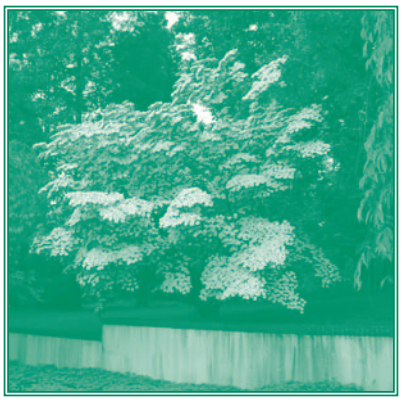
Reynolda Gardens of Wake Forest University

The Gardener's Journal

Summer 2005

Alternatives to Native Dogwood

by **John Kiger**, *assistant manager*



Cornus kousa, Kousa Dogwood

Spring arrives and a sense of newness begins. The long anticipated emergence of flowering plants and trees helps us cast off the dismal winter blues. Long lines soon form at local nurseries, with people seeking that special plant that lends itself to special interest in the landscape. The native dogwood, *Cornus florida* is one tree that is often sought by consumers. It is excellent as a specimen plant or placed in a grouping. It is, however, one that has problems. Most noted is *Anthracnose*, a fungus that began showing up in various locations in the Southeast in the mid-1980s. This fungus causes distortion and discoloration of the bracts and causes the tree to lose its leaves. Its cause is generally unknown, but it is most likely to show up in early spring during wet periods. Trees under stress, such as as those affected by drought in the previous year, are more susceptible to the fungus; quite often, it destroys these trees. However, do not despair; there are alternatives to the native dogwood.

Cornus kousa, Kousa Dogwood

This is a small, deciduous, sun to part-shade loving tree, reaching a height of fifteen to twenty-five feet, with an equal spread. Vase shaped in form, this slow to medium grower produces brilliant white bracts, which appear two to three weeks after our native dogwood and persist four to six weeks longer. The reddish fruit produced by this tree in late summer ranges in

Continued on page 2

Keeping Tropical Waterlilies Over the Winter

by **Michelle Hawks**, *horticulturist*

There are few sights more beautiful or refreshing in summer than a cool, clear pond with waterlilies, *Nymphaea* floating serenely on the surface. They come in a wide assortment of colors, shapes, and sizes, ranging from pure white through yellows, blues, pinks, and rosy reds, as well as the exotic changeables, which open yellow and then melt to sunset colors and deeper reds. Flowers may be as small as pansies or bigger than baseballs and may be shaped like stars, cups, powder puffs, or spiky cactus blossoms. Many are delightfully fragrant. The lilypads may cover as little as two feet of the water surface or as much as six feet. With proper care—and some luck—they can provide much enjoyment during the summer.

But what do you do with all these tropical plants that have been so wonderful all summer long, once fall approaches? Fall is the time to prepare them for overwintering. If you follow the recommended procedures, you will be rewarded next year with more mature plants that show improved performance. Waterlilies can be expensive. When you divide and repot them in the spring, you'll have plenty to keep and to share.

Helping Your Waterlilies Survive the Cold

It is best to treat tropical waterlilies and lotus as annuals in this area; however, if you are interested in trying to keep them year-to-year, there are some options. The easiest way is to keep them in a cool greenhouse, which will provide enough sunlight and warm temperatures during the winter months for a tropical lily. Do not try to grow the lily; just keep it alive, keep it wet, and don't fertilize it. If you do not have a greenhouse, you can keep it inside your home or a shed as long as it gets plenty of sunlight and the temperature is no cooler than fifty

Continued on page 9

Alternatives to Native Dogwood

Continued from page 1

size from three-quarters to one inch in diameter and, to me, resembles a small soccer ball with protruding knots. The fruit is edible but not very tasty. The fruit's grainy texture leads one to believe a sweetness is soon to follow, but it doesn't. I've often wondered if this fruit could be prepared in a dessert dish. In my opinion, if persimmons can be made tasty, so could the fruit of the Kousa; it's logical to me that if you add enough sugar, anything can be made delicious. As the tree ages, exfoliating bark reveals colors of tan, grey, and brown, providing the added bonus of winter interest. Pest problems are virtually nonexistent, with only some minor borer damage reported. From literature I have read on the Kousa and personal experience from planting them, I highly recommend this plant as a substitute for the native dogwood.

Viburnum plicatum var. tomentosum, Doublefile Viburnum

This deciduous, broadleaf plant reaches a height of ten to twelve feet, with an equal spread. Clusters of white flowers, abundant in mid- to late spring, seem to rise above the foliage, providing a layered look. Its winter interest consists of an abundance of bright red berries. It is often referred to as a shrub, since it creates a bushy look due to its upright, branching habit. Removing the lower branches using a technique known as "up-limbing" forces the plant to take a tree form. Hardy in Zones 4 through 8, this sun lover is tolerant of sandy, clay, or loamy type soils and works well as a specimen, border, or screening plant. Maintaining a doublefile requires some work. During the growing season it produces shoots from its base that should be removed to keep the branches from getting too crowded. This plant has no known serious pest or disease problems.

