**Slow But Steady:**
The Eastern Box Turtle

*by Preston Stockton, RGWFU manager*

This summer I was driving down Walker Road when the truck in front of me slammed on the brakes, and I skidded off the road to miss it. The driver of the truck jumped out and, instead of checking on me, she quickly ran to move a box turtle out of the road before a car coming from the opposite direction hit it. I got out of the car, as did the other driver, and we all convened in the middle of the road to discuss this little guy. The woman put him on the side of the road in the direction he was headed, and in time, he emerged from his shell and wandered off. I guess it was our good deed for the day.

The Eastern box turtle, *Terrapene carolina carolina*, is very familiar to North Carolina natives. It is the only land turtle in the state as well as the state reptile. We often see them here at Reynolda as it is a perfect place for them to live, with moist woodlands and underbrush to protect them from predators.

Their dorsal shell, called a carapace, is dome-shaped and is part of their spine. The ventral part of the shell, the plastron, is hinged which allows the animal to completely draw in feet, tail, and head for protection. The shell does not completely harden until the turtle is seven and is usually brown or black with yellow to orange lines and blotches. I recently read in the New York Times that each shell is as unique as a fingerprint, including markings and scars, and this helps New York City naturalists track them in the city parks. The skin has a similar coloration which helps them hide on the forest floor.

Box turtles have a varied diet. When young they are almost totally carnivores, eating snails, earthworms, caterpillars, grasshoppers, and often carrion that
**Biennials**

*by David Bare, RGWFU greenhouse manager*

When autumn is on the horizon, it is time to think of spring. Biennial seed sown in September will yield colorful blossoms when the warm weather returns. Biennials are perfectly suited to our southern climate. There is just enough chill to get them started, but it is rarely so cold that you risk losing them over the winter. Biennials by definition are plants that spend their first year producing roots and foliage, and in the following year they flower and produce seed. After setting seed they die. There are many cold hardy annuals that are treated the same way in the garden. Because their culture is the same, gardeners tend to lump them all together and call them biennials.

Biennials can be the easiest of plants to cultivate, but attention must be paid to timing. They should be sown early enough to get the plants established before cold weather sets in. This usually means by early to mid-September. It is easy to add biennials to an established bed by simply broadcasting the seed around the existing perennial plants. When the warm weather returns, Biennials self-seed readily and tend to do much better without human intervention. Your role at this point is simply to edit them from where you don’t wish them to be.

Colorful biennials are a regular feature at Reynolda Gardens in the spring, and a few have become staples with us. Chief among them would be foxgloves, which form tall spikes of nodding, funnel-shaped flowers rising from a large, fuzzy rosette of leaves. White foxgloves, *Digitalis purpurea alba*, are featured on the original Thomas Sears plan for the Pink and White theme garden. Modern varieties have expanded on the colors commonly found in the *Digitalis purpurea* seed strain. ‘Apricot Beauty’ and ‘Primrose Carousel’ are creamy pastels that work beautifully with flowering bulbs and pansies. Another favorite of mine is ‘Pam’s Choice’ which forms tall spikes of white flowers with deep black raspberry stains in the throat.

It takes some effort to grow delphiniums in our hot and humid climate, but their lesser cousins flower with abandon in the South. Larkspurs shoot up their two foot branching spikes in shades of purple, pink, and white. Larkspurs are technically cold hardy annuals, but the distinction is a technical one. In the South larkspurs are sown in the fall for spring bloom. They are excellent at the feet of old-fashioned roses, many of which tend to flower at the same time.

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Nature’s Engineer
by John Kiger, RGWFU assistant manager

As we emerged from winter into the spring of 2013, it was brought to my attention that the water level around the boathouse at Lake Katharine seemed to be rising. My initial thought was that recent rains had increased the water level, as they generally do, or that debris had gathered at the spillway and needed to be cleared away. As it turned out, neither of those issues was the problem.

As I walked the drive to the spillway, a morning jogger pointed out a beaver dam about half way between the boathouse and my destination. Located about fifty feet from the bank, beavers had constructed a dam of trees, sticks, and mud in one of the main tributaries that runs through Lake Katharine. Fortunately, the ground was firm enough for me to walk out through the silt to take a closer look. Of course, I saw no beavers. What I did see was quite amazing, and it piqued my curiosity as to why they do what they do. In this article and in the upcoming spring issue, I would like to share a few facts with you about one of nature’s engineers.

The North American beaver, Castor canadensis, nearly became extinct in the early 1900s, mostly due to the harvesting of its pelt, which was primarily used for felt hats and clothing. It was not until the 1930s that a law was passed to protect the beaver, and its population was allowed to grow once again.

