Trumpet Vine

Knowledge for the Community From Loudoun County Extension Master Gardeners

Winter 2019

Volume XV, Issue 1 www.loudouncountymastergardeners.org

LOUDOUN COUNTY EXTENSION MASTER GARDENER LECTURE SERIES

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January 10, 7 P.M. *Spotted Lanternfly--Not Wanted!* with Rebecca Hutchings, Master Gardener.

February 7, 7 P.M., *The Important Role of Home Gardeners in Protecting Our Natural Water Resources*, with Chris Van Vlack, Urban/Agricultural Conservationist, Loudoun Soil and Water Conservation District.

March 7, 7 P.M. *The Historic Gardens of Germany*, with Margery Erickson, garden lecturer.

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

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

Winter Weather Is Here!

Normally, when we are preparing this winter edition of the Trumpet Vine, we will have had a hard freeze and some chilly weather but not continuous nights in the 20s and school closures due to snow as we have had already this fall.

With the rain and then the sudden cold, I'm sure I'm not the only gardener who still has work to do. It's time to prioritize! Mulch any exposed soil. Winter weather leaches the nutrients out of soil. I prefer leaf mulch as a ground cover. The trees seem to be cooperating this year, and most of the leaves in my neighborhood have dropped--even the oak leaves. So shred your leaves with a mower or mulcher and then use them to cover the soil and also to heel in any potted perennials that spend the winter outside.

Some of your perennials may retain green basal leaves during winter, and some groundcovers are essentially evergreen. Cardinal flower, green and gold, coneflowers, foamflower, lyre leafed sage, black-eyed susan, goldenrod, golden ragwort, evergreen ferns, and many other plants do better if their leaves are exposed to the sun rather than buried in mulch. Keep an eye out for green leaves and don't bury them. Note how some of the leaves are holdovers from the summer such as the foamflower, and others seem to be fresh growth in preparation for spring such as goldenrod and black-eyed susan.

Some plants should not be cut back because they contribute to the aesthetics of the garden. Certain tender perennials benefit from the insulation to the crowns provided by old foliage. Leave fern fronds in place until spring. Finally, some plant stems should be retained to mark the plant's location.

On the other hand, any foliage that may harbor diseases or insects should be cut back and removed from the site. Hosta leaves should be cut off and disposed of to discourage slugs, pests, and diseases.

2019 "Let's Get Growing" Annual Symposium

The Loudoun County Extension Master Gardeners are sponsoring a one-day gardening symposium on Saturday, March 23, 2019. Four prominent speakers will provide inspiration, ideas, and information to prepare you for this upcoming growing season. Please join us at the Ida Lee Center in Leesburg to learn more as this year's outstanding speakers share their expertise.

Larry Weaner: Landscape architect, speaker, and author.

Larry combines expertise in horticulture, environmental science, and the traditions of garden design. In his talk, ***The Self-Perpetuating Landscape: Setting a Process in Motion***, he will discuss the principles and protocols for creating dynamic, ecologically rich landscapes where nature does much of the "planting." The lecture will include case studies that demonstrate how practical, concrete strategies for assisted plant proliferation can be applied from the most intimate garden to large multiacre landscapes.

Barbara Pleasant: Award-winning author, lecturer, and vegetable gardener.

Barbara has written four books on gardening and contributes regularly to gardening magazines. Her lecture, ***Gardening to Feed Body and Soul,*** delves into how to find the deepest form of happiness in your garden, work with plants that have it all--flavor, fragrance, and gorgeous good looks. Barbara's simple success plan starts with easy edibles and then adds soothing herbs and fast-growing summer flowers that support beneficial insects. She will spotlight her favorite plants for Virginia gardens and offer dozens of tips for keeping your garden going from spring to fall.

Dr. Sara Via: Professor and climate extension specialist, University of Maryland.

Spring now comes earlier, affecting plants and the species with which they interact. Warmer winters have increased the overwintering survival of many herbivores, weeds, and diseases. Night temperatures are increasing faster than daytime ones, affecting chill hours and many aspects of plant growth. These diverse effects of climate change have significant impacts on gardens and home landscapes. Learning some strategies for adapting to climate change and adopting climate-friendly gardening strategies will both improve gardening success and act to reduce future climate change.

Nancy Lawson: Author of *The Humane Gardener: Nurturing a Backyard Habitat for Wildlife.*

In her talk, ***The Humane Garden: Cultivating Compassion for All Creatures*****,** Nancy will discuss why we call some insects "beneficial" while others are called "pests" and why some plants are considered "desirable" while others are called "weeds." In this myth-busting talk, learn how common growing methods divide the natural world into false dichotomies and perpetuate misperceptions about the wild species living among us.

Online registration opens February 1, 2019, (mail-in payment available). Tickets that include a box lunch are $70; tickets are $60 if you choose to BYO lunch. This symposium is sure to sell out as it did last year. Buy your tickets early!

See our website for more information and registration beginning on February 1, 2019, http://loudouncountymastergardeners.org/events/annual-symposium/.

Adding Winter Interest to Your Garden

Do you look around in the winter and feel that your garden is missing something? Do you see another garden that looks wonderful in the winter and wish yours did? Below are some plants to consider when you are snuggled in front of the fireplace with a hot drink and perusing the new garden catalogs this winter. All plants discussed here will grow in our area of Virginia.

Photo with permission of congerdesign@pixaby.com.

One of the most dramatic looks in winter can be created with grasses. Left with their seed heads on through winter, grasses will convey movement, color, and texture in the garden. The seedheads also provide food and protection for the birds. The Miscanthus family offers a wonderful assortment to choose from, including the one shown.

Lenten roses. Photo with permission of congerdesign@pixaby.com.

