Of all the stops on our fall river cruise in France, including Paris, Rouen, and Normandy, I knew a highlight for me would be Giverny, the site of Claude Monet’s house and gardens, and it didn't disappoint. Judging by my own garden where asters and sedum are the primary September bloomers, I was prepared for the gardens at Giverny to have gone past their prime. Fortunately, I was wrong--the lush masses of flowers were breathtaking.

Looking at climactic conditions, it seems that this area is ideal for gardens. On the coldest winter night, temperatures reach approximately -13 degrees Celsius or 8 degrees Fahrenheit. Although France does not categorize gardening zones, calculating based on this average low temperature, Giverny would be in zone 8 (giverny-impression.com).

Located 46 miles from Paris, on the right bank of the Seine, Giverny became famous when Monet discovered it in 1883 while on a train ride. He first rented a farmhouse which had a vegetable garden and an orchard of about 2.5 acres. After he purchased the property in 1890, he created two garden areas--the Clos Normand and the water lily pond. These gardens, along with the house, were neglected after World War II. Over a ten-year period, the house was restored, the pond was redug, the bridge was replaced, and soil was removed from the Clos Normand to reach the original ground level before it was replanted with...
the same flowers as Monet himself had planted.

The Clos Normand is an area of about 2.5 acres and is located in the front of the house. It is a huge flower garden made up of long beds with walkways in between and is said to contain 100,000 annuals and 100,000 perennials, providing color for each season. The walkways allow visitors to get excellent views of the plants without going into the beds themselves. Monet planned the garden to contain traditional choices as well as more rare varieties often purchasing rare plants at great expense. He said, "All my money goes into my garden . . . I am in raptures." Not surprising, as an artist he laid them out according to color and preferred that the flowers grow freely. The plants grew so close together that I could not see any earth—certainly no room for weeds to grow! During our visit, dahlias, amaranthus, sunflowers, rudbeckias, nasturtiums, and roses were blooming profusely; surprisingly, the pink monarda, which in my garden is past bloom, was healthy and vibrant. Two-foot tall impatiens were in full flower. Climbing roses covered the iron arches in the central alley, or middle walkway. Standing near the house and looking over the expanse of the garden, I could see how his garden inspired Monet's art.

Ten years after he arrived in Giverny, Monet bought land adjacent to his property containing a small brook to install his second garden, the water lily pond. Neighbors objected to his installation of a pond because they were afraid that unusual plants would poison the water, but he received permission to dig the pond which would later be enlarged. Curved streams, bordered by bamboo, trees, and weeping willows, lead to the large pond virtually covered with water lilies, some of which were still flowering. On one end is the bright green Japanese bridge which is covered by wisterias. I could imagine Monet himself rowing around the pond in the boat which was tied up close to the shore. For more than twenty years, Monet's art would focus on the water lily pond and the Japanese bridge.

When Monet envisioned and created his gardens, he was also creating the inspiration that would guide his work as an artist. And Giverny continues to be an inspiration—for gardeners who gain a fresh perspective on combining and planting, for photographers who see another amazing subject at every turn, and for lovers of Impressionism who can see so many views of his gardens depicted in his art.
Now is the time when seed catalogs are studied with great eagerness. A seed contains an embryonic plant and food that will nourish the young plant until it is photosynthetic. Take a look at a fairly large seed such as a bean seed. You'll notice a scar on the concave surface. The scar is called the **hilum** and it marks the place where the seed was attached to the former ovary. (The ovary matures into a fruit, so your green bean is, botanically speaking, a fruit.) You will need a magnifying glass to see the small hole or **micropyle** on one side of the hilum. To create the embryo, the sperm entered through the micropyle and fertilized the egg. The micropyle remains open so that the embryo can breathe. Now let's take a look inside the seed. You'll notice the seed easily breaks in two. These two halves are the food for the embryo and they are called **cotyledons**. Between the two cotyledons is the embryo. You will notice a slightly curved finger-like structure (the **hypocotyl**) and a feathery portion (the **plumule**). The first part of the embryo to emerge from the seed is the bottom of the hypocotyl, which forms the root. The upper portion of the hypocotyl may become stem as is the case for a germinating bean seed, or the entire hypocotyl may remain below ground, as is the case for the pea seed. The plumule is then pulled up and emerges as the first above-ground leaves. You may have noticed that the first leaves of many plants do not resemble the more typical subsequent leaves. For example the first photosynthetic leaves of a tomato resemble grass leaves. That's because the tomato plumule looks like two blades of grass. Chlorophyll can only be synthesized in the presence of light so the plumule, which was white in the seed, becomes green upon exposure to light. The shoot growing area of a dicotyledonous stem is called the terminal bud and it is found between the two leaves of the plumule. Note that the terminal bud does not have to push its way through the soil, rather it is dragged because the top of the embryo is bent over. "A picture is worth a thousand words", hence the diagram below explains the process of germination better than I can.
I’m not a trend-setter, not even a follower. My car is barely new enough to have airbags, and I still have clothes dating from the Bill Clinton administration. But in terms of gardening, it is useful for me to know the trendiest trends, even if it goes against my nature to need the latest and greatest. To remedy my deficiency in things au courant, I’ve turned to the web.

