At some point in our lives, many of us begin to realize that it is time for a change. The large house where we had raised our family still needed to be heated and cleaned even though we were living in only a few rooms. The 5 acres, huge organic vegetable garden and flower beds, not to mention the 2 acres of lawn, needed a lot of maintenance. And our backs and knees weren’t getting any younger. So being older, but not necessarily wiser, we decided to downsize and begin a new chapter.

There were really so many things to consider, but this article will focus on just the gardening aspect. After looking for 2 years my husband and I decided on a small one level house in a “maintenance free” community. This would allow us to travel easily and not have to worry about outside upkeep. The lot was small, but had the potential for many wonderful gardening spaces.

Did I mention that we were older, but not necessarily wiser? Our first disappointment came when we realized that standard practice in new developments is to remove and sell off the beautiful topsoil, leaving in our case a sub-soil of clay, alkaline clay. Ornamental planting beds in the front of the house had a layer of sand under the 3 inches of mulch. Testing revealed that the soil had few nutrients or organic materials.

The second disappointment came when we realized that the lawn fertilizations were mixed with toxic chemicals for killing grubs, crabgrass, and broadleaf weeds. We had been promised that we could “opt out” of the chemicals, but that’s a whole other saga.
Meanwhile, we had a patio area installed with a large stone raised bed. This was filled with a mix suggested by the “Square Foot” gardening guru. Also, borrowing from Keyhole Garden procedures, kitchen compost was buried about 20 inches down and covered with soil. Back at the old house, we had practiced the “lazy persons” compost method. Forming two piles, one active and one with finished compost from the previous year. With a much smaller lot and no place to hide a compost bin yet, we used a holey metal garbage can to collect vegetable scraps. Another adjustment was having to use paper lawn and leaf bags for larger plant materials and bringing them to the local transfer station.

We harvested pounds of chard, kale, radishes, beets, lettuces and green beans. Even ten forgotten sprouted potatoes were thrown in and grew quite well. Later plantings of cucumbers cascaded over the sides of the walls and produced so many fruits, that I was making pickles.

For other crops, we started collecting large pots and containers and arranged them for maximum sunlight. The pots contained tomatoes, peppers, eggplant, and zucchini. Two of the pots on either side of a trellis were planted with pole beans in hopes that they would grow up and cover it. And of course there were pots of herbs and lettuces.

My husband purchased and set up a timer controlled irrigation system from one of the Big Box stores. It snaked from planters to pots and eliminated the need for a lot of hand watering. He even ran a separate line to water the new blueberry bushes against the south side of the house.

This vegetable garden was so easy to maintain! I spent minutes weeding instead of hours. And I think that it looked beautiful.

We also dug up most of the remaining backyard, adding someone else’s topsoil, peat moss, compost and our sweat. There we planted dwarf or semi-dwarf fruit trees, apple, peach, pear and crab apple, along with perennials and whole swaths of butterfly-attracting zinnias.

So that was the first year of our experiment. Some things did not work out as expected, but that’s what gardening (and life) is all about. With this past winter’s arctic temperatures, I’m anxious to see what has survived and what needs to be replanted. The peas are in and the garlic is up!
As the days grow longer and warmer, we see dandelions popping up everywhere. Actually, the dandelion (*Taraxacum officinale*) is a lovely flower. It belongs to the largest family of flowering plants, the composites. They are called composites because the “flower” actually consists of many flowers, each of which is commonly referred to as a petal, but actually is called a floret or “little flower”. Pull off a floret and you will see the reproductive structures.

In my opinion, the dandelion is the most under appreciated plant in the world. It is food, it is medicine and it is a source of rubber. Every part of it is edible. I have made dandelion wine (from the flowers) and I have used the leaves in salads. There are two ways to avoid the bitterness of dandelion leaves: you can harvest the leaves of an etiolated plant or you can boil the leaves. An etiolated plant is one that has grown under something that blocks out light. Dandelions have been used medicinally for years. Eating the root increases urine output, eating the entire plant reduces stomach upset and applying the latex (milky white secretion) to the skin, smooths the skin. The latex can be converted to rubber and Continental Tire Company is growing dandelions in the hopes of decreasing their dependence on rubber trees. I think, however, that the most important service that dandelions provide is early spring production of pollen and nectar.

