Root Concerns

Hungry Hordes Hit Local Lawns

Often in gardening, the more time and effort you put into something, the more the pests want to eat it. This is certainly true with lawns. Recently, I’ve met a spate of folks with bug trouble in their carefully tended swaths of green. Personally, I don’t worry too much about this problem, because my own care-free lawn is mostly weeds.

A gentleman brought in lawn samples from a very high-end mansion in Albany. We plopped the samples, enclosed in bags and Styrofoam food boxes, down on my lab table and had a brief conversation. Moments later, as tiny critters fanned out in all directions from the boxes, the diagnosis was apparent: chinch bugs. Wouldn’t it be nice if the mysteries of all our samples were so easy to unravel, I told myself as I swept up the scattering swarm.

Chinch bugs are sucking insects that feed on plant sap at the base of the grass leaves, stems and crowns. Adult chinch bugs are only 3/16 of an inch long. Their wings are folded over their backs in the form of an “X.” They concentrate in limited areas and work outward from these centers of in-
festation, destroying the grass as they advance. The damage produced by chinch bugs will show up in non-shaded areas of the lawn as brown patches of dead grass. Sometimes entire lawns are killed except for certain types of weeds.

Photos of dead lawns are arriving in my email. Perhaps you have chinch bugs, I reply. Cut a six-inch square piece of browning turf from the lawn, and sink it into a bucket of water. If chinch bugs are present, they will float to the surface in a few minutes. Another method involves inspecting a foot square piece of turf. Turn the turf upside down over a piece of white paper and scratch the grass roughly so that any insects in the turf fall onto the paper. If chinch bugs are present, they can easily be seen on the white paper. Remember, all other insects in that turf will be on the paper so you must be able to differentiate chinch bugs from other insects.

A landscaper friend had a Voorheesville client with lawn problems, so we rode off in his giant four-by-four to take a look. A close examination on bended knees revealed chinch bugs. What to do, this late in the season, becomes the burning question. If found earlier, an insecticide could be used to reduce the bugs, then the area could be re-seeded with endophytic grasses, which naturally fend off surfacing feeding insects. But now, in early October, the chinch bugs will only be active for a little while longer. Since they’ve done most of their damage, it may not make sense to treat, and it is getting too late in the season to re-seed. In the case of the Voorheesville lawn, the clients want to use sod, which they’ve elected to do next spring. Then, with care and a magnifying glass, they’ll watch for the possible return of the chinch.

Text by David Chinery

Editor’s Note: In the July’s edition of this newsletter, the article entitled “Solar Pollinator Gardens” was mistakenly credited to Angela Tompkins, when in reality it was written by Schenectady Master Gardener Kathy Harter. We apologize for the error.
When I was young, my favorite season was autumn. Everything seemed warm and cozy: one could lie in a meadow and not get wet, one could sit in a harvested hay field and feel the warm earth. Besides that, fall harvests included the orange pumpkins and the red apples as well as the wonderful squashes; all red, orange, yellow, the same wonderful warm colors that our trees were displaying.

As I’ve aged, I’ve changed from looking forward to autumn to looking forward to spring. What happened to the immutable me to change so drastically? I guess in both cases it’s a consideration of what lies ahead. Now, in autumn, I think of the things that are coming to an end: the year, the gardening season, and the warm days of abundant sunshine. As I consider spring these days, I think of lengthening days, the onset of the growing season and the verdant days to come. A lot of my mood and thoughts depend on light.

Light, as it comes from the sun, is considered white light. If you pass this light through a prism, you will find that the white light actually contains lights of different colors. Light is a form of energy called electromagnetic radiation and light travels in wavelengths. Some wavelengths are long, while others are short. I think of the long wavelengths as being lazy, slow to reach the same position again as they travel. In contrast, the short wavelengths are in a hurry and quickly reach the same height they just left. The shorter wavelength is more energetic than the long wavelength and it is deflected at a more acute angle than the long wavelength; hence the separation of the colored lights. The light that comes out of the prism is called the color spectrum and it is visible when the wavelengths are between 400 and 700 nanometers. We remember it with the name Roy G. Biv (red, orange, yellow, green, blue, indigo, and violet).

