but soon it shoots up to nine inches with explosive seedpods. Hand pulling is not successful because of deep tap roots. So, either dig or mow frequently to keep the flowers from going to seed. Good luck!

Loudoun County Master Gardeners Association

Spring Plant Sale Update

Historically, our plant sale has taken place at the Leesburg Flower and Garden Festival held each year in April. While the festival will be held this year, its capacity is greatly reduced. Therefore, we are taking the main plant portion of our fundraiser to an online sale from April 17 through May 7, with a plant and merchandise pickup event on May 8, 2021. We will still be attending the Leesburg Flower & Garden Festival.

Leesburg Flower and Garden Festival

- Little Lovely containers and native plants for sale.
- Merchandise and gently used garden books for sale.
- Garden Clinic to answer all your garden questions.
- Preorder of tomato, pepper, and herb plants with the help of one of our Extension Master Gardeners.

Plant Pickup Scheduled for May 8 (Time TBD)

- Preorder your tomato, pepper, and herb plants, along with a selection of merchandise and canna lilies, online prior to the event date. *www.loudouncountymastergardeners.org*.
- The sale will open via a link on our website on **April 17.**
- Our Extension Master Gardeners will put your order together for pickup.
- The pickup event will be held at the Virginia Cooperative Extension parking lot.
    - 750 Miller Drive SE, Leesburg, VA 20175 (across from the Leesburg airport).
- Drive up and we will load your order into your vehicle.

Tomatoes, Peppers, and Herbs We Are Planning to Sell (subject to change!)

Tomatoes	Peppers	Herbs
Ultimate Opener	Golden California Wonder	Genovese Basil
Big Beef	Red Beauty	African Blue Basil
Brandywine	New Ace Hybrid	Greek Columnar Basil
Cherokee Purple	Shishito	Basil Mini Purple
Uncle Joe's	Jimmy Nardello	Italian Flat Parsley
Patio	Poblano	Rosemary ARP
Patio Bush Beefsteak	Fish	Thyme Archers Gold
Sweet 100	Jalapeno–-La Bomba	Golden Variegated Thyme
Sungold	Thai Dragon	
Speckled Roman		
Gladiator		
Juliet		

This plan is subject to continual evolution. Our goal is to get your vegetable plants to you as safely and efficiently as we can so that you can get them into your gardens! Thank you for your support. By purchasing from us, you help our Extension Master Gardeners continue to provide environmental stewardship education and information to Loudoun County homeowners.

Katie Conaway, Loudoun County Extension Master Gardener

Spring Lawn Maintenance

Witch hazel, harbinger of spring. Photo J. Sanchez.

Is spring really around the corner? Sometimes it doesn't feel like it. We are coming off a record cold February, and March weather can be windy, cold, and even bring snow. But there are signs of life. You might notice forsythia sporting the first yellow flowers that will soon be spectacular or other hearty plants pushing through early green shoots, and you might even see the yellows and reds of witch hazels in bloom against a snowy backdrop. Oh, we know it won't be long before warmth and sunlight make us turn our faces skyward and smile.

Well, here we are looking forward to spring and all the possibilities in the growing season. So many are planning vegetable gardens and landscaping, contemplating what can survive in sun or shade or attract pollinators to keep everything thriving. Then there are others out in the yard, head tilted to one side, hand under chin, surveying the large green sections of their own domains. Yes, the sections that will involve mowing and edging, the sound of power machinery signaling that this homeowner cares, that this homeowner will be rewarded with a yard that looks *good*. Let's face it, when the lawn looks good, all the beds, shrubs, and trees go from pretty nice to *showcased*! And it's not just a pretty green face; a thick healthy lawn holds nutrients in the soil, resists weeds, and slows water runoff.

Although every homeowner wants a great looking lawn, the end state can be a bit elusive given that most residents live in developments where all the good topsoil was removed during the neighborhood's construction and they really don't know what their particular lawn needs. So many go to the store and put their trust in lawn product companies that tell them to buy more stuff and put more stuff on their lawns throughout the year. This doesn't help your lawn or your wallet, and it is likely polluting the environment.

So, what is a homeowner to do? I mean spring is almost here, so we have to start doing stuff, right? Yes, by all means, let's do stuff, but do the right stuff. The lawn requirements of every yard are unique due to soil conditions, shading, various levels of care over the years, and other factors. A great first step is to turn to your local Virginia Cooperative Extension (VCE) office for a lawn evaluation. The Master Gardeners will analyze your lawn's condition and provide you a plan that will remove the guess work, helping you achieve a healthy lawn that will look great, save you money, stand up to the harsh summer months, *look great*, prevent the leaching of excess nutrients into our waterways (which is the result of applying excess products), and, if I haven't mentioned it, ***look great***!

What does the evaluation entail? The Master Gardeners will measure your lawn space, take soil samples to send to Virginia Tech for analysis, evaluate shade, sun, weeds, and problem areas. In the end, the homeowner receives a full report based on Virginia Tech research telling him or her in plain English whether or not to add lime (since lawns only need lime when their soil pH levels are too low) and how much, exactly what type of fertilizer to use and how much, how to deal with weeds, how much lawn compost to use, when to aerate, recommended grass seed, mowing heights, etc. They can even tell you how much and how often to water so you (or you kids who *never* complain about house chores) can spend less time on watering and have more time to do other things. The report is easy to use and provides the homeowner a schedule for the whole year

specifying exactly when and how much right stuff to apply. And, if the Master Gardeners note other issues during their visit, the report will address those as well.

So, what sort of things should we do in the spring? Good news, the to-do list is fairly short. Spring is about weed control. For cool season grasses like fescues and bluegrasses, which most homeowners in this area have, spring is the time for defense (this discussion is oriented to cool season grasses, though if you have warm season grass, your local Master Gardeners are ready to help you with that as well). Yes, it's the time to focus on weeds. In early spring when forsythia is in bloom (early March) you should apply a pre-emergent for crab grass if it has been present in your lawn or is present in the surrounding area. Later, control broadleaf weeds and other grass-like weeds while they are actively growing. Consider that broadleaf weed control is best conducted in the fall and in early spring on a warm day before those weeds come into bloom, and some weeds require repeat applications at specified intervals. Remember that weed killers are herbicides, which can be harmful if applied in excess, so please use the right product for the right purpose and follow the directions carefully. Try to avoid weed-"and feed" products if you do not know your fertilizer requirements. Also, combined weed-and-feed makes it hard to determine how much fertilizer you're putting down by weight if it's all mixed together, so we recommend using separate weed products and fertilizer products. Here is a podcast about spring weed control: https://vtechworks.lib.vt.edu/handle/10919/61122.

Repair winter damage. Photo J. Sanchez.

What about fertilizer? There is a limited amount you could apply beginning in May (this application is even optional). The major part of fertilization should be done according to your soil analysis, and for cool season grasses that means fall, because fall is when cool season varieties grow best. This strategy definitely goes against big box marketing, since it is based on science and not on sales. For established lawns, please do not go out and buy 10-10-10 fertilizer (readily available in this area) unless your soil analysis tells you this is what you need. The three numbers found on every fertilizer bag are a rating that represents the ratio of nitrogen, phosphorous, and potassium in that order. If you apply too much of any component, and it cannot be absorbed by your turf because it's not needed, then excess nutrients will find their way into our waterways as pollutants. Therefore, it's important to use just the right amount of the right type of fertilizer for your particular situation. Check the Virginia Tech Extension's Turf and Garden Tips website https://vtechworks.lib.vt.edu/discover?scope=%2F&query=Extension%E2%80%99s+Turf+and+Garden+Tips+website&submit= .

To seed or not to seed? In general, if you have cool season grass like fescue, spring is not, I repeat not, a good time to overseed. Let's say you go ahead and put seed down. As temperatures warm and you've watered consistently, you find that your little seedlings are brightly colored and look great through the spring. Then summer hits us with those really hot temperatures that get the weather analysts talking and send us into the comfort of air conditioning. Although you've watered consistently, that newly planted grass doesn't last and eventually dies out, encouraging weeds to fill in. This is because new spring grass will generally not have enough time to develop strong root systems or sufficient food stores to withstand the very hot summer weather that

arrives all too quickly. The optimal time to overseed is in the fall; warm temperatures help germinate the seed and the following cooler climate helps build healthy root systems in our "cool season" grasses before winter hits. Here is a link to a publication on Spring and Summer Lawn Management Considerations: https://vtechworks.lib.vt.edu/handle/10919/48345.

However, if you simply cannot resist the urge to overseed in the spring, please pay special attention to seed type, timing, and selection of weed killers you might apply so as not to harm the seed you want to grow.

Mowing. In brief, don't mow your grass too short. Mow at a height of three to four inches. Longer grass blades absorb optimal levels of nutrients from sunlight during photosynthesis. Longer grass blades reduce weeds by denying them sunlight. Longer grass blades slow water runoff, giving it more time to absorb into the soil where it's needed; yes, it's ok to horde rainfall. Sharpen your mower blades every year and don't mow more than 1/3 of the blade height at a time. If possible, leave mulched grass clippings where they fall to decompose and add nutrients to the soil, but remove large clumps of clippings.

Your VCE office stands ready to provide you the best lawn advice based on Virginia Tech research. Please visit our website for links to a wide range of science-based articles to address your specific questions or contact us directly. Remember, whether you want a great lawn for your own personal satisfaction, to maintain the health of our environment, to spark the envy of your neighbors, or for all the above reasons, we're here to help. Here is a link to information on the Healthy Virginia Lawns program and how to sign up: http://loudouncountymastergardeners.org/programs/healthy-virginia-lawns/.

I hope this information helps you to understand that spring is a great time to get a soil test and that your spring lawn chores are minimal. You can use the extra free time for other activities. Later in the fall you can pull out the tools, do the more extensive fall lawn prep, and then stand with your hands on your hips to survey your awesome handiwork knowing that the following spring your lawn will impress the neighbors!

