Abraham Lincoln (Photo 1) was a man of many actions. One which often gets overlooked today was his approval of 1862’s Land Grant/Morrill Act, a catalyst which set in motion the birth of Cornell Cooperative Extension (CCE) in 1917. We’re celebrating our 100th anniversary this year, making it an ideal moment to ponder our roots.

Lincoln’s signature spurred the development of “Land Grant” colleges, each with a heavy focus on agriculture, in every state. Cornell became New York’s Land Grant school in 1865. The mission was three-fold: teaching primarily young people on a college campus, researching current agricultural problems and possibilities, and extending knowledge out into each community. A New York native, Seaman A. Knapp (Photo 2), was to figure highly in what happened next. A Union College graduate and physician, Knapp attended meetings of “The Teachers of Agriculture” in Michigan and Iowa in the early 1880’s. The idea of improving farming through science so inspired him that he drafted a bill for federal funding for agricultural experiment stations, which developed into the Hatch Act of 1887. Now greater attention could be focused on the mounting challenges facing the nation’s farmers.

Knapp moved to Louisiana and set up his own demonstration farm, encouraging his neighbors to adopt improved techniques. The conservative locals saw no need to change, but Knapp persisted. Then in 1892 the boll weevil appeared, destroying the cotton crop, and everyone was suddenly in the mood for education. Knapp’s idea of show-and-tell plots and classes on farms took hold, and he became a government employee...
who spread the word. By 1904, some 20 more “agriculture agents” were doing the same in Louisiana, Arkansas and Texas, and, with the passage of the Smith-Lever Act in 1914, a new organization was formed, Cooperative Extension.

With the threat of a world war looming, a group of farmers and businessmen met in Troy to form a local branch of Extension in January, 1917. Originally called the Rensselaer County Farm Bureau, they hired a young Cornell graduate, Nick Farber, as the first county agent. A photo of the time shows each gentleman wearing a suit and tie, except for young Nick who goes jacketless (Photo 3). Hailing from Castle-ton to Berlin to Schaghticoke and everywhere in-between, they undoubtedly brought a variety of motives to their organization, but all agreed that extending education to their neighbors was an important endeavor.

More growth soon followed. In 1918, the Rensselaer County Home Bureau (Photo 4) was organized to teach women homemaking skills in response to World War 1. Miss Alice Bunce was the first county home agent. With the men and now the women involved in Extension activities, it didn’t take long for someone to think of the kids. That happened in 1919, when Albert Hoefer (Photo 5), another recent Cornell graduate, became one of the first 4-H club agents in New York State. He had originally come to Troy in 1916 to organize war victory gardens. So thanks to Abe, Seaman, Nick, Alice, Albert, and many elected officials and volunteers, we are here for you today.

The new Rensselaer County Home Bureau grew quickly and focused on a diversity of topics, including nutrition, housing, clothing and child care. In 1920, a Home Bureau Mending Shop was started at 259 Broadway in Troy and in 1921 373 women attended the annual meeting. Here (left to right) Mrs. Lloyd Hewitt of Petersburg, Mrs. Bernard Roarke of the Hilltop, Mrs. Edward Savage of Defreestville and Mrs. James Markussen learn to make a wool dress at a program in 1950.
I’ve suffered through several seasons with allergies, an unfair plight for a gardener. Let those who prefer to spend their summer cruising the superstores or shopping online in an air-conditioned house have the allergies, I say, and give us outdoorsy types immunity to pollen! Well, I’m not in charge, but I did go for allergy testing, which revealed my nose runs when I’m anywhere near over a dozen things, including a bunch of plants. And while I’ve always known that ragweed wasn’t my friend, I’ve only come to recently appreciate that another prevalent weed makes my head throb and eyes water.

