Of all the things that we humans tend to take for granted, soil ranks high on the list. It is always there, under our feet either directly or far below the structure that we are in, but it is there. Soil forms much of the substance of the earth and is the basis of agriculture. It is the life force of the food web and while we have an appreciation for the balance within the soil, we are still very much students of its diversity. 2015 has been designated by the United Nations as the International Year of Soils as a way to bring global awareness to the importance of soil health as it relates to a sustainable future. The USDA Natural Resources Conservation Service was established 80 years ago to help farmers in the Midwest who were struggling with the health of their soil after the “Dust Bowl.” Their focus has been on soil health and most recently they have launched a campaign to “unlock the secrets of the soil” as a way to engage the public and spread the soil health message.

Soil captures and cleans water as part of the water cycle; much like kidneys they filter water, keeping ecosystems balanced. Population growth over the next few decades will stress the planet’s clean water supply so conservation practices are vital to sustainable agriculture and having enough drinking water. Healthy soil lessens the effects of flooding and helps to store large amounts of organic carbon. Soil is often referred to as the earth’s living skin. It is the source of rainforest plants that have been a medicinal bounty as well as the organisms within its structure such as fungal spores that have become lifesaving antibiotics. There is much to celebrate about soil a seemingly humble substance. Gardeners may be well aware of the power of healthy soil, but even they need to be reminded to be good stewards of our soil. Cornell Cooperative Extension is a resource for information on maintaining good soil health as well as sustainable gardening practices such as composting.

As you start your gardening season, keep in mind the words of author Wendell Berry. “The soil is the greatest connector of our lives, the source and destina-
tion of it all. It is the healer and restorer and resurrector, by which dissase passes into health, age into youth, death into life. Without proper care for it we can have no community, because without proper care for it we can have no life.”

New Crabapples Say, “So Long, Suckers!”

Today’s variety of crabapples (*Malus* sp.) available on the market is extensive. This genus encompasses one of the most diverse collections of trees of any in the plant kingdom. Trees are available in various sizes, shapes, forms and flower colors. The *Malus* sp. has had to overcome some major hurdles in disease resistance, such as cedar-apple rust, apple scab and fireblight to remain viable in the marketplace. Further demands were then put forth. Cultivars which would hold their fruit, dubbed “persistent fruiting varieties” were requested, making them less messy and acceptable to a wider range of commercial, residential and municipal consumers. It seems that the last hurdle to universal acceptance, root suckering, is about to be overcome as well.

Carlton Plants, a bare root nursery stock grower from Dayton, Oregon, has found the solution to the root suckering problem by introducing SproutFree® Malus Rootstock. Carlton Plants has tested this new rootstock extensively for the past 15 years, both here in the United States and in Canada. Ken Brown of Brown & Sons Nursery in Phillipsburg, Ohio has been growing these rootstocks for years and finds them to be a major step in the right direction. Ken said “We find them to be vigorous growers with a good root system, both in our fields and container production. We feel we’ve possibly gained as much as an extra year of growth over a two- to five-year period.” Other growers who have also trialed the rootstock have reported good crown and caliper growth on a well anchored root system.

Growers are enthusiastic about the new rootstocks vigor and the reduction they see in labor costs associated with the removal of suckers. Wholesale growers have reported anywhere from 50-70% reduction in labor with the new rootstock. Retailers can use this as a new marketing tool in selling crabapples. Municipalities and other landscape managers will reap the cost savings benefits as well.

SproutFree® is a full-size standard rootstock that is hardy to Zone 3. Carlton plans to use SproutFree® on all crabapples except the few that need to be hardy to Zone 2. For those they use the standard Dolgo rootstock.

The demand for trees on this new rootstock has been great. At this point Carlton Plants is currently prorating their orders to cover the demand. Hopefully in the next few years there will be plenty of trees, both containerized and balled- and- burlapped available on the market from producers all across the country.

The market for crabapples may be on the rise once again. Look for the SproutFree® rootstock trees in your area and help spread the word.
At least twenty years ago I wrote a newsletter column on spring ephemerals and entitled it “The Harbingers Of Spring.” Our typist read “hamburgers” instead, and ever since then I’ve associated the season’s first flowers with grilled meat patties. It’s a lovely vision since I enjoy them both.