This nocturnal mammal is the largest rodent in the United States, weighing forty to seventy pounds and reaching a length of three to four feet. The beaver has very poor eyesight but has an excellent sense of smell and excellent hearing. It relies heavily on these attributes to alert other colonies to any predator, such as a dog, fox, or coyote.

Once a threat to the colony is detected, the beaver will warn the others by slapping its tail in the water and immediately diving below the surface. This distress signal can be heard for a great distance. While submerged in water, a clear membrane covers the beaver’s eyes to act as goggles, and valves in its ears and nose close to prevent water from entering. The beaver is an excellent swimmer due, in part, to its webbed rear feet and broad, flat tail, which acts as a rudder. It can remain submerged for up to fifteen minutes, thereby eluding any predator.

The beaver’s fur is made up of a coarse outer layer of hair covering a fine inner layer of hair. By rubbing the hair with castoreum, an oily substance that is secreted by scent glands located at the base of its tail, the beaver creates a waterproof coat. As an herbivore, its diet mainly consists of green vegetation, such as water lilies and pondweed. It will also dine on the bark of maple, willow, and birch trees. What is not consumed as food is used in the construction of their dam.

The teeth continually grow throughout the beaver’s life and serve a dual purpose. Of course, the obvious use is eating, but they are also used as tools. The upper incisors can reach a length of one inch and are capable of felling a nine inch diameter tree within an eight hour period.

Their mating habits are quite unique. Once a partner is found, they remain together for life. A female beaver will reproduce one time per year, generally in mid-spring, with a typical birth rate of one to six offspring. The “kits,” as they are called, are born with their eyes open, a full coat of fur, and capable of swimming with their parents in twenty four hours. If one mate dies, the other will seek out another companion.

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A Little of Reynolda For Your Garden:
Centaurea montana

by Forrest Allred, RGWFU head horticulturist

This past May the staff at Reynolda Gardens had the privilege of picking our favorite picture from those posted on the Gardens Facebook page. The photo that won the “Best of Reynolda” contest was a close-up of Centaurea montana, also known as perennial cornflower. Not only did the photo win the photographer a free plant from our sales area, but this spring C. montana was truly a winner in its own right. If you do not have this perennial in your own collection, let us recommend this garden favorite.

Centaurea is a genus belonging to the herbaceous Aster family. In this genus there are between 450 and 600 species that are either annual or perennial. Centaurea’s history goes back to Greek mythology. Chiron was a peaceful, wise centaur (half man and half horse) who was credited with teaching music and hunting skills, and using herbs for healing. Chiron is believed to have used the flower of Centaurea to heal wounds after battle. The plant’s center of distribution is found predominately north of the equator; mostly in Europe, the Mediterranean, and western Asia. There are only a few species native to the Americas.

Centaureas are great for cut flowers and arrangements. They can be used either fresh or dried. Dried petals make a nice color addition to potpourri. A natural dye can be made from the petals. Some of the most commonly available species are C. montana and C. cyanus. C. americana is a North American native but difficult to find in the trade.

C. montana is often called perennial cornflower or mountain bluet. Bluet is the French word for cornflower. It is commonly found growing in the mountains and fields of Europe. The flowers are typically lavender-blue protruding from black-edged bracts that overlap, similar to the scales of a fish. The leaves are greyish-green and lance-shaped. This perennial grows thirty inches high and eighteen inches wide in full sun to partial shade. It blooms from spring to early summer. C. montana can be used in beds, perennial borders, natural settings, and cottage and rock gardens. It self-seeds readily or can be propagated by division. Varieties to look for are: ‘Amethyst in Snow,’ ‘Amethyst Dream,’ ‘Gold Bullion,’ and ‘Black Sprite.’

C. cyanus, also called cornflower, blue bottle, or bachelor’s button, is native to southern Europe and has grown among grain fields for centuries, thus the name cornflower. Today they still grow wild in the fields of Europe and the United States. The term “bachelor’s button” refers historically to bachelors sporting the flower in a button hole of their shirt or suit when they would go courting. Bachelor’s button generally grows two to three feet tall in full sun. Varieties generally come in mixed seed packs and are a fine selection for cutting and dried floral arrangements. Some individual varieties you may find on the market are: ‘Black Magic,’ ‘Blue Boy,’ and ‘Sweet Imperialis.’ They are annuals, so seed should

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they find. When they get older they include berries, flowers, vegetables, grass, or mushrooms into their diet. Unlike humans, they can eat poisonous mushrooms.

Females can be distinguished from the males several ways. Generally the male turtle has red eyes while the female has brown. The female normally has a round shell but the male's shell is slightly flattened. Also, the male plastron is concave which allows it to fit over the female's shell during mating and he has a longer and wider tail.