Broadleaf plantain (Plantago major) is a low-growing perennial with fat green leaves on chunky stems. It loves to grow in lawns – and in fact, a good swath of my back lawn is only broadleaf plantain. It thrives beneath the mower blades, surviving quite nicely at a few inches tall, although unshorn it grows to a foot. It will feel at home in any soil from wet to dry and likes all exposures from sun to shade. Broadleaf plantain is tolerant of compacted soils and grows so readily on dirt paths and roads that when the first Europeans inadvertently imported it, Native Americans noted that it sprouted in their footsteps. They named this unknown plant “white-man’s foot,” at least according to Henry Wadsworth Longfellow’s poem “Hiawatha.” Ever the opportunist, broadleaf plantain will flourish in the hell-strip between street and sidewalk, or even in a sidewalk’s crack. Once on the east coast, broadleaf plantain hitched a ride to all fifty states and Canada.

In broadleaf plantain we have both a curse and a blessing. Its tiny flowers are borne on upright spikes above a rosette of leaves from June to September. As do many wind-pollinated plants, it produces copious quantities of pollen which causes unfortunate folks like yours truly to snivel and wheeze. Other plantain species cause allergies, too, including English or Buckhorn plantain (Plantago lanceolata), also common on the local scene. Aesthetically, folks desiring a grassy lawn lament broadleaf plantain for its coarse look and thuggish ways of taking over. It is perhaps number three (behind ground ivy and crabgrass) on the list of troublesome lawn weeds about which people quiz this Extension horticulturist.

Yet broadleaf plantain has virtues, too. Packed with vitamins and minerals, it served as a spring tonic for the centuries before fresh vegetables were available year-round and a pharmacy inhabited every street corner. A chewed leaf applied topically will quell a bug bite, and injected bp lowers cholesterol. Colonial Americans used Plantago major to reduce fevers, to prevent tuberculosis and to treat cholera, bleeding gums and blood disorders. Dried leaves, roots and seeds have all been pressed into service in various concoctions. And in the most interesting twist, plantain can be used to treat…seasonal allergies.

What shall I do? Although experts say that ridding your garden of plantain won’t help (there’s just too much pollen on the wind), I still wonder. Gesundheit!
Saying good-bye to our lovely blooms at this time of year is a melancholy process, but this is the perfect time to think of spring and new growth by saving seeds from your garden plants. What better way to replicate your favorite flowers without the cost of purchasing more seeds or plants?

Seed saving can be done with annual or perennial plants. The gathering of seeds takes some patience. Moist, green seeds on the stem care too immature for successful seed saving. They will not dry properly, and may get mildewed, creating quite a mess. Waiting until they are dry on the stalk will give the best results. When the seed pods or seed heads appear brown and dry, you can either clip off the seed head, or sprinkle the seeds into a plain envelope. Seeds that are ready for harvest will fall easily into your hand or container. I always carry a few white envelopes in my garden tool container. Different flowers will reach the seed stage at various times and it helps to have a ready container for whatever seed you find at the perfect harvesting stage. Be sure to label each seed variety as you collect them.

Some of the easiest annual seeds to save for the spring include calendula, cleome, marigold, morning glory, nasturtium, and zinnia, but you may find other favorites in your garden. Look for strong plants with the biggest, most colorful flowers. After collecting the seeds, it is important to let them go through a drying period. Storing moist seeds will lead to their deterioration and lessen the chances of sprouting successfully. For the drying process I spread them on newspaper in a seed tray in a cool, dry place. You may want to get rid of extra plant material surrounding the seed, but this is not totally necessary (I use an old kitchen sieve for this). After a week or two, they will be ready to store in properly labeled glycine bags or small jars until you are ready to plant in the spring. Sometimes I start my zinnias indoors in a seed-starting medium in a tray. I sow them thickly, and re-pot them into small pots when they have two sets of leaflets. From there they can be planted in your garden in the spring. This method will give you a jump on the blooming season, but you can also simply sprinkle your seeds onto the garden soil outside when there is no more danger of frost. Cover gently with a bit of soil and be sure to water your seedlings.