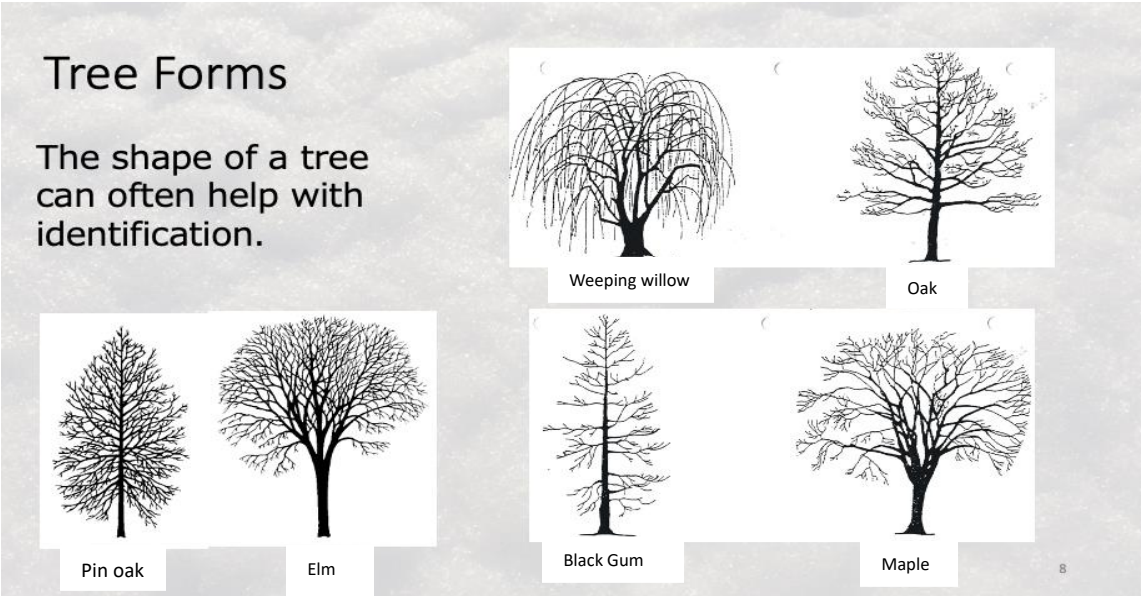
Joseph Sanchez, Loudoun County Extension Master Gardener, Healthy Virginia Lawns Program

Strategies for Identifying Trees

Identifying trees takes experience and patience. Many of us rely primarily on leaves for identification, but leaves aren't always available or reliable. Trees may be too tall to allow close examination of leaves, the leaves may be absent, unremarkable, or they may not match the picture in your tree guide. Leaves are highly variable, even leaves on the same tree. It's best to use a variety of factors to identify the species of a tree. If a tree has grown naturally in a spot rather than having been planted, consider the location—high or low, wet or dry, coastal, piedmont, or mountainous. Consider the form (shape), branching patterns, fruit/nuts/seeds, and the bark. Looking at all aspects of the tree will allow you to make the best identification. Tools that are useful when looking for identification hints are a hand lens (10X), binoculars, a ruler, and your favorite field guide.

Habitat can range from rocky areas to open lands, to woodlands, and to wetlands. Factors to consider would be the type of soil, how much water is available, temperature range, and the amount of sunlight that the tree receives. Sunlight greatly affects the size of leaves. Seedlings and young trees on the floor of the forest have very large leaves.

Tree shape and size cannot be solely used for accurate identification. However, there are a number of tree shapes that are quite identifiable. The tree forms shown below are common shapes noted in our environment.

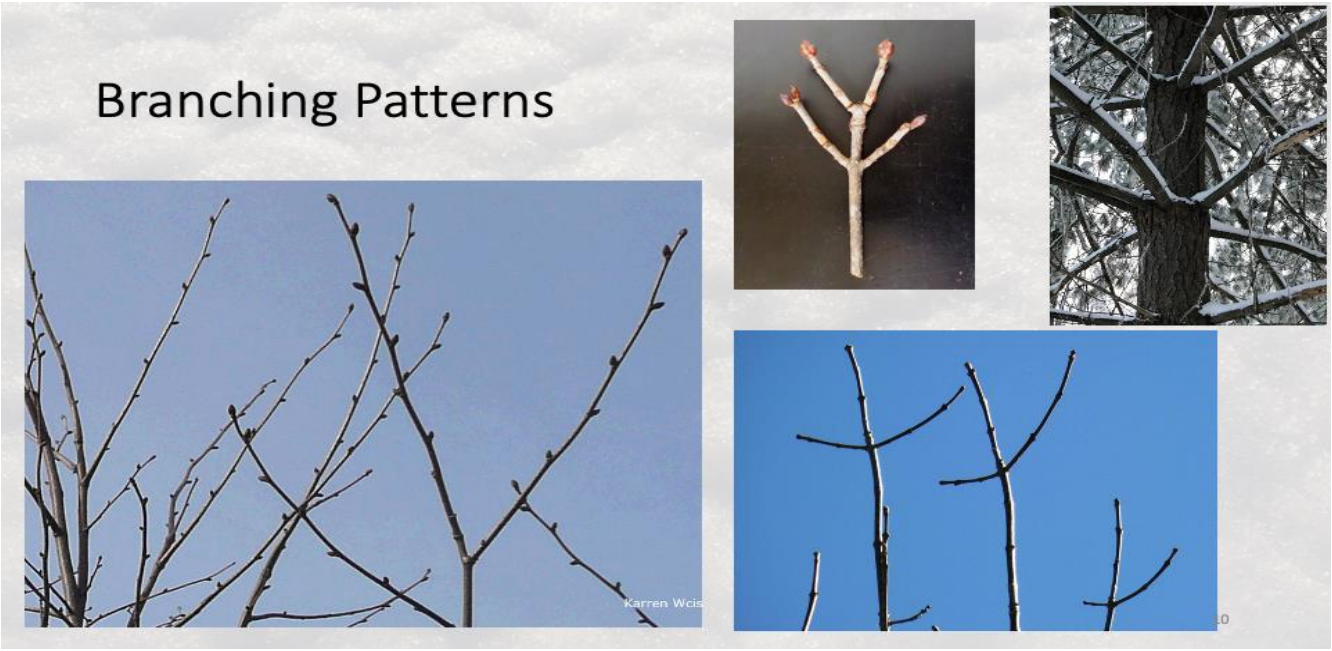


Courtesy of Charlottesville Tree Stewards.

Form is best associated with straight species trees growing in the wild. Many ornamental cultivars display a variety of forms such as weeping cherries, weeping maples, and even weeping hollies. Varieties of columnar maples and beeches can be found, so don't rely on form alone.

Branching patterns help identify trees year-round. Branching takes many forms including alternate branching patterns, opposite branching patterns, and a whorled branching pattern. Start at the outer edges of the tree--where the newest growth can be found and the environment has not affected the tree--to identify the branching pattern. A tree can lose an opposite branch and

appear alternate. Examples of opposite branching patterns are maples (Aceraceae); ash (Oleaceae), which includes lilac and forsythia; dogwood (Cornaceae) except for alternate leaf dogwood; Caprifoliaceae, which includes viburnum, elderberry, and honeysuckle; and Hippocastanaceae, which includes horse chestnut and buckeye. In a whorled branching pattern, the branches all come out from the same height on the trunk and resemble the spokes of a wheel of a bicycle. Pines, spruces, and firs exhibit a whorled branching pattern.



Courtesy of the Charlottesville Tree Stewards.

Twig parts include lateral buds, bud scales, bud scale scars, leaf scars, nodes, pith, and vascular bundle scars. All of these can be used as identification, especially in the winter. (See *Winter Tree Finder: A Manual for Identifying Deciduous Trees in Winter* by Watts and Watts**.)**

Always look for seeds, fruit, and nuts. These may be on the tree or on the ground under the tree. This is especially helpful for trees with look-alike leaves. While the leaves of the native catalpa and the non-native paulownia are very similar, their seeds are quite different. The native catalpa have string-bean-like seed pods, hence the nickname "bean trees."

Acorns are a sure sign of an oak. White oaks produce acorns every year, and red oaks produce acorns every other year. The size and shape of the acorn and its cap can indicate the oak species. The non-native saw tooth oak probably has the most distinctive cap; it is densely covered in soft, long, "mossy" bristles. Once you see one you will never forget it.

A walnut tree has leaves that resemble those of some other trees, but the presence of walnuts in the tree or on the ground under it help with identification. The species of a hickory tree can be determined through a combination of the appearance of the bark and the size and shape of the nut.

Courtesy of the Charlottesville Tree Stewards.

Persistent conspicuous fallen fruit is yet another way to identify trees. The picture above is an illustration of some of the varieties available for winter identification. Moving from top left to right (first three examples) you will find seed pods from a catalpa, then a paulownia tree, and then an acorn from a northern red oak. The top right are tulip tree seeds. Below them is a persimmon tree fruit. At the bottom, going from right to left, are black walnuts, sweetgum seed pods, a chestnut oak acorn, and a seed ball from a sycamore tree.

Bark is an obvious means of identification. Bark varies greatly depending on its age and on environmental conditions at its location.

Courtesy of the Charlottesville Tree Stewards.

As you can see in the previous picture, various types of bark exist. One type is smooth and unbroken. This type of bark can be found on many young trees. Few trees maintain smooth bark throughout their lives. The American beech and the American hornbeam are examples of smooth bark even in mature trees. Red maples start out with smooth bark, but the bark transitions to show long, vertical ridges as it ages. Hackberry trees start out smooth, but as it ages, the bark develops a rough and corky texture with irregular ridges, giving a warty appearance.

Another bark type has visible lenticels, which are small pores that allow gas exchange throughout the bark. The lenticels can be linear, diamond shaped, oval, or round and tend to be a different color than the surrounding bark. As the tree grows, the lenticels can stretch horizontally and peel due to the stress of the growth. Black cherry, sweet or black birch, yellow birch, river birch, and honey locust all exhibit visible lenticels.

Uninterrupted ridges and furrows characterize still another type of bark. It is the most common existing pattern and consists of a series of raised ridges that alternate with sunken areas known as furrows. These ridges can be either rounded or convex or flattened along the top of the ridge. The furrows can be quite deep in appearance. Red oak, chestnut oak, black locust, black walnut, and eastern cottonwood are species that have this type of bark.

Another type of bark has intersecting ridges and furrows. The raised ridges alternate with sunken furrows and can be rounded or convex or flattened along the top of the tree. The bark can have a diamond pattern with furrows of different colors. Tulip trees, sassafras, ash, and hickory are examples of this type of bark although their bark patterns can look quite different.

Vertical shags are typical of another example of bark. The shags or strips are three times longer than they are wide with breaks in the bark in a long, vertical fashion when the outer cork layer is no longer growing. The shags can look like overlapping shingles, have spongy strips, or appear fibrous. White oak, American elm, hophornbeam, silver maple, eastern red cedar, and shagbark hickory are trees found with this type of bark.

Another bark exhibits ridges and furrows that are broken horizontally. The raised ridges alternate with sunken furrows and can appear as rectangular blocky plates. The ridges can be rounded or convex or flattened along the top of the tree. Ash, black gum, dogwood, and persimmon have this type of bark.

Still another type of bark is exfoliating or peeling. The sycamore tree has what is called a camouflaging pattern of exfoliation. Plates are sometimes referred to as exfoliating and occur when overlapping sections of the cork layer do not sluff off the tree. The sycamore, eastern white pine, and pitch pine have plates.

As you can see, many tree features can help you identify tree species. A good little tree identification book that is easy to carry out in the field with you is *Common Native Trees of Virginia* by the Virginia Department of Forestry.

