For many joys in gardening, there are darker shadows. A tremendous number of home gardeners seek the simple pleasure of homegrown tomatoes. Tomatoes are grown in huge rural gardens, in neat suburban lots, and on urban rooftops in five gallon buckets. Gardeners with shady backyards plant them in wheelbarrows to move them with the shifting sun. A favorite photo I took years ago is of a tomato garden squeezed between the Bronx River Parkway and a mausoleum in Westchester.

Tomatoes often grow rapidly and happily up to mid July. Then brown spots start to appear on the bottom leaves. The area around the spots turns yellow and enlarges, and soon the entire leaf is spotted and pale. This malady progresses up the plant, from lowest foliage moving skyward, until the devastation becomes painful to view. While a few ripe tomatoes may be produced (and are still safe to eat), production is cut short, far from what was dreamed of, and below the plant’s potential.

When I tell folks the culprit is a disease called early blight (and/or its cousin Septoria blight), they ask, “What can I do?” I say, “If I had a great answer, I would be richer than Warren Buffet,” which is no lie. Nationally, this is a big problem that has millions of gardeners upset. There are many cultural things to do, but none are foolproof. Since the fungus lingers in the soil, mulch to prevent soil splashing up on the lower leaves from the rain. Don’t plant tomatoes in the same place where any member of that family (the nightshades), including potatoes, peppers, eggplants, and of course tomatoes, grew in the last three years. Avoid getting the foliage wet when watering, and don’t water in the evening. Give your plants lots of room and don’t work around them when conditions are wet. Thoroughly clean up the dead plants, rotten tomatoes, etc. in the
fall and don’t compost the mess. Pinch out leaves as soon as they show signs of the disease, and keep the area weeded. Use of fungicides is also possible, but many home gardeners don’t relish the thought of spraying their tomatoes.

For many plant problems, Extension types like me enthuse about disease resistant plants. The plant breeders should create early blight resistant hybrids, right? Not so simple. The genes for early blight resistance are many, and linked to other tomato traits. Therefore, a blight resistant tomato could be created, but it is difficult to get other good characteristics, such as fruit size, color, and taste included in the new plant. With multiple genes involved, it also is hard to get complete disease resistance (which would be easier to achieve if just one gene were involved). Scientists have recently made some progress, however, and today there are a few tomatoes with good early blight resistance. One of the first came from Dr. Randy Gardner of North Carolina State University and is called ‘Mountain Supreme Hybrid VF.’ Others include ‘Juliet,’ with small, 1-ounce, oblong fruits, ‘Legend,’ a larger Beefsteak-type hybrid with 12-ounce round red fruits, ‘Matt’s Wild Cherry,’ a red cherry tomato, ‘Mountain Fresh Plus,’ ‘Mountain Supreme’ and ‘Iron Lady’ (all mid-sized hybrids), and ‘Cabernet’ and ‘Merlot,’ both red grape types.

In just the past few weeks, late blight, a very different pathogen from early blight, has hit farmers and gardeners in our region. Late blight can attack any combination of potatoes, tomatoes, and some weeds, and is caused by the same fungal-like organism, *Phytophthora infestans*, that gave us the Irish Potato Famine. Leaves, stems and fruits can quickly develop a blackened, rotten appearance; sometimes a plant can go from perfectly healthy to completely dead in less than a week. One piece of good news is that late blight is an “obligate parasite,” a fancy way of saying it needs living plant tissue to survive. Therefore, it isn’t on your seeds or tomato cages or in your soil. Late blight can survive the winter if infected potatoes are left lying in piles, in cold compost or in the soil, so do your part to root out and destroy them now. A few of the tomatoes mentioned above, including ‘Juliet,’ ‘Legend’ and ‘Iron Lady,’ show some tolerance to late blight.
Planning a new garden site takes some investigation into the available sunlight and soil.

As the sun arches lower across the horizon the days get shorter. The track of the fall sun is a footprint of spring when the days are growing in a bath of light. Trees, mountains and buildings all interfere with the minimum six hours of sun needed for a vegetable garden. Check potential garden sites for early, late and mid-day sun exposure. The summer arch of the sun is more to the north and higher in the sky. Trace this with your hand from east to west for interference. Moving the garden site as little as ten feet may increase the sun exposure by an hour. Move out of the shadows. Some low light conditions can be corrected.