Another family that offers an abundance of choices is Helleborus. The flowers of these wonderful perennials come in a wide range of colors, from white to yellow, pale rose to deep burgundy, and even green! Some even have freckles! With leathery leaves appearing after they bloom, the bloom period ranges from Christmas to Easter, depending on the variety planted. Several varieties will naturalize quite easily, making them a great plant to place under shade trees where grass won't grow. To learn more about each of the 20-some species, you can hop over to plant lover Tony Avent's nursery website plantdelights.com here. Hellebores need part to full shade and well-drained soil.

Winter aconites and snowdrops are two bulbs whose sweet blooms will pop up through the snow, adding a vibrant color to your garden. Winter aconites are tubers, two to three inches tall, and do spread. They will bloom in late winter--letting you know that spring is on its way. Snowdrop or Galanthus is a small bulb that will bloom around the same time as winter aconites, and together they make a lovely combination in the garden. A snowdrop can be a single flower or double, white with or without green markings. It's a small, slender plant although one variety, *Galanthus elwesii,* will reach eight inches.

Snow drops in February. Photo by Carol Ivory.

Bergenia in the winter. Photo provided by Bluestone Perennials.

Another fun perennial to plant for winter color is purple bergenia, *Bergenia pupurascens,* also called pigsqueak (due to the sound produced when two leaves are rubbed together). Cold weather turns bergenia's leaves to a rich deep burgundy. The plant has a clump-forming growth habit and is good for bed edges or ground cover in shady areas. They reach a height of 12 to 18 inches and its spread is about twice that. For best color in the winter, pick a variety like Winter Fairy Tale or Winter Glow. Bergenia needs part to full sun and well-drained soil.

Are you thinking you need some new trees or shrubs in your garden? Why not add one of these that will give you winter interest as a bonus?

Witch hazel is, in my opinion, sorely underused. Blooming in mid to late winter on warm days, it provides a much-needed bit of cheer. The flowers will curl up when the temperatures drop again, which lets you know before you go out just how cold it might be! A small, wide tree, the witch hazel grows to be about 12 feet tall and 15 feet wide. I would place it where it can show off its fringe-like flowers. You can find flowers in white, pink, red, and yellow.

Witch hazel flowers. Photo with permission of Pixabay.com.

Yellow or red twig dogwoods can add a bright unexpected color to your beds. As the best color is shown on new growth, make sure to prune about one-third of the old growth in the spring. Another small shrub or tree, depending on how you prune it, this dogwood reaches about five to eight feet tall. Full sun is best for the brightest color wood.

Ilex verticillata **in the winter.** Photo with permission of Pixabay.com.

Hollies are another great family of shrubs and trees for winter interest. While most hollies are evergreen, a perennial favorite of gardeners is *Ilex verticillata,* which is a deciduous holly. To get those amazing red berries in the winter, make sure to plant a male holly for every five to seven female hollies. Full sun is necessary for these beauties. Some of the more outstanding varieties of verticillata *are* Berry Holly or Berry Holly Gold, Little Goblin Orange, or Berry Poppins. Ilex prefer full sun and moist soil.

And one last tree: Magnolia. For me, to have a southern magnolia tree to prune in the winter for my mantelpiece is a joy. And those glossy leaves! The picture they make with snow all around and the sun shining on their leaves. Now, you might not live to see it in all its glory, but what a way to leave your mark in the garden for those who come after. This is one of those trees that you buy as big as you can afford and that you pay someone to plant properly!

Magnolia grandiflora **with seed pod.** Photo from Va. Tech Dendrology site.

Becky Phillips, Loudoun County Extension Master Gardener

Winter Damage to Shrubs and Trees

The weather forecast for the winter seems to be consistent with the very wet summer and fall—no end in precipitation, which will most likely take the form of snow and ice. The good news is that drying out, called desiccation or scorch, which causes brown leaves, won't be the big problem that it was last winter and spring when rainfall was scarce. Evergreens are fortified by all the rain; however desiccation can still occur if the soil is frozen for a period of time accompanied by cold winds. Always make sure that your trees and shrubs, especially those with shallow roots such as azaleas, boxwoods, and rhododendrons, have a wide ring of three-inch-deep mulch (ensure the mulch is not touching the trunk).

Leaf scorch on Nellie Stevens Holly. Photo by Margie Bassford.

Preventive pruning. Ice and snow are likely to be the problem this winter. You can take some preventive measures now. It is the perfect time of year to walk your property and assess your trees and shrubs. Most of the leaves have fallen and you can get a good look at the structure of your plantings as well as see if there are any damaged limbs that need to be pruned out before a heavy snowfall or ice storm. You can look for trees that have structural damage from previous storms or trees that have weak, narrow-angled, V-shaped crotches. Early winter is a great time to proactively prune these defective branches, which could save you the heartache of a broken branch that might tear down into the trunk. Publications on proper pruning: https://pubs.ext.vt.edu/430/430-459/430-459.html, https://pubs.ext.vt.edu/430/430-456/430-456.html, https://pubs.ext.vt.edu/430/430-457/430-457.html.

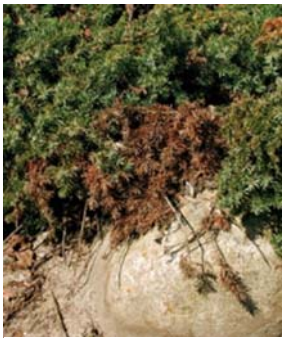
Photo by B. Bailey.

When snow and ice occur. Homeowners often ask whether their plants are better served by knocking off ice and snow or by leaving it alone until it melts. Most extension horticulturists recommend leaving ice-covered branches alone since knocking the ice off often causes even more branch breakage. Snow itself is not dangerous to plants. In fact, it acts as a natural insulator, helping to protect plants from freezing and thawing temperatures. After light or medium snows, there is no need to try to remove the snow from plants. However, if the snow is heavy and is severely bending branches, it can be gently removed by brushing upward with a broom or lightly bumping limbs upward with a broom or pole.