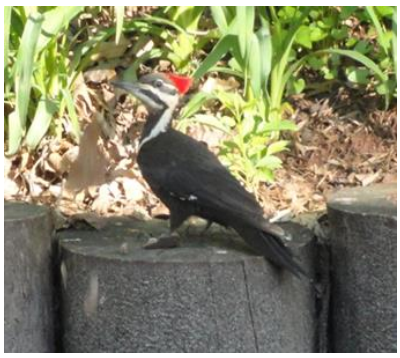
Sally London, Loudoun County Extension Master Gardener

Wildlife in a Suburban Garden

As a gardener, my primary focus is on the plants in my yard, but I cannot ignore the critters who make my garden their home or pass through occasionally. My small suburban subdivision yard is home to the usual array of chipmunks, squirrels, and rabbits as well as a variety of birds. I periodically hear owls and occasionally spot hawks and vultures.







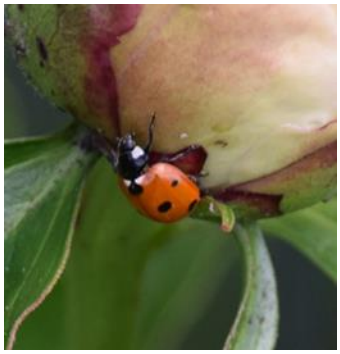
On a smaller scale I regularly host butterflies, bees, and other pollinators. The monarch caterpillars devour all my milkweed, but they are always a welcome sight in the garden.



Unfortunately, along with the pollinators, my garden attracts pests, such as aphids, four-lined bugs, and an array of other creatures who want to munch on my plants. (See the photos on the next page.)



Fortunately, however, the pests serve a role in the food web and they in turn attract predators such as ladybugs, praying mantis, and lacewings to help keep the ecosystem in balance.

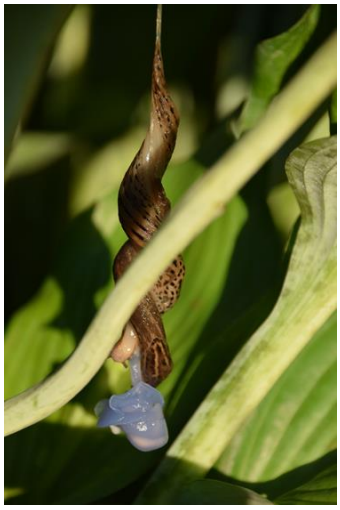


Larger animals such raccoons and fox have wandered in leaving signs of their visit, but rarely stick around for a photo. Some are most likely on the prowl for my smaller friends, which also include skinks, snakes, toads, and turtles.





If I am observant enough--a real plus for a gardener--sometimes I am fortunate to get a glimpse into the often-hidden world of these garden creatures. Once I spotted a brilliant blue where I was not expecting color. On closer examination I realized I was looking at two slugs in the midst of what I could only surmise was a mating ritual. Slugs are definitely not my favorite garden creature, but the ritual I had stumbled on was fascinating to watch. Once the ritual ended, I did a quick Internet search to confirm my suspicion and learned some fascinating facts about slugs (though I still do not like them!). To keep this article rated PG, I will skip the details, but you can do the research yourself if you are interested!



A more delightful and fascinating observation happened last spring when I heard quite a racket as I started weeding in one of my garden areas. I followed the sound to spot a male cardinal high in a tree overhead. He clearly was not happy with where I was working, so I backed off and watched from a distance. When he thought it was safe, he flew into a dense shrub just outside my dining room window. I noted the spot and went inside to see if I could get a better look.

My curiosity was rewarded. From inside I had a front row seat where I could see a female cardinal sitting on a nest. At first, I did not know if she was sitting on eggs or babies, but patience paid off. When she finally left the nest, I could see three tiny hatchlings with closed but bulging eyes. With the nest so close to the window, I could observe without being seen or disturbing the birds.

At first the mother rarely left the nest, while the father did most of the food gathering. He made regular stops at the nest, bringing food for Mom and the babies. On the rare occasion when the mother did leave the nest, the father took up watch. I never saw him actually sit on the nest while she was gone, but he was always in a nearby shrub, ready to protect the nest from any perceived danger.


Over the next several days, the nestlings gradually opened their eyes and began to grow a few fluffy feathers. As the babies grew, Mom would spend more and more time helping to gather food for these hungry ones. When a parent was close to the nest returning with a tasty morsel, he or she would emit a sharp tweet that would alert the little ones to be ready for food.


The parents showed extraordinary patience in their attempt to feed each of the little ones equally even when one of the chicks would seem overly aggressive in trying to beat out a sibling for extra food.

One ritual initially puzzled me. After feeding, the parent would scour the nest and come up with what I at first thought was a grub that had been overlooked. However, this was never eaten, but rather taken away from the nest. After a bit of research, I came to call this ritual "taking out the dirty diapers." It seems the birds are fastidious about insuring there is no smell in the nest to attract predators. They not only removed this waste, but took it in different directions, dropping it in a different location each time so there was no trail leading directly back to the nest.

As the babies grew, I knew eventually they would leave the nest. Even so, I was a bit sad the morning there were only two babies in the nest. I could only hope the missing nestling had moved out to a secure location. I continued to watch the nest closely that day and eventually one of the remaining little ones took a bold step and climbed onto the edge of the nest. At first, he (or she) appeared uncertain as to what to do next. At this point he looked so much bigger than the last remaining nestling. After sitting at the edge of the nest for some time he bravely stepped off the edge to a nearby branch. The next move was an awkward "flight" to a branch on the red osier dogwood immediately adjacent to the shrub and then he hopped to the ground. Dad was nearby and protectively led him to what I assumed was a secure location, perhaps one where the first fledgling was safely ensconced.



My attention now turned to the remaining chick who made several attempts to follow its siblings, but the effort seemed to exhaust him. I worried that Mom and Dad might abandon this little one, but my fears were unfounded as both continued to return regularly to provide food and encouragement throughout the day. The next morning the nest was empty but a quiet chirp led me to spot the last little one on the ground with Dad close by ready to guide him to safety.



The nest is empty now but reminds me to keep my eyes and ears open for new opportunities to catch a glimpse of the critters in my yard. They are there. I just have to look closely.

All photos by Diane Bayless taken in her yard in Sterling, Virginia.

Diane Bayless, Loudoun County Extension Master Gardener

Brood X Cicadas – Coming Your Way Soon!

Brood X, or the Great Eastern Brood, is a massive brood of cicadas that are set to emerge in the spring of 2021 in 15 states, just as in 2004 and 1987. Brood X has a 17-year life cycle. X is the Roman numeral 10 indicating that Brood X cicadas are the tenth group of cicadas that biologists have tracked. These insects are sometimes called locusts, but locusts are a type of grasshopper. These are cicadas and have been underground 17 years since 2004, feeding on sap from the roots of trees. Their lifespan above ground is much shorter, measured in weeks. Cicadas will die two to six weeks after mating.

All periodical cicadas of the same life cycle that emerge each year are known collectively as a single "brood." There are also annual cicadas that emerge every year in late June or August while periodical--such as Brood X--cicadas emerge in cycles of 13 or 17 years depending on the species. *Magicicada* is the genus of the 13-year and 17-year periodical cicadas of eastern North America. The 13-year periodical cicada is *Magicicada tredecassini. Magicicada cassinii* is the 17-year locust. Unlike other periodical cicadas, cassini-type males may synchronize their courting behavior so that tens of thousands of males sing and fly in unison.

The first appearance of Brood X was noted in 1715 in Northwest Philadelphia. Brood X, one of the largest broods, will be emerging soon. And they are coming in the billions. Huge numbers allow them to overwhelm their predators so they can live on and breed.

Adult Cicada, Photo by Jon Yushock, Bugwood.org

This truly massive brood will arrive in the Mid-Atlantic and Midwest and will fill the air with a deafening mating hum. The sounds measure between 80 and 100 decibels, equivalent to a low-flying airplane or a lawn mower. The typical periodical cicada emergence will last between six to eight weeks in a single location with significant chorusing (singing) lasting about three to four weeks. This very distinct loud noise comes from the male cicada tymbals, drumlike structures on their abdomens used to attract females. The males make all the noise since the female does not have tymbals. The male cicada pulls his tymbal ribs inward and together. The ribs make a short, sharp noise when they draw together and snap apart. They repeat this action 300 to 400 times per second. Females will respond to the male sound by snapping their wings. When the males hear the snapping, they move closer to the female, and the male and female will face each other to mate. The sounds have two purposes-to help to attract a mate and to help to fend off predators.

The long cycle of 17 years is part of the cicada's evolutionary strategy that dates back 1.8 million years to the Pleistocene Epoch. They are warm-weather insects and will not mate and survive if the temperature lingers too long below 68 degrees. For this reason, the cicada evolved into different cycle lengths to improve their odds of survival. While they could not survive a cold summer above the ground, surviving below the ground was no problem. The less often they

emerge, the higher their odds of not being wiped out.

Cicadas first emerging from exoskeleton. Photo by Joseph OBrien, USDA Forest Service, Bugwood.org.

Once the ground is warm enough, cicada nymphs will crawl out during the night and in the early morning hours. They will climb on trees, buildings, or anything above the ground. They will first appear with a milky-white color and a soft shell. They are oval shaped and winged. The color will darken as their shells harden. They will shed their exoskeletons; their wings will expand, allowing them to fly, and they will enter adulthood. During their time above ground, they will eat and mate, and the females will lay eggs to continue the cycle. After mating, the females will cut small V-shaped slits into pencil-sized twigs of trees and bushes to deposit up to two dozen of their eggs at a time. Females will lay up to 600 eggs. Once the eggs hatch, about two months later, the first instar nymphs, which resemble tiny termites, will drop to the ground, burrow underground, and suck xylem sap from small rootlets. This sap is very low in nutritive value and the nymphs grow very slowly. They will molt five times, moving on to larger roots deep in the soil as they grow over a period of 17 years.

Cicadas have many predators when above the ground. Birds, reptiles, fish, spiders, wasps, and even household pets will eat these protein-packed snacks. If something wants to eat a cicada, chances are, it will. Cicadas are big, clumsy, and slow and do not fly very well even though they do have wings. Since the cicada has a hard exoskeleton and wings, a household pet could choke on them, but cicadas do not bite, and they do not spread disease. They will not ruin your crops, and they are not poisonous. They can even be eaten by humans if one decides that is to their liking since they are edible and nutritious. The best time to eat them is before their exoskeleton hardens, when they still are white with a soft shell. They are high in protein and low in fat with a taste has been described as like that of chewy asparagus.