Having good soil out of the box is like being born with a silver spoon. Probe the soil with a garden fork as deeply as possible. If with some effort the fork will go full depth, this soil should adapt well as a garden. Hard soil needs further scrutiny. Any rock ledge, clay, hardpan or construction backfill would be a persistent problem. Dig a hole with a shovel to determine if this soil can easily be amended. Get a soil sample checked for pH and add lime or sulfur as recommended. A vegetable garden can be grown on any surface with enough time, labor and money.

Kill the grass now! Even a raised bed design needs a deep root zone. Use something to block out the light on your new garden footprint. Old carpet or odd pieces of plywood will work. Wet cardboard covered with leaves will do the job. Juice it up with grass clippings for the first compost pile.

A garden is personal. Use garden books as a reference and a benchmark. What you read and whom you talk to will help mould your decisions. How will the garden be watered? Will it be organic? Will the crops be open pollinated or hybrid or a mix? Where can one acquire quality transplants, seeds and soil amendments? Will your design be wide rows or raised beds or something else? Will anything go to storage or will it be for fresh eating? So many questions to be answered with a long winter ahead to help plan.

Yikes! Who Is This?

Lynn Brenn came to the Schaghticoke Fair with a question. What was the giant insect she had captured in a digital photo? A little research lead us to discover it was a female eastern dobsonfly, Corydalus cornutus. Dobsonflies are some of the largest non-lepidopteran insects in our part of the world, spending their larval stages in unpolluted, fast-moving water, where they are a top predator. The female adults can bite, but should be considered as beneficials and left alone. Female dobsonflies only live eight to ten days, so to see one is a rare treat.
Can Japanese Knotweed, *Polygonum cuspidatum*, be eradicated? Can it even be controlled? These were the questions looking to be answered at the Japanese Knotweed Management Summit held at the Tannery Pond Community Center in North Creek, NY on August 5, 2013. This meeting was a collection of researchers, educators, community organizers, chemical sales representatives, Department of Transportation and Department of Environmental Conservation experts all collectively sharing information with the hope of answering these questions. The meeting was organized by the Adirondack Partnership for Regional Invasive Species Management.

Japanese Knotweed was brought to the United States from Great Britain as an ornamental introduction in the late 1800’s. It was seen as a durable plant capable of handling full shade, sun, high temperatures, high salinity and other difficult conditions. It would provide a thick, tall, flowering, living fence. We now know just how invasive and persistent it can be. Once this plant is established it is nearly impossible to get rid of! Controlling Japanese Knotweed is not as easy as one would imagine. Recommendations are based on the individual circumstance of the infestation, i.e. the size of the infestation and its location play a very important role.

Japanese Knotweed has stout, erect, hollow, perennial stems that are able to reproduce through an extensive rhizome system and vegetatively via small stem sections. Stem sections, as small as ½” can reproduce, these occur during mowing or manual removal of the plant. If manual removal is used the plants must be dried out on tarp or other non-soil surface prior to disposal. Never place any part of this plant in a compost pile. The NYS-DOT is aware that mowing will spread the plant and are training their staff on how to minimize the movement of this plant.

Homeowners have a couple of options when it comes to control. If the infestation is very small, weekly mowing from April through frost (generally October) to prevent the plant from reaching 6” in height will eventually exhaust the root system and eliminate the infestation. Homeowners must be diligent and inspect the area, including a 20 foot circumference beyond the visible infestation, until all evidence of regrowth ceases. The other viable option is to spray the weed with a glyphosate product in the late summer or fall, i.e. after it has flowered but before frost. It must grow to its full maturity (6-9’), and flower without being cut for the best results.

Due to the rhizomatous root system, this is when it is most susceptible to the herbicide application. I know this runs counter to what we have all been taught when it comes to controlling most other weeds. We have always heard, “control it before it flowers and goes to seed”. Generally sound advice when dealing with MOST unwanted plants. But as you know, Japanese Knotweed is not your average plant. Researchers now know that mowing and cutting before spraying will lessen the ability of the herbicide to control Japanese Knotweed!

Homeowners are able to purchase a foliar applied systemic herbicide with the active ingredient glyphosate, (brands such as Roundup and others), and apply it after Japanese Knotweed has flowered, at the 5% rate, to their own property. Researchers report that this will treatment provide upwards of 90% control. The following season, and several seasons after that, the homeowner will have to repeat this process for
the plants that survive and regrow. Homeowners must be vigilant and keep an eye on the site and be prepared to reapply to fully mature plants as they occur. Also, be aware that if the infestation is in or even near water, (100 feet of a wetland), a certified pesticide applicator, with a permit, must be employed to make the application.