Beware of standing underneath taller shrubs or even small trees when you do this. Do not shake the shrub or tree as this can cause more injury to the plant.

Piled and heavy snow. When shoveling or snow plowing near shrubs, avoid piling excessive amounts of wet, heavy snow on them since the weight of compacted snow can break branches. If foundation shrubs are situated underneath areas where snow or ice often slides off the roof, they can be protected with A-shaped wooden frames. Upright shrubs such as arborvitae and some junipers that may splay outward and lose their shape under the weight of snow can be supported

by tying strips of cloth or twine around each shrub or by tying the leaders together inside the shrub to maintain its shape.



Salt Damage.
Photo: Stephanie Fagan, Jennifer Benner, and Danielle Sherry from Fine Gardening.

Salt damage. Heavy accumulations of deicing salts along roadsides and sidewalks can cause leaf and needle scorch and may kill buds and branch terminals. This damage is caused by desiccation of the more tender tissue in buds and new growth. Salt may also accumulate in the soil and cause root death from desiccation of root tissue. It's important to remember that deicing salt runoff from one sidewalk or parking lot may not cause problems, but the combined effect from numerous applications raises the harmful concentrations of salt in adjacent soil and bodies of water. Never dump salt on impervious surfaces or the soil. High concentration of salt will kill trees and shrubs. In order to prevent this, don't use a salt-based snow melt! Try using sand or sawdust to get better traction on the snow and/or ice. If you must use a salt-based chemical, don't pile the snow with it against your landscaping. Then, in the spring, flush the soil with two inches of water over a couple of hours (slow stream) and repeat after three days.

Blasted or damaged blooms. This damage results when flower buds swell and then freeze during cold snaps or late frosts. Star magnolia and lilac flowers frequently suffer from this type of injury.

Repairing damage. Immediately repair broken limbs. See the pruning references provided on page one. Large trees will require a professional arborist. Otherwise, be patient and resist the urge to prune until new growth begins in the spring. Where the buds are not damaged, healthy green leaves will emerge and the damaged leaves will eventually drop. Moreover, we will be able to more easily identify the dead branches that we can remove.

Arborvitae that are badly splayed can be tied together or professionally pruned to substantially reduce the height. They will grow back beautifully.

Additional resource:

https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-500/426-500_pdf.pdf.

Barb Bailey and Margie Bassford, Loudoun County Extension Master Gardeners

Stormwater Runoff and Erosion

Loudoun County experienced above average rainfall in 2018, causing excessive stormwater runoff and erosion on many residential properties and HOA common areas. Continual deluges can wash away surface soil, leaving exposed tree roots, ponding water, ruts, and eroding landscape banks. A question came to the Loudoun County extension agent, Jim Hilleary, from a Loudoun resident about mitigating erosion on his property as well as the HOA property behind his home. The property has a steep slope on one side and ponding water in the back that flows into HOA property and eventually down a slope into a stream. The slopes are well shaded by neighboring trees, where bare roots and soil are exposed.

In order to assist, Hilleary called upon several Loudoun County departments and the Extension Master Gardeners to answer the questions and provide resources to the resident, as well as the HOA, on stormwater mitigation. A site visit included the Department of General Services, Loudoun Soil and Water Conservation, and Loudoun County Cooperative Extension.

As part of the Stormwater Management Program, the Department of General Services establishes and maintains a countywide stormwater program. More specifically, the department addresses the design, development, improvement, operation, inspection, maintenance, and oversight of the stormwater management system. On this particular inspection, department representatives were able to advise on the stormwater drainage from the street through the drain and back down toward the watershed stream. A tree was down, blocking the flow of runoff from the rock riprap that was installed. The tree will be removed.

Loudoun Soil and Water Conservation District advises on the Virginia Conservation Assistance Program (VCAP) and on whether funds are available to assist in mitigating soil erosion. Literature on VCAP was given to the homeowner and to HOA management, to be discussed at a later date.

Loudoun County Extension Master Gardeners advised on landscaping practices that prevent excessive water runoff from recurrent storms with the *My Backyard* program. Structural suggestions included installing rock walls in a step fashion or terrace, so the water is slowed and absorbed. Also, with stones placed at the end of the corrugated pipe after the downspout, water will be slowed and allowed to percolate so soil erosion can be mitigated. See: Reducing Erosion and Runoff

In addition to structural improvements, ground covers are one of the best ways to reduce runoff and therefore erosion. Some native suggestions for shade included:

- Green and Gold *Chrysogonum virginianum*.
- Wild Ginger *Asarum canadense*.
- Pennsylvania Sedge or Oak Sedge *Carex pensylvanica*.
- Golden ragwort *Packera auera*.

For more educational information, Virginia Cooperative Extension offers the following factsheets as a six-part series on stormwater management for homeowners:

- Factsheet 1: Rooftop Redirection (Disconnection).
- Factsheet 2: Rain Barrels.
- Factsheet 3: Permeable Pavement.
- Factsheet 4: Grass Swales.
- Fact Sheet 5: Rain Gardens.
- Fact Sheet 6: Buffers.

Partnering for success to protect the Chesapeake Bay and its watershed is a goal of all departments mentioned in this article (See https://www.epa.gov/chesapeake-bay-tmdl). Without mitigation, eroding soil will flow into waterways. The sediment, along with excess phosphorus and nitrogen from fertilizers, will pollute the waterways. Residents and HOAs can take a part in stopping this pollution using the *My Backyard* program, which offers educational information on the best management practices for land use.

Barb Bailey, Loudoun County Extension Master Gardener

Biologs interplanted with native grasses and perennials installed to mitigate erosion on a hillside. This is an example of conservation landscaping subsidized by the Virginia Conservation Assistance Program.
Photo by Carol Ivory.