Garden Design magazine, among others in the know, says houseplants are hot. For those of us with horticultural roots stretching back to the gardening boom of the 70’s, this is one comeback that is long overdue. Contributors to this movement indoors include fickle weather, drought, and a desire to improve one’s living environment. Fiddleleaf fig is the “it” plant of the moment, but bromeliads, succulents and even terrariums are coming back in style, and cacti are predicted to spike in popularity. Houseplant-printed fabric is available for your new garden room, and hipsters are weaving macramé plant hangers. Growing tea ingredients on a windowsill and herb plants under lights is also of interest. I’m hoping pet rocks and earth shoes re-surface, too.

How about dyeing fabrics with plants from your garden? Anyone working with yarn, creating their own clothing or working with textiles might have fun combining those interests with plant pigments. Many dye plants are easy to grow, including cosmos, purple basil, and coreopsis, and many have the advantage of attracting pollinators. Native plants, including walnut, smooth sumac and bloodroot were all used for dyes by our ancestors before being replaced by synthetic substitutes in the nineteenth century. Since leaves, flowers, seeds and roots may be the sources of color, it is important to consider what parts of the plant need to be harvested when planning a garden or harvesting in someone else’s plot. With a little creativity, this trend lends itself to anything from high fashion knitwear to kid-friendly craft projects.

Smaller is better when it comes to landscape plants. As lot sizes around new homes decrease and many people move back into cities, trees and shrubs which fit into tighter spaces are desired. For busy folks with many activities who aren’t likely to want to stay home to prune Jack’s beanstalk back into submission, slower growing or dwarf plants can mean less maintenance. Small plants are also great for containers, a gardening style which has remained swank for quite some time.

Pollinator gardens also remain in fashion. Planting to give the creatures which make the ecosystem turn and the food grow is of critical importance. Aply, 2017 has been chosen as the year of butterfly weed (Asclepias tuberosa) by The Perennial Plant Association.

Numerous sources say the color gold is in vogue for 2017. This may come in the form of blossoms, bark, fruit or foliage, or even in accessory items such as wind chimes and gazing balls. Consider ‘Golden Spirit’ smoketree, ‘Gold Heart’ bleeding heart or ‘Sutherland Gold’ elder for the Midas touch.
Heavenly Hostas

Music, movies and television recently celebrated themselves with the People’s Choice Awards, but they don’t have anything on hosta, a plant genus which is followed by thousands of adoring gardening fans. These leafy denizens of shade gardens are feted by the American Hosta Grower’s Association (AHGA), which chooses a “Hosta of the Year” annually, as well as the American Hosta Society (AHS), whose members vote for their top hosta picks. Any shade gardener worth their mulch can probably rattle off a list of must-have hostas, too. So with over 6,000 named varieties listed in the archives and hundreds available in the nursery trade, how is a gardener to choose?

A start by pondering those favored by the AHGA is a good decision. I’ve got eight of their annual winners from the last twenty-one years in my garden and I think they’re all the bomb. ‘Guacamole,’ 2002’s champion, makes a large mound of very shiny chartreuse leaves bordered with deeper green. It grows quickly and has good sun tolerance. ‘Striptease,’ from 2005, is a medium-sized plant whose leaves of light and dark green have random thin white stripes, which provide the sassy name. 2014’s ‘Abiqua Drinking Gourd’ has dark, blue-green foliage with is heavily seersuckered and deeply cupped. I’ve never seen it, but the victor for 2016, ‘Curly Fries,’ reportedly is an eleven inch plant with very narrow, ruffled leaves of pale green which fade to pale yellow. The plant may be an acquired taste, but the name is simply delicious.