Box turtles grow slowly and don't reach sexual maturity until they are between seven and ten years old. The female lay between three to six eggs in the spring. In dry summers we often see females in the formal gardens where the irrigation makes the soil softer for digging a hole for the eggs. The eggs hatch in late summer and the little turtles are a little over an inch long. Although a female will lay several hundred eggs during her lifetime, only two or three will live to maturity.

Box turtles live a long time when they have an appropriate environment. They easily live to thirty years old and often up to fifty. The New York Times article referenced a box turtle caught and marked on Martha's Vineyard in 1861 that was documented through 2006! Often the age of a turtle can be estimated by counting the rings on the plates of the shell. It is not an exact science but can give a general age.

Like many of our native species of plants and animals, box turtles main threat is the destruction of habitat from urban sprawl. Their home range is normally no larger than a square mile so if it becomes developed, they are often confined to smaller areas with limited food and mates. It is hard to re-locate them because their homing instinct will cause them to return to their birth place. Cars and farm equipment are also a danger.

Box turtles are such amazing and interesting animals. So the next time you see one crossing the road, stop to help it get safely to the other side. It may be a hundred years old.

**Nature's Engineer**

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In the second part of this article, which will be in the spring issue of *The Gardener's Journal*, I will continue to chew away, pun intended, at the construction process of the beaver dam and describe a few positive and negative aspects to beavers and our environment.
Sustaining Reynolda Gardens: The Next 100 Years

by Amanda Lanier, RGWFU curator of education

As we begin the celebrations of the last 100 years at Reynolda, it makes me wonder what the next 100 years will hold. The fact that the original mission of the Gardens is still the mission and work of today, speaks to its sustainability. When we examine the past and look into the future, we see that the needs of our community have changed, are still changing, and will probably continue to change in the years to come. Reynolda was built on the idea of sustainability, and this thread still flows through the work we do here. It is essential for Reynolda Gardens to remain a model to our community, and, these days, that model includes the goal of sustainability. To reach this goal, we will have to examine the needs of our community as they change and serve as an example of the ways people can care for the resources that have been entrusted to them.

To begin exploring our own sustainability, it is important to decide what sustainability means for Reynolda. Merriam Webster defines sustainable as “of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged.” The definition I like to use also adds that resources are available for future generations. This means we must define our resources and determine how we will steward them. As part of the Wake Forest University community, we have committed to “encourage all members of the campus community to take responsibility for the interdependent environmental, economic, and social consequences of their actions.” There are many variables when it comes to measuring sustainability. The struggle is addressing as many as we can, but the benefit is that the sum of our actions will greatly decrease our impact on the natural world and the burden of generations to come. We have tremendous resources in this gift called Reynolda Gardens, and we have been entrusted to maintain it for those who will come after us.

This summer we signed on to participate in a program offered by the American Public Gardens Association called “YouTopia.” This program seeks to engage public gardens and their visitors in looking at how we approach sustainability and how we can address climate change. We hope that our membership in the YouTopia program will help “reduce our climate impact and engage our visitors by implementing conservation, education, and communication initiatives that increase the awareness, understanding, and action on climate solutions.” It is the pledge we have made as a member of YouTopia, and it is a promise we have made to our community.

Over the next several issues, I will be diving into what sustainability means for Reynolda Gardens. We will look at what we are currently doing, as well as our plans for future projects. The articles will also focus on what home gardeners and community members can do to become better stewards of their own resources.

We are in the business of sustaining Reynolda Gardens for future generations. We hope you will join us in supporting practices and programs that help us reach that goal.
Mint: The Perennial Herb

by Michelle Hawks, RGWFU horticulturist

I always get questions about the terra cotta drain tiles that are in the herb gardens. There are seven tiles, and most contain some variety of mint. The tiles are excellent for controlling the vigorous spread of plants such as mint. They are three to four feet long and are buried about two to three feet.

When I think of mint, the first thing that enters my mind is the chewing gum my granny used to give me when I was little. Mints have an amazing fragrance and a coolness that awakens my senses.

Mints are perennial herbs that can be identified by their square stems. If you rub your fingers down the stem, you can feel the four sides. Mints also have opposite leaves and labiate flowers, which are blossoms shaped like mouths. The mint family, Lamiaceae, is quite large with 250 genera and around 7,000 species. Members of the family include herbs such as basil, lavender, rosemary, and thyme. Other well-known family members are salvias and coleus.