Recommended reading:

US Government Fourth National Climate Assessment (FNCA) https://nca2018.globalchange.gov

The Blackberry Lily: Triseasonal Beauty

Not a true lily, blackberry lily is the common name for *iris domestica*. This somewhat recent botanical name was proposed in 2005 as a result of DNA evidence suggesting the species to be more related to iris. Formerly the blackberry lily was known as *Belamcanda chinensis*.

The sword-like leaves of this perennial, which grow to 18 inches, are arranged in a fan on a tuberous rhizome similar in appearance to the iris. The flowers, two inches wide with six petals, are very different in appearance from typical iris flowers. The color is generally bright orange spotted with red. From this spotting comes the additional common name leopard lily. The flowers appear above the foliage early to midsummer on stems that are two to three feet tall. These tall flowers may benefit from staking to prevent flopping in strong winds.

Blackberry Lily Flowers. Photo by Normalee Martin.

After the flowers are spent, green pear-shaped seed pods fade to tan and split open revealing shiny black seeds arranged in clusters resembling blackberries. These seeds may remain on the stalks several months, providing winter interest. Brought inside they may be used alone in a vase or combined with other dried floral elements.

The flowers are followed by numerous seedpods that open to reveal black seed clusters resembling blackberries. Photo courtesy of Wisconsin Master Gardeners.

Iris domestica grows well in full sun and moderately fertile soil with good drainage in zones 5 to 10. Plant the blackberry lily in a location where one can appreciate up close the unique beauty of the flowers and seed pods. Blackberry lily will also self-sow enough to be considered invasive, so planting in a convenient location allows deadheading to control self-seeding and for easy removal of seedlings.

It has been said that Thomas Jefferson grew the blackberry lily.

Jean Fenwick, Loudoun County Extension Master Gardener

Hemp: An Old Agriculture Staple Is a New Consideration for Virginia's Commercial Farm and Garden Users

What Is Hemp?

Hemp refers primarily to the plant *Cannabis sativa* L. (Cannabaceae). Industrial hemp is not marijuana but is a variety of *Cannabis sativa* that can be used for a variety of products.

Individual Gardener

As a Loudoun County Extension Master Gardener, I have been growing green tea (*camellia sinensis* var. *sinensis*) and was looking to hemp as a mulch for my plants.

Bale of hemp. Photo by Nancy Feeney.

The local horse supply store carries bales of hemp bedding for horses who may be allergic to straw bedding. I purchased six bales of hemp to put around my tea plants as mulch for the winter season.

Hemp hurds are easily distributed. Photo by Nancy Feeney.

So far, I have found that one bale of hemp hurds, though a bit pricey, can be distributed easily around each plant. Hurds, also known as shives or hemp wood, are very small and light, consisting of the woody inner portion of the hemp stalk, broken into pieces and separated from the fiber. After a few days and a rain, I found that hemp absorbs water and puffs out. The outer part gets a bit crusty but seems to hold moisture and stays around the plant. Hemp breaks down into the soil easily and may also repel some insects.

Since I haven't tried this product before, it will be a few years until I can say for sure that it can be a good substitute for common types of mulch. But, since the laws have changed and each farmer could grow a self-sustaining mulch crop, it may be economical in the future to grow and sell this local product.

History

Hemp harvesting has been traced back over 8,500 years in China and back six millennia to western Asia and Egypt. European hemp was widespread after 500. North and South America trace growing hemp to the late 1500s to 1600s. The United States hemp industry flourished in Kentucky, Missouri, and Illinois between 1840 and 1860 due to the strong demand for sailcloth and rope. American Presidents George Washington and Thomas Jefferson encouraged the cultivation of hemp. The hemp plant was so important to Virginia that farmers were required to grow it in Colonial times. Our and Declaration of Independence and U.S. Constitution were written on it.

Political and Social Developments

The current hemp industry is making great efforts to point out that hemp is not marijuana. Three key developments have recently occurred that may change some of the thinking on hemp cultivation: (1) recent advances in the legal cultivation of hemp in western Europe; (2) enterprising farmers and farm groups convinced of the agricultural potential obtained permits to

conduct experimental cultivation; and (3) lobby groups convinced that narcotic forms of the hemp plant are distinct and distinguishable from fiber and oilseed forms.

Virginia Use and Current Trends

Four years ago, federal law was changed to allow universities to grow hemp for research. (Just this month, December,2018, hemp legalization was tucked into the 2018 farm bill passed by Congress.) In 2015 Virginia had passed its own law legalizing hemp cultivation for research purposes. In September of this year, there were 85 licensed hemp growers in Virginia through state universities, according to Erin Williams, who works with hemp registration at the Virginia Department of Agriculture and Consumer Services.

On July 1, 2018, the licensing process to grow industrial hemp was opened to everyone in Virginia. The General Assembly passed a bill in both houses that changed the licensing system for industrial hemp and hemp farming. The new registration system is open to everyone.

In a *Loudoun Now* article, it was reported that most recently in Virginia, the Loudoun County Supervisors heard a report on the history of industrial hemp and the potential impacts of legalizing the crop. Loudoun economic development officials advise that the crop could be a potential boon for area farmers. It was only grown in Virginia through programs at universities or the State Department of Agriculture; however, new regulatory changes could significantly affect the rural economy and add diversity with a new crop.

Multiple Uses of Hemp

Industrial hemp production has many uses including fiber, textiles, paper, auto parts, building materials, animal bedding, foods, supplements, ink and varnishes, environmental cleanup, and gardening.

Fiber and Textiles

Hemp fibers have strength and durability (particularly resistance to decay), which makes hemp useful for rope, nets, and sailcloth.