Philadelphus coronarius, Sweet Mockorange

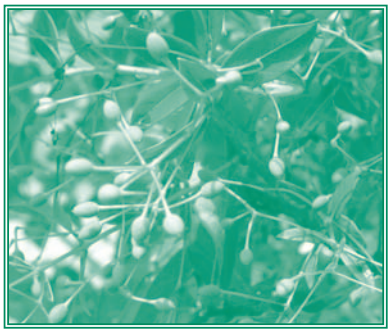
Considered a shrub but attaining the height of a small tree, this sun loving ornamental reaches ten to twelve feet in height with an equal spread. Hardy in Zones 4 through 8, this plant produces fragrant, white flowers that appear in May to June. The growth rate is fast, thus making it one that will fill in a space quickly. There are drawbacks to fast growing plants. As this one grows, it can become somewhat leggy. The older shoots create the semi-weeping form, which is characteristic of this plant and quite attractive. Younger shoots fill in from within the plant itself, creating a dense look. Proper pruning and thinning helps to keep it under control. Be careful, though. Much like azaleas, the sweet mockorange should be pruned after flowering. Cut back each outer stem to a bud that is facing outward. This allows next year's flowers to appear from these buds. Open the plant's interior by selectively removing young shoots. Unlike the other plantings listed here, the mockorange does have some disease and insect problems, such as leaf spot, canker, rust, aphids, and leaf miner. Although these conditions sound unattractive, none is considered serious.

Philadelphus coronarius, Sweet Mockorange

The photos above depict *Viburnum plicatum var. tomentosum*, Doublefile Vibernum in various stages of its development.

Chionanthus retusus, Chinese Fringetree

This plant is highly ornamental, one that makes you pause and take notice. Hardy in Zones 5 through 8, this deciduous, sun loving tree works well in groupings, shrub borders, or as a specimen plant. It reaches a height of fifteen to twenty-five feet, with a spread of twelve to fifteen feet. Somewhat fragrant, the wispy, white flowers arrive in late April, followed by a bluish colored fruit in the fall. The flowers, leaves, and fruit of this tree are all described as highly ornamental in horticultural publications, but it should be noted that fruit only appears on the female plants.



Chionanthus retusus, Chinese Fringetree fruit forms in late spring.

Proper Planting is the Key to Success

All of the plants listed above will lend themselves well to any landscape and add considerable beauty. As always, proper planning should be done when selecting a plant for your property. When planting trees, either potted or burlap-wrapped, never plant too deep. Case in point: not long ago, I was called to a client's house to look at a weeping cherry that was planted last fall. The leaves were small and obviously in distress. At first glance I thought the tree might have a fungus, but as I inspected further I noticed the soil line was two inches up on the trunk of the tree. It was an easy fix. With shovel in hand I dug it up—thank goodness it had not rooted in—and raised it to expose a fourth of the ball above ground. Simply put, the tree was planted too deeply and was suffocating. Hopefully it wasn't too distressed and with time will recover.

Remember, burlap-wrapped plants should be planted with three-fourths of the ball underground. Leave the burlap around the ball, but remove any string tied to the trunk. Container-grown plants should never be planted any deeper than the soil line. If you cover the top of the ball, there is a good possibility of suffocating the plant. Remember, the roots need to breathe and have the ability to take in water.

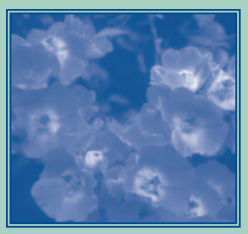
Recollections of a rainy, late May morning in the rose garden...

The first three roses are in the restored Greenhouse Garden. The last is in the All-America Rose Selections Garden.

Tausendschon, a medium pink, hybrid multiflora introduced in 1906, lives up to its name, which translates Thousand Beauties.

Paul Neyron, a medium pink, hybrid perpetual introduced in 1869, has massive blooms that are rich in color and fragrance.

Delicate stems hold heavy blooms on this 1909 hybrid tea, Mrs. Arthur R. Waddell.



American Pillar, a cream-pink blend rambler, planted beside an arch in the Nicer Fruit, Cut Flower, and Vegetable Garden in the early 1920s, is now surrounded by more recent introductions.

Lessons from the First Garden Plan

by **Camilla Wilcox**, *curator of education*

Stone pillars were replaced with brick-capped plaster walls in the Sears design.

In September of 1913, a few months after the greenhouse complex was completed, Louis L. Miller of the New York firm of Buckenham and Miller completed his plans for the formal gardens. This firm of "landscape engineers" was responsible for the overall design of the estate, including the placement of buildings and construction of the lake. Mr. Miller's garden plans were highly detailed, listing several hundred varieties of plants within a complicated configuration. Here is what we know: work began and proceeded through excavation, wall construction, and bed preparation. Then it stopped. Eventually, another garden took its place. What could have happened? Although there has been speculation over the years, we have no eyewitness accounts or written record as to why the change was made, but we may gain some insight into the mystery by comparing the Miller plan with Thomas W. Sears' plan, which was installed in the spring of 1918.