The above method can also be used for perennial seeds. However, if you prefer, you can simply sprinkle the dry seeds from perennial plants directly into a clear garden area in the fall. They can also be dropped directly into the soil surrounding the parent plant if you are looking for a thicker show of the plant. This is, of course, what many perennial plants accomplish by themselves, but by spreading the seed where you want it, you can place your new flowers where you like. Some perennials that are easy to harvest from seed include globe thistle, milkweed, oriental lilies, aster, coneflower, columbine, sunflower, poppy, and Joe Pye weed. Many of our native plants are ideal for seed saving. There are many more, of course, and I encourage you to experiment in your own garden with different species.

There is one important caveat: In order to get an exact replica of the parent plant, you must use seed from a “true” variety, not a hybrid. When purchasing garden plants that you will later harvest for seed, be sure they are not cultivars, signified by the name of the cultivar in single quotes. Heirloom plants are great choices for seed saving, guaranteeing true results.

Ask your friends or fellow Master Gardeners to save their favorite flower seeds and have a seed exchange. Have fun experimenting with new plants or favorites from your flower garden and you’ll have beautiful blooms for many years.
What to do in October?

It’s a good time to:

- Plant your spring bulbs.
- Mulch the more tender of the perennials such as chrysanthemums after cutting them back to the ground.
- Dig up cannas, dahlias, and remaining tender bulbs and cut off the foliage. Use a hose to wash soil off the bulbs and let them dry in the sun for a few days. Don’t leave them out at night when frost is expected. Put the “cured” dry bulbs in flats, crates or heavy paper boxes, preferably with peat moss, perlite, vermiculite or sawdust and store them in a dry, cool, frost-free location such as a basement or crawl space. Plan to check the bulbs periodically for signs of rotting or shriveling. In February or March, you may have to sprinkle water on the bulbs if they are shriveling, especially if you’ve not covered them with peat moss, vermiculite, etc.
- Amend your soil with a dressing of compost.

- Turn your compost pile. Or use your garden debris and leaves to start one.
- Get raking.....then shred the leaves into leaf mulch.
- Plant trees and shrubs. Be sure to keep them well-watered, even through the winter.
- Make sure all vacationing houseplants are brought back inside. You might want to check for “guests” before making the move.
- Continue planting garlic.
- Harvest and dry or freeze herbs for winter use.
- Remove green tomatoes from the plants. Either ripen them in a brown paper bag or lift the entire plant and hang it upside down in a warm spot (messy, but the tomatoes are then “vine-ripened!”)
- Harvest winter squash once the vines die back, but definitely before a hard freeze.
- Continue harvesting fall crops like beets, cabbage, carrots, cauliflower, kale and leeks.
- Clean and put away empty containers and garden ornaments.
- Clean and sharpen gardening tools.
- Clean bird feeders.
- Think about a de-icer or heater for your birdbath. If your birdbath is unheated, empty it and turn it over or bring it inside to keep it from cracking.
- Enjoy the last warm days of fall. Think warm mulled cider, wine and a bonfire…

Text by Rensselaer County Master Gardeners
I am, admittedly, for the most part, chronically lazy and undisciplined. My college degree was in Procrastination. Straight A’s throughout. But experience has taught me that some chores can’t be ignored.

Settling your garden in for the winter requires effort and discipline, but pays big dividends in the long run. Sort of a “pay me now, or pay me much more later on.” In reality, you can put off some or all of the tasks until spring, but the results will be substantially sub-optimal.

Step 1: Clean up

After the first hard frost most vegetable plants give up the ghost and wither away. Even perennials such as asparagus turn brown and require attention.

One of the big reasons to perform a fall cleanup is to remove pernicious insects that might otherwise overwinter in plant debris and then re-emerge bright and early in the spring, ready for active duty. My particular nemesis, the asparagus beetle, cozies up inside asparagus stems when winter approaches. Cutting asparagus stems off at ground level and then disposing of them in some far-away galaxy helps reduce the population of this noisome pest.