New York State certified pesticide applicators will generally employ a stem injection method of control. In this method, specialized tools are employed to place 2ml’s of concentrated glyphosate (40-52%) and/or other herbicides directly into the plant stem between the 2nd and 3rd leaf node. Generally mature stems over 2” in diameter are sturdy enough for injection. This is a time consuming laborious task, but one that yields excellent results. Smaller stems are sprayed with 5% glyphosate. Yearly follow up and reapplication is still required with this method of treatment.

It was obvious to me that the research conducted by these individuals is beginning to pay off. Information on other attempts at controlling this weed such as repeated mowing of large sites, soil removal, plastic tarpping and other methods of applying herbicides was also discussed. It was a very enlightening exchange of ideas. It is clear that Japanese knotweed must be controlled and it is not an easy task. It is also important to note that herbicides may only be applied as per label instructions. Be sure to follow all instructions and restrictions on the label and select the product that is labeled for “the application site” under consideration. If you have questions about the treatment of an infestation, don’t hesitate to contact your local Cornell Cooperative Extension office for help.

Many people know about the incredibly beautiful, much honored, rose garden in Schenectady’s Central Park. It is run mainly by volunteers, with Volunteer Superintendent David Gade, a gifted rosarian, in charge.

But do you know about the experimental rose garden tucked into one back corner?

The photo says it all. This is an experimental rose garden which is in its THIRD YEAR and has had NO fertilizing, NO spraying, NO deadheading, and uses MUCH LESS WATER.

David is proud that none of the original plantings has died. They are all on their own root stock, with no grafted stock. Volunteers do cut off any dead wood at the end of the winter and give each rose a “winter survival rating,” which is recorded.

It is called the EARTHKIND manner. It has been a project co-sponsored by Texas AgriLife Extension Service, Texas A&M System, the New York Botanical Garden, and the University of Wisconsin-River Falls. The sponsors have chosen to place these test gardens within a number of prominent rose gardens in various parts of the U.S. to test a variety of climates, etc.

There are a number of different types of roses in this garden—mainly shrub roses, which is a very broad category, such as hybrid rugosas, David Austens and knockout roses but NOT fussy ones such as hybrid tea roses.

Besides the sign, you will also see in the rear of the long shot of the trial garden, Rensselaer County Master Gardener Keith Austin, himself a very knowledgeable plant person.

We urge you to go to Central Park, to the Schenectady Rose Garden and check everything out—both the Rose Garden itself and the Experimental Garden.
Wisley is a wonderful garden to experience at any time of year but our visit in June seemed magical in every way with inspirational vistas that are extraordinarily diverse and filled with practical ideas for gardeners to emulate. For more than 100 years Wisley has been the flagship garden of the Royal Horticulture Society (RHS) and is often cited as one of the finest gardens in the world. Walking through the mixed borders there were gardening techniques at work with signs explaining each practice. Birch twigs fashioned as perennial supports were fast being overtaken by lush growth and soon would disappear to the eye—much more natural than metal supports and far less expensive!

Geraniums (photo 1) were the featured plant in the conservatories and so the world of pelargoniums opened to us in all its diversity. The British have long been fans of the geranium and use it widely in their gardens and containers; it is a common annual bedding plant in the US as well as a versatile perennial for a range of light conditions.

One of the Conservatory treasures, the Jade Vine (photo 2), was in bloom for our visit. A futuristic hanging bundle of vivid aquamarine, this vine is native to the Philippines and a member of the legume family.

Signs in the Conservatory beckoned the visitor to find the “sheep-eating plant” and we were all up for the hunt! The carnivorous Puya chilensis (photo 3) is native to the Peruvian Andes and it feeds itself in a unique way. Puya has sharp spines arranged in such a way to entrap a small sheep or other mammal that starves to death and the decaying body as it putrefies fertilizes the plant. The Puya at Wisley is fed by artificial fertilizers and was blooming for the first time in the Conservatory.

Wisley has a large area devoted to growing fruit and the garden scale is similar to what an urban UK gardener might have for an allotment or community garden. Support and trellising techniques for brambles and vines revealed thrifty plants growing with good air circulation on a minimal amount of land. Sustainability is the underlying theme in this garden.