Tree flagging. *Photo by Sue Russell.*

Cicadas can be dangerous to young trees, especially fruit trees. Tree damage from cicadas occurs during the egg laying process. The female lays her eggs under the bark of a twig or small branch. The twig splits and dies, and the leaves on the twig turn brown. This condition is called “flagging.” You can spot flagging twigs and branches at a glance because of the contrast of brown leaves against the healthy green leaves on other branches. Trees planted in 2020 are at risk of severe damage and of possibly being killed. Young trees should be covered with netting by the end of April to keep the cicadas from laying their eggs in the branches. The netting should be ¼-inch garden netting or finer. Fasten the netting around the trunk of the tree just below the canopy to prevent emerging cicadas from climbing up the trunk.

If your area is going to have cicadas, avoid planting trees this spring and wait until fall. Brood X will emerge in very specific areas. They will not occur in all of Loudoun County, while they are likely to be throughout Fairfax and Arlington. For more information, see https://www.cicadamania.com/cicadas/periodical-cicada-brood-x-10-will-emerge-in-15-states-in-2021/ and other local reports.

This brood will die off in June and will not return until May 2038 when the cycle will repeat.

Heather Keith, Loudoun County Extension Master Gardener

Spotted Lanternflies Reach Blandy

This article is reprinted from the Winter 2020-21 Newsletter
of Blandy Experimental Farm, State Arboretum of Virginia

In 2020, the spotted lanternfly claimed its second county in Virginia: Clarke. First found in eastern Pennsylvania in 2014, it reached Frederick County, Virginia, just west of us, a couple of years ago; now it has claimed Berryville and Blandy Experimental Farm. We found four adults on a tree of heaven (*Ailanthus altissima*) in November.

Although the insect preferentially feeds on tree of heaven, a tree despised for its prolific seeds, foul-smelling foliage, and hydra-headed regrowth after cutting, the spotted lanternfly is not a godsend curing us of a plague of weed trees; rather, it is a second plague nourished by the first. It spills from tree of heaven onto roses, grapes, fruit trees, walnuts, maples, and many more, tapping into the plant's circulatory system and sending a constant stream of sticky liquid out its little insect butt. The liquid, euphemistically called “honeydew,” coats everything beneath the tree, leaving car windshields glazed like jelly donuts and the roads sticky as a movie theater floor. So, despite the flash and dash of a new polka-dotted insect on the landscape, its popularity is quite fleeting.

"Honeydew" coats leaves with sticky substance.

At the arboretum, we are most concerned with potential damage to our maples, walnuts, and ornamental fruit trees. We have 147 maple trees of 24 species and don't know which are most vulnerable. Locally, red maples and silver maples were preferentially targeted by the lanternfly in late summer, with hundreds and even thousands lined up along the stems to feed and lay eggs. Excessive feeding can cause the stems to flag and sometimes break. That, combined with the local emergence of the 17-year periodical cicadas this year could make it a tough year to be a small tree.

Combating the spotted lanternfly is a big challenge, and we will be following scientific guidelines in order to save our own collection and to prevent ourselves from being a lanternfly nursery for our neighbors. Control is focused on reducing the population of tree of heaven on the property but leaving occasional large trees treated with insecticide that will attract the insect and kill it when it feeds, so it doesn't just switch to less preferred species nearby.

Removing tree of heaven is challenging, both because it is such a large part of the wild areas in our region and because it requires the use of herbicide after cutting to prevent regrowth; but we must undertake it. We will focus on the largest trees and densest patches first and work out from there as new trees are found. The large trees even include arboretum specimens, towering trees planted in 1939 before it became known as an invasive species. It is a big task for us, and for government agencies, public land managers, and private landowners; but a coordinated effort will benefit us all.

T'ai Roulston, *Arboretum Curator*

For more information about SLF or to report a sighting in Loudoun County, please go to https://www.loudoun.gov/spottedlanternfly

Mayapples (*Podophyllum peltatum*)

Poh-doh-FY-lum pel-TAT-tum

The lovely umbrella-like leaves of mayapples (*Podophyllum peltatum*) are familiar to most people who have ventured into the woods or wild gardens. They're commonly seen in deciduous woodlands throughout the East Coast, from southeastern Canada to Florida, and as far west as Texas. The plants have a number of different common names, including Indian apple, hog apple, duck's foot, mandrake and umbrella leaf. But as common as they are, most people have never gotten down on their knees and looked at what's going on *underneath* those beautiful leaves, where in April or May you'll find a lovely white flower followed sometimes in mid-summer by a small fruit (actually a berry). A pink form, *P. peltatum* forma *deamii* also exists and is available at some wildflower nurseries.

Mayapples in deciduous woods. Photo by PookieFugglestein, CC0, via Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Stand_of_Podophyllum_peltatum.jpg

Mayapples have an interesting growth habit: that beautiful, large patch of mayapples you see in the woods may actually be *only one plant and they will be genetically identical.* From the initial plant, mayapples spread by underground long, fibrous rhizomes, from two-to-eight inches or more a year. What started out as one plant can spread to cover an enormous amount of territory, even as much as an acre – but still be *only one plant.* This has implications for fruit production. Mayapples are not self-fertile; they will not self-pollinate. Therefore, to produce seeds, you need *two genetically different plants* either mixed together in the same colony or in a second colony nearby. Given a "friend" nearby, mayapples will produce fruit containing viable seeds which you can harvest. Colonies are extremely long-lived, with some 100 years old and even older.

Newly emerging leaves, tightly furled. Photo by Chris Evans, University of Illinois, Bugwood.org

Mayapple leaves are quite showy. They emerge from the ground in early spring, furled tightly around the stem and remain tightly furled until the stem reaches its full height, when they slowly unfurl. Each mayapple in a colony produces either one or two large, umbrella-like leaves on a single stalk each year. The leaves are glossy, sometimes mottled, have five-to-seven lobes and are about 12-18

inches tall and 9-12 inches wide. Immature plants will produce only one leaf. These plants will not flower. Mature plants will produce two leaves, flower, and if the flower is fertilized, produce fruit.

Glossy leaves of mayapples are quite showy. Photo by and (c)2007 Derek Ramsey (Ram-Man) - Self-photographed, GFDL 1.2, https://commons.wikimedia.org/w/index.php?curid=2225002

Mayapples bloom in April or May, depending on the weather, with the single flower appearing in the axil between the two leaves. The flowers range from 1-3 inches across with 6-9 waxy petals and bright yellow anthers. The flowers are fragrant, however there is some disagreement about the quality of the fragrance – some people find it pleasant, others describe it as putrid. If pollinated by bumblebees and other long-tongued bees, each fertilized flower is followed in mid-summer (August-September) by a small, egg-shaped green fruit about the size of a small lemon which will soften and turn creamy or golden yellow when ripe. As it ripens the fruit stalk will bend downward and the fruit eventually will either fall off or rest on the ground where it can easily be reached by hungry box turtles, skunks, raccoons, and other small animals, which spread the seeds to other locations through their feces. Each fruit contains between 6-12 seeds which resemble apple seeds.

From the left, a flower bud in the leaf axil, the flower hidden under the leaves, and the open flower. Photo courtesy of Wisconsin Horticulture, Division of Extension, https://hort.extension.wisc.edu/articles/mayapple-podophyllum-peltatum/

NOTE: All parts of these plants contain podophyllotoxin and related lignans and are poisonous if eaten by people, cats, dogs, and horses. The *only* exception is the ripe fruit, with seeds removed, which is sometimes made into jelly and jam. Native Americans did use some parts of the plants medicinally, and today, interestingly enough, derivatives of the toxic lignans in mayapples and synthetic substitutes of these lignans are being used in some modern medical applications, including in anti-cancer medications.

Acquiring plants. You can obtain plants by planting rhizomes or sowing seeds, with planting rhizomes being the fastest, easiest, and most reliable way to start a colony.

Rhizomes: Mayapple rhizomes are widely available for sale, both in local wildflower nurseries and by mail order from wildflower specialists. The Virginia Native Plant Society has an extensive list of

nurseries in the area which specialize in native plants at https://vnps.org/view/native-plant-nurseries/

Another source is the garden of a friend who is thinning them out or corralling plants which are growing out of bounds. In this case, you could dig a few rhizomes either in early spring or, preferably, after the leaves have died back in late summer-early fall. Make sure that each rhizome has at least one leaf bud, preferably more. After digging, plant the rhizomes horizontally as soon as possible, with the growing tip up, 1-to-2 feet apart and about one inch deep. Mulch with leaves. If all goes well, they will settle in nicely and you'll have mayapples in the spring.

Mayapple fruit. Photo courtesy of Charles E. Peirce at http://www.michwildflowers.com/

Seeds: You can also start plants by seed, although it takes far longer to do so. Still, if you want a challenge, it can be done. Seeds are available either harvested from a local patch or ordered from a vendor who specializes in wildflower seeds.

Box turtles particularly love mayapples and are the primary method by which they spread from one place to another in the woods. In fact, there is evidence that seeds which have passed through the digestive system of turtles have a higher germination rate. If you want to try starting plants from seeds, harvest the fruit as soon as it is changes color. Let it continue to ripen, then macerate the fruit. You must plant the seeds immediately, with the pulp, before they have a chance to dry out. If you let them dry out, they will require cold-moist stratification prior to planting. Even in the best circumstances, mayapples are slow to germinate; if you sow them in August or September, it will be spring before they do so. Many of them *won't* germinate, so sow them thickly. If you purchase seeds, you will need to stratify them for three months in cold-moist conditions prior to planting, and germination will be very uncertain, at best. Unfortunately, even seedlings which do emerge have a high mortality rate. Seedlings take 4-5 years, sometimes longer, to mature to the point where they will flower.

A perfect mayapple flower. Photo by and courtesy of David G. Smith, http://www.delawarewildflowers.org/index.php

Cultivation: Mayapples definitely are plants for the shady or semi-shady garden and should receive no more than 2-6 hours of sun a day, maximum. Less is better. Dappled shade or light shade is ideal. The more sun they receive, the earlier they will die back in mid-summer, and they won't thrive in sunny areas at all. When the leaves do begin to deteriorate, don't mow them

or cut them back. Let them die back naturally. While they are tolerant of a wide range of soil types, they prefer a rich, loamy, moist soil with lots of humus. They aren't picky as to pH and will thrive in soils ranging from pH 4-7 although a pH of 5-6 is preferred. Given these conditions, they will spread and become large colonies in the woods or in the wild shade garden. In dry summers, they will die back prematurely and while the plants will survive, they probably won't produce fruit that year.

Deer and rabbits don't eat mayapples. They may occasionally be attacked by rust, but this is a minor issue which does no permanent harm. They are tolerant of juglone and will grow under black walnuts.