Hemp clothing has a natural appeal. So, the processing and blending of hemp with other natural fibers has significantly improved the feel of the product.

China's hemp textiles are indistinguishable from fine linens in texture. The North American hemp apparel industry today is based on fiber, yarn, and fabrics imported from Eastern Europe and China. Lower Chinese labor costs make it very difficult for the potential development of a hemp textile industry in North America. In addition to textiles used in clothing, coarser woven cloth (canvas) is used for upholstery, bags, sacks, tarpaulins, and carpeting.

Pulp and Paper

The pulp and paper industry (based on wood) considered the use of hemp. Hemp's long fibers could make paper more recyclable; however, various analyses have concluded that the use of hemp for conventional paper pulp would not be profitable.

Specialty pulp is expected to remain hemp's core market for the foreseeable future. The specialty pulp products made from hemp are cigarette paper, bank notes, technical filters, hygiene products, art papers, and tea bags.

Composites for Auto Industry

Plastic composites for automobiles are the second most important component of the hemp industry. There are widespread technologies: (1) thermoplastic production--natural fibers are blended with polypropylene fibers and formed into a mat, which is pressed under heat into the desired form, (2) thermoset production--the natural fibers are soaked with binders such as epoxy resin or polyurethane, placed in the desired form, and allowed to harden through polymerization, and (3) injection molding--hemp fibers have proven to be superior for production of molded composites.

Building Construction Products

Thermal Insulation. Due to the high cost of fuels and ecological concerns about conservation of nonrenewable resources, this market is growing very fast, and hemp insulation products are increasing in popularity.

Fiberboard. The short fibers of the hurds have been found to produce a superior product. However, in North America, the use of nonwood fibers in sheet fiberboard (pressboard or composite board) products is relatively undeveloped. Composite board can be made of flax, jute, hemp, and wheat straw.

Cement (Concrete) and Plaster. Hemp fibers added to concrete increase tensile strength while reducing shrinkage and cracking. Entire houses have been built using hemp fiber in the concrete.

Animal Bedding

Hemp hurds make remarkably good animal bedding. The small hurd pellets appear to be unsurpassed for horse bedding and also make an excellent litter for cats and pet snakes. Hemp can absorb up to five times its weight in moisture (typically 50 percent higher than wood shavings), does not produce dust (following initial dust removal), and is easily composted. Hemp bedding is especially suited to horses allergic to straw.

Oil and Waste Spill Cleanup

The high absorbency of hemp hurds has led to their use as an absorbent for oil and waste spill cleanup in land reclamation in the oil and gas industry.

Gardening--Geotextiles

The widespread current use of plastic netting to reinforce grass sod is quite objectionable; the plastic persists for many years and interferes with lawn care. The use of hemp fiber as a planting substrate (biodegradable pots and blocks for plants) and as biodegradable twine to replace plastic ties used to attach plants to supporting poles is considered the “green ideal” of producing locally for local needs; by this credo, hemp is preferable in temperate regions to the use of tropical fibers, which need to be imported.

Geotextiles or agricultural textiles include (1) ground-retaining, biodegradable matting designed to prevent soil erosion, especially to stabilize new plantings while they develop root systems and along steep highway banks to prevent soil slippage and (2) ground covers designed to reduce weeds in planting beds (in the manner of plastic mulch).

Environment Friendly

Hemp is environment friendly with respect to agricultural biocides (pesticides, fungicides, herbicides) and is known to be exceptionally resistant to pests. Insecticides are very rarely required when growing hemp. Most insects cause only limited damage to hemp, and substantial insect damage is uncommon.

Hemp is relatively resistant to weeds and requires very little herbicide. When fields are thickly seeded--as is always done when hemp is grown for fiber--the rapidly developing young plants normally shade out competing weeds.

Future Vision

With increasing awareness of the differences between industrial hemp and marijuana, the U.S. population will have an increased appreciation of the environmental benefits of hemp cultivation. The continuing demonstration of successful hemp cultivation and development in most of the remaining Western world will increase pressure on state and federal governments to permit hemp cultivation by farmers, particularly wheat, corn, and tobacco farmers, in desperate need of substitute crops, but also for rotation crops to break pest and disease cycles.

Those who have entered the hemp industry have tended to be very highly motivated, resourceful, and industrious--qualities that have been needed in the face of rather formidable obstacles to progress. Many uses of hemp have yet to be discovered. The imagination can only continue to develop many more uses for this valuable crop.

Nancy Feeney, Loudoun County Extension Master Gardener

INFORMATION RESOURCES

Reviewed various internet articles on the current events in the industrial hemp movement.

Articles published in *The Roanoke Times*, *Loudoun Now*, and *Marijuana Moment.*

Article, “Hemp: A New Crop With New Uses for North America,” Ernest Small and David Marcus.

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The Garden of Good and Ego

Gardening has been a passion that has ebbed and flowed throughout my life. As a little girl, I focused on soil, specifically the muddy kind used to create mud pies. I remember how damp and cool it felt from the gift of rain and that it smelled like spring, my favorite time of year. I have never forgotten the raw, Zen-like connection to Mother Earth that flowed through me each time I squished handfuls of her soil between the palms of my hands and constructed whatever image my imagination conjured up. In the process, splatters of mud landed like gentle missiles on my hair and on every part of my body not covered by the lace-tipped white pinafores my mother had made with love and blatant optimism that my enthusiasm for anything dirt would end before I started kindergarten.

In my twenties I created my first real garden, a miniscule triangular patch filled with a few spring blooming bulbs and zinnias that flowered for most of the summer. Over the next four decades, I produced many gardens far bigger than my first attempt. I chose plants that I liked, not knowing that what I liked wasn't necessarily conducive to survival in the location and soil in which it was planted. Gardening ignorance, blessed by dumb luck, followed me from Maryland to D.C., to Egypt, India, and Mexico. Finally, after Mexico, when we moved to Texas, I learned to ask my neighbors and local nursery owners to help me choose the right plants for the climate and I began to wear gardening gloves. They became a necessity when my unclad fingernails began to replicate the striped stains found on the teeth of our pastured horses. More importantly, wearing them while gardening kept me from another visit to the ICU in our local hospital where I was treated for a copperhead bite.