Most would agree that the Sears garden, as we see it restored today, is expansive, yet it offers many intimate spaces, and it fits in well with the residence and surrounding landscape. There are many flowers, but they are nicely organized by size, season of bloom, and flower color. By contrast, the Miller plan appears to be a bit fussier, with a mixture of all types of flowers crowded together; narrow paths, some of which end abruptly; and no focal points or intriguing destinations. The Miller garden is not particularly appealing to the modern eye, and it is easy to dismiss it; after all, the original owner did. But there are several reasons to learn about the first garden.

Garden Location

First, the Miller plan helps explain the location and size of the garden. It has long been thought that the garden was placed alongside Reynolda Road so that passersby could see it. While we can't be sure this was the sole reason for its placement, we know that the location was unusual for this time period. Most large gardens on estates were closely tied to the residence and almost always could be seen from inside and accessed easily. Usually, they were hidden from public view. The Miller garden related to the greenhouse instead of the residence; in fact, the only views of it from the residence are from two small porches.

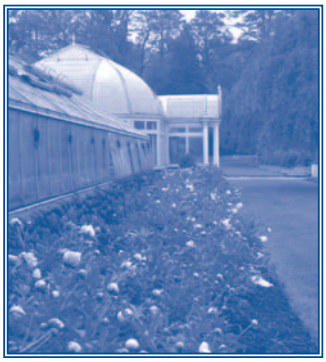
The preparation of the site was complete by the time Mr. Sears assumed responsibility for planting designs. Except for the addition of a lawn and entrance on the east side of the garden, he made little change to the existing footprint. He maintained Mr. Miller's concept of having a decorative flower garden near the greenhouse and a vegetable and fruit garden on the opposite end. In describing the path between the garden and the highway, he wrote on his own plan, "Leave path in old location." An undated Sears plan refers to a Miller drainage and grading plan.

Changes in Fashion

Second, a study of the differences between the two plans helps us understand more about the development of ideas that led to the finished garden. Fashions in architecture and garden design were changing rapidly in the 1910s. The Beaux Arts style, which Mr. Miller seems to have embraced, was in vogue in 1913. Incorporating many elements of ancient Greek architecture, it often included massive, heavy-looking walls. Decorative pieces, such as large urns, were often featured in gardens. Mr. Sears replaced Mr. Miller's Beaux Arts style elements of tall stone walls, urns, narrow paths, and strict, formal plantings, with a simple, elegant look that incorporated lawns; wide grass walkways; controlled, yet informal flower gardens and borders; softly trimmed boxwood hedges; and the fresh, clean lines of brick-capped stucco walls. He added fountains, arbors, benches, and tea-houses for a furnished, comfortable look.

The Owner's Personal Touch

Third, and most importantly, we can gain insight into the garden's owner by tracing the garden's development. Throughout the process of developing her garden, Mrs. Reynolds obviously made deliberate choices that made the garden her own. As we trace the garden's history in plans, photographs, and other documentation, we see that not only did she change designers, but she also made changes even in Mr. Sears' design. As evidence of her direction, we can point to the fact that between the fall of 1917, when the garden was designed, and the spring of 1918, when it was installed, forty-four Japanese weeping cherry trees had been added to the already packed perimeter borders. Then, or not long after, Japanese cedar trees replaced the magnolias designated for the central lawn. In 1920, a border of annuals near the greenhouse was replaced with peonies, mums, and Japanese anemones.



Peonies bloom in the restored greenhouse border, May 2005.

The two plans also give us an answer to a perplexing question, which is often asked by visitors: What was Mrs. Reynolds' favorite flower? Judging from the two plans for her garden, it seems that she must have loved them all, given the massive quantities and the huge variety on both plans, but if one flower surpasses the rest, it would be roses. Very few plants were repeated between the two plans, but roses were a notable exception; they were obviously a priority in both designs. Even though Mr. Sears removed Mr. Miller's twelve rose-covered trellises and his four rose gardens, he consolidated most of the roses into two rose gardens near the greenhouse. He placed climbing roses on the tea-houses in the 1917 garden and on the fences in the 1921 garden. There were well over 600 rose bushes on the Miller plan and even more on the Sears plan.

Thomas W. Sears

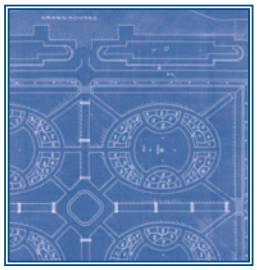
The development of the style of the garden heralded a larger change that was underway at Reynolda at the time. In the beginning, the estate-to-be was a collection of farms and work areas, with a large lake. Construction was underway for a complete village. On October 1, 1914, the name was officially changed from Reynolds Farms to Reynolda. By 1915, Thomas W. Sears had proved his abilities to Mrs. Reynolds by designing the landscape around the boathouse, the dairy barn, the entrance driveway, and various cottages. In doing so, he had introduced the philosophy of the progressive Harvard School of Landscape Architecture to this Southern estate. Even though he had not produced the engineering drawings for the estate, over the next several years he made changes to them and crafted new designs that drew the disparate parts of this very large property together: he helped plan a pastoral scene at the entrance; changed existing roadways so that they curved gently and blended into the landscape; added unusual specimen trees that filled groves and punctuated scenery; combined multitudes of ornamental and native plants in charming gardens that surrounded all the buildings, large and small; contrasted expansive lawns with more intimate spaces; planned simple, appropriate, functional walls, walks, terraces, and fountains; and designed delightful small structures, both rustic and formal, that combined to fashion the ambience that characterizes Reynolda to this day.