Because of the size of their leaves, mayapples tend to shade out other spring ephemerals, and as they spread, their rhizomes tend to crowd out the root systems of other plants. When they die back in mid-summer, they leave an empty hole in the garden. For this reason, they are best grown in woodland gardens or in a shady garden, preferably in an out of the way place where that empty hole won't be noticeable in August. Or you could move shade-loving plants in pots into that area after they die back for continuing garden interest. Some larger plants, however, can compete with them in the shady garden. Mt. Cuba Center suggests growing ferns with mayapples and specifically recommends *Phegopteris hexagonoptera* (broad beech fern), *Dryopteris goldiana* (giant wood fern, Goldie's fern), and *Polystichum acrostichoides* (Christmas fern), all of which are competitive growers. For flowering plants, Mt. Cuba recommends *Eurybia divaricata* (white wood aster) and *Solidago flexicaulis* (zigzag goldenrod), both of which also are competitive growers. All of these plants are native to this area.

Ferns can compete with mayapples and fill in the holes left behind when the mayapples die back later in the summer. These leaves, photographed in June, are still lovely. Photo by Jim Mullhaupt. https://flic.kr/p/29oc53E

Lina Burton, Loudoun County Extension Master Gardener

A New Invasive in Disguise

We have a new invasive, and it's posing as a familiar native garden plant. Currently, the latest threat to our gardens, forests, and wetlands, incised fumewort (*Corydalis incisa*), *Fumariaceae* family, is known from a limited number of populations in New York, Pennsylvania, Maryland, Virginia, and the District of Columbia. Incised fumewort readily escapes cultivation, spreading by seed explosively ejected from the fruit. The plants form dense stands, carpeting an area within a few years and crowding out more desirable species. Incised fumewort is native to Japan, Korea, and China. In 2014, populations of incised fumewort were detected in Bronx and Westchester Counties, New York, and have spread from there. Currently there is no published information available on how the species arrived in this country, how quickly it spreads, and how it can be effectively managed.

Flowers and foliage of Corydalis incisa Photo by Gary Fleming, Department of Natural Resources, and Bugwood.org.

An excellent description is found on the Maryland Invasive Council website:

Incised fumewort is a 3" to 24" biennial forb with deeply cut, glabrous leaves and purple flowers. The first-year plant shows few leaves, which grow from a small tuber. The second-year plant is upright with numerous branched leaves. Leaves are divided into three leaflets, with those leaflets further divided into threes, or even divided again into threes. They are 1.5 to 5 inches long and wide, on 2- to 8-inch leaf stalks, with the smallest leaves near the inflorescence. The purple flowers (rarely white) are tubular, about ½ inch long, with reduced, irregularly cleft sepals. The petals touch each other but are not fused. Flowers occur in elongated clusters up to 4 inches long, with 10 to 16 flowers per raceme. Green oblong seed capsules hang from the ends of the flower stalks; they are less than 1 inch long and look like tiny, short green beans.

Close-up of tubular flower. Corydalis incisa | Watercolor and ink | Bobbi Angell, 2015 | Drawn from living material collected in the Bronx, New York | From the Collection of the LuEsther T. Mertz Library | Artwork commissioned for the Invasive Species Summit held at the New York Botanical Garden, November 6, 2015.

Incised fumewort has seed capsules that open explosively when the seeds are mature and can launch the small black seeds up to 10 feet. In the mid-Atlantic, *Corydalis incisa* will flower and fruit from May to June. The above-ground plant parts shrink and flatten but stay visible all winter. They require just a speck of space to get started and then elbow their way in.

Fumewort remains visible throughout the winter. Photo, C. Ivory.

The threat in Northern Virginia is not theoretical. I first noticed this plant in my neighborhood, growing in shaded areas. It was small, with lacy foliage and a pretty little flower. How cute, I thought. Then it started to invade entire areas, growing very densely. Alarm bells should always go off when a plant moves in and starts to take over.

Fumewort in sheltered spot in February. Photo, C. Ivory.

A dense carpet of fumewort grows down a slope into a wooded area, so I am concentrating on the plants that spring up in cultivated areas. This keeps me plenty busy. The plants aren't easily pulled up; first-year plants are slender and break above the ground and then pop up again from the root or tuber.

Dicentra eximia or fringed bleeding heart.
Photo courtesy Walters Garden.

Fringed Bleeding Heart

The native look-alike that might cause you some confusion in your garden is *Dicentra eximia* or fringed bleeding heart. This plant is also a member of the *Fumariaceae* family, which includes about 450 species throughout the northern hemisphere of the world.

Species in the *Dicentra* genus that we all know are the native wildflowers squirrel corn and Dutchman's breeches in addition to the native wild bleeding heart. They all have foliage similar to the fumewort and without looking closely, the flowers of the bleeding heart and the fumewort seem similar. But on close examination, the flowers of the *Dicentra eximia* are clearly heart shaped, and the fumewort flowers are tubular.

Flowers are heart shaped, not tubular.

Native to eastern North America, *D. eximia* is the most heat tolerant member of the Dicentra family, which makes it an excellent choice for southern gardens. Unlike the common bleeding heart, *Dicentra eximia* will not go dormant in midsummer as long as the soil is kept moist. The pink flowers of *D. eximia* differentiate it from the other native *Dicentra* flowers, which are white.

The lesson I learned from this confusion in my garden was to look closely at flowers and foliage. Don't be lazy! Research and confirm what you think a plant is; realize when there's an unwelcome plant in the neighborhood.

Right now, the invasive fumewort is competing with native golden ragwort in the naturalized area. I'm putting my money on the ragwort!

Carol Ivory, Loudoun County Extension Master Gardener

Slime Mold: What IS That in My Mulch?

Mulching is a rite of spring for many gardeners. Mulch is used to hold moisture, help surpress weeds, and protect tree trunks, plus, it's supposed to look attractive.

Now you've spread the bags of mulch, and the beds are looking pretty good. A day goes by and, while admiring the yard, you discover a pile of something that does not belong in your newly mulched bed of plants. YUCK! That is the only description fit to print that describes it. Is this really in the fresh mulch? Yes, it's a big pile of something gross and yucky. What IS that in the mulch? It is *Physarum polycephalum*--commonly called slime mold. It is also called dog vomit, seriously. The following is what you need to know about slime mold and then some additional information that will make it more interesting and perhaps less disgusting.

The slime mold organism reproduces and survives much like a fungus. It is also capable of moving itself to some degree. These facts might lead you to believe that it is either a fungus or an animal, but this is not the case. The organism gets moisture from air and nutrients from what it grows upon, and yet it is not a plant either. Slime molds are in the genus *Fuligo* and are primitive single-celled organisms with spore reproduction. One of the more interesting slime mold facts is their apparent separation from any known plant or animal classification.

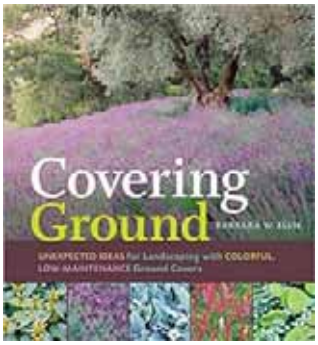
Slime mold grows when the weather is warm and damp. So, it can occur anytime between April and October. It needs decaying matter—all that wonderful compost, leaf matter, and mulch in your garden.

There is no doubt that slime mold is unattractive. Anything that closely resembles vomit in the garden is an uncomfortable sight. However, since slime molds in garden mulch or other areas are not harmful, removal is not necessary. For this reason, slime mold control with chemicals is more trouble than it is worth. Few chemicals can permanently kill the organism, and toxic applications may even be detrimental to other life around the mold. Slime molds thrive where conditions are moist, so the easiest way to remove it is to let the area dry out. Rake up slime molds in garden mulch to expose the organism to drying air. You can also just scrape up the stuff, but likely it will be back. Some molds have been known to come back in the same spot year after year. Slime mold is not anything to worry about, and it will not harm your plants.

Slime mold is the subject of studies to discover how a single-cell organism without a brain or nervous system appears to have intelligence. See this article in Nature Nov. 13, 2012.

Becky Anzelone, Loudoun County Extension Master Gardener

Book Review: *Covering Ground* by Barbara W. Ellis



Most all of us spread some kind of mulch in our ornamental gardens, so we all know that mulching is a big chore. While there's no denying the beauty of a freshly mulched garden, unfortunately it is a temporary victory. Remember the saying, "Nature abhors a vacuum"? By mulching, we are preparing a vacuum that is just waiting for an unwanted seed to land. When that eventually happens, the mulched area must be weeded, and then the mulch must be replenished. Lather, rinse, repeat.

The mulch → weed → mulch cycle has come to feel like a make-work project to me. Since something will eventually attempt to grow in the mulched area, why not stop the cycle? Why not deliberately intervene and plant something desirable instead of dealing with random weeds? (And digging cats, and scratching chickens, and…) Cue the ground covers!

While searching for ground cover information at the Loudoun County Public Library, I fortunately discovered Barbara W. Ellis's wonderful book, *Covering Ground: Unexpected Ideas for Landscaping With Colorful, Low-Maintenance Ground Covers*. I loved it so much, I purchased my own copy. (ISBN-10: 1580176658. Paperback: $15.49 from Amazon.)

Covering Ground is a useful resource for both beginning and experienced gardeners alike. Plus, it is a pleasant read. Ellis starts with the fundamentals of how to assess your site and identify places where you can make the most of ground covers. She even tells us how to "read the weeds" to help identify the soil conditions at a site.

Ellis finishes with a chapter on Planting, Growing, and Propagating that provides comprehensive information on:

- Site Preparation Basics
- Buying and Installing Ground Covers
- Planting on Slopes
- Planting Over Time
- Caring for New Plants
- Renovating Ground Covers
- Growing Your Own

In between, Ellis provides more than 100 pages of suggested ground covers organized so that gardeners can choose the "right plant for the right place." Categories address common needs such as:

- Ground Huggers for Paths and Stepping Stones
- Flowering Ground Covers for Shade
- Ground Covers for Wet Soil
- Ground Covers for a Sunny Slope

While Ellis presents many low and creeping plants that we traditionally consider to be ground covers (think sweet woodruff (*Galium odoratum*), lily of the valley (*Convallaria majalis*), and Japanese pachysandra (*Pachysandra terminalis*)), *Covering Ground* opens our eyes to all sorts of

herbs, flowers, shrubs, and vines that can add more beauty to our gardens while reducing the need to mulch and weed.