As for most annuals such as tomatoes, peppers, squash, greens of all sorts etc., I favor the technique of cutting the stem off at ground level and leaving the roots in the ground. The worms really love to chomp down on the roots, and I never want to discourage our little wiggly friends from their appointed rounds. Use a sharp knife, wear thick gloves, and cut away from yourself (blood meal will enrich the soil if you really do insist). Again, toss the plant debris somewhere far away and downwind.

Step 2: Check the soil pH and fertility

Fall is by far the best time to adjust your soil pH if it has gotten out of whack. Before the soil freezes, take a sample to your closest office of Cornell Cooperative Extension, where, for a moderate fee, they will test the pH and recommend any needed adjustments. See page 11 of this newsletter for a list of offices. They can also tell you how to do a more in-depth analysis of the plant-important nutrients in your soil, too. How each office does this and the fees involved differ county-to-county, so call ahead or visit the websites for details.
Step 3: Add compost and organic matter

Fall is the ideal time to augment the organic matter in your soil. If you have compost, by all means use it. No compost? No problem! Leaves, particularly if they’re chopped up a bit, will fit the bill quite nicely. I happen to live in a town that asks residents to bag their leaves and leave them at curbside for pick up (by me). Folks who use their lawn tractors to sweep up the leaves make my day. Otherwise a quick pass over the leaves with your own mower will do the trick. Dry leaves work much better than wet ones. No need to emulsify the leaves, but if you have time on your hands or maybe you’re having a particularly difficult day . . . .

I don’t expend much energy digging the leaves into the soil since I’m a big believer in disturbing the soil only to aerate. And I’m terminally lazy.

I aim to collect at least 50 bags of leaves for my 4000 square foot vegetable garden (approximately 2 bags per raised bed). When particularly ambitious, I collect additional leaves and spread them in the paths around the raised beds (whole leaves work best here since you want a mat of leaves to suppress the weeds). A thorough soaking will help keep the leaves in place.

You might ask “What about cover crops?” I’m sure they work very well, but I’ve never felt the need, and thus have no first-hand experience with them. If I did grow a cover crop, I’d be sure to use one that didn’t survive the winter (again, that adversity to turning over the soil).

Step 4: Straw as icing

I grow vegetables as a hobby, not as a business. I don’t aim to “break even” in my endeavors, any more than if I climbed mountains or rode dirt bikes as a hobby. So I indulge myself occasionally, and laying down a layer of straw over my garden beds in the fall is one such monstrous indulgence. Straw serves two purposes. First, it helps hold the leaves in place. Secondly, and more importantly, a layer of straw makes the garden much more visually pleasing in the off season (which, sadly, is half the year).

Follow these steps and your garden soil will be ready in the spring to grow luxuriant and delicious vegetables.

Text by Rensselaer County Master Gardener Paul Zimmerman
I'll go out on a limb and say that many of us, as gardeners, try to do the right thing. We use fertilizers carefully, prefer composting to throwing organic waste in a landfill and only spray when all else fails (and maybe not even then). But sometimes deciding which fork in the garden path leads to a planter’s pitfall and which to horticultural heaven is a murky choice. This has been my relationship with a plant called *Aralia*.

As a young gardener, I found boxwoods boring and turnips trite, preferring more exotic flora. I was seeking to set my garden apart, to grow plants like no others found in the neighborhood. Perhaps that’s why I was attracted to the Devil’s Walkingstick: even the name of this strange shrub spoke of gardening-on-the-edge. Its giant leaves are up to five feet long and composed of dozens of tiny leaflets, giving it a rather soft appearance from a distance. This is entirely deceitful, because the stout, clubby stems are covered in sharp prickles. The plant grows into a dense thicket using a vigorous underground root system, creating a patch which might easily shred anyone unfortunate enough to fall into it. A lacey veil of white flowers, morphing into purple berries, tops a mature DW in high summer. The impact of a well-grown patch of this bad boy has been described as strikingly handsome. Botanically known as *Aralia spinosa*, it ranges natively from southern Pennsylvania to Florida and Texas. While a gardener with more sanity would work to avoid such a hard-to-handle beast, I figured I was sophisticated enough to enjoy its virtues while tough enough to rein it in when needed.