A Description of the Miller Garden, 1913

The size is the same as the one you see today. It is comprised of approximately four acres, divided in half, then in half again, and again. The terminus on the north is the greenhouse. There is a decorative flower garden on the north and a vegetable and fruit garden on the south. The plan is extensive, with hundreds of varieties of plants, some named individually and others in a class, such as "annuals for cutting."

As it is today, the main pleasure garden is below grade level, approximately four feet. A peony hedge surrounds the sunken garden. A series of arbors, twelve in all, covered with climbing roses and clematis, highlight narrow walkways through the central axis. Off these pathways, there are four large, rectangular gardens. Each features a large, oval-shaped bed planted with roses and lilies; outer beds are devoted to cut flowers. A decorative urn is at the center of each garden. A hydrangea hedge surrounds this part of the garden.

The Miller plan for the southern half of the garden, which Mr. Sears called the Nicer Fruit, Cut Flower, and Vegetable Garden when he completed his own design for it in 1921, contained an extraordinary range of vegetables and fruits: asparagus; horseradish; strawberries; artichokes; apple, apricot, pear, peach, and plum trees; currants; raspberries; blackberries; and gooseberries. Perhaps the most ambitious planting, however, would have been the seventy-two rose standards on the outside and inside borders of this garden.



This section of the Miller plan shows the gardens closest to the greenhouse, which were later transformed into rose gardens in the restored Sears design we see today.

The photo above shows the 1913 design under construction. Note the piles of stone beside the steps (a man stands behind each one, with only his head visible). This is the same volcanic stone, excavated from a pit near the entrance to the Village, which was used for the foundation of the greenhouse.

The photo to the right also shows the garden under construction, at a later date. The stones have been cemented in place and the terracing completed at the greenhouse door. Wooden planks cover the surfaces of the steps. Mrs. Reynolds (facing away from the camera) is talking with a group of unidentified women. Her daughter, Nancy, is looking toward the camera.

Tomatoes—
The Best Part of Summer

by **Preston Stockton**, *manager*

The staff at Reynolda Gardens has a summer lunchtime ritual. When the tomatoes are ripe in the gardens, we will slice up five or six on a platter, and everyone makes a good old tomato sandwich. We do this every day. It is interesting to see the ways that different people like them. Some will only eat them if they are peeled; some like Miracle Whip Salad Dressing; some prefer a certain type of bread; some like them with turkey, ham, or onion. A past intern from Illinois who worked with us said that she liked them best on rye bread with mustard! I think they have to be at room temperature on white bread with Hellman's Real Mayonnaise and a little salt and pepper. Then you sort of mash them down and eat. Tell me, is there anything better? Anyway you look at it, vine-ripe tomatoes are a hallowed part of the summer for many.

Several years ago, we started growing many of the heirloom varieties for the Gardens, as well as to sell. The hybrids such as Better Boy and Early Girl are fine but just do not have the flavor and thin skins of the ones we ate growing up. They have great names such as Aunt Ruby's German Green, Mortgage Lifter, Cherokee Purple, Black Krim, and Green Zebra. They are all very different in appearance and taste, but they are all wonderful and interesting. Sliced on a plate, they are a visual masterpiece. Marizol Gold is one of my favorites. It is a yellow tomato, not very big, and it has a beautiful red starburst in the center. It is very tasty in a sandwich but also makes a showy salad. Obviously our local tomato growers have developed a love for the heirlooms' taste, because at this year's sale, we sold 800 plants in twenty minutes!

Sometimes I wonder if I would have starved to death growing up if my mama's kitchen had not always been full of tomatoes, bread, and milk. She was from South Carolina, and I don't think she could have lived without summer tomatoes and gardenias. We spent most of the summer at Edisto Island, where a big part of the local economy was the tomato crop. The farmers would pick them green for several weeks and then let the fields go when the tomatoes really began to ripen; they are just too perishable to ship at that point. The owners of the fields would then let the locals go in and pick what was left. We spent many mornings picking in these fields. One thing I quickly learned was to stick close to my aunt or mother, or I would get beaned in the back of the head with a nasty, rotten one thrown by my brother or one of my cousins. Woe be unto them if they hit either one of those women, so staying close was the key. I would eat so many tomatoes that my mouth would be raw from the acid. By the end of the summer I would be so sick of them that I would swear that I would never eat another one, but in January, when I was picking those awful green things out of restaurant salads, I could not wait for June and another tomato season.