A twist on espalier growing is the “stepover” which trains a dwarf fruit tree in one direction to create a low border of fruit around a garden utilizing the plant as the bordering mechanism (photo 4).

Alpine plants are a common feature in many UK gardens and Wisley did not disappoint (photo 5). Troughs and micro-climate areas fostered the alpine treasures but a large area of crevices created an ideal growing condition for many of the alpine plants. Adjacent to the area was a small cut away section for gardeners to see the technique up close.

Whimsy is often a feature in a garden when creativity spills over the rules to delight the eye—it should be done more often.

Wisley is a wonderful experience for anyone but for a gardener it is an out of body experience. Like all great gardens, one could visit over and over and always find new things. It is a “must see” garden if you are visiting the London area.

Text and photos by Sue Pezzolla
Unbelievably, it’s been over 30 years since “E.T. the Extra-Terrestrial” came to earth via the silver screen. Since everything (at least in my mind) relates to horticulture, I’m here to report that the friendly, helpful creature from the heavens has a counterpart here on earth. It even has a similar name, B.t., or, more formally, *Bacillus thuringiensis*.

This garden helper comes not from the sky, but is a soil-dweller, and doesn’t have a glowing digit but is in fact a bacterium. This summer I found cabbage looper larvae devouring my broccoli and Brussels sprouts leaves and I went around the bend. Coming down to earth, B.t. immediately came to mind as one of the possible solutions. Since it is derived from a living organism, we classify B.t. as a biological control, and more specifically, we can call it a microbial pesticide.

B.t. was first identified in 1901 by a Japanese biologist, and shortly thereafter linked to a disorder of flour moth caterpillars by a German researcher. Subsequently, scientists learned that several strains of B.t. existed, each of which could kill specific insect pests. For example, the *kurstaki* strain is a common recommendation for forest tent caterpillars, gypsy moth larvae, cabbage loopers and tomato hornworms. Strain *israelensis* controls mosquitoes and is an ingredient in “dunks,” donut-like objects you can float in a small ornamental pond or rain barrel. The *tenebrio-* type has been used for Colorado potato beetles and elm leaf beetles. After application, B.t.’s narrow range of effectiveness leaves the vast majority of other insects unharmed, and it has been widely judged as “safe” for birds, fish, wildlife, pets and humans.

So how does this miracle microbe work? First, the insect must be in the juvenile, or larval, stage to be susceptible. When the gardener dusts or sprays a product containing B.t. on the desired plants, the pest insect doesn’t die immediately, but feeds a little bit more. The product contains crystal proteins which are produced by B.t. After the insect ingests the crystals, the alkaline pH of the digestive tract activates a toxin in the crystal. The toxin in turn causes cells in the gut to rupture, which eventually causes the insect to die. I beg your pardon, I hope you weren’t having lunch just now.

But just like E.T., B.t doesn’t come along without a little controversy. In 1985 Belgian scientists successfully developed a tobacco plant capable of producing the crystal proteins from B.t., thus shielding the plant from insect attack. This technology was then incorporated into cotton and corn, reducing the need to use pesticides on these crops. B.t. plants were also cleared of causing harm to monarch butterflies and honeybees. Unfortunately, the pink bollworm in India has become resistant to B.t. enhanced cotton, and fears of additional resistant pests, or new pests entirely, are emerging.

Luckily for gardeners and landscapers, using B.t. as a spray or dust is as safe as ever. So next time you see a cabbage looper, just cry “B.t., come home!”
Gardeners are nosy…in a good way. Call ’em “garden-hoppers” if you want, but when they set out to roam, they are lured by the siren song of the next garden.

Need proof? Our trip to Europe! It was plotted and planned around gardens – Kew, Versailles, Boboli, Borghese.

Our trip into North Carolina? Hello to Monticello and Biltmore.

Cape Cod? A field of lavender where my wife discovered fairy houses.

Myrtle Beach? Memories of Brookgreen Gardens

It’s safe to say anywhere we wander, we will be witnessing the work of people who play in the dirt.

We’re not alone with this affliction. It’s spread throughout the gardening community. Mention a bus trip to just about any garden or horticultural hotspot and it will sell out in a hurry.

How about an excursion to the Philadelphia Flower Show? The Chelsea Flower Show? Prepare your passport….and make your reservation early.