No wonder my stomach began to grumble last Saturday when I spotted the winter aconites. Featuring bright yellow, bowl-like flowers above a wreath of toothed foliage, the appearance of *Eranthis hyemalis* brings joy to a winter-frozen heart. Diminutive might be too large a word to describe its height: authorities claim it reaches four inches, but that’s like a first-grader standing on tiptoes. Given time, its bulbs will spread to make colonies which appear in April but vanish as the season progresses. Usually found only in well-established gardens, I watch for two roadside patches planted many years ago and bless the gardeners who did the work. One cluster is beneath a mailbox along Best Road in Kinderhook, while the other is in a patch of weeds just south of Castleton on 9J, and neither are places were you would expect to find an attractive native of Southern Europe. I can attest that the Castleton patch is blooming well again this year. The less-than-ideal conditions at both places show this little guy’s toughness.

Wanting to have some of these harbingers in my own backyard, I planted ten tiny bulbs (after the requisite soaking) in what I thought of as a rather choice spot back in 2009. While four disappeared, I was waiting impatiently since snowmelt to see the six survivors and was rewarded last Monday morning. They are still alive, and one appears now to have two shoots! English gardeners (and those writing books) indicate that winter aconite spreads readily: all one must do is plant them, sit back and wait for a golden carpet to spread. But northern gardeners don’t have it so easy, and proclaim it slow to establish. I was just glad that mine again escaped the maws of the voles. But since I alluded to being hungry in paragraph two, I’ll finish here with a warning that *Eranthis* is quite poisonous.

While sunnier days encourage plants to come alive, they also show off the horticultural casualties. Winter winds cause evergreen plants to loose water even though the ground is frozen, leading to brown needles or leaves, dead twigs and sometimes total death. Some rhododendrons, hemlocks and spruces are looking rather necrotic, but shorter plants, such as my two handsome boxwoods, were protected by abundant snow cover. Saddest of all are the dwarf Alberta spruces. Normally green mounds, in some cases they’ve turned a brilliant rusty red. Hopefully their dormant buds are still alive, and with a little time their green will return. Some which are no longer dwarf – like those creeping over a tombstone or hiding front windows – have been here for decades, so with any luck it will take more than one winter to knock those Fat Alberts down.
I was looking forward to the pollinator conference last week, so when my wife gave me a glance saying “you certainly get involved with some strange things,” it didn’t dampen my spirits. Officially titled the “UMass Extension Symposium on Pollinator Health for Agriculture and Landscapes,” I was pleased that the topic encouraged several hundred kindred spirits to convene on the Amherst campus. The decline of honeybees has made pollinators a hot topic, and each speaker provided a treasure-trove of information about these insects on which our lives depend.

Although pollinators include beetles, moths, birds, butterflies and even bats, bees were the day’s focus. Joan Milam, a scientist with the UMass Department of Environmental Conservation, started with bee biology, and appreciating genetic diversity was the first lesson. There are at least 20,000 bee species known worldwide, with about 4,000 in North America and 378 in Massachusetts. We’ve got 35 non-native bees nationally, and only five of those were introduced intentionally, with the honeybee (Apis mellifera) being one. Bees can usually be identified to the family level by examining their wing venation patterns. A good resource for this type of work is found on the U.S. Geological Survey’s “Bee Inventory and Monitoring Laboratory” website, which has links useful to budding bee fans as well as the professional entomologist.

Most folks understand that honeybees live in a hive, but not all bees are social. Many types are solitary nesters, laying eggs and raising young in underground burrows or hollowed twigs by themselves. Others, known as cuckoo bees, lead a life described by the ten dollar word “kleptoparasitism.” This female finds the nest of a solitary bee of her own taxonomic family, waits until the other leaves, then buzzes in to lay eggs of her own. The cuckoo eggs, much like the bird they’re named for, hatch faster and proceed to consume the stored food and host’s offspring, all rather ungracious moves. These bees aren’t involved in the noble work of pollination, but you’ve got to admire their chutzpah nonetheless.