The good news is that tomatoes are very nutritious. They are a good source of vitamin A and vitamin C and also contain significant amounts of lycopene, beta-carotene, magnesium, niacin, iron, phosphorus, potassium, riboflavin, sodium, and thiamine. A University of California at Davis survey ranked the tomato as the single most important fruit or vegetable of Western diets in terms of overall source of vitamins and minerals. The latest buzz surrounding tomatoes is the possible benefit of lycopene, the major carotenoid contained in tomatoes, that is responsible for the deep red color. Similar to beta-carotene, lycopene has been touted as a potent antioxidant, a molecule that stops cancer-causing free radicals. Tomatoes are an excellent source of lycopene, and numerous studies have confirmed that people who consume increased amounts of tomato products experience marked reductions in cancer risk. Results from cancer research have already driven tomato breeders at the University of Florida to produce high-lycopene cultivars.

Tomato Cultivation in History

Native to Mexico and Central America, tomatoes were cultivated by the Aztecs and Incas dating back to 700 AD. Sixteenth century conquistadors introduced them into Spain, where their popularity spread quickly to Portugal and Italy. It is hard to imagine Italian food without tomato sauce.

The introduction of the tomato was not a great success in all areas of Europe. The mistaken idea that tomatoes were poisonous probably arose because the plant belongs to the nightshade family, of which some species are truly poisonous. The strong, unpleasant odor of the leaves and stems also contributed to the idea that the fruits were unfit for food. The hallucinogenic properties of nightshade most likely led to its association with witchcraft. Old German folklore has it that witches used plants of the nightshade family to evoke werewolves, a practice known as lycanthropy. The botanical name for the tomato, *Lycopersicon esculentum* translates "edible wolf peach."

The early American colonists did bring tomato seed to this country but also carried these prejudices with them. Not until after the *Declaration of Independence* do we find any record of the tomato being grown in this country. Thomas Jefferson grew it in 1781. It was supposedly introduced to Philadelphia by a French refugee from Santo Domingo in 1789 and to Salem, Massachusetts, in 1802 by an Italian painter. Tomatoes were used as food in New Orleans as early as 1812, doubtless through French influence, but it was another twenty to twenty-five years before they were grown for food in the northeastern part of the country. By the end of the century, they were very popular. The first Fanny Farmer cookbook, printed in the late 1890s, included recipes for tomato soup, salads, and sauces, with no dire warnings.

It seems that the tomato has all sorts of folklore and superstitions surrounding it. Superstition once had it that placing ripe tomatoes on a mantel when first entering a new dwelling would guarantee future prosperity or ward off evil spirits. Pincushions the color and shape of ripe tomatoes were used instead if ripe tomatoes were not available. To this day, pincushions are most often red, and many are made to look like a tomato. My mother had one just like that. I now tremble to think what might have happened to our family without it!

Tomatoes Today

The top five tomato producing countries of the world are the United States, China, Turkey, Italy, and India. In the United States, Florida, California, and Georgia are the top commercial-producing states. An estimated thirty-five million backyard gardeners across the country grow tomatoes as well. I have a friend who lives in Wyoming at 6,000 feet, and she bemoans the fact that her growing season is too short to grow and ripen tomatoes. Or so she thought. I recently read about an Idaho seed company, Seeds Trust, that did a seed exchange in 1989 with gardeners in Siberia. This company obtained sixty varieties from families that have passed down tomato seeds for generations. The Siberians have hundreds of varieties that are able to weather cold nights, ripen in eighty days or less, and have a great taste. Some of these include varieties such as Olga's Yellow Round Chicken, Grandpa's Cock's Plume, and Peristroika. They are available today from Seeds Trust. The interesting thing is that these varieties do equally well in hot climates and are great to plant for early harvest. It is obvious that the love of fresh tomatoes is universal.

This summer, if you are in our neighborhood, grab a loaf of bread and stop by the office for lunch. We'll provide the tomatoes.

In the eastern Mediterranean region where the Madonna lily, *Lilium candidum* grows naturally, plants send blooms on sparsely leafed stalks high above the shrubby growth that surrounds them. They are at home at Reynolda, with columbine and Japanese anemone at their feet.

Return of the 'Jindai'

by **Diane Wise**, *head horticulturist*

As promised last winter, I will discuss tatarian aster, *Aster tataricus* in this edition of *The Gardener's Journal*. Remember, we are using it along with blue mist shrub, *Caryopteris* 'Longwood Blue' in the Blue and Yellow Garden and along the main allée as replacements for the monkshood, *Aconitum carmichaelii*. Although aconitum was specified on the original 1917 Thomas Sears landscape plan for the formal garden, it has suffered for years with a disease that is almost impossible to eradicate, once it is established. We've tried replacing the soil as well as drenching it with the required chemicals, but it has been a losing battle. Each spring, the aconitum pops its head through the soil looking, for all the world, exactly like it should, but by mid-season, it is a different story entirely—brown, wilted, the tubers a slimy mess. The poor plant would collapse on the ground as if begging to be removed. Finally, we'd had enough, and Camilla went on one of her infamous searches to find a replacement that is appropriate for the period and similar in form, color, and bloom time. We decided on the caryopteris and the aster; both are wonderful plants that I have in my own garden. I've already told you a little about the caryopteris, so now on to the aster.