Ellis helps us to consider new ground covers as she introduces us to plants such as:

- Prostrate broom (*Cytisus decumbens*): Small shrub with oblong leaves on wiry stems. Yellow flowers in late spring, early summer. Prefers poor dry soil, good on windy sites. 4 to 12 inches high, 3-foot spread.
- Virgin's bower clematis (Clematis virginiana): Native vine with large fragrant greenish white flowers from midsummer to fall. Full sun to part shade. Vines range from 10 to 20 feet long.
- Creeping Saint John's wort (*Hypericum calycinum*): Dwarf semi-evergreen shrub with showy yellow flowers from midsummer to fall. Grows best in partial shade. 1 to 1½ feet tall with indefinite spread.
- Homestead purple verbena (*Verbena canadensis, 'Homestead Purple'*): Attractive to butterflies, with deeply cut leaves and purple flowers in summer. Grows in sandy and rocky soils. 4 to 6 inches tall, 2-foot spread.
- Corsican pearlwort (*Sagina subulate*): Sometimes incorrectly called Irish moss and Scotch moss. An evergreen mat of foliage topped by small white flowers in summer. Grows in full sun to light shade. 2 to 4 inches high with indefinite spread.
  Sweet fern (*Comptonia peregrina*): Native shrub with aromatic fernlike leaves. Grows in full sun in any acidic soil. 2 to 4 feet tall, 4- to 8-foot spread.

Ellis wisely advises us to select native species whenever possible and includes native plants in her recommendations. She also includes an entire section on Native Plants for a Woodland Floor.

Each plant is clearly described, and Latin names are included along with common names. Cultivars of special interest are noted. Exposure requirements (how much sun or shade) and growth habits (height and spread) are clearly identified. *Covering Ground* provides tons of beautiful photographs, but not all listed plants are pictured. However, readers can easily search the Web using the Latin name of the plant and "image" for any plant of interest that is not shown in the book.

But wait—What about lawns? While Ellis encourages readers to replace lawns with ground covers, thereby further reducing overall yard maintenance, she readily acknowledges that lawn is the best ground cover choice in some situations. *Covering Ground* shows how to assess the shape and health of the lawn to identify ways to reduce the need for string trimming, avoid mowing in dangerous areas like steep slopes, and replace portions that are struggling due to site conditions such as deep shade or competition with tree roots.

As we enter spring, please consider checking out *Covering Ground*. It is a great read and a valuable reference you'll turn to again and again.

Wendy Hiller, Loudoun County Extension Master Gardener

My Arborist Recommendations

The Master Gardener's Help Desk often receives client calls about tree problems that we cannot always diagnose as well as we would like. Or the solution that we may or may not find would be better addressed by an arborist who has far more knowledge, expertise, and experience than we do. There are many reasons for hiring an arborist and his or her company, and I would like to share some of my recommendations if you do.

I love trees. So does my husband. Our three-acre lot was formerly farm land. Its only trees were along the property line. It afforded my husband and me an opportunity to plant all the types of trees that appealed to us. So, more than 15 years ago, we planted over 100 trees, most of which were saplings. During that time my husband and I confidently pruned our small trees, but it wasn't until I received tree steward training that I learned that we were guilty of some improper pruning practices such as removing too much tree canopy. Have you ever seen a young white oak bend over once it leafs out in the spring? We did. We pruned too many lower branches. When you looked at the tree, it should have been one third trunk and two thirds canopy--not the reverse. We should have left many lower branches to balance the tree until the trunk could grow in the summer.

Once our property's trees grew over 20 feet tall and became afflicted with insect, environmental, or storm damage, their treatment exceeded my training and our physical capabilities. That is when we contacted an International Society of Arboriculture (ISA)-certified arborist. Our initial consultation was free. To prepare, we made a list of the trees to be examined in counterclockwise order as you walked the property and tied a fluorescent ribbon, marked with the number on our list, which included the tree variety and desired work to be done, around each. We gave a copy to the arborist to make it easier for that person to take notes. When the work estimate was sent to us, our list became our checklist for verifying that all the work we had requested was done.

Large dead oak in the upper left must be removed. Photo M. Bassford.

On the day of the work, the arborist should accompany the work crew to initially supervise all of the work. He or she might not stay. In our experience, the arborist did not perform the tree trimming work. Instead, his trained crew performed excellent work.

If possible, be home when the work is done. Questions will arise. You might be available by phone, but sometimes you will have to evaluate the situation--such as where can the crew drive their truck as there could be lawn damage (especially in late winter or early spring after a wet period).

Use your contract that lists all the work and your own list to verify that work was completed.

Ask questions. If work is not being performed as you expected, talk to the on-site supervisor. Contact the arborist, if necessary. Should the arborist leave the work site, make sure you have his or her phone number.

Be prepared to find another arborist. Stuff happens. One year our tree work was not completed. Because of an unexpected ice storm, we had at least seven uprooted trees and multiple broken branches that needed to be removed safely. After a day of work, the crew did not return. The arborist's company never returned our calls. Consequently, the next year we had to find another arborist and company to finish the work in addition to removing the two biggest trees on our property--a green ash killed by the emerald ash borer and a red oak right behind the house-–both 50 years or older.

Get a second evaluation and estimate. When the ash started to decline, we consulted two arborists. One recommended treatment for a very small fee. The second noted how much of the tree canopy was dead (over 30 percent) and recommended no treatment. He also advised that ash trees are extremely brittle after they die and become a hazard if left in the landscape. Having read Virginia Tech's publications on emerald ash borer damage, we knew that treatment could prolong the life of the tree but we didn't know for how long. The tree was located in the far corner of our lot, downhill from the house, so it did not add any landscape value; therefore, we opted for no treatment. It was dead the next year.

This year we are looking for a new arborist and company. Although last year's arborist was very knowledgeable and he was affiliated with a nationwide company, his crew's chipping machine did not perform properly. As a result, the machine did not properly chip the branches, so the crew did not leave the material as we had requested. We planned to use it as mulch in our forested area, so this was a disappointment.

By this time, you would think that we would no longer need an arborist, but we do. We have another dead tree to be removed and many high but drooping branches to be trimmed back to enable mowing. Also, we need an assessment of the health of two large oaks with some dead limbs. For us, the tree work will never end. We value them and will continue to plant more trees. We will plant them for the future. For as long as we are able, we will use arborists and their crews to care for them.

For additional advice, please read the Virginia Tech Publication ANR-131NP, "Hiring an Arborist to Care for Your Landscape Trees," located at https://vtechworks.lib.vt.edu/bitstream/handle/10919/100441/ANR-131-pdf.pdf?sequence=1&isAllowed=y.

Margie Bassford, Loudoun County Extension Master Gardener

Native Perennials in Containers? Read more here. Planting in pots for easy butterfly viewing – plantnovanatives (wordpress.com)

What's Weather Got to Do With It?

Weather is whatever is happening outside your windows right now—sun, rain, snow, temperature extremes, damaging winds, high humidity—and it is the primary factor that determines whether your flowers and plants will live or die. Temperature, moisture, and their extremes, have a direct effect on the survival of your plants. Weather affects plants in ways that we can see, but it also affects them in ways that we might not realize, or that are not readily obvious. For example, a large tree snapped by a big gust of wind is easy to associate with the wind event; but large trees may not show the effects of drought for several years. In addition, weather-related stress can cause plants to be more susceptible to disease and insects. Weather is not the same as climate. Climate is historical weather—the average of weather conditions over a specific period. Climate determines what will probably grow well in your area, although plants can still be damaged or killed by extreme weather. Climate is the main reason plants favor growing in certain places over others. Both short-term weather information and long-range climate information are important factors to consider when you're planning where and what to plant.

ELEMENTS OF THE WEATHER THAT AFFECT GARDENS

Although we have no control over the weather, we can try to design and maintain our gardens to minimize the negative effects of weather on them. The major elements of weather that affect how our gardens grow are temperature, precipitation/moisture, sun, and wind.

Temperature

Up to a point, as the temperature goes up, plants grow faster. However, extreme heat will slow growth, increase the plant's moisture loss, and perhaps affect seed germination. Temperatures for the best plant growth vary according to the type of plant. Some annuals and vegetables are very sensitive to cold temperatures and should not be transplanted outside until the temperatures are consistently warm. Cooling temperatures in the fall trigger plants to reduce their growth and to start storing energy. As temperatures continue to fall below freezing into the winter months, all plant growth stops. Perennials go dormant where they are better able to withstand winter's freezing temperatures. An unexpected cold snap in the fall can catch your plants off guard, before they've had a chance to harden off, which can do more harm than the constant cold temperatures in mid-winter. Wide fluctuations in the temperature can be hard on plants, especially in the winter. Warm, sunny days followed by bone-chilling cold nights can injure the bark on trees that have thin, smooth bark. Constant freezing and thawing of the soil can cause heaving of shallow-rooted plants. Frost damages cell walls and cell content of actively growing plants. A warmer than average winter can encourage flowers to bloom early, only to be buried by a late March snowstorm when the temperature can drop below freezing again. After all, astronomically speaking, it *IS* still winter. Temperature can also indirectly affect plants. A warm winter may produce a larger insect population the following summer.

Freezing temperatures can kill a plant overnight. That is why the United State Department of Agriculture (USDA) developed Plant Hardiness Zones to guide growers in knowing when the approximate first frost in the fall and last frost in the spring are expected. Knowing the first and last freeze dates determines when you should direct-sow plants outside or transplant your seedlings to avoid harm to them from temperatures that are too cold. Our area is in Hardiness Zones 6b and 7a, which have an average low temperature of -5 to 0 and 0 to +5. According to Dave's Garden (www.davesgarden.com), our average risk of frost in Loudoun County is from October 23 through April 22, making our area's frost-free growing season about 184 days. An

early frost, however, doesn't mean that Jack Frost is in town. It can be followed by many days or weeks of warm weather.

Temperatures that are extreme—too hot or too cold—may inhibit fruit set on tomatoes and other vegetables. Temperature, along with moisture content, could affect the flavor of fruits and vegetables growing in your vegetable garden. As we get further into summer and the temperatures start to rise into the 90s, cool season vegetables are likely to bolt. Although the effect of heat is not as immediate and radical as severe cold is, it could slowly damage and even kill your plant. The American Horticulture Society (AHS) developed a Heat Zone Map based on the daily high temperatures recorded by the National Weather Service (NWS) between 1974 and 1995. The map identifies 12 zones, each indicating the average number of days per year when the temperature tops 85 degrees. Many plants that you buy commercially have the Hardiness Zone and most likely the Heat Zone information on the plant tag. The tag has four numbers on it, and each number represents the Maximum and Minimum Hardiness Zone and Heat Zone information. For example, a tulip could be 3-8, 8-1. This means that if you live in USDA Zone 7 and AHS Zone 7, you can safely leave tulips outside in your garden year-round. Be sure to buy plants suitable for your Heat Zone.

Plant tags showing heat and hardiness zones.

Precipitation / Moisture

Water is necessary for just about every function of plant growth. Too little water damages plant cells, resulting in decreased plant growth, wilting, leaf scorch, and eventually leaf drop and root damage. Alternatively, too much water reduces the amount of oxygen in the soil (a requirement for plant growth), which can result in root loss and make the plant more susceptible to fungal diseases. Plant tissues must contain enough water to keep their cells alive. Although many plants are tagged as "drought tolerant," no plant can survive when completely dry. Knowing the local seasonal rainfall information can help a gardener decide when plants may need additional water or special planting requirements.