Over at the AHS, their “Popularity Poll” webpage isn’t up to date, but from 2008 to 2014 we find that ‘June,’ ‘Sagae’ and ‘Liberty’ hosta traded spaces annually for the top three spots. Sort of like seven-time Tour de France winner Lance Armstrong, these hostas must be hum-dingers to hold on for so long, but I’m sure their success isn’t just due to Miracle-Gro doping. ‘June’ is a medium-sized plant with pointy leaves of blue and green with centers of pale green which fades to creamy white in bright light. A large plant of bold form, ‘Sagae’ has dark green leaves bordered with gold and is noted for being slug resistant. ‘Liberty,’ which is actually a sport of ‘Sagae,’ is a smaller plant with wider margins of gold which fade to creamy white and a splash of green in the center. Examine photos on the web, as words alone cannot describe a hosta. All of these plants were also honored by the AGHA in years past, so in choosing one you simply can’t go wrong.

Perhaps the hottest hostas are the oddest. ‘1st and Ten’ grows almost three feet tall with very large shovel-like blue-green leaves. Reaching four feet high by almost six feet wide is ‘Empress Wu,’ a grande dame indeed. On the opposite extreme is the Mouse Series, standing in at five to eight inches. ‘Church Mouse,’ ‘Frosted Mouse Ears,’ ‘Solar Mouse’ and several others make great container plants and would cause a darn cute infestation in any garden.

Text by David Chinery
When faced with a problem we call in a specialist, but sometimes a generalist has the most creative answers. At least that was the case with Charles Valentine Riley, a man of many talents – artist, author, naturalist, philosopher, and most prominently, entomologist – when faced with prominent pests of the nineteenth century.

The well-educated son of a Church of England minister, Charles journeyed to America at the young age of seventeen after his father died. He first toiled on an Illinois farm, but his lucky break came with a job at the Chicago-based publication *Prairie Farmer*, where he wrote, edited, and illustrated articles on insect pests. Drafted into the Union Army in 1864, one wonders if he found his short stint a civic duty or an annoying interruption. Fortunately he returned unscathed and got back to work with his bugs.

Success in the print world elevated him next to status as Missouri’s first state entomologist in 1868. There he studied the hordes of grasshoppers afflicting Midwest farm crops proved fortuitous. Riley convinced the U.S. Congress to establish the first Entomological Commission and appoint him chairman of the Grasshopper Department. This landed him on the national scene, where he would later direct the Commission and become insect curator for the Smithsonian. But it took an aphid to carry him to the international stage.

This pest, called the grape phylloxera, originated in the U.S. but devastated the French wine grape industry when it established there. Feeding primarily on the roots but also the leaves, it threatened not only France’s agriculture and gastronomy but entire way of life. Riley learned that, while American grapes were attacked by the phylloxera, they exuded a sticky sap which clogged up the aphids, allowing the plants to shrug them off. He therefore suggested that French grape varieties be grafted onto American rootstocks, thinking this might give the French grapes phylloxera resistance. The trick worked, the vineyards were saved, and Riley received the French Grand Gold Medal and was named a Chevalier of the Legion of Honor in 1884.

At just about the same time, California’s citrus industry was in trouble. Spurred on by a favorable climate, a delicious product and quick rail access to eastern markets, farmers in the Golden State planted thousands of acres of oranges and related fruits and enjoyed economic success. Then came the cottony cushion scale, an inert lump-like creature which multiplied endlessly and sucked tree sap dry. Riley figured that the scale should have its own enemies living back in the land from which it sprung, Australia. An assistant dispatched post-haste returned with a predator of note, the ladybird vedalia beetle. A large screen cage was erected around one tree and 140 beetles released inside. These proved voracious hunters of the scale and once released, their descendants knocked down the pest throughout southern California in just 18 months, earning Riley the moniker “Father of Biological Pest Control.”

Tragically, Charles died in a bicycle accident in 1895. His replacements in government had different ideas for managing insects: pesticides.

*Text by David Chinery*
In Fence We Trust

by David Chinery

All the talk of walls in the news lately has gotten me thinking of vertical gardening. Some crops, such as climbing beans and peas, demand a trellis, while others, such as cucumbers and melons, can scramble on the ground but yield more given a support system. To be sure, purveyors of garden goods offer all sorts of custom designed equipment. Garden fencing doesn’t have to cost billions, however, and often the best solutions are scrounged, recycled, or close at hand.