The word aster comes from the Greek word aster, meaning star, an allusion to the plant's flowers, which are often described as stars or rays. The aster, a member of the Compositae family, is a temperate zone genus of approximately 250 species of mainly herbaceous, leafy, perennial plants. The aster is also known as the Michaelmas Daisy, as it blooms around the Feast of St. Michael in late September. Asters vary from low growing, drought tolerant plants for the rock garden to tall, back of the border plants that require moist soil. Many asters are well suited to naturalizing in wild and woodland gardens and other informal situations. North Carolina, in particular, is known for the showy asters blooming along the roadsides in early- to late fall. Asters hybridize freely and rarely, if ever, come true from seed. Most asters are woody at the base and have rhizomatous and/or fibrous roots. The leaves, as a rule, are simple, linear, alternate, and hairy. The ray florets, in one or two rows surrounding a disc, are commonly blue or purple; occasionally, they are red or white. Strangely enough, an aster is never yellow. Although a plant may resemble an aster in form, size, or flower, there is no true yellow aster. Asters are widely occurring and are native to South America, Asia, Europe, Africa, and North America, where they are particularly abundant. The hybrid asters available for the garden at various nurseries are usually offspring of the Italian aster, *A. amellus*; the New England aster, *A. novae-angliae*; and the New York aster, *A. novi-belgii*.

Culture

All asters share some characteristics:

- All prefer full sun—while some will grow in partial shade, they simply won't look their best.
- All are easy to grow and care for—no heavy fertilizing or staking required.
- All are propagated by division in late spring or fall or by soft cuttings in the spring.

Keep in mind that flower quality and good health in asters are maintained by frequent division, about every fourth year. When dividing, replant the most vigorous growth at the outside of the clump and discard the rest; asters grow so rapidly that you'll never miss it. When the plant dies back in the winter, cut it back and clean up any debris remaining around the crown. Although asters have very few pests, you don't want to give slugs or any other undesirables a place to spend the winter.

The tatarian aster, *A. tataricus* is native to Siberia and is hardy to Zone 3. It is the largest of the asters used for ornamental purposes, reaching a height of seven feet, and is excellent for a mixed border. As in all asters, the lower leaves are linear in form and may reach twenty-four inches in length; they often are slightly glaucous (silvery), as well. In late fall, *A. tataricus* is covered in a profusion of violet-purple, one-inch flowers with yellow disc centers. As showy as the species is, finding space for such a plant here at Reynolda is difficult, so we will be using the cultivar 'Jindai' instead. Slightly smaller than the species, 'Jindai' has all the characteristics of the parent in a smaller package. The lower leaves are about ten inches in length and have been described as resembling a "pretty salad green." Topping out at a manageable three feet, 'Jindai' is capped by dark lavender, yellow-eyed flowers in late fall until first frost. Often, it is among the last of the asters to bloom. It is not difficult to find; you should be able to pick it up at any of the larger nurseries in town.

Thomas Sears used asters extensively here at Reynolda Gardens, from *A. novae-angliae*; to *A. novi-belgii*; to smooth aster, *A. laevis*. I think he'd be pleased about the addition of 'Jindai'. It adds a great deal to Reynolda's already incredible fall display.

Keeping Tropical Waterlilies Over the Winter

Continued from page 1

degrees. Depending on the location, some supplemental light may be required to give the plants a little more energy.

Regardless of the method you choose, you should bring in the entire plant from the pond, with pot and growing medium intact. Trim off the largest leaves and any damaged leaves, so the pot fits into an aquarium or pond liner. Over the course of the winter, change the water every other week. In springtime, when air and water temperatures outside warm up, you can repot the plant in some fresh soil, add fertilizer, and place it back in the pond, where it can be enjoyed for another season.

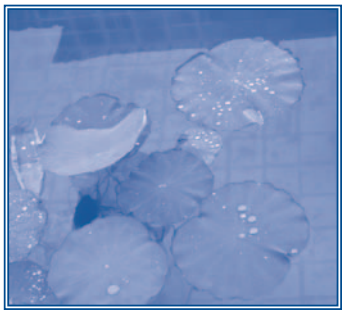
Repotting and Dividing Waterlilies

The tropical waterlily will begin to shut down as the water temperatures start to drop and light levels start to decline in the fall. As with all water plants, fertilizing should stop by mid-September to prepare for winter dormancy. Doing so for the tropical waterlilies promotes the growth of small tubers that will store energy for the winter ahead. These tubers are joined to the mother plant and can be successfully broken off in the spring to produce new plants.

If you have a mature specimen that is starting to outgrow the pot, you may wish to propagate new plants from the old rootstock. Spring is the best time to divide waterlilies; this gives the new plants plenty of time to establish themselves before planting outside. All of the waterlilies at Reynolda needed to be repotted and divided this year. This was truly an experience. Some of them had sizeable rhizomes that looked like something from an "alien" movie. 'Mayla' is my favorite tropical waterlily, with her shocking pink color that says, "Stop! Look at me! I'm so vibrant I could hurt your eyes!" I especially wanted to save this lily and have many more for everyone to enjoy.