Much lately has been made about how reliant our diet is upon the services performed by bees: one in three food bites eaten by humans is bee-related. Consider also that pollination is a tough job. It can take 21 bee visits to a single strawberry flower to transfer enough pollen from anthers to stigmas successfully and make one strawberry. Fortunately, Mother Nature has equipped bees well to do the job. Some species have hairy abdomens on which pollen will stick, while others have hairy legs or backs. Some bees ingest pollen and regurgitate it once back home, while the honeybee carries pollen in her baskets, a small cavity on each hind leg. A fuzzy honeybee takes pollen from flowers as well as that stuck on her body and packs it into her baskets, using a little bee spit for moisture. A single hair acts as a pin to secure the load. The thought of losing this miraculous, customized service rightly has anyone who cares about eating very worried.
Soon it will be dandelion season. To some the chrome yellow blossoms are a sunny start to spring, while others run for the herbicide. But for the settlers in Plymouth Colony, dandelions were an experiment in keeping their honeybees alive. We weren’t taught in school that honeybees were among the Mayflower’s passengers, but records show they made the crossing in late 1620 along with the Allertons, Crackstones, Tinkers and Tilleys. And as with their human compatriots, food was scarce for the honeybees the following spring. Dandelions were imported to Massachusetts in 1624 to provide an early blooming plant to strengthen winter-starved hives with pollen and nectar. Little did anyone realize the dandelion would run as rampant as the settlers across the new world and help spawn the modern lawn care industry.

Honeybees spread, too, both in the form of wild colonies living independently and as semi-domesticated subjects of farmers and beekeepers. Things hummed along nicely until a bacterial disease called American foulbrood began killing honeybee larvae in the hives in 1907, with European foulbrood found in 1912. A system of state honeybee inspectors was formed, hives were inspected and infected hives burned. Disaster was avoided, but it was only the tip of the iceberg. Other diseases, such as one called nosema, another termed chalkbrood and various viruses, surfaced. The widespread use of new insecticides in the 1950’s killed not only pests but honeybees as well. Then in 1987 a new creature called the varroa mite was found to kill honeybee larvae, deform the pupae, transmit viruses and compromise the bee’s immune systems. While relatively new insecticides such as those in the neonicotinoid family have also harmed bees, the varroa mite and the havoc that goes with it is likely the major player plaguing the honeybees today.

While this cavalcade of bad news makes it easy to sink into a motionless funk, gardeners are among those empowered to help. The idea of planting a “bee garden,” which contains plants offering valuable sources of nectar and/or pollen, is generating a buzz. Dr. Lois Berg Stack of the University of Maine, who was also a speaker at the pollinator conference, is studying the floral preferences of honeybees, bumblebees, and solitary bees by planting 36 types of flowering plants at four sites in her state. Four days per week, researchers observe pollinator activity for one minute intervals, three times each day, on all plants in flower. The study will last five years, but early results have already fine-tuned the knowledge on what turns each type of bee on. For instance, the French marigold ‘Disco’ (a single-flowered yellow) attracted more than three times as many bumblebees as the French marigold ‘Bonanza’ (a double-flowered yellow). Poppies were discovered to be an important food source for honeybees, but not bumblebees. And while it is generally observed that bees prefer blue, yellow and purple flowers, white flowered borage attracts more total bees than the blue flowered kind. As with much in nature, the truth is in the details, and Dr. Stack’s discoveries will allow us to fine-tune our flowers.

USGS Bee Inventory and Monitoring Lab: http://www.pwrc.usgs.gov/nativebees/

University of Maine “Understanding Native Bees, the Great Pollinators: Enhancing Their Habitat in Maine” website: http://umaine.edu/publications/7153e/
When The Spruce Hits The Lawn

We have been getting a lot of inquiries from homeowners concerned about the high volume of branch tips littering their yards. Homeowners are reporting green, succulent growing tips falling from healthy trees for no apparent reason. The good news is that their worries can be alleviated when they realize that this is not caused by an aggressive disease that would kill their tree. In fact, it is actually a very common occurrence and the culprits are squirrels! Squirrels will cause this type of damage while feeding and some foresters have reported that they will also do this out of boredom. The following article from the Michigan State University Diagnostic Lab was written by Howard Russell and posted on their website this past March.