My middle child became a bee keeper last year and I have become much more aware of the life of honeybees. My daughter (Ingrid) and son-in-law (Bruce) live in Canada and they find Canadian winters are too cold for them, so they head south in November. Of course, they worried about their bees’ ability to survive the winter. The hives were stocked with abundant honey and off the snowbirds went. When they returned to Canada, they were delighted to find the bees had survived, but, unfortunately, a few days later, a pigmy shrew entered the hives and ate the bees.

Pollen and nectar! This is, after all, a plant article. Pollen is produced in structures called stamens. In the stamen, a cell, called a microspore mother cell, goes through a special division called meiosis. Meiosis results in the production of cells that contain half as much DNA as the parent cell. So, the parent cell was a microspore mother cell, and the cells produced by meiosis are microspores. Each microspore doubles its DNA and then divides into two cells, each containing one set of DNA. The two cells are contained in a protective cover and released as pollen. One of the two cells will double its DNA and then divide to form two sperm. (As a clarification: whenever a cell is about to divide, it begins by doubling its DNA. In meiosis this doubling of DNA is followed by two divisions, whereas in normal division the cell divides just one time after the DNA is doubled.) So pollen is the carriage that serves to transport the sperm through the dry air to the egg. Bees collect the pollen to make honey. What about nectar? Not all flowers produce nectar, but dandelions do. Nectar is a sweet liquid that is contained in a small sac toward the bottom of a flower. The best example I can think of in terms of nectar comes to mind when I think of lilacs. When I was a child I enjoyed sucking on a lilac flower because of the sweet taste.

So, while humans welcome the return of warmer temperatures and more sunlight, other forms of life feast on the pollen and nectar abundantly provided by dandelions and other plants.
My first gardening challenge this year has been a big one: re-build two raised beds. I have a total of nine raised beds, scattered about our 1.3 acres in the few sunny spots available, since they are primarily vegetable gardens. The one in question, a sixteen footer next to the greenhouse, started out four feet wide, but as its hemlock sides rotted, it splayed out to over five. While the plants don’t care, it looks awfully untidy, so re-building this bed has been on my seemingly bottomless bucket list for some time.

I’m a huge advocate of the many advantages of raised bed gardening. Raised beds eliminate space-wasting paths between rows. Not walking on the bed minimizes the back-breaking job of turning the soil. You’ll also need less compost or fertilizer to make the root zone a happier place to grow. Raised beds encourage the use of trellises for rambling crops like cucumbers and tomatoes, which keeps the area neat. My old in-ground vegetable garden resembled a lost corner of the Amazon by August, so the inherent tidiness with beds is a tremendous benefit. You can plant closer in raised beds, too, so less space is wasted (think “Square Foot Gardening,” created by 1980’s green guru Mel Bartholomew). Closer planting means less area to weed, and if you mulch (and you really should), less mulch is needed.

Of course, every upside has a downfall, and it’s my duty as an Extension Educator to give you both sides of the rutabaga here. Eventually, wooden raised beds need to be replaced. Starting with my first ones built in 2002, I have used hemlock lumber from local sawmills. This material is reasonably priced, locally-grown and additive free. In my experience, however, it has a life of about ten to twelve years, after which natural decay takes over and the sides of the bed fail. Initially, I didn’t mind re-constructing them, but I’m now at the age where I want something more durable. I’m now using the newest generation treated wood, which contains no chromium or arsenic, chemical constituents in the old treated lumber which made it taboo for vegetable gardening. Recycled plastic lumber, bricks, blocks – fancy and store-bought to found or scrounged, many materials can be made to work. Necessity makes strange beds, fellows.

Experience has taught me to adopt other raised bed upgrades. Due to the wild ways of wildlife, I’ve deemed the installation of ½ inch galvanized steel hardware cloth on the entire bottom of all raised beds mandatory. Moles, consummate diggers, construct terrestrial runways invaded by voles, vegetable eaters, and this duo has steadily made growing any unprotected root crops at my place pointless. With the steel mesh screening the critters from below, I can grow dahlias, onions and even delectable potatoes in peace. Additionally, the longest raised beds are now only eight feet, with reinforced corner blocks and plenty of deck screws to prevent the sides from gradually flopping. If I added heated soil and solar-powered LEDs, I could probably grow year-round.
Prepare your tools if you haven’t done so already. Clean and sharpen blades for optimum efficiency.

Tackle the garden beds. An early winter last year sent a lot of us into an early hibernation, and a very cold April had us dragging our feet. Rake out remaining leaves, clean up perennial remains, and add them all to the compost pile.