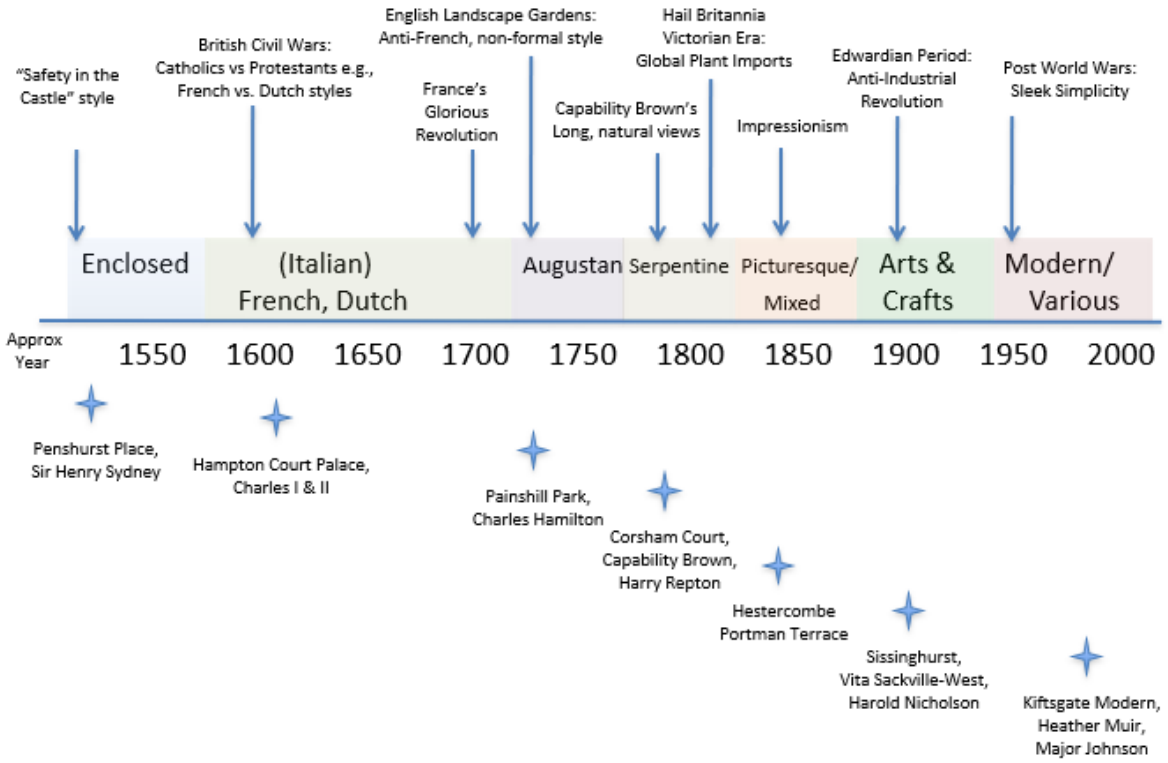
The burning sun over our newly built gardens in Colorado, a place where gardening is complicated by an altitude of 8,000 feet, a short growing season, and spring to summer hail storms, required many consultations with the owner of a local nursery. It wasn't until my husband retired and we purchased a small farm in Loudoun County, Virginia, that included 10,000 square feet of neglected gardens, when something tapped me on the head. The self-flagellation of my ego was not enough. I needed to learn everything I could about gardening before my dumb luck ran out and I destroyed sad plants begging to be saved. It was no coincidence that the frustrated gardening angels who had followed me from garden to garden for 70 years, led me to the Loudoun County Extension Master Gardener (LCEMG) training program. After completing college-level classes ranging from the science of plants and soil, to conservation and best gardening practices, my amazing classmates and I completed an additional 75 hours of training and community service before graduating as Loudoun County Tenured Extension Master Gardeners.

In looking back on the mud-smearing stage of my life, the smell of spring still thrills me. Connection to the Earth and nature grounds and balances me. Gardening has taught me to appreciate the opportunity to observe the changes that every season delivers. It has taught me to embrace most of nature. I say "most" because no matter how often I ask, the Universe has never replied to my question about why God continuously provides new destructive insects bent on destroying my favorite plants and shrubs. It has also taught me the basics of patience, a quality I continuously fail to appreciate. I've learned how to create harmony and sustenance for the birds, butterflies, bees, and beneficial insects that brighten our lives, and to welcome our relationship with rabbits and a herd of deer whose precious babies appear each spring. They are safe, and they know the rules, but that's another story.

Jeanne Eck, Loudoun County Extension Master Gardener

Gardens as a History Lesson….Say What?

Did you know that gardens reflect the historical periods surrounding their creation? That you can walk through a garden and use all of your senses to reflect and reinforce the historical style that it represents? Here's a graphic, based on historical garden trips taken with Purdue University that helps with understanding classical western garden styles and the historical events that led to their emergence.



The **Enclosed Style** started in Italy in the 15th century and then appeared in in England during the 16th Century. Enclosures held fruit trees, knots, grass and a sheltered hilltop so the ladies could safely view the outside world. Penhurst Place (below) is a good example.

The **French Style** enclosed views and avenues by planting lines of trees. The **Dutch Style** emphasized canal gardens and horticultural skill, including use of topiary. Hampton Court Palace (below) illustrates this style.