Electromagnetic radiation that has wavelengths longer than 700 nanometers cannot be seen, it takes other forms, such as radio waves or microwaves. In like manner, electromagnetic radiation that has wavelengths shorter than 400 nanometers is also invisible, and it takes such forms as x-rays and gamma radiation. Of visible light, red light has the least energy. If the energy has a wavelength just slightly longer than 700 nanometers, we speak of it as infrared. Infrared energy is detected as heat. Conversely, energy of wavelength shorter than 400 nanometers (ultraviolet) also cannot be seen, but it can do a lot of damage.

How are the properties of light applied to everyday life? Light can be absorbed, reflected or transmitted. What we see is light that is reflected. If the light is absorbed, it means energy is taken in. If light is transmitted, it means the light is passed through. Let us look at a common example. You leave your car outside on a summer day with the windows closed. When you return to the car it is hot inside. Sunlight passed through the car windows (transmitted) and entered the car. Some of the electromagnetic radiation also passed back out of the car, however, red light and infrared do not have enough energy to get back out of the car. Hence, the heat stays inside. Other examples of light in everyday life include wearing white (reflecting light) in the summer, as well as wearing dark clothes (taking in more energy) in the winter.

Light as it applies to plants: most plants reflect green and green is in the middle of the spectrum. This means that plants absorb light from both ends of the spectrum, maximizing their use of light in photosynthesis.

Text by Rensselaer Master Gardener Inge Eley
Journalist Christopher Morely once wrote, “the bicycle, the bicycle, surely should always be the vehicle of novelists and poets.” I would add that garden columnists ought to ride one, too, since from a bicycle seat you inhale story ideas as you pant up the hills. Last week I participated in BikeMaine’s Tour of Aroostook County, a 300-plus mile jaunt across the rolling terrain of our country’s northeastern-most corner. Aroostook, known to Mainers as “The County,” is the largest such entity east of the Mississippi. The average tourist never ventures there, but hunters, fishers and canoeists do, for much of the area is covered by the Great North Woods. And the land that isn’t wooded often is, or used to be, an incubator for one of the world’s perfect foods, the potato.

By the time settlers ventured into northern Maine, they were used to finding rocky soils like those in most other parts of New England. Indeed, much of today’s scenery between Bangor and Houlton shows that the land is more suited to forestry than farms. But in the early 1800’s, pioneers discovered well drained, fertile soils in Aroostook. The cool climate and forty inches of rain wasn’t ideal for corn, but potatoes and small grains flourished. When the railroads arrived later that century, specializing in a crop which could be shipped easily and grown in mass quantities made sense, and the potato boom was on. By the early 1940’s, Aroostook was the number one potato production area in the U.S., with tubers produced on about a quarter of a million acres. These were modest family farms, with two or three generations helping to produce the harvest. Such small-scale operations fit the land well and allowed a large number of people to live good lives.

But times changed. Young people left for new opportunities, and the number of farmers and farms decreased. Consumers became convinced Idaho potatoes were the best via slick marketing campaigns. Western states subsidized their potato growers with irrigation and hydro-electric plants. Concentrating on just one crop increased the need for soil conservation and crop rotation practices. Maine’s potato production dropped like a novice picking up a hot spud down to 8th in the nation. When I told friends I was riding my bike in Maine’s potato country, they often said, “I didn’t know that they grew potatoes in Maine.”

Those folks also don’t know that they probably eat Maine potatoes. About 25% of the Aroostook crop goes on to grow again on other farms and gardens as seed potatoes, while 65% gets turned into French fries and potato chips. Potatoes are also still a large part of the local culture. July’s Potato Blossom Festival has events you might expect (a Potato Queen and a tater tot eating contest) and some you might not (a human chess game), and thousands attend Potato Feast Days in late August. Most telling, schools still close during harvest time so students can work the fields. My new motto: will bike for spuds.
Pull out all remaining weeds. Cut off your deep-rooted vegetables (peppers, tomatoes, eggplant, corn) at the ground (leaving the roots in allows for exchange of nutrients and minerals from the top to the base of the soil and vice-versa, thereby aiding soil structure and fertility). Rake out all beds, dispose of any diseased material and compost the rest.