Remove weeds.

Add compost OR fertilizer to your beds.

Mulch beds to prevent weeds and improve water retention.

May can be very warm and dry, so don’t forget to water.

Prune early flowering shrubs (e.g., forsythia, lilac) after they have bloomed.

Harden off plants that need to be brought outdoors.

Organize and disinfect containers with 1 part bleach to 9 parts water.

While prepping containers, create a shopping list of plants needed. This is a great way to avoid “impulse buying” of plants.

Add fertilizer to lawns in late May. If you have not sharpened your lawnmower blade, do it now. A mower with a sharp blade is 30% more efficient in fuel.

Set your mower deck to 3 inches. Taller grass crowds out weeds and is more resilient in drought.

Monitor spring bulb plants and remove dead flowers leaving foliage intact.

Move and divide perennials.

Sow sweet potatoes, white potatoes, beets, salad greens, radishes, and carrots.

Keep asparagus and rhubarb picked to encourage continued harvest.

While busy, busy in the yard and the garden beds, remember to be proactive with tick prevention. Wear protective clothing and always do a tick check. Tick population is said to be very high this year, due to the snow keeping them cozy all winter.
Your Clematis - How and When to Prune It

Three years ago a friend offered to help me clean the yard in the spring after I had injured my knee. I had already cut back my purple clematis to the first buds in March and pruned some of the shrubs when they were dormant, but the yard still needed raking and cutting back the deadwood of the Russian sage. To my dismay, my friend cut back my clematis to a foot above the ground! The clematis had finally grown to the floor of the deck and I was saddened that it might not come back from so severe a pruning. My friend said she didn't know and thought all perennials get cut back to the ground. This was the inspiration for this article.

When I first moved into my home 27 years ago, I planted purple, *Jackmanii* clematis which bloomed reliably. A colleague suggested that I over plant the feet of the clematis to keep them cool. So I planted a low growing creeping sedum which had tiny yellow flowers. It was a striking contrast until the myrtle creeping from under the stairs overran it. Nonetheless, the clematis’ feet were kept shaded and cool. I found annually clearing out the deadwood to the first bud in March encouraged growth up the staircase and kept the vines neat and tidy. The clematis was happy; I was happy.

Later I got some more clematis plants of other varieties and was dismayed because I didn’t have much luck with encouraging bloom or keeping the plant going. Is the problem location or care? I researched; the following is what I found.

*Clematis* vines grow best in moist, well-draining, slightly alkaline soil. The flowers, vines and leaves need at least six hours of sun each day, but their roots need to be shaded. Shaded roots can be accomplished by over planting with a low growing cover plant, such as the creeping sedum or myrtle I used. If your clematis is struggling from too much shade or suffering in a location with acidic soil, and soil amendments like limestone or wood ash have not helped, it may be time to move your clematis to a better location.

The best time for clematis transplanting is in spring, just as the plant is waking up from winter. If you are not able to do it then, try in the fall.

There is also a range for hardiness, and considering the fluctuations in temperatures we have had, buds can get killed off old wood or previous year’s growth for early flowering species. The truly hardy cultivars are ‘Bluebird,’ 'Blue Boy,’ ‘Ruby,’ ‘White Swan,’ and ‘Purple Plena Elegans’ which are hardy to USDA Hardiness Zone 3 and bloom on new wood. Zone 3 plants need to be hardy through weather temperatures of -30 to -40 degrees Fahrenheit (-34 to -40 C). These plants could be pruned to the ground in fall or early spring. Flowers that bloom in spring grow on old wood. Summer or fall flowering clematis should be pruned in early spring, as these flowers are produced on the current year's growth. Note large flowering hybrids may produce a second set of blooms. To account for these differences, three main groups have been used to categorize clematis varieties for their bloom time, care and pruning.