When other food becomes scarce in the winter, red squirrels will feed on spruce buds, leaving a pile of branch tips on the ground below. During the past two weeks, several people have called to report finding the ground around their spruce trees littered with branch tips. Each 4 to 5 inch branch tip had been neatly pruned from the tree. Some reported finding piles of these cut-off ends around the base of their trees. We’ve seen this type of injury before and a quick look at the buds will likely reveal the centers have been eaten out. This is the work of our noisy little friend, the red squirrel. When other foods become scarce in the winter, red squirrels feed on spruce buds. Rather than just eating the buds, these pesky rodents prefer to first prune the branch tip from the tree, eat the bud then discard the branch. As the squirrel continues to dine, the branch tips pile up on the ground below.

Red squirrels, also known as pine squirrels and chickarees, are native rodents that can be easily identified from other North American tree squirrels by their smaller size, territorial behavior and reddish fur with a white under-belly. Red squirrels aggressively defend their territory from other squirrels. They get annoyed whenever large animals, particularly dogs and people, intrude into their territory. Anyone who walks the woods recognizes the barks and chatter of an annoyed red squirrel. They will sit on a birdfeeder seemingly for hours eating sunflower seeds and chasing the intended beneficiaries away.

Red squirrels have one the widest distributions of all North American squirrels. They occur in Alaska, across Canada to the northeastern United States and south through the Appalachians. They also are found in the Rocky Mountains. The diet of these tree squirrels is specialized on the seeds of conifer cones and as such, they live throughout North America wherever conifers are common. There are 25 recognized sub-species of red squirrels. They eat almost anything they can get their little hands on including spruce buds and needles, mushrooms, willow leaves, poplar buds and catkins, flowers, berries and animal material such as bird eggs and bark beetle larvae.

Other than raking up branch tips, I don’t really know what to recommend to clients with a red squirrel problem. Maybe feeding them tasty sunflower seeds or corn would keep them sated and away from a spruce tree. Of course, there is the nuclear option: both Remington and Winchester manufacture several products that will provide effective red squirrel control. However, local ordinances regarding the discharge of firearms within city and other municipal boundaries, as well as the legal hunting season for red squirrel must be followed. If you have any other ideas, please contact me.
What to do in April

* Clear dead leaves, plants and other debris out of your flower or vegetable beds. Dig well-rotted manure or garden compost into your beds to prepare them for the growing season.

* Feed trees, shrubs, hedges, raspberry canes and fruit bushes with an application of slow-release fertilizer “scratched in” around the base of the plants. After fertilizing, mulch with well-rotted manure or compost.

* Prune fruit trees or bushes as needed, with the exception of stone-fruit trees such as peaches, plums nectarines, etc.

* Start tomato seeds indoors if you haven’t already.

* Start cucumbers, gherkins, sweet pepper and other vegetable plants under cover, toward the end of the month.

* Sow cool-weather vegetables such as spinach and lettuce in the garden.

* Lift and divide such perennials as hosta, beebalm and asters as soon as the soil can be worked. This will improve their vigor and provide new plants for the garden.

* Apply crabgrass preventers about the time the forsythia is blooming. Overseed your lawn in September with perennial ryegrass so you won’t need lawn weed preventer in the future.

* Plants new strawberry beds after enriching the soil with plenty of manure. Fertilize rhubarb and asparagus.

* Plant potato sets around the end of the month.

* Cut ornamental grasses to the ground.

* Turn your compost pile and sharpen your tools.

* Prune clematis vines that bloom on new growth.

* Celebrate Arbor Day on April 25th. Plant a tree if the spirit moves you!

Text by Master Gardeners Chris Roblin and Connie Gatt and photos by David Chinery
Warmest Winter on Record, 2014-2015

It now seems possible to believe that our long harsh winter is finally over. As the calendar turned the page to April I recall the local weatherman (in Albany), recounting how the winter of 2014-2015 has been the warmest winter on record! I was stunned because that not what I had been experiencing for the past 3-4 months. Had he misspoken? Was my hearing impaired?