After the first frost, cut back herbaceous perennials (e.g. asparagus, rhubarb) to the ground, fertilize and mulch with shredded leaves (or straw if you’re lucky enough to not have leaves on your lawn). Your woody perennials such as lavender should NOT be cut back until the spring.

Plant your garlic for next year.

Harvest remaining root vegetables and late leafy vegetables. Clipping tops off carrots, turnips, beets or parsnips will keep them fresh longer.

Plant spring-blooming bulbs like crocus, tulips or daffodils.

Cut down dahlias and cannas. Dig up the tubers and store them in your cellar.

Deer-net your shrubs if you have a deer problem.

Spray broadleaf evergreens with an anti-desiccant or protect with a burlap screen. This will protect them from drying out in the winter winds.

Plant new deciduous trees or shrubs or transplant old ones.

Bring in any warm-weather plants that you set outside for the spring and summer months.

Do NOT prune any spring-flowering shrubs.

Prune ever-bearing raspberries. If you want a larger fall crop, cut the canes off at 2-3 inches. For a light crop in spring, then another in fall, prune first year canes to 2-3 feet.

Mound additional soil around the crown of hybrid roses. Add mulch after the ground freezes in November.
It doesn’t seem possible, but summer is almost over. I’ve had my delicious share of bacon, lettuce and tomato sandwiches, the yummy corn on the cob and fresh lettuce. As always, the extra rays of sunlight caused my houseplants to burst forth to new heights. What does one do with glasses full of rooted houseplant cuttings? Being the cheapskate that I am, I cannot throw them out. So, what do I do with them? I live in a retirement community and I put them in public areas with a note saying “Houseplant cuttings looking for a home!” This has served me well in the past. I am an ardent lover of begonias, and I have lost some begonias that I had intended to keep for the rest of my life. Well, no problem: I knew people who had what I had lost and within a few days I was, once again, the loving owner of a favorite plant. Of course, the reciprocal exchange has also worked many times. So, as houseplants once again move from sunny warm gardens to dimmer, dustier environments, I expect I will lose a few during the upcoming winter.

What kind of houseplants? In general, I am a foliage lover and many of my plants have specific requirements. I love ferns, and, in general, they survive best with less than optimal light conditions. I grew some ferns from spores this past spring and, unbeknownst to me, some *Polystichum* spores fell on the soil in which I was growing *Adiantum* (southern maidenhair). (I don’t know the common name for *Polystichum*; as a matter of fact, I know very little about this fern.) Most *Polystichums* are temperate outdoor plants, but a few may be houseplants. Anyway, the upshot of this is that I have two types of fern growing in one flower pot; one is the very large *Polystichum* (2 to 3 feet) and the other is the smaller southern maidenhair (about 10 inches). I have to separate these two ferns before October arrives.

Another foliage plant that I love is the scented geranium. One, in particular, I have replaced several times for a fellow houseplant grower. This geranium is a lemon-scented plant that has deeply cut leaves and each leaf has a white border. The geraniums, in contrast to the ferns, need as much light as they can get. My apartment only has east windows, so the geraniums get to sit on the windowsill, while the ferns are placed a little further from the light source.

And finally, the begonias! The begonias are squeezed in between geraniums and ferns. I had to get rid of some of the large leafed begonias, such as angel wings, to accommodate the reduced window space I now have, but they, as the ferns and geraniums, have learned to adapt to the east windows.

So, this autumn, as many autumns in the past, I am grateful for my gardening friends for I realize that the dimmer, long winter may result in a favorite houseplant or two being lost and in need of replacement.

Text by Rensselaer Master Gardener Inge Eley

A second note from the editor: This article should have appeared in our August edition, but that was never produced. We still thought you would like to read it in October!
A recent phone call to the Extension office went something like this. A gentleman reported his lawn was lush this summer and growing like topsy, but was a vibrant shade of light green. Were the blades of grass rather wide? Yes! After a few more questions, the verdict was in. You, sir, have crabgrass.