**Group 1**

These include certain species clematis and their cultivars which bloom early in the year and bloom on growth made the previous year. They should be pruned right after flowering, if at all. Examples of this group include the *Montanas*, which are extremely vigorous in USDA zones 5 and warmer, *Clematis armandii* and its cultivars, *C. cirrhosa*, varieties of *C. alpina* and *C. macropetala* (these clematis will eventually develop into very large specimen plants). All can be pruned to keep them within their allotted space, or to remove dead and unsightly foliage. Note however, if they are pruned late in the season, or before they flower in the year, you will be cutting off potential flower buds.
Group 2
These are the large flowered hybrids all of which bloom on 'old wood' (actually on short shoots from old wood) and should not be pruned except for deadwood pruning in early spring after the leaf buds open slightly. These include: ‘Allanah,’ ‘Gypsy Queen,’ ‘Star of India,’ ‘Ville de Lyon,’ ‘Polish Spirit,’ ‘Red Cardinal’ and ‘Comtesse de Bouchard.’ One reference also included Jackmanii here. These can be categorized into two subgroups:

Subgroup 2a normally blooms in the spring and possibly again in the fall. Subgroup 2b blooms mainly in the spring, then intermittently all through the summer. This type usually continues to grow as well as to bloom as the season progresses. So in the spring, you might have a mass of blooms at waist height and by autumn they may be blooming overhead. Note Subgroup 2b also bloom on new wood. By pruning Group 2b as if they were Group 3 type plants, you can get a bigger display of flowers later in the year. The flowers of both subgroups tend to be smaller later in the season and might be more intensely or differently colored as well. The number of later flowers can be increased if the seed heads from the first flowering are removed right after the blooms drop their petals.

Group 3
These are the summer blooming varieties such as the crispa, x durandii, heracleiflora, tangutica, viticellas, Jackmanii types, texensis, the herbaceous species such as integrifolia and recta that bloom on new wood and the late bloomers such as Sweet Autumn Clematis (C. terniflora) and orientalis types. The florida species blooms once in the spring, stops producing, then blooms again in the autumn.

Clematis in Group 3 mainly flower on new wood produced in the current year and should be pruned back severely every year in late winter, when they are completely dormant, to about 12 - 14 inches. It is important to leave at least two pairs of buds (4) on each stem of the plant. Most Group 3 varieties are very fast growing and will reach their full height before blooming every summer. Over time, if you fail to prune them, they will develop long 'legs' that get woody and will be devoid of foliage and blooms.

However, with both Group 2 and Group 3 varieties, you can vary both flowering height and flowering time by adjusting your pruning strategy by either pruning later so that flowers are produced later, or not pruning some of the vines, so that you may get flowers earlier. Understanding the principles outlined above, you can prune to suit your needs. Say, for example you have a Jackmanii type (like mine) which you want to flower up the stairs to a deck. Pruning it down to 12-14 inches each year will mean that it will never reach the height you intended. Instead, knowing that it will grow approximately 8-12 feet each year, you can prune it back to a point which will allow it to flower at the height you need. Also, if you are growing Group 3 types onto a shrub or a tree, it is best to only prune down to a branch that gives them sufficient light for an early start next spring. It will stunt them if you prune the vine stem to 12 inches putting the vine into a very shady situation to start next spring.

The clematis is a resilient plant, and you are unlikely to kill your plant by poor pruning. The worst that is likely to happen by incorrect or untimely pruning would be the loss of flowers for one year.

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Text and first photo by Master Gardener Michele Badger
Are you open-minded when it comes to gardens? Some folks only want to see gardens full of plants which they also can grow at home. But not our group of sixteen who spent a week touring desert gardens in Arizona. We enjoyed a broad look at an entirely new palette of plants, used in a land of ten inches of rainfall annually and 350 sunny days per year. Who cares if we can’t grow agaves and mesquite trees outdoors in the Hudson Valley, we gained from seeing it done.

Phoenix’s Desert Botanical Garden showcases a tremendous range of plants on 140 acres under the watchful eyes of the red buttes of Papago Park. The magic starts in the entrance garden, where purple pricklypears and other fantastically formed cacti are joined by some giant pink heads, created by artist Jun Kaneko. Nearby, huge, pointy yuccas are cousins to the spikey towers of chartruse glass created by Dale Chihuly. Along the wildflower loop trail, bee, butterfly and hummingbird gardens were abloom with a rainbow of salvias and penstemon. And, like any good botanical garden, the weird plants were there, including the boojum trees (*Fouquieria columnaris*), with their tall, straight trunks and short 90 degree branches covered with tiny leaves. Dr. Seuss could have done no better. After being inspired here, I think the folks in charge are making good on their goal of “the garden is here to help you enjoy the beauty of the desert and care about it.”
Frank Lloyd Wright’s Taliesin West, in Scottsdale, is the rock-star architect’s vision of a desert paradise. Started in a remote spot in 1937, when the nearest civilization was miles away, this home is actually a complex of buildings, including offices, studios, entertainment spaces, a library, and accommodations for architecture students. As might be expected of Wright, the buildings are cutting edge, even after 80 years, yet quirky. The front door is hidden, the doorways are low and the roof is covered in canvas panels. A pool and lush green lawn speak of a time when it was okay to use precious water with abandon, but native saguaros, ocotillos and chollas all bring the Sonoran to the doorsteps. At the time of our visit, abundant color was supplied by magenta bougainvillea and yellow palo verde blossoms. All was greatly enhanced by our guide, a silver-haired cowboy poet named Don whose insider stories brought Mr. Wright to life.