Vertical gardening has a few rules. First and foremost, the equipment has to be up to the job. It would be supremely disappointing to find your melon trellis collapsed one August night under the weight of almost-mature golden globes. Likewise, many trellises need sufficient anchorage (such as being attached to steel stakes driven 18 inches into the ground) to survive summer storms. Sturdiness is the key; it is not a sin to over-build when it comes to strength. And while the sky may not be the limit, making your trellis so tall that you need a ladder to harvest might be downright inconvenient. Next, location is key. You don’t want your bean tower to cast a deep shade on the shorter garden dwellers nearby, so study the sun’s track beforehand. And lastly, small considerations can make life easier. Using string or jute may allow you to throw a tangle of vines and support into the compost pile, while using plasticky twine does not provide such luxury.

Cattle panels (also called feedlot or utility panels) aren’t just for livestock anymore. Measuring three, four, or five feet tall and eight or sixteen feet long, their grid of steel 4 inch squares could nicely house peas, cucumbers and other crops climbing by tendrils. One panel could provide a vertical support, two could become an A-frame. If you are of a creative bent, a cattle panel can be looped over to form a rounded or Gothic arch you can walk under. Add a lounge chair and you can sit down while harvesting plus have a nice place to take a nap. Or, cover the arch with a sheet of clear plastic and a greenhouse can be improvised. As the old chestnut goes, the only limit is your imagination.

If bicycles are more your speed, there’s a movement afoot to make bean towers from discarded wheels. Using a central pole, one wheel is installed just above the ground, the other at the pole’s summit. Vertical strings are then strung between the two wheels. Climbing beans don’t need horizontals to clamber up, only verticals, so this simple system suffices.

But wait, there’s more! Crib walls are ready-made fences, but my guess is that they’ll weather poorly and only last a season or two, while old-fashioned steel mattress frames and headboards are indestructible and will likely outlive the gardener. Even two crutches stuck in the ground with string in-between makes a trellis. Now there’s a way to give your squash a leg up.
Curly Willow: A Wild-Child On Ice

The poet that sang “I think that I shall never see a poem as lovely as a tree” hasn’t met the monster growing in our side yard.

It’s a curly willow. It’s proper name? Salix matsudana tortuosa. You could call it Peking or Hankow willow. Perhaps you’ve seen the pictures. Granted, it’s a pretty tree – a trophy tree.....not too tall (30 feet) and not too wide (15 feet) with a lovely green canopy that dances and rustles in the wind.

But, you’ve been seduced by beauty – a beauty masking the fact that the curly willow is a spoiled brat, a life force that delights in being out of control!

I should have known better when I found out how easy they are to grow. “Oh, just take this cutting and stick it in the ground.” Sound too easy? It’s true. This wild child will grow just about anywhere, wet, dry – it’s not very fussy. And it grows very quickly. And rampant, undisciplined growth is only one of the tree’s drawbacks. It seems like the last time I looked, it was a leafy twig. Now it’s a multi-trunked monster with branches exploding upward knitting a bird’s nest of entanglements that can only be controlled by enthusiastic pruning. Another bit of advice: do not put off for tomorrow what should have been done yesterday. The Curly willow punishes procrastinators. If you wait, you’ll find all of the problems have developed overhead... and out of reach.

Coming back to ground level, you’ll find other concerns, but they take longer to develop. The roots are shallow, rapidly spreading and willing to fight and defeat sidewalks, water lines and utility lines. Oh, and as the tree ages, the roots rise above the ground and spread out to siphon off their neighbor's water.

Granted, it’s a good looking tree, but it doesn’t have a long life. It’s rapid growth creates a structurally weak tree that is easily damaged by wind, rain, ice or snow.

Perhaps it’s kinder to cast the curly willow as a vulnerable beauty, a Blanche DuBois of trees, that can only thrive with the kindness, care and discipline of strangers.

Text and photo by Rensselaer County Master Gardener Don Maurer
What to do in MARCH?

* Attend The Cornell Cooperative Extension Garden Day on March 11th and visit the Master Gardeners at the Flower & Garden Show held at Hudson Valley Community College on March 24, 25, and 26.

* The days are getting considerably longer and warmer. We are beginning to look forward to being outdoors. Start taking a walk outdoors and look over the lawn areas for winter damage. Paths may have been worn by people taking shortcuts, or poorly drained areas maybe saturated with moisture. Depending on the warmth of the soil, you may even begin to repair the damage now. Do however, be sure that the ground is not frozen when you go to work.

* Test your soil’s pH. Most vegetables like slightly acidic soil in the range of 6.5.