Precipitation comes in many forms—rain, sleet, snow, and hail. The amount and type of precipitation affects the water available to plants for growth. It can also affect soil characteristics and temperature. The effects of too much or too little water can be temporary, or they can be permanent. Heavy rain damages plant roots by compacting the soil and reducing the oxygen content. It can also cause runoff of all those lawn products and chemicals into the watershed. Prolonged heavy rain can cause erosion. High humidity in the summer reduces water loss from plants, which can increase the chance of disease.

In the winter, snow provides moisture for the plant as well as insulation and protection from temperature extremes and fluctuations. On the downside, the weight of a heavy, wet snow can break branches, especially on evergreens. The very worst type of wintry weather for plants, trees, and shrubs is freezing rain. Do not try to remove the ice from your plants because it could break off the branches. Be patient and wait for the sun to melt the ice. Snow makes it difficult for wildlife to find food, which results in damage to your landscape plants as they look for dinner in your yard. Ice, hail, and deicing salts all cause damage to plants. Evergreens continue to lose

moisture through their needles during the winter and if the ground is frozen, they are unable to replace it.

Wind

Wind has a drying effect. On the positive side, this can reduce the chances of fungal disease. Wind can also remove water faster than the plant can replace it. Transpiration from plants and evaporation from the soil cause major moisture loss. This could be a problem in the summer when temperatures are high and soil moisture is typically low. Wind can increase the evaporation and transpiration rates so that on a hot day, even a breeze will have a negative effect on your plants by quickly dehydrating them. Wind also scatters seeds, pollen, spores, noxious chemicals, and insects. High winds associated with thunderstorms, tornadoes, nor'easters, or hurricanes can do significant and substantial damage to plants, shrubs, and trees. If you know your area's average wind speed and direction, you can better plan the orientation of your garden. Plan to locate your garden away from the effects of the strong northwest wind. You can reduce the air circulation by building fences and/or hedges; or locate your garden in an area of your property that not only has abundant sun, but which is somewhat protected from the wind. Do not apply pesticides when the wind is blowing.

WEATHER TOOLS

The two most important weather variables that you want to keep track of are temperature and moisture. Through the decades, plants have been bred to be more resilient, but there are still temperatures at which they grow best. Temperatures that are too high or low and dry conditions can stunt your plants' growth. Ideally, plants and flowers need about one inch of moisture a week to survive, more when it's hot. Here are a few inexpensive tools to help you keep track of the weather.

Home Weather Stations. **"**If you are serious about gardening, you should be equally serious about watching the weather." (Ed Oswald, WeatherStationAdvisor.com). If your plants, flowers, and vegetables aren't getting enough sun and rain, all your gardening efforts will be wasted. One of the best ways to monitor the effects of weather on your garden is to invest in a basic home weather station. These are small, inexpensive (less than $50), and fit easily on your desk or kitchen counter. A home weather station can provide you with detailed information about your garden micro-climate. This information is particularly useful if your area tends to get big variations in the weather.

Weather station.

In addition to indicating the inside and outside temperatures, a weather station can tell you the current barometric pressure and how the barometer is trending—up, down, or holding steady—as well as the current sky condition (clear, partly cloudy, or mostly cloudy). A falling barometer indicates the approach of low pressure, which usually signals rain of some kind. A rising barometer and a change in the wind direction to west and then northwest means the front (and danger of possible plant damage) has passed and high pressure is taking over. A small home weather station will cost a

little more than a less expensive, stand-alone tool, but it will give you more precise and accurate readings and an overall better experience. Weather stations also have a longer life than stand-alone instruments.

Rain Gauges. Every garden needs a rain gauge. Analog rain gauges are the simplest and most popular models for home gardeners. They are composed of a transparent glass or clear plastic material that is usually marked off in hundredths of an inch. The cylinder is fixed to a sturdy support that can be mounted on a deck rail, fence, or post in your yard. When you are deciding where to put your rain gauge, choose an open area with easy access. The cylinder should not be obstructed by plant leaves or roofs because that could affect the accuracy of the reading.


Rain gauge.

Digital rain gauges are designed to give peace of mind to people who don't feel confident enough to accurately read an analog gauge. Digital rain gauges have a rain sensor and a self-emptying container system that connects to a wireless device that displays the collected information. The way it works is the container collects the rainwater and the sensor detects the level and transmits the information to the display window. The display component can be up to 350 feet away from the container which means you don't have to leave your house in a rain or snowstorm to check how much water is in the gauge. Like analog rain gauges, digital rain gauges should be located in a spot unobstructed by trees, leaves or a roof overhang.

Anemometers. Wind is measured using an anemometer. In general, in this area our strong winds come from the northwest so you might want to consider locating your garden in an area protected from those winds. The wind has a drying effect that could influence how often you might have to water your plants. To give an accurate wind speed reading, the anemometer has to be mounted on a tall enough pole to be above obstructions that could affect the reading. You might also mount the anemometer on your roof, but you'll have to devise a way to take remote readings from your position on the ground. Be advised that you may need HOA approval to install a tall pole in your yard or mount anything on your roof. Also, anemometers of this variety are more expensive and more difficult to install and maintain. Best advice on monitoring the wind? Check one of the weather sources noted below. They have professional anemometers that record and report the wind speed, gusts, and direction constantly.


Handheld anemometer.

WEATHER GARDENS

In 2017, Stephen Vermette, Department of Geography, SUNY/Buffalo State, planted a weather garden on a terrace at SUNY/Buffalo State to explain the concepts of meteorology and climatology to his students. The weather garden at SUNY was in containers and was maintained for five years as part of the Department of Geography and Planning's meteorology and climatology program. Each plant in the containers had an accompanying tag with a short

description of a weather element. An additional benefit was that the garden also helped with the campus beautification project. Unfortunately, the garden no longer exists.

What is a weather garden and how can it help us make our own gardens better? The purpose of a weather garden is to display and learn about various links between the weather and plants. It does this through the choice of plants and yard ornaments such as thermometers, wind vanes, sundials, and rain gauges that are installed in the garden. A weather garden demonstrates how sunlight, temperature, wind, and rain affect plants in different ways.

Sunlight. Two sunlight-oriented yard ornaments to consider putting in your weather garden are a sundial and a radiometer. Align the sundial so that the movement of the sun across the sky shows the time of day. The gnomon (metal bar across the face of the sundial) casts a shadow that rotates clockwise around the dial and tells you the time of day. A radiometer is composed of black and white vanes, or sails. The black vanes heat up more than the white vanes because dark surfaces absorb more sunlight. The difference in surface heat causes the vanes to rotate. Simple radiometers are interesting, affordable, and readily available.


Sundial in the Demonstration Garden.

Many plants exhibit an unusual reaction to sunlight or lack of sunlight (night). Consider adding morning glories to your weather garden. They open their blooms in the early morning and will bloom until late afternoon. Sometimes on cloudy days they don't open at all and the blossoms only last for one day. Morning glories have a historical link to the sun. The Aztecs believed that the flower was connected with the sun gods. Daylilies, strawflowers, and portulaca all follow a similar pattern of blooming during the day only. Strawflowers attract bees during the day and curl up at night to preserve their fragrance. Just the opposite is true for moonflowers. Their blooms start to open as the sun is setting so they can be pollinated by night-flying moths. Sunflowers, of course, are a perfect choice for a weather garden. The name comes from the shape of the flowering head, which is frequently used to depict the sun. A popular misconception about sunflowers is that the flowering heads track the sun across the sky. While immature flower buds may do this, mature heads stiffen and settle on a fixed easterly direction.

Temperature. Obviously, a thermometer that measures the temperature of the outside air as well as a soil thermometer would both be excellent choices for temperature yard ornaments in a weather garden. Dark surfaces tend to absorb more solar energy than light-colored surfaces that reflect much of the sun's energy. As a result, dark surfaces tend to be warmer than light-colored ones. Also, when the soil is wet, there is less of a temperature difference. Some of the sun's energy is used to evaporate the water so that leaves less of the sun's energy to warm the soil. That's why evaporation is considered a cooling process. You can check on this difference in temperature on your strolls through the garden. So, if your yard is very sunny and tends to be hot, add a water feature to cool it off a little.

There are several good choices for plants representing temperature in a weather garden. Snapdragons are usually grown as a very hardy cold season annual. They are cold tolerant to a

temperature of 36 degrees Fahrenheit. Snapdragons can be planted early in the season and are the last flowers to succumb to the frost in the late fall. Because they can survive light freezes and short periods of snow cover, snapdragons are one of the most popular cool weather annuals. Snapdragons are not heat tolerant though and often must be replaced as the heat of summer wears on. Four o'clocks, *Mirabilis jalapa*, need nocturnal pollinators and they respond to the cooling temperatures of the late afternoon (hence the name). An interesting aspect of this plant is that a variety of color patterns are found on individual flowers and over time, the flowers can change their color. As summer fades, many gardeners plant a fall garden. The queen of the fall garden is the chrysanthemum because of its wide range of colorful blooms, which last for weeks. Two other great possibilities for a cool weather garden are ornamental cabbage and rhododendron. Both resist light frosts and give your garden lots of color.

Wind and Rain. The best wind and rain yard ornaments for a weather garden are whirligigs, wind chimes, bells, and garden flags. All these ornaments are powered by the wind and make your garden musical and/or colorful. Wind chimes and bells have a relaxing, soothing effect. The wind disperses insects and blows seeds around, distributing them to the far corners of your neighborhood. Milkweed would be an excellent plant for a wind weather garden. Aside from dispersing seeds, milkweed has lovely pinkish-purple flowers and is essential in saving the Monarch butterfly population. Starflowers and gazanias are also good examples of wind-borne seed dispersal. Other plants whose seeds are dispersed by the wind include the "helicopters" from maple trees in the spring (which are very annoying because they cause maple tree seedlings to pop up everywhere in your garden), cottony seeds from cattails, and tumbleweeds.

A rain gauge is a must in a garden and a water feature such as a fountain or a pond would also be a great addition. Without water (rain, sprinkler, or hand watering), many varieties of plants will wilt or even die. Know your plants that need frequent watering and those that do not.