There should be no particular shame in having crabgrass in your lawn, although there is peer pressure to eliminate it in some “better neighborhoods.” According to the U.S. Department of Agriculture, large crabgrass, also known as *Digitaria sanguinalis*, is present in every U.S. state except Florida. The Centre for Agriculture and Biosciences International (CABI.org) says large crabgrass lives in Florida plus a list of countries around the world. Given a plant with more worldwide recognition than a VISA card, how can I be expected to keep it out of my backyard? It’s a tall task, since crabgrass displays an incredible degree of versatility.

Smartly, crabgrass avoids our cold winters by passing them as seed. It waits to germinate until spring soil temperatures move into the 50’s, and then progresses slowly. We call crabgrass a “warm season” grass, meaning that it prefers to grow during the hotter months. Our desirable lawn grasses need cooler weather, so when July drought and August heat slow the growth of Kentucky bluegrass and perennial ryegrass, crabgrass busts a move. A single plant can rapidly expand to a foot or more across, but crabgrass will thrive as a tightly packed crowd, too. In late summer it shoots out seedheads with three to twelve finger-like spikes (as alluded to in the botanical name). These dastardly digits produce up to 150,000 seeds, which take residence in the soil and insure generations of crabgrass to come. Having a strong and pushy constitution allows crabgrass to completely commandeer some lawns. With the first sharp frost, it turns a sallow brown. Some lawn owners are shocked to see most of their lawn die, quite literally overnight. Ignorance of crabgrass can be bliss until an October cold snap of reality.

Folks who like to mow their lawns low (I know you are out there) play right into the hands of crabgrass. While it might grow four feet tall, it’s just as happy when mowed as turf, and can set seed when cut as short as ½ inch. Mowing your lawn lower than 2 inches seriously weakens the bluegrasses, ryes, and fescues. These weakened grasses can’t compete with crabgrass. But if mowed higher, the good grasses can prevail. A study at Michigan State University showed that a tall fescue lawn mowed at a too-low one inch turned into 96% crabgrass in one season, while the same tall fescue mowed at 4 inches had only 4% crabgrass. Why are Americans killing their lawns by mowing them to death?

Crabgrass also has lawn owners spending millions on pre-emergent herbicides each spring. More careful cultural practices, such as overseeding and proper fertility, could reduce the need. Crafty crabgrass wins in man versus weed.
The trees and some shrubs are changing to the warm rich colors of autumn. Synthesis of chlorophyll requires abundant light and as light decreases, so does the synthesis of chlorophyll. Not only is the synthesis of chlorophyll decreasing, but also the chlorophyll that is present is being degraded. Actually, green leaves contain more than chlorophyll; other pigments that function in photosynthesis may be yellow and orange, but these are masked by the more abundant green. All the photosynthetic pigments are hydrophobic (not water soluble), so to see the non-green pigments we need a way to separate the pigments.

In the days when I was teaching, we would grind up spinach in an organic solvent and filter out fragments of plant material. Next, we would run paper chromatography and thus separate the photosynthetic pigments. Paper chromatography is the following technique: you spot something on absorbent paper and then allow a solvent to move up the paper. As the solvent ascends, it carries - in this case - the pigment extract with it. Pigments that are not very soluble are left behind as the solvent continues to ascend. We found the photosynthetic pigments were the olive green chlorophyll b (least soluble), followed by the blue-green chlorophyll a, then the yellow xanthophyll and finally the very soluble yellow carotene.

Nowhere have I mentioned the red leaf color that’s so striking in the autumn! Pigments called anthocyanins become more abundant during the fall and anthocyanins (blue or yellow) may change to red anthoerythrins as acidity increases. I’m going to stray from the topic for a brief moment to tell a story of the influence of pH (acidity/alkalinity) on color. When we lived on a farm, we had grapes. I used the red grapes to make jam and grape juice. I noticed the residue of grapes turned blue when I put the dirty dishes into dish water. Some time later I was asked to give a talk on autumn foliage color. To illustrate the effect of pH on color changes, I thought back to my experience of making jam and then washing the dishes. At the time of my talk (winter), I was not harvesting grapes. So, I bought grape juice and decided to put some juice into two glasses. To one glass I added vinegar (acid) and to the other glass I added Palmolive dishwashing liquid (alkaline). Imagine my chagrin when neither juice changed color. I was mortified! That night I realized that store-bought juice was no doubt buffered! (A buffer keeps the pH from changing.)