The **Augustan Style** tried to emulate the Roman landscape during the period of Augustus. William Kent led this style, which includes woods, water, grass and classical buildings. Painshill Park (below) is a great example, including the hermit hut and grotto because, of course, why not?

The **Serpentine Style** is closely associated with Lancelot (Capability) Brown. Although an offshoot of the Augustan style, it eschewed classical buildings for serpentine and more natural lines. A house and lawn should be seamlessly joined, with an encircling belt of trees and carriage drive…and a peacock, if available. Corsham Court (below) ably illustrates this style.

The **Picturesque Style** came about as purists rejected the serpentine style as too manufactured. (Capability Brown was known to move villages to create that "swish".) Instead, in concert with impressionism, garden views should be composed—and include exotics, just becoming available. Hestercombe (below) shows this well.

The **Arts & Crafts Style**, led by John Ruskin and William Morris, was a rejection of both copying others' styles and the Industrial Revolution and signaled a return to the simpler life: arts and crafts. The style clearly differentiates between an enclosed, "manufactured" area near the house and a naturalized "wild" garden. Gertrude Jekyll is one of its best known designers and Sissinghurst (below), the home of Vita Sackville-West and Harold Nicholson, one of its exemplars.

The **Modern Style** generally draws on Asian styles and is marked by sleek lines and simplicity. The modern gardens at Kiftsgate (below), also known for their rambling, hardy white rose, illustrate this style.

Next time you want to bring history to life, take a stroll through a garden and see if you can guess the age by the style(s) employed. It will engage all of your senses and bring new insights that you might want to reflect in your own gardening endeavors!

Dawn Meyerriecks, Loudoun County Extension Master Gardener

All photos in this article are by Dawn

Succulents and Cacti Reign in the West — Different but Beautiful

While in California just recently, we visited San Diego, a vastly different plant region from the East. Top of my list of places to visit was Balboa Park, which encompasses its Botanical Gardens and its Desert Garden, somewhat on its perimeter. Neither disappointed, so I hope you'll enjoy the adventure with me by pictures.

First, the Botanical Gardens, which far surpass our National Botanical Garden, both in displays and in its grooming, which was especially impressive! No dropped leaves or lackluster specimens under this lath roof!

As one approaches the Botanical Gardens, this stunning lily pond presents itself, full of delicate blooms as well as turtles.

All photos in this article are by Pamela McGraw.

As can be seen in the lower right of the photo on the left, grass is not a landscape priority in San Diego. It's not even an afterthought, which is understandable given the average rainfall of ten inches annually (last year brought only three inches from the heavens). I might add, neither is any type of mulch, which could have greatly enhanced the appearance of the planting beds along the roadsides, hotel entries, etc. as well as helped retain the scant moisture they do receive. Surprisingly, neither were irrigation systems prevalent. I do suppose we might learn something from them in this regard: to cooperate with, rather than fight the climate, whatever it brings.

Entry to the gardens was decked for fall. Dried leaves, pumpkins, and an array of fall decorations almost seemed out of place to this easterner, much less the early Christmas wreaths we observed!

Trunks of both trees and large older plants were often used as structural elements and offered a sense of antiquity and beauty.

The Desert Garden, established in 1976, features more than 1,300 plants, mostly succulents and drought-resistant plants from around the world, within its 2.5 acres.

Ever see an aloe blooming? Its blossom closely resembles the kniphofia (tritoma) or red hot poker plant's bloom.

These were abundant and often served as ground cover…..really?!

Next, cacti of all sorts and shapes were displayed in both beds and islands. The barrel cactus really showed its stuff!

How's THIS for a fantail palm? Just spectacular!

This giant staghorn fern, one of many, was unbelievable! The handsome dude is my husband who just stood before it to marvel. (Plantlife and gardening are growing on him!)

The stroll through these areas provided a delightful day of lingering to enjoy the diversity and unparalleled beauty of the region.

Pamela McGraw, Loudoun County Extension Master Gardener

The Theory of Evolutionary Anachronisms

This article was written for the Winter Edition of the C&O Canal Association quarterly newsletter. Reproduced here with permission of the author, Marjorie Richman.

In the 1970s, biologists began to focus on solving a puzzle. It had long been noted that the fruits of certain trees had no takers; they simply sat on the ground and rotted. Since food is a precious commodity in nature, it didn't make sense that a food source would be ignored. There were many theories over the years as to why this happens, but none seemed to satisfy the growing collection of evidence. Other features under discussion added to the mystery; for example, why some trees retain attributes for which no purpose can be found. Finding plausible reasons for rotting fruits and useless attributes led to intriguing concepts that are now being offered in the context of a new theory and a new term, "evolutionary anachronisms."

Anachronisms are all around us, in our neighborhoods and along the towpath. We have become accustomed to them to the point where we take no notice. For example, we often see osage orange trees, but we rarely note that the large, solid fruits sit on the ground for extended periods, uneaten. We often see honey locust trees and never wonder why such lovely trees have an array of very nasty thorns extending along the trunk. Fruits too big to swallow and dagger-like thorns are now thought to be anachronisms: attributes that evolved in response to pressures over the long history of a species but are no longer present.

These pressures began long ago, when huge animals roamed the Earth. Megafauna, animals weighing over 100 pounds and perhaps as much as 1,000 pounds, were the norm millions of years ago. Fossil evidence indicates that huge bears, giant sloths, mastodons, woolly mammoths, and even camels were once present in North America. These animals formed a partnership with the trees of that time. The trees provided food; the animals ate their fruit and dispersed their seeds. The partnership was essential for animal survival and tree reproduction. Then, about 13,000 years ago the great glaciers of the Pleistocene epoch began to melt. The climate changed and the megafauna eventually became extinct. Some species of trees survived the extinction, those fortunate enough to find new seed dispersal partners or new reproduction strategies. Biologists now think this survival came at a cost. Many tree species adapted in important ways but still retained features of a bygone day; a time when large animals could eat and digest large fruits or fruits encased in hard containers, a time when large herbivores could topple a tree simply by rubbing against it or were tall enough to browse immature fruit before the seeds were ready to germinate. Since trees populated the

Honey Locust thorns. Photo by Marj Richman.

planet long before we did, and they live much longer than our life span, it seems reasonable that such attributes could have once been an important part of a species' life cycle. The fact that these features have not been discarded over many thousands of years is a new concept.