No, I heard him right. The local weatherman proceeded to show a world map covered in pink and red colors indicating above normal temperatures for most of the earth. The exception of course was an area over the ocean to the north and the whole Northeastern portion of the United States. Now I began to believe him because that’s how I will remember this past winter.

According to my early April issue of the Cornell Turfgrass ShortCUTT newsletter, February and March of 2015 were the coldest two months in the Northeast in over 120 years! It also proved to be drier than normal, producing about 50% less precipitation than during a normal season. Interestingly enough, those coastal areas of MA, RI, and CT that ended last year very dry were the recipients of most of the precipitation that fell this winter. Just ask the residents of Boston!

I review this information as a means to explain all the damage we are seeing on our local evergreen plants. Holly, rhododendron, azalea, Japanese andromeda and many other evergreen shrubs are exhibiting plenty of burned needles and leaves. How does this happen? Well, as the air temperatures remain cold over an extended period of time, the frost layer in the ground sinks deeper and deeper into the earth. Our plants are not able to take up any moisture at a time when they are also experiencing plenty of dry winds, which results in plant desiccation. I guess its the plant equivalent of frostbite!

According to the local town authorities, who are bearing the cost of water line repairs in all the surrounding cities, a five foot deep frost layer is to blame for more than just frozen pipes. I have seen similar and unexpected damage to mature fir and spruce trees as well. Trees that have been in the landscape 10+ years are burnt this spring.

Other shrubs such as the ever present Yew is also exhibiting plenty of windward side browning and leaf loss. Dwarf Alberta spruce trees throughout the area show drastic needle burn and in some cases whole tree death.

What do we do now? In most cases it is best to let the needles drop naturally and allow the new growth to cover the plants with the familiar coating of green. Most of the buds are alive and well on the plants I have observed. On those plants with obvious dead tissue, now is the time to prune this out. If left in place too long, wood decaying fungi move in to decompose this tissue, it then appears as if a fungal disease is attacking the plant.

If you are unsure if the tissue is still alive, use your nail to scratch the bark to check for life or bend the branch with your hand. If it snaps instead of bending, it is dead. Time to replace it and see what next winter dishes up.

Text and photos by Chuck Schmitt
This month’s photos come from Rensselaer County Master Gardener Kathy Henry. Kathy writes, “Genvaugh Castle, County Donegal, Ireland, sits on a slight promontory jutting into Lough Veagh and was built 1870-73. The estate was originally created in 1857 by the purchase of several smaller holdings and was privately owned, and the grounds developed by a series of owners, until 1981 when it was presented to the Irish nation and a National Park was created.

The 11 hectares of garden are laid out in a network, each garden with a different theme. The gardens boast a multitude of exotic plants in combination with the natural flora. From the Balinese Temple Guardian Statues mounted to prevent evil characters from slipping through the gates, to the Tuscan garden depicting the formal gardens of central Italy with such statues of Bacchus and Roman Emperors, to the solitude of the paths winding to the lake, the magic of Glenveagh can be enjoyed and appreciated for all who wander the grounds.”
“Land, then, it not merely soil; it is a fountain of energy flowing through a circuit of soils, plants and animals.”

From Aldo Leopold’s “Sandy County Almanac,” 1949

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 12:00 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 12:00 Noon and ask to speak to a Master Gardener. You can also email your questions to Dhc3@cornell.edu

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Cornell Cooperative Extension provides equal program and employment opportunities. Please contact Cornell Cooperative Extension if you have special needs. No endorsement of products is implied.
Container Herb/Veggie Gardening

Thursday April 23rd 6:00 – 7:30 pm

This class will cover all the techniques necessary to create and maintain your beautiful container garden, such as plant selection and planting tips; design considerations; watering and fertilizing. Hanging baskets and placement of your container for greatest impact will also be covered. After the presentation participants will create their own container garden to take home. A selection of veggies and herbs will be available to choose from. $20.00 per person.

All classes held at 180 Ptl. Arthur Chaires Lane, Central Park, Schenectady next to the tennis courts.
Pre-registration is highly recommended.
To register contact Grace at 518-372-1622 ext. 240 or ges17@cornell.edu.