Now back to the topic of this essay! You can perform some very simple chromatography which illustrates the usefulness of this technique. Markers may be water-soluble or permanent non-water soluble ones such as Sharpies. Cut a strip of paper towel and, using a black water-soluble marker, put a dot of black ink in the middle of the strip about one inch from the end. Use a pin or a toothpick to fasten the strip’s non-dotted end to a three or four inch square piece of cardboard. (The purpose of the cardboard is to anchor the strip to something that can cover a glass.) Put a bit of water in a glass and dip the dotted end of the paper towel in the water. Do not immerse the dot in the water or the dot will wash out. If, however, you have the dot just above the water level, you will see the water travel up the paper towel, and, as the water passes the dot, it will carry all the colors that make up black with it. The various colors in black will separate out according to their solubilities.
Garden Hookers

If extra-terrestrial beings came to earth and saw a human walking a dog, they would conclude the dog was in charge, because the human was carrying the baggie. Watching the effort to fill the baggie only strengthens the conclusion, since the human often has to venture into the weeds. And in the weeds, we pick up seeds, which leads me to this week’s topic, seeds that stick.

After taking our dog Magnus for his evening perambulation, my dearest came in covered in tiny, rounded hitchhikers. While on a prosaic poo-trip, she had also been blessed by Enchanter’s Nightshade, a native perennial herb of the shade and damp. Growing to about two feet tall with fat green leaves, it produces a terminal spike of tiny, white, two-petaled flowers, rather charming in a most unpretentious way. These blossoms morph into small seeds which, upon close inspection, reveal that they are teardrop shaped and covered in miniature hooked hairs. Being covered in such an armament allows *Circaea Canadensis* seeds to hitchhike easily on both animals and humans. It can also run by rhizomes. Such a dual system of spread would seem to make Enchanter’s a weedy nightmare, but it only makes small, reasonable colonies hither and yon.

Two terminal barbs help tickseed seed pick a victim to stick. Several plants in the genus *Bidens* are called tickseeds for this trick, one of the most common locally being *Bidens frondosa*. Ranging from short (eight inches) to tall (over 50), it isn’t much of a looker, even when in flower. The blooms appear to be yellow daisies which have lost all their petals (technically, the rays), leaving only the central disks. As such, it is easy to walk right by *Bidens frondosa*, but that is clearly this plant’s strategy, which might be summed up as “hiding in plain sight.” Having Bidens myopia allows one to blindly brush up against tickseed and carry away dozens of the vaguely rectangular seeds. The pair of spikes on one end of the rectangle are aided by a covering of even smaller prickles, giving this hitchhiker’s seeds wings. The dismay sets in when, glancing down at your socks, you find your lower extremities are now being used as a Bidens delivery system.

The story goes that a dog’s coat, matted with burdock seeds after a hike in the Alps, inspired George de Mestral to invent a hook-and-loop fastening system. It took him ten years to develop the idea completely, and he received his first patent on Velcro in 1955. Burdock (*Arctium sp.*) doesn’t bother with legal protection but trades its seeds freely with all passersby. The purple thistle-like flowers appear on stems towering over the large rhubarb-like leaves in late summer. These are supported by a massive, elephant-like root system, which makes this weed a persistent customer. In addition to inspiring inventors, burdock flower stalks, leaves and roots are popular in Asian cuisine, and the Brits make a burdock and dandelion soda. What other secrets are held by dogs and weeds?
“When apple seeds, all white before,
Begin to darken in the core,
I know that summer, scarcely here,
Is gone until another year.”