Rotting fruit and thorns that could skewer any type of potentially helpful reproduction partner illustrate two of the major characteristics that are now thought to be anachronisms: needlessly aggressive defense mechanisms and fruit that can only be eaten by animals large enough to swallow it.

Thorns are hard to miss on a honey locust tree (*Gleditsia triacanthos*) and on several species of hawthorn (*Crataegus*). They are long, nasty, and sharp. The osage orange (*Maclura pomifera*) thorns are more subtle, but they are there. You have to look carefully on new branches to see a small thorn under each leaf stem. In all three cases, these thorns contribute little to the functioning of the tree, yet they must take a great deal of energy to produce. Since energy is in short supply in nature, it is a question as to why a tree would retain attributes that don't give any survival advantage and in fact might deter mutually advantageous relationships with animals. Biologists now think the thorns were an important defense mechanism when these trees shared the environment with large megafauna. The thorns were designed to control the habits of animals much larger than those in our environment today, animals that no longer exist.

Osage orange thorns on tree, south branch of Catoctin Creek, Purcellville, Photo by Carol Ivory.

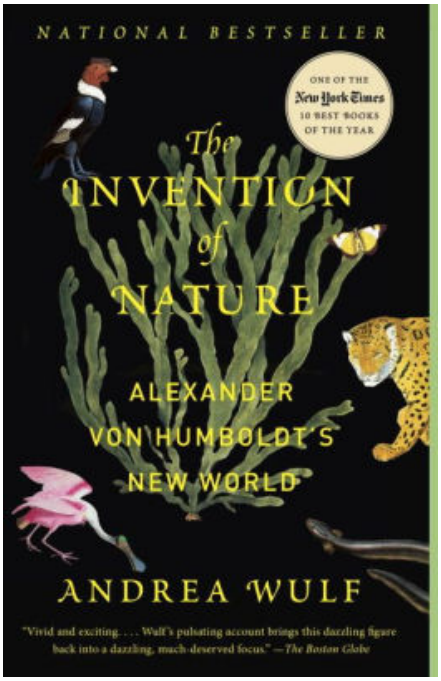
The osage orange tree offers a good example of a fruit that is ignored by wildlife. The characteristics of the fruit couldn't be less tempting to our wildlife, including our own species. Besides being too big to swallow in one bite, the fruit contains a latex substance that is sticky and messy. Long ago these same characteristics were probably quite attractive to mammoths and mastodons, animals with large mouths and efficient digestive systems. For today's wildlife, the fruit is too large for one mouthful and too hard to penetrate. Today, the tree survives because people value its wood. It is highly resistant to rot. Native Americans used it to make bows; settlers used it as building material. It also helps that osage orange trees can reproduce vegetatively by sprouting new stems.

Similarly, the fruits of the honey locust are long, hard-shelled pods containing multiple seeds. These pods dangle on tree branches sometimes for an entire season. In order to free the seeds, a browsing animal must eat and digest the pod or crack the hard shell. It seems today's wildlife prefer food sources that are easier to deal with. Today, honey locust trees survive because we plant them, or they are found on floodplains where water can take over the job of seed dispersal.

To learn more about evolutionary anachronisms, read Connie Barlow's book, *The Ghosts of Evolution.*

Marjorie Richman, C&O Canal Association

The Invention of Nature: Alexander von Humboldt's New World by Andrea Wulf



I read this book because it was chosen by my book club. While I knew Andrea Wulf's *The Founding Gardeners* and *The Brother Gardeners,* I had not heard of Alexander von Humboldt. After 398 pages, I was in awe of Humboldt and thrilled by his radical theories of nature presented in the early 1800s and that, in some areas, are still considered radical. Humboldt was the first to recognize and write about the negative impact of human activity on the environment.

Born in Prussia in 1769, Humboldt was drawn to natural science and wanted to be an explorer, but his mother wanted him to be a bureaucrat. He had to be content exploring the Alps and forests of Europe. When his mother died, he finally had the freedom and money to follow his dreams. In 1799, Humboldt set off for South America, where he mapped the junction of the Oronoco River and a tributary of the Amazon, climbed every active volcano in South America, and completed a nine-month, 1,300-mile trek of the Andes. He constantly wrote back to European contacts and became very well known. Humboldt visited Mexico and Cuba and traveled to the United States, visiting Thomas Jefferson. Jefferson questioned Humboldt closely about his impressions of South America. In late June 1804, Humboldt left the U.S. to return to Europe.

Humboldt was the first to relate colonialism to devastation of the environment. He criticized slavery, unjust land distribution, monocultures, violence against tribal groups, and indigenous work conditions. He noted the toll on soil from growing cash crops such as sugar cane and the clear cutting of forests. He criticized water engineers who drained lakes for irrigation.

Humbolt observed how many things were connected with a single species. He discovered the concept of a keystone species almost 200 years before the concept was named. After observing plants in South America that resembled those in Europe, he developed a theory that the Earth was a single interconnected organism and nature was a web in which everything was interconnected. Instead of placing plants in their taxonomic categories, he saw vegetation through the lens of climate and location.

Humboldt was famous worldwide when he died at 89 in 1859. Charles Darwin called him the "greatest scientific traveler who ever lived." What is amazing is that he's all but forgotten now.

Carol Ivory, Loudoun County Extension Master Gardener