Once acquired, I planted my DW in a shady corner at wood’s edge. It has slowly grown into a small clump and hasn’t threatened a rampant takeover. Its height is eight feet rather than a possible fifteen. Perhaps it’s a little too far north, or in too much shade, to become a full tiger. It only bites when incautiously handled, like a pussycat, but so far it has required little pruning. I’m partly disappointed that it hasn’t grown into a superb novelty while also partly relieved it hasn’t grown.

Our relationship has recently taken a new turn. Ever more aware of invasive plants, I was perusing an on-line publication entitled “Mistaken Identity: Invasive Plants and their Native Look-alikes,” produced by the Delaware Department of Agriculture. Their premise is that many invasives look confusingly similar to desirable natives, and they provide clues for proper identification. Want to tell sugar maple from Norway maple, or tree-of-heaven from sumac? Check here. Devil’s Walkingstick has an invasive doppelganger in the sweetly named Japanese Angelica Tree (*Aralia elata*), a thug erroneously planted and now escaping in parts of the mid-Atlantic. With some trepidation I used the guide to check my Aralia’s leaf veins and flower structure, clues to its true identity, and I’m glad to say it appears I have *Aralia spinosa*. This time, the details are in the Devil.
Every October I look forward to the beauty of the Northeast! Where did all those beautiful colors come from? Believe it or not, they have been there since spring, but they were masked by the much more abundant chlorophylls. The main photosynthetic pigments of land plants are two chlorophylls (chlorophyll a and chlorophyll b) and carotenoids. Chlorophyll a is blue-green in color (blue Colorado spruce has a lot of chlorophyll a) and chlorophyll b is olive-green. As the name implies, carotenoids are the color of carrots, yellow, orange and red. The two common carotenoids are carotene and xanthophyll. Both chlorophylls and carotenoids are fat-soluble, i.e., they are hydrophobic. Since the ground substance of a cell (cytoplasm) is mostly water, these pigments are not free in the cell, rather they are embedded in membranes.

Light contains energy of different wavelengths with red being the least energetic and violet being the most energetic. The colors contained in white light are red, orange, yellow, green, blue, indigo and violet. When plants absorb light energy, the chlorophylls and carotenoids vibrate more quickly. If energy is absorbed, the plant can do work - photosynthesis. If light energy is reflected rather than being absorbed, the plant doesn't work. Plants appear green, which means they are reflecting green light.

But, let's get back to the colors of autumn. Chlorophyll cannot be synthesized in the absence of light. As the days shorten, less and less chlorophyll is produced, and thus the carotenoids become visible. What do the carotenoids do in the living plant? For one thing, they increase the amount of usable light, although this is of little use. Visible light ranges from red to violet with green being in the middle; yellow is right next to green. So, while yellow is able to absorb some light that green cannot, it is insignificant.

Let me stray from the topic a bit. In order to be photosynthetic, plants need chlorophyll and light. One place where light is scarce is the floor of the tropical rain forest. Yet in this poorly lit area we have some of the most lush and spectacular plants. How do plants do it? One plant that is common to the floor of the tropical rain forest is the begonia. If you examine almost any Rex begonia, you will see red. For example, the underside of the beefsteak begonia leaf is red. That means red light is reflected. Red is one end of the visible spectrum; green is in the middle. That means red light is absorbed by green plants. So tropical rain forest floor plants enhance their own photosynthesis by reflecting red light.