So why do we do it? Like I said, we’re nosy ….in a good way. We want to know what kindred spirits are doing. Education. Inspiration! “How did you do that?” And bit of larceny. See a good idea, snap a photo. We’ll lock it up, either in a picture or a memory.

But you don’t have to be a world wanderer to enjoy this beautiful madness. There’s plenty to see close to home. Hang around with Master Gardeners for a while and you’ll hear about “The Rensselaer County Garden Tour”. It’s fund raiser and this is the way it works: A couple of Master Gardener volunteers offer to coordinate the tour in a community, which means convincing 6 to 8 of their friends, neighbors, acquaintances or complete strangers to open their gardens for one evening to upwards of 300 garden gazers. People sign up for the tour and on that magical night…..after paying a modest entry fee…they get a map and directions to find the featured gardens.

Since the first tour in 1998, which was in Schodack, it has been repeated 16 times and all in different neighborhoods across the county. Just look at the math: 16 years x 7.5 gardens per tour = 120 gardens. An average of 225 visitors X 16 means over 3,600 took the tour to peek, poke and harvest ideas.

And I must admit, when I’m working in the yard, I smile when cars slow down for a longer look at our gardens. Or when the walkers linger to check out the ornamental grasses, the cosmos or the clematis. I feel complimented, in fact. Some stranger appreciates our efforts. And that feels good.
The Rensselaer County Master Gardeners conducted a “Question and Answer” booth from 10:00 AM to 6:00 PM on all six days of the Schaghticoke Fair at the end of August/beginning of September. In addition to answering questions, a beautiful dahlia display entitled “Dahlia-Palooza” was grown in place for the fair by two Master Gardeners Sandie Fratianni and Liz Holmes. An exhibit concerning the emerald ash borer, designed to raise concern about this newly-threatening pest, was also on display. In the below-right photo, senior administrative assistant Marcie Vohnoutka models the giant purple trap, which was constructed to mimic the actual purple traps used to collect data about the spread of EAB.

Rensselaer County Master Gardener Denise Maurer writes, “These photos were taken in Sarasota, FL on the grounds of The John and Mable Ringling Museum of Art. I just love how the statue has been encased by the banyan tree making it seem like it has been part of the landscape for years. Banyan trees are amazing trees with the way they set down their roots. I would love one just to increase my garden fairy population. LOL!
What to do in September?

Summer’s fading fast. Leaves are turning, the geese are leaving ……and you and I? We’re here because summer didn’t take the work with it. Nope. There’s plenty to do. You just might need a sweater to get it done.

Play in the dirt: Dig up tender tubers and corm of dahlias, cannas, caladium and gladiolus after they are killed by frost. And store them in a cool dry spot. Oh, don’t forget to bring the geraniums before the frost.

Pot up some paperwhite bulbs for holiday forcing.

Time for a trim: Thin out one-third of the oldest branches of forsythia, lilac, spirea, and potentilla for better bloom and shape next spring.

Don't cut back ornamental grasses, sunflowers, and wildflowers—leave them for winter interest and for wildlife.

Clean up all fallen fruits to reduce disease and pest problems.

Work well-rotted manure or compost into asparagus beds.

Lawns and leaves: Don't retire the lawn mower when the growth of your lawn slows down this fall. As long as it’s growing you should be mowing. And there is still time to patch bare spots in the lawn —cover grass seed lightly with compost.

Don't allow leaves to accumulate on the lawn. Rake them up regularly, and store in a pile for use as mulch in your garden next summer. If leaves accumulate on your lawn and become matted down by rain, they may kill the grass.

You can help leaves break down more easily by running a lawn mover back and forth over the pile. Put the shredded leaves directly onto the garden or compost pile.

Think Spring ……and plant those spring flowering bulbs. As you plant, remember that planting a lot of one flower or color will get a bigger “pop” than a mixture of many. And if you can’t figure out which end of the bulb is up….plant it sideways. The bulb will figure it out.

Text by Don Maurer. Photos by David Chinery
“I consider every plant hardy until I have killed it myself.”

Sir Peter Smithers

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

In Schenectady County: Call 372-1622 weekdays 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/

In Rensselaer County: Call 272-4210 weekdays from 9:00 AM to Noon and ask to speak to a Master Gardener. You can also email your questions to Dhc3@cornell.edu

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