HOW TO MINIMIZE HARMFUL WEATHER EFFECTS

- Choose plants that are suited to your climate and growing conditions. Seriously consider native plants.
- Keep your plants healthy so they are better able to deal with stress from any source.
- Try to maintain an even moisture level. Improve your soil with compost to help retain moisture, water when you need to, and mulch.
- Ensure evergreens are well watered in the fall before the ground freezes.
- Use care removing snow from shrubs and don't even try to remove ice.
- Do not let any deicing salts get on your plants.
- Know the first and last frost dates for your area. Cover plants when necessary.
- If you have a problem with wind, consider planting a wind break to protect your plants and garden.
- No matter what you do or how well you plan, remember that Mother Nature is always in charge. The best you can do is stay aware of weather conditions and be ready to protect your plants if it becomes necessary. Worst case scenario—a trip to the nursery for more plants!

SOURCES OF WEATHER INFORMATION

Community Collaborative Rain, Hail, & Snow Network (CoCoRaHs). According to their website, CoCoRaHs is "a unique nonprofit, community-based network of volunteers working together to measure and map precipitation." They state that their aim "is to provide the highest

quality data for natural resource, education, and research applications." CoCoRaHs now has volunteer observers in all 50 states. I am one of three or four volunteer observers in Loudoun County.

CoCoRaHs volunteers take measurements of how much precipitation fell during the preceding 24 hours. They report this information, along with information about the current temperature and sky conditions and any other pertinent information, to the CoCoRaHs website where the data is organized and displayed for anyone to use. CoCoRaHs has both current and historical data that is used by a wide variety of organizations and individuals—the National Weather Service, meteorologists, hydrologists, emergency managers, municipal utilities, USDA, insurance adjusters, teachers, students, your neighbors, farmers, and GARDENERS. In fact, they have a Master Gardener Guide on their menu. Check out their website at www.cocorahs.org.
For more information about your local forecast or local historical weather data, see two government agencies: National Weather Service at www.weather.gov and NOAA (National Oceanographic and Atmospheric Administration) at www.noaa.gov . Other websites providing current and historical weather data include The Weather Channel, www.weather.com; Accuweather, www.accuweather.com; Weather Underground, www.wunderground.com; and Weather Bug, www.weatherbug.com. Local meteorologists called the Capital Weather Gang (Washington Post) are pretty accurate with their forecasts.

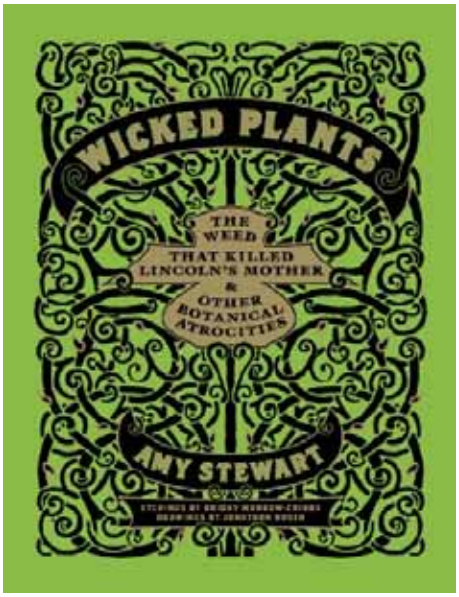
Jayne Collins, Loudoun County Extension Master Gardener

Photo of sundial in Demonstration Garden by Normalee Martin. All other photos by Jayne Collins.

So Many Varieties; Which Should I Plant?

Mt. Cuba Center is a botanical garden in Hockessin, Delaware, dedicated to native plants and environmental research. They conduct three-year trials on various plants to determine the best performing species and cultivars. They have just released the findings of their latest trial in which researchers conducted a pollinator survey to determine which echinacea were most attractive to pollinating insects. For echinacea, special attention was paid to the difference between single and double flowers in their ability to attract pollinators. For the results of this trial, see Echinacea for the Mid-Atlantic Region.
Also, on the Mt Cuba website, you can find the results for trials conducted on helenium, phlox for sun, phlox for shade, monarda, baptisia, coreopsis, annual coreopsis, heuchera, and asters.

A Gardening Horror Story



A review of *Wicked Plants: The Weed That Killed Lincoln's Mother and Other Botanical Atrocities* by Amy Stewart (Algonquin Books of Chapel Hill, 2009).

I'm not a fan of scary movies and stories. I find them typically to be a collection of cliché scenes and over-used surprise tricks. Predictable and boring. However, I recently read a book that left me terrified. I may never go in the garden again! Seriously, it was fun to read more about plants and their "not so nice" characteristics.

Most of us, especially gardeners, consider plants as good citizens of the Earth. We view them as part of the Earth's ecosystem, producing oxygen, habitat, and food for insects and animals. For people they are also a primary source of food, provide various everyday materials (for example paper, construction wood, textiles, biofuels, etc.), and are used for decorative purposes such as landscaping or houseplants. And, not so long ago, people relied exclusively on plants for many of their chemicals and medicines.

This book is a treatise on the dark side of plants. It is an easily read series of short stories about approximately 60 different plants that are deadly, intoxicating, dangerous, offensive, destructive, or painful. Who would have thought there were so many ways needed to describe how plants are sometimes not as innocent as they seem?

Deadly plants have been known for centuries. Consider some of the common names we have given to plants including Satan's apple, devil's root, bad-man's oatmeal, deadly crab's eye, and more. Hemlock *(Conium maculatum)* killed Socrates, South American natives used curare to make poisonous arrows, castor beans contain ricin, a powerful nerve agent used by the KGB to kill defectors and spies, and tobacco is a slow-acting poison that kills nearly five million people worldwide every year. And many people have been killed by mistakenly eating dangerous mushrooms. In fact, Claudius, emperor of Rome, probably died from a meal of poisonous mushroom served by his fourth and last wife. (An early late night show comedian of the time said he died of "one too many wives!") Three bites of the sweet tasting water hemlock root will kill you in a few hours. And just when you think you are being safe, watch out for corn (too much causes pellagra whose bleeding symptoms may be the source of the vampire legend), rhubarb leaves (coma and death), and potatoes (green skin may cause severe gastrointestinal symptoms and worse).

And you might not be safe inside. Common houseplants such as peace lily, philodendron, ficus, and dieffenbachia all cause unpleasant or possible severe symptoms if eaten. While adults may not be tempted, children and pets may be a bit too curious.

As the author puts it, plants that are intoxicating can be thought of as "nature's bartender" or perhaps a shady drug dealer. Ergot, a toxic fungus that can infect bread, is thought to be the cause of the bizarre behavior of the girls accused of witchcraft in the 1691 Salem witch trials. Henbane was once added to beer to increase its intoxication effect and also was an ancient

anesthetic. Teenagers have found that a tea made with morning glory seeds can cause an LSD-like trip. For bartenders, absinthe, mescal, Sambuca, and tonics are well known drink ingredients. In the United States some of intoxicating plants are also illegal such as marijuana and coca (cocaine). Ironically, you can order opium poppy seeds from a garden catalog! In other countries, khat and peyote are commonly used for their mind-altering effects.

Those who enjoy hot peppers are quite familiar with plants that cause pain. Pepper's active chemical is capsaicin, and the Scoville Heat Unit (SHU) is a measure of hotness. Peppers range from zero SHU (a bell pepper) to over one million SHU (the Dorset Naga, a selectively bred Bangladeshi pepper). And according to Wikipedia, some spurges have an SHU of 16 billion! Other plants that can be painful include the nightshade family (hallucinations and seizures) and the cashew family (long-lasting painful rashes). Did you know that poison ivy, oak, and sumac are part of the same family as cashews, and you may develop a reaction to cashew nuts if you have a strong response to poison ivy, nettles, spurge or any of the carrot and parsley family? Finally, we all have had unpleasant encounters with plants that have thorns such as brambles, cacti, roses, a variety of tasty berries, and some trees like the black locust (also highly toxic) and Osage orange.

Destructive plants are often innocent plants that have been relocated to non-native habitats by well-meaning persons. Once there they have no natural controls and can quickly get out of hand, choking out native plants and causing economic damage to crops. Some common plants considered destructive are purple loosestrife, water hyacinth, hydrilla, nutsedge, kudzu, and some types of algae.

Finally, some plants are social misfits and just plain offensive, smelly, or ill-behaved. Some plants produce an oily excretion that can burst into flame if struck by lightning or near an open fire. Others stink such as the famous corpse flower, stinking iris, stinking hellebore, or skunk cabbage. One especially disgusting plant is the slobber weed. If ingested, it will cause a person to continuously drool up to one to two pints of saliva.

So, if after reading this you are still brave enough to want to garden, I highly recommend you pick up a copy of this book, but don't read it at bedtime!

Ken Uffleman, Loudoun County Extension Master Gardener

Note: Nancy Hanks Lincoln died of milk sickness brought on by drinking milk contaminated by the poison *tremetol*. It is in the milk from cattle that graze on white snakeroot. White snakeroot is common on the eastern and southern United States and looks similar to Queen Anne's lace.

Ageratina altissima, White Snakeroot.

Photo courtesy Colorado State University Guide to Poisonous Plants.

Notes from the Help Desk: Holes in the Lawn

Lots of different creatures can dig holes in your lawn. The Loudoun County Help Desk often gets request to help homeowners identify the culprit or culprits.

Chipmunk—Chipmunk tunnels will go down at an angle from the opening and will be two fingers in size.

Cicada—Cicada holes are about the size of a dime.

Cicada Killers--The female digs a ¾-inch hole 18 to 24 inches deep in the ground to lay eggs. One sign of a cicada killer hole is it will have all the excavated dirt mounded to one side of the hole.

Raccoons—They can roll up a sodded lawn while searching for grubs and other larval insects.

Rodents—Rodent tunnels are 1.5 to 2 inches in diameter

Moles—They tend to make tunnels without openings. A mole's tunnel will be flatter with the opening two fingers in size. Moles are good diggers. Moles eat earthworms and insects.

Sod Webworms—They create ¼- to ½-inch tunnels.

Skunks--Once they smell some grubs, they can tear up the lawn, pulling back chunks of turf.

Squirrels--Their holes are only about three inches deep. They bury and subsequently dig up nuts in the lawn and in mulched beds. The holes don't have excavated dirt at the top, just like vole holes.

Voles—They create openings into mole tunnels, but these are usually no larger than an index finger in diameter. Vole tunnels are shallow and are typically under mulch or debris. Voles eat vegetation (plants, seeds, etc.).

An easy way to tell whether you're dealing with a mole or a vole is to put a piece of apple in the tunnel and see if it gets eaten. If it's gone, you have voles. If it's not, it's probably a mole.

Resources:

Internet Center for Wildlife Damage Management
Chipmunks: https://icwdm.org/species/rodents/chipmunks/chipmunk-damage-prevention-and-control-methods/
Moles: https://icwdm.org/species/other-mammals/moles/mole-damage-prevention-and-control-methods/

Loudoun County Help Desk, LoudounMG@vt.edu

Loudoun Wildlife Conservancy Spring Native Plant Sale is on!
April 10 9 a.m. to 3 p.m. Main Visitor Parking Lot at Morven Park