Most mints are native to Europe and Asia, although some are native to North and South America, South Africa, and Australia. Since the beginning of time, mint has been an important herb used for culinary and medicinal purposes. In biblical times, many Pharisees would barter with mint, often paying for taxes with the exchange of the herb. Ancient Greeks valued the herb and incorporated it frequently into their daily routines for use as a medicine and in religious rituals. Both the Greeks and Romans used the herb in their baths and to flavor drinking water. Historically, mint is very well-known for its homeopathic properties such as soothing a sore throat, treating a cold, and settling an upset stomach. Today, mint and its many varieties are used for cooking and are commercially developed for personal uses such as an additive to toothpaste and cosmetics.

Growing mint is extremely simple. It needs water, good drainage, and well-fertilized soil. Mint will do best in full sun but will take some shade. It is best to harvest mint first thing in the morning when the oils in the plant are at their strongest. Cut stems as you need them and try not to let the plant bloom, which can cause the leaves to be bitter. You can make several harvests depending on the length of the season. Dry mint by hanging it in loose bunches and allowing it to air dry. Air circulation is the key when it comes to drying herbs, as it removes the moisture from the plants and helps prevent mold from developing. Hang mint or other herbs in a warm area with plenty of air circulation. Basements, for example, are not a good option.

Mints are a great addition to any garden, and our herb garden at Reynolda has had many varieties of mint. I am happy to share some of my favorite mints, listed below. Stop by the next time you are walking in the Gardens. The scents from all the different plants and the sounds of the hummingbirds buzzing by may entice you to think about putting some wonderful mint in your own garden. Choose at least one mint for the fragrance and experiment with some of the other varieties for different uses. Create new flavors in some of your old recipes by adding mint. Tired of your boring salad? Toss in some mint and watch it come alive.

Mentha citrata - Bergamot mint has smooth dark green leaves and a very fragrant, citrus-like scent that can be used in salads, desserts, and jelly. The crushed leaves can be used for a refreshing drink.

M. suaveolens - Apple mint, also called the fuzzy mint, has a mild flavor and a very slight apple-like aroma. It can be used for tea, jelly, as a garnish, and in fruit salads.

M. x piperita - Peppermint has a strong taste that holds up well in cooked dishes, but it also is good in drinks and desserts where you want intense flavor.

M. spicata - Spearmint is a mint with a strong flavor and fragrance that is released with simple bruising. You can toss bruised leaves in cold water for a refreshing drink or snip a leaf to eat after eating an onion.

M. piperita ‘Chocolate’ - If you love chocolate, you have to have this mint. It is wonderful for desserts and baked goods. The leaves can be used in tea and coffee.

M. spicata ‘Hillary’s Sweet Lemon’ - This mint has a small hint of lemon, which is great for salads, and hot or cold drinks. It is great to use in a dried flower arrangements. It is named after Hillary Clinton.

M. spicata ‘Kentucky Colonel’ - In my opinion, this is the best mint, with its shiny green leaves. Most people know this mint because it is the one used to make juleps and mojitos. It can be highly aromatic and can be added to any dish that calls for spearmint.
Biennials
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Two types of forget-me-not are planted in the method of biennials. The typical forget-me-not, *Myosotis sylvatica*, has tiny, sky blue flowers with a yellow eye. They grow up to eight inches tall and twice as wide. The Chinese forget-me-not, *Cynoglossum amabile*, is a coarser and slightly larger plant that blooms a bit later in spring. Its flowers are also blue but closer to deep turquoise.

The plants of dreamy cottage gardens seem to inspire romantic names. Love-in-a-mist, *Nigella damascene*, fits right in with the forget-me-nots. The name comes from the fine thread-like foliage that the flowers seem to float upon. Originally a pale almost silvery blue, it is now available in pink, white, and deeper blue.

Space allows me to describe only a few of the extensive catalog of biennials, but it is worth exploring these supremely easy plants that ask so little of us and yield such a colorful reward.

A Little Reynolda For Your Garden: *Centaurea montana*
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be collected or the plant can be allowed to reseed. Too much of a good thing can become a problem, so it is best to deadhead bachelor’s buttons to limit reseeding. The North Carolina Native Plant Society lists this as an exotic plant that can potentially become invasive.

*C. americana*, also known as basket flower, shaving brush, or star thistle, is an annual that is native to most of the south central United States and South Carolina. Before the flowers fully open, they resemble an old-fashioned shaving brush. The ray-like petals appear to be protruding from a shallow basket of straw-colored bracts. Although they are commonly known as star thistle, they lack the prickly characteristics of these plants. They generally grow from two to three feet tall with four inch, fragrant, lavender or white flower heads. They bloom in June and July. Although not as readily available, this would be a great addition for naturalizing in open spaces such as woodland edges, meadows, and fields.