William Boyce Thompson, a mining engineer from who lived in Yonkers but made his fortune in Arizona, founded the arboretum which bears his name in 1924. Growing below rocky Picketpost Mountain today are over 3,200 types of plants (including 800 different cacti) from arid regions across the globe. The arboretum’s early ambition was to find useful plants which would thrive in Arizona, but public education and conservation efforts are important topics now, too. I especially enjoyed the cardon grande cactus (*Echinopsis terscheckii*), a saguaro look-alike from South America, and the ultra-weird Namibian *Welwitschia mirabilis*, resembling something hit by a truck. No need to grow that in my backyard.

Text and photos by David Chinery
The million maple march has invaded my garden, and perhaps yours, too. Abundant seed and good growing conditions have somehow conspired to produce a bumper crop of diminutive seedlings across most of my lawn. These don’t bother me, since they’ll disappear with a few mowings. It’s the mini maples mixed into the hosta shoots, lurking under the viburnums and even in the sidewalk cracks which pose more inconvenience. Left alone, their aspirations of becoming redwood-sized trees will slowly start to become true. So I’m planning my summer fun around de-mapling my garden world.

Scientists tell us that for all the seeds a tree packed into a dense forest might produce over its lifetime, only one might live to replace its parent. This must make the maples growing near gardens and open spaces feel smug. Scads of their seeds germinate and more than a few shoot skyward before the gardener notices. From the viewpoint of a maple, the entire earth should be covered in maples. This isn’t too far from the human idea of a coffee joint on every corner.

Oddly enough, this grousing about the maple explosion coincided with last week’s gardening class on propagating woody plants from seed. Since gardeners like to get dirty and take home a prize, I devised a hands-on activity involving one of my favorite native trees, the Kentucky coffeetree (Gymnocladus dioicus). I collected the large, leathery seedpods from two of the few trees in the area late last fall. In class, I displayed photos of the trees, then explained how the seedpods might have been broken down and the seeds distributed. Travel back to the Pleistocene, and we see Mastodons munching on the seedpods of Kentucky coffeetrees. Their stomach enzymes could melt the notoriously hard seed coats, allowing the seeds to sprout happily in a pile of nutritious dino-dung. Fast forward back to today, when no known animal eats these pods. New trees only appear near their parents, having no animals to scarify and transport the seeds. So before planting, each student rubbed their coffeetree seed on rough sandpaper, breaking the seedcoat and allowing water uptake. This demonstrated one of the principles of seed propagation, scarification.

According to the USDA, of some 400 woody plant species studied, only 7%, including the Kentucky coffeetree, had an impermeable seed coat. A small number for sure, but a big challenge, so a number of scarification methods have been devised. Knives, files and even nail clippers work well for some seeds. My personal favorite for large seeds is a handheld rotary powertool equipped with a tiny sandpaper disk. Giant drums containing an abrasive material spin and abrade the seeds placed inside. Seed might also be plunged in very hot (200 F) water and left to soak overnight. And under the “do not try this at home” headline, seeds can also be given a dip in sulfuric acid. Honeylocust seed, for instance, will perform much better after an acid trip. No one in our class asked how to germinate a maple seed.

Text and photo by David Chinery
Green Shots: The Gardening World in Pictures

Our photos this month come from Rensselaer County Master Gardener Kim Mann. He writes, “During the first week of June 2017 we visited the Coastal Maine Botanical Gardens in Boothbay, Maine. This was our second visit, the first being in the fall, and of special interest was the rhododendron garden which was in bloom. This was one of the first areas developed at Coastal Maine and there are many varieties of rhododendron planted in a natural woodland setting among rock outcroppings and water features. The garden’s location on the coast and it’s warmer microclimate allows many plants to thrive in this northern location. A wonderful place to spend a day in late spring and early summer, or anytime.”
“Just now the lilac is in bloom
All before my little room.”

Rupert Brooke (1887-1915), English poet

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