*Edna St. Vincent Millay* (1892-1950, poet)

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 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/](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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Rensselaer County, New York Master Gardens are continuing their quest to see Gardens in America. Join us on a wonderful trip to the Southern part of the United States - South Carolina and Georgia. Here we will explore the native plants of this area and experience gardens so different from our own. We will also see many other hidden gems in Charleston, SC, Murrells Inlet, SC, Beaufort, SC, and Savannah, GA. Included will be the House in Garden Tour in Charleston along with guest speakers throughout the tour.
**Southern Charm Garden Tour**

**DISCOVER CHARLESTON & SAVANNAH**

**MARCH 26 - APRIL 1, 2019**

**Day 1 - Tuesday, March 26:** Arrive in Charleston. Your transfer is included to the hotel. Check-in at the Hampton Inn, located in the heart of the Historic District of Charleston. A Welcome Dinner is included this evening at Virginia’s on King. (D)

**Day 2 - Wednesday, March 27:** A hot breakfast is included at the hotel. Enjoy a city tour of the Historic District. Travel to Magnolia Gardens where your lunch is included. After lunch tour Magnolia Gardens and grounds, beginning with a guided tour of the Plantation House, followed by a guided tour of the Gardens. Conclude with the Swamp Garden. (self-guided) tour. (B.L)

**Day 3 - Thursday, March 28:** A hot breakfast included at the hotel. Depart for a tour of Brookgreen Gardens in Murrells Inlet, SC. Tour the Gardens upon arrival, then enjoy an included lunch and speaker followed by free time to enjoy the gardens. Dinner is on your own in Charleston upon your return to Charleston. (B, L)

**Day 4 - Friday, March 29:** A hot breakfast at the hotel. Enjoy the Charleston House and Garden Tour today. Afternoon is on your own. Dinner is on your own this evening. (B)

**Day 5 - Saturday, March 30:** A hot breakfast at the hotel. Check-out of hotel and board the bus to Charleston Tea Plantation for a tour of the plantation. Arrive in Beaufort SC for lunch at Panini’s on the Waterfront. After lunch, Laura Lee Rose (Beaufort County Master Gardener Coordinator) will lead the group on a walking tour of Old Point in Beaufort. The historic district is a National Historic Landmark and is renowned for its impressive collection of architecture. A variety of homes, gardens, commercial buildings, and houses of worship are featured in the district. The walking tour will end at The Chocolate Tree. The Chocolate Tree was the creator of the iconic “box of chocolates” in the movie, Forrest Gump. All treats are made in-house daily. Continue to Savannah and check into the Doubletree in the Historic District. Dinner on your own. (B.L)

**Day 6 - Sunday, March 31:** Breakfast is included at the hotel. Trolley tour of Savannah and tour Juliette Gordon Low’s birthplace. Lunch is on your own before departing for the Coastal Georgia Botanical Garden. Dinner is included this evening at River House Seafood. (B, D)

**Day 7 - Monday, April 1:** Breakfast is included at the hotel. Check-out of hotel and depart for drop off at Charleston Airport for flights leaving after 1:00PM. (B)
Master Gardener Tour Price: $1,885 per person/double, $2,685 per person/single
Non-Master Gardener Tour Price: $1,935 per person/double, $2,735 per person/single
Includes: All hotel accommodations, transfers to/from Charleston airport, all motorcoach transportation, meals as indicated Breakfast (B), Lunch (L), Dinner (D), meal gratuity, all taxes.
Not Included: Airfare, meals not indicated, guide and driver gratuity, baggage gratuity,

Individual Reservations:
Reservations can be made by contacting Free Spirit Vacations directly at (480) 926-5547 or by email at reservations@freespiritvacations.com and referencing the Southern Charm Garden Tour. Upon making your reservation, you will receive a tour confirmation sheet from Free Spirit Vacations to confirm your reservation.

Deposit: $250 is due on or before 1/8/2019
Final Payment: Remaining balance is due on or before 1/25/2019

Payment Options:
1. Credit Card (VISA or MasterCard)
2. Check payable to Free Spirit Vacations
835 W Warner Rd. # 101-217
Gilbert, AZ 85233

Individual Cancellation Policy: Money is fully refundable if cancelled 60 days prior to departure. If cancellation occurs 59-45 days prior to departure, there will be a 50% charge. Money is not refundable if cancelled within 45 days.