Freshly planted waterlilies

When you repot and divide your plants, you will need plenty of room, the more room the better; access to water; soil—any heavy, dark, rich soil will serve for repotting; pots; a sharp knife; gloves; and a raingear suit. (When I divided the plants at Reynolda, I had mud and smelly water all over me, so I definitely recommend a raincoat of some kind.) Carefully remove the lily from the pot and wash away the soil from the tuber so that you can see it clearly, exposing the rhizomes. Select the best looking piece with good growth showing and cut to about three inches long. Discard the remainder of the plant. Trim away excess roots and any damaged foliage from the selected piece. If the waterlily is not to be potted immediately, keep it in the shade, with damp paper towels or wet newspaper covering it.



Lotus should be treated as an annual in our area.

Prepare the container by filling about three-fourths full of soil and add a good tablet fertilizer. Mound some soil against one side of the container and place the rhizome at an angle, with the cut edge against the pot and the growing point at the top level of the soil. Add more soil to within a couple of inches of the top of the container. Firm the soil in place and add about one inch of pea gravel to cover the soil, keeping it from covering the growing point of the plant. Gently add some water to the container.

How to Place

Carefully tilt the pot and slowly lower it into the pond. This allows the air bubbles within the pot to escape without dislodging the tuber. Newly planted lily tubers may not flower for six to eight weeks. Flowering will also depend on the amount of sunlight and warmth received; waterlilies need full sun to flower well. Fertilizer tablets made for water plants can be applied to the waterlilies and other aquatic plants while they are in the pond. Press a finger into the soil to make a hole about three or four inches deep. Push a tablet into the hole and squeeze the soil around the hole to enclose the tablet in the soil.

Yes, saving tropical waterlilies is a lot of hard work, and you will definitely get messy, but it all pays off when your lilies are covering the pool surface with all their glory, shading and cooling the water temperature, with beautiful blossoms floating on the surface for your enjoyment. So buy your new waterlilies and start saving your favorites, but don't forget to bring your sunglasses and stop by the Gardens to take a glimpse of 'Mayla'.

Hummingbirds—"The Miracle of All Our Winged Animals"

by **David Bare**, *greenhouse manager*

On one of my regular trips to the garden last summer, I came upon a battle of epic proportions. Two hummingbirds were spiraling together and plummeting in the morning air. In the quiet of a misty August morning they made more noise than their size could explain, squeaking and chirping and buzzing violently about. The aggressive and territorial nature of these seemingly sweet, little innocents was in full display as they fought for control of the airspace above the perennial garden. After several aerial somersaults, they eventually locked their feet together and came tumbling down with a violent thud to the sandy bluestone path. Here they continued to buzz about, kicking up dust and spinning like an out of control wind-up toy. This went on for such a time that I began to think their talons were interlocked, and I would have to go in and disentangle them. Eventually they freed from each other, only to take to the air and repeat the process all over again.

Ruby-throated hummingbirds are summer migrants to our area. By late autumn, these tiny creatures will have made their way south and crossed the Gulf of Mexico to the Yucatan to spend the winter, an amazing feat for a bird about the length of my thumb.

Hummingbirds are a constant delight in our warm season gardens, feasting on everything from spring's early columbines to the last salvia blossoms of autumn. It is these salvias that the aforementioned combatants were contesting. We grow upward of two-and-a-half dozen species and cultivars of these plants at Reynolda, and hummingbirds seem to relish them all. Salvias are members of the mint family and have their characteristic tubular flowers, just the thing for a hummingbird to probe its beak into. A hummingbird has a long tongue that it can extend deep into the floral nectary of these flowers. It does not so much suck nectar out of a blossom as lap very quickly, several slurps per second.

Red salvia

Much scientific inquiry has developed around the specialization of hummingbirds and their flowers. Ornithophilous is the term for bird-pollinated flowers. Some flowers have placed their nectaries so that only a hummingbird can reach them. In one species of lobster claw, *Heliconia* the birds must place themselves almost upside down in order to reach the hidden nectary, taking advantage of the hummingbirds' unique ability to fly backwards, forwards, and upside down. In the process, pollen is placed on the chin and the base of the bill, assuring that visiting the next *Heliconia* will result in pollination. It asks the question, "Which came first, the flower or the pollinator?"

The hummingbirds' continual feeding is in direct relation to their need to constantly refuel. Their metabolic rate is so high that a hummingbird must visit thousands of flowers daily in order to sustain itself. Migratory routes of hummingbirds have also been found to follow certain sequences of flowering. The hummingbird's affection for red flowers is well known. Recognizing red as a source of nectar is a quick way to get to the necessary food source while covering unfamiliar territory during migration.

Some hummingbirds have the ability to go into a state of hibernation nightly, a means to compensate for their inability to feed at night. Their body temperature drops, and their metabolism rate falls to one-fifteenth of that maintained during active daytime feeding. Their biological clock is set to raise their body temperature and metabolism as daylight approaches.

I've had first-hand experience with the "need to feed" issue with hummingbirds. When I lived in the mountains, I worked in a greenhouse that was attached to the side of a building. A hummingbird found its way in once but could not figure how to escape. Within a short period of time, his battery began to wear down as he battled the greenhouse plastic to no avail. When I found him, he was in a sort of stupor. He sat on my finger, weakly clinging with his tiny feet. I stuck his head into a nearby weigela blossom, and within seconds he was recharged and took off. It was a rare opportunity to view the jewel-like iridescence of a live hummingbird so close.