So, shouldn't the abundance of red foliage in autumn increase photosynthesis? Don't forget the second - and actually it's the first or main item necessary for photosynthesis - chlorophyll. Mother Nature has ways of regulating herself. If light is scarce, but chlorophyll is present, reflected red light helps. If red is present, but chlorophyll is not, nothing helps. I think it is Mother Nature's gift to humanity to present us with the beautiful colors of autumn just before the trees retire for their annual winter rest.

And one final personal note: You may wonder who the heck is this Inge Eley who doesn't attend Master Gardener meetings, didn't work the fair, etc. I have had to give up driving, but David is allowing me to continue writing and I am grateful.

By Rensselaer County Master Gardener Inge Eley
Amazing things abound in the woods, especially at a place like Papscanee Preserve. Amounting to 156 acres along the Hudson River north of Castleton, the site is named for the sachem Papsickene and was farmed by members of the Mahican tribe until it was acquired by Kiliaen Van Rensselaer in 1637. Influenced by the adjacent river dredging and railroad construction, today it is a jungle-like forest, open to the public, full of both native and foreign plants.

One character requiring experience to tangle with is wood nettle (Laportea canadensis). “Nettle” comes from an old Anglo-Saxon word “noedl” and accurate describes the stinging hairs which cover this herb’s stems and leaves. Growing to between two and four feet tall, native wood nettle plants aren’t unattractive, although I doubt you’ll find them offered in garden centers anytime soon. The small, green, female flowers are borne in branched clusters on top of the plant while the male flowers hang below. I’m told that walking into a patch of wood nettles will result in painful lacerations which last only about an hour, but I’m not about it give it a try. Historically, wood nettle was boiled and eaten as a spring tonic. It was also employed in urtication, also known as intentional stinging, with the goal of stimulating the immune system to relieve arthritis and rheumatism. Wood nettle has a cousin in even pricklier stinging nettle (Urtica dioica), although they differ in leaf arrangement and the fact that stinging nettles are not native plants here.

The species name Laportea turns out to have interesting roots. The wood nettle was given its scientific name in honor of Francois Louis de Laporte, Count of Castelnau, a Frenchman born in London who traveled the world as a diplomat and scientist. Laporte was tall, stooped and neglectful of appearances, had at least two wives (simultaneously) and a son who gave no end of trouble to his father’s butler. He is described as both warm-hearted and generous, as well as mean and aloof. Perhaps French botanist Hugh Algernon Weddell, who attached the name to the plant, experienced more of the latter than the former.

Another tough customer at Papscanee is white snakeroot, or Ageratina altissima. Growing to about five feet, this meadow and edge-of-the-woods perennial sports clusters of tiny white flowers in late summer and early fall. Native to the eastern half of our country, white snakeroot caused trouble for the early European immigrants moving into the midwest. Little did they know that the attractive plants their cattle and other livestock were grazing on contained a poison called tremetol. Not only did this compound cause disease in the animals, when people ate the milk and meat, tremetol was passed on to them, resulting in a condition first called the trembles, then later termed milk sickness. Thousands died before Dr. Anna Pierce Hobbs Bixby learned (perhaps from a Shawnee woman) in the 1830’s that the trouble originated with white snakeroot. Don’t let your cows roam freely at Papscanee Preserve.
“Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are part of nature and therefore part of the mystery that we are trying to solve.”  

*Max Planck, German physicist (1858-1947)*

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**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.ccc.cornell.edu/schenectady/](http://counties.ccc.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](mailto:Dhc3@cornell.edu)

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The Rensselaer County Garden Garden Tour for 2018 will be held on Thursday, July 12 at gardens in the East Greenbush area. Do you have a garden or know of someone else who has a garden, that would make a beautiful addition to next year's tour? If so, for information, please contact David Chinery at Cornell Cooperative Extension during the week at (518) 272-4210 or Garden Tour Chairperson Teresa Murphy at (518) 283-3604.