* Start seeds of warm season vegetables and flowers indoors.

* If the soil is dry enough, and only under that condition, prepare garden beds for planting. Turn under winter cover crops and add compost

* Make sure your tools are in good working order before you need them. Using a metal file, sharpen the edges of your shovel, hoe, and pruners -- the sharp edges will make them easier to use.

* Removing old wood is necessary for all types of shrub. It opens up what could be a densely packed shrub into a lighter, more airy plant that not only looks a lot better, but keeps the plant healthy by giving the young, more promising growth room to grow and put on a good show throughout the year.

* Divide many of your perennials later this month as they start to emerge from the soil. Most perennials do best when divided every three years or so, but some vigorous growers could use splitting every two or three years. In mid to late March, rake off non-shredded leaves from the garden. Note: if the perennials are early bloomers wait to they bloom before dividing.

* Give your compost pile its first spring turn as soon as possible. Most compost piles sit unturned all winter and need to be reactivated. If you don’t have a compost pile, start one now.

* When you go to the garden center or other source of garden supplies, look for summer flowering bulbs. This is a very good time to stock up, while quantities are plentiful. The bulbs and tubers will store well in a cool, dry place if you can’t plant now. For containers, however, this is the best time to pot up tuberous begonias and gloxinias, as well as anything tuberous or bulbous you want to get an early start on before transplanting into the soil. This works well for bulbs such as dahlias, cannas, and caladiums. These particular three need either longer season or warmer weather to thrive, so an early indoor start can produce sensational results.

* At this time of year the increased day length has an encouraging effect on plants as well as people. Cheer up your houseplants with a nice spring grooming and feeding. Longer day length means greater rates of growth, so they will need more water and fertilizer. If you repot and do division at this time you will create miraculous results.

Text by Rensselaer County Master Gardeners Photos by David Chinery
“Every year, back spring comes, with nasty little birds yapping their fool heads off, and the ground all mucked up with arbutus.”

_Dorothy Parker_  
(American Poet and satirist, 1893-1967)

Gardening Questions?  
Call The Master Gardeners!

In Albany County: Call 765-3514 weekdays from 9:00 AM to 3:00 PM and ask to speak to a Master Gardener. You can also email your questions by visiting their website at [www.ccealbany.com](http://www.ccealbany.com)

In Schenectady County: Call 372-1622 Monday and Thursdays from 9:00 AM to Noon, follow the prompt to speak to a Master Gardener and press #1. You can also email your questions by visiting their website at [http://counties.cce.cornell.edu/schenectady/](http://counties.cce.cornell.edu/schenectady/)

In Rensselaer County: Call 272-4210 from 9:00 AM to Noon on Tuesdays and Thursdays and ask to speak to a Master Gardener. You can also email your questions to [Dhc3@cornell.edu](mailto:Dhc3@cornell.edu)

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“Root Concerns: Notes from the underground” is a shared publication of Cornell Cooperative Extension of Rensselaer, Albany and Schenectady Counties. It is published by Cornell Cooperative Extension of Rensselaer County.
Spring Garden Day

Saturday, March 11th, 2017
9:45 am to 3:30 pm
Tamarac/Brunswick High School
Troy, New York

Special Keynote Speaker

Shade Revealed

How to Garden Successfully in Low Light (Really!)

By Amy Ziffer

Amy Ziffer has been assisting clients in western Connecticut with their gardening needs since 1998. Her nickname is “The Shady Lady” because her business name is A Shady Lady Garden Design (but, she tells us, she is only nominally shady). Her work actually has a much broader scope than shade gardening. Amy has designed or cared for gardens in both shade and sun, from foundation plantings to flower borders to vegetable gardens, and even the occasional pond. The one thing they all have in common is their location in the Northeast (USDA Zone 5).

Amy grew up gardening and trained as a Master Gardener in Los Angeles, California. She spent a year in the U.K. visiting a wide variety of gardens and has been a photographer for over two decades, maintaining a large and constantly growing collection of plant and garden images. Amy worked as a staff editor at Fine Gardening magazine and has made contributions to Reader’s Digest books as well as eclectic assortment of publications including Yankee, Valley, Indoors & Out, Crisis, Camera & Darkroom, and Delta Sky. In 2014 her first gardening book, The Shady Lady’s Guide to Northeast Shade Gardening, was published by the University Press of New England (see the image above). More about Amy Ziffer can be found at www.amyziffer.com

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See you there!