On a mountain hike one summer to one of my favorite spots, I found a hummingbird nest suspended over a swiftly moving stream. It was a fly or die situation for these nestlings. If they survived the fledging stage, the nest worked out well. High and above the water, it was both protected and had access to lots of cardinal flower, *Lobelia cardinalis* along the stream banks. The nest was composed of spider webs and lichens, and its cavity fit the imprint of my index finger. Sources say that the eggs are the size of beans, but they were long gone by the time I spotted their nest.

From John Gould's magnificent Victorian-era lithographs in *Monograph of the Hummingbirds* to Celia Thaxter's writings about her experiences on the Isle of Shoals in *An Island Garden*,

the hummingbird has held our curiosity for centuries. Among the first written accounts of life in "Carolina" is John Lawson's *A New Voyage to Carolina*, published in 1709. Lawson gives this memorable portrait of the hummingbird:

> "The hummingbird is the miracle of all our winged animals; he is feathered as a bird, and gets his living as the bees, by sucking the honey from each flower. In some of the larger sort of flowers, he will bury himself, by diving to suck the bottom of it, so that he is quite covered, and oftentimes children catch them in those flowers, and keep them alive for five or six days. They are of different colors, the cock is of a green, red, aurora, and other colors mixed. He is much less than a wren and very nimble. His nest is one of the greatest pieces of workmanship the whole tribe of winged animals can shew, it commonly hanging on a single brier, most artificially woven, a small hole being left to go in and out at. The eggs are the bigness of peas."

THE *AQUILEGIA CANADENSIS*, EASTERN COLUMBINE WITH ITS ORANGE AND YELLOW FLOWERS, BLOOMS IN REYNOLDA GARDENS IN EARLY SPRING.

Some Irresistible Hummingbird Plants

- *Lobelia cardinalis*, Cardinal Flower
  Spikes of red flowers on a native preferring full sun and moist conditions; blooms in summer.
- *Monarda didyma*, Bee Balm
  A bright red native in the mint family that will spread vigorously in moist soil; blooms early summer.
- *Mertensia virginica*, Virginia Bluebells
  An early spring blooming native with sky blue flowers bearing lavender markings.
- *Aquilegia canadensis*, Eastern Columbine
  Our native columbine with orange and yellow flowers; blooms in early spring.
- *Rhododendron periclymenoides*, Pinxter Flower
  A rose-pink native azalea; blooms in spring. All of our native azaleas are good hummingbird flowers.
- *Aesculus parviflora*, Bottlebrush Buckeye
  Long white candles of bloom in midsummer on a tall shrub.
- *Penstemon species*, Beardtongue
  Most penstemons are western North American perennial species. Select among the red ones; blooms in summer.
- *Lonicera species*, Honeysuckle
  Hummingbirds love the honeysuckles. Avoid the common Japanese weed species.
- *Campsis radicans*, Trumpet Creeper
  'Madame Galen' is apricot-colored and a little (relatively) better behaved than the invasive species. A perennial vine.

Gardener's Journal

Published twice yearly by Reynolda Gardens of Wake Forest University

Communications about Gardens development should be addressed to Preston Stockton, manager. Correspondence concerning *The Gardener's Journal* should be addressed to Camilla Wilcox, editor.

A calendar of events is published separately in January and September.

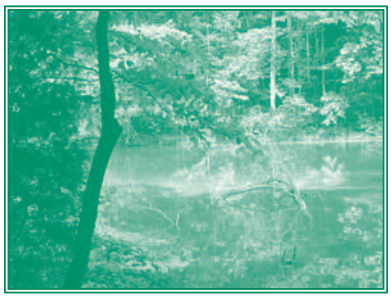
Layout by Dana Hutchens.

Historical photographs courtesy of Reynolda House, Museum of American Art archives.

For a list of sources for plants mentioned in The Gardener's Journal, *please send a SASE to Reynolda Gardens, 100 Reynolda Village, Winston-Salem, NC 27106.*

Printed on recycled paper with 60% postconsumer waste

Restoration of the Ponds, Spring 2005



The three ponds alongside the woodland trail have been restored, thanks to an anonymous donor's generous gift. These ponds are connected by a small stream that originates from a spring in the meadow near the woods.

Biologists consider the largest pond to be one of the cleanest bodies of water in the state. Repairing the dam allowed the water level to rise to its original depth and upgraded the path connecting the woodland and perimeter trails.

The second pond, to the north, was originally a holding pond for the irrigation/swimming pool. It had filled in when the dam of the south pond was breached. It was dredged during the project and the shoreline cleaned of underbrush.

The last pond was built to the north of the irrigation/swimming pool in the early 1920s to catch silt entering Lake Katharine. It was also dredged and the shoreline restored.

WAKE FOREST UNIVERSITY

Reynolda Gardens

100 Reynolda Village
Winston-Salem, NC 27106

Non-Profit Org.
U.S. Postage
PAID
Winston-Salem, NC
Permit No. 69