REYNOLDA GARDENS
of Wake Forest University

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A WORK *in* PROGRESS

by PRESTON STOCKTON, *superintendent*

It has been over two years since Wake Forest University hired the Jaeger Company, a landscape architecture firm from Gainesville, Georgia, and work began on the Reynolda Gardens restoration. Although many of the contractors now seem to be full time staff, we look forward to the completion of the structural work sometime this summer. This has been an unusual and challenging project for all involved — staff, members of the Reynolds family, the University, and the public. It is hard to see a garden that you have come to admire and love for its own beauty and character destroyed in order to preserve it for future generations.

EN BENNETT

LION'S HEAD FOUNTAIN UNDER CONSTRUCTION, APRIL 1997.

Certainly, the time had come to address some very serious problems that faced Reynolda Gardens — old and declining trees, crumbling walls and fountains, deteriorating walks, poor drainage, and an inferior heating system in the greenhouse, just to name a few. Five years ago, a planning committee was appointed by Wake Forest University to address these obvious problems. But a difficult question remained; that is, should we continue to maintain the boxwood garden that had evolved through the 1930s to the present, or should we re-establish the sophisticated herbaceous flower garden that was originally planted for Katharine Smith Reynolds in 1917?

The committee considered this very difficult question carefully because the overall appearance and function of the garden had remained the same over a long period of time. The formal gardens have been enjoyed by thousands of visitors for years; many of these people are here every day. Local parents have raised generations of children who have played in the boxwood gardens and fountains and hidden Easter eggs in the flower beds. Staff members, too, were reluctant to see the garden change. Reynolda has been a wonderful environment for the many gardeners employed here over the years to work and learn, a place where the activities associated with the changing of the seasons are as regular as the beating of our hearts.

But if you ask which garden has a significant place and time in history, the answer will be the original garden designed by Thomas Sears in 1917. The gardens of Reynolda were part of an important period in this country, often referred to as the "Golden Age" of American gardens. In the late 1800s through the 1950s, large estates sprang up all over the U. S. Many are open to the public today as gardens, parks, and arboreta, but hundreds have been lost to decay or development. Thankfully, at Reynolda there remain over 150 acres of the original property to preserve the legacy of this

CONTINUED ON PAGE 2

Restoration

Continued from page 1

beautiful estate. The photographs housed in the Reynolda House archives that show the early garden are beautiful and impressive. Clearly, they were designed to complement other landscape and architectural features of the estate. Surely, these are the gardens meant to be at Reynolda.

The Reynolda Gardens restoration has been an expensive undertaking for the University, and I commend the administration for their foresight and commitment to the planning and fundraising for the project. I also want to thank the many Friends of the Gardens for their financial gifts as well as the trust and support they have shown during these last three years. Thanks also to Bill Sides and Bill Shotton, both from the WFU facilities management department, who were invaluable to the staff. They understood that if something doesn't have chlorophyll or photosynthesize, don't ask us about it! Gratitude is also due Dale Jaeger and Chet Thomas of The Jaeger Company for establishing what was important.

The Gardens staff will now spend the next several years locating the original plant material used in this garden. This phase is a lot like a blind date — we have great anticipation but more than a little trepidation! I know we will love the restored garden as much as the one it replaces, and we can be proud to have re-created the garden that Katharine Smith Reynolds placed next to Reynolda Road for all to enjoy.

EN BENNETT

West garden feature during construction, March 1997.

Palms *of* today . . .

by Tom Pratt, *greenhouse manager*

The palm does not offer us foliage of distinct color and variation nor does the palm have flowers of color and beauty that bring a tear to one's eye. So I ask, what good is it?

The uses of palms are multiple and wide-ranging. There are over 2,500 species throughout the world. Many palms are valued for their oil, which is used to produce margarine and soaps. Its uses for indoor ornamental purposes can be numerous as well. Whether you grow a feathery pinnate-leafed palm or a fan-shaped palmate-leafed palm, you'll find that no other evergreen offers the charm and grace that the palm foliage can bring. Palms can fill a big corner of our living rooms, bring interest to our offices, and add eye appeal to floral arrangements.

Propagation is easy. Plants are most often grown from seed. Simply cover seeds to about twice their thickness in sandy soil and keep the starting medium damp. Add a little bottom heat for best germination.

Culture is no problem. The palm, generally a slow- to medium-grower, requires little if any pruning and does best in partial shade conditions. The growing medium should be coarse and high in organic matter. Keep palms well watered during the growing season. An occasional shower spray keeps foliage looking its best. There are few pest problems to worry about, nothing a little insecticidal soap can't handle. Palms have proven to grow best when they are a little potbound. Once palms get old and outgrow their space, simply throw them out. Pruning them is a disgrace to their dignity.

These varieties are recommended for indoor culture: silver palm (*Coccathrinax argentata*), princess palm (*Dictyosperma sp.*), umbrella palm (*Hedyscepe canterburyana*), and European fan palm (*Chamaerops humilis*).

. . . AND YESTERDAY

Two of today's recommended varieties for indoor culture were in cultivation at the time of the 1926 publication of *Plant Culture, a Working Handbook of Every Day Practice for All Who Grow Flowering and Ornamental Plants in the Garden and Greenhouse* by George W. Oliver and Alfred Carl Hottes. The European fan palm, *Chamaerops humilis*, and the umbrella palm, *Hedyscape canterburyana*, were both popular then. One of them, the umbrella palm, may have been grown at Reynolda.

In 1926, the umbrella palm was classified in the genus *Kentia*, which also included many other palms that had become important for indoor culture, replacing the yellow-stemmed butterfly palm in popularity because they were easier to grow.

Correspondence on the letterhead of Samuel Feast and Sons in Baltimore dated March 23, 1909, indicates that Mrs. Reynolds had ordered numerous large plants from a listing of these so-called kentia palms for the family home on West Fifth Street. The company offered to supply a selection of them. Many were not listed by species, but two of them were, the Belmore sentry, *belmoreana*, and the larger sentry, *fosteriana*. The kentia palms as a group are similar in form with large pinnate leaves, but taxonomists have now moved the sentry and the Belmore sentry palms into the genus *Howea* and the umbrella palms into the genus *Hedyscape*.

When Mrs. Reynolds wrote to the Lord and Burnham Company on May 27, 1912, to give instructions on the layout of the greenhouse complex, she asked that a palm house be included in the new building. The above photograph shows at least two varieties of palms on a porch in the family home at Reynolda.

What's in a name?

When Thomas Sears drew the plans for Reynolda's formal gardens, many plants had only recently been discovered or hybridized and become available commercially. A naming system had not yet been standardized to reflect their inclusion.

On the 1917 plant list, Sears used such terms and punctuation as Achillea ptarmica "Perry's White," Lupine Moerheimi, and Iris orientalis "Snow Queen." These terms do not appear to be as consistent in spelling and punctuation as those used by scientists and gardeners today.

According to Albert D. Taylor in the 1921 book *The Complete Garden*, the American Joint Committee on Horticultural Nomenclature adopted and published an official code of standardized plant names in 1917. The new code addressed some, but not all, issues related to plant naming. In adding that the new code did not adequately cover all possibilities, Mr. Taylor may have been reflecting on the wide range of plants flooding into market at that time. Some texts, including *The Complete Garden*, also used *Bailey's Standard Cyclopedia of American Horticulture* as a standard for cultivar names.

By 1921, when Thomas Sears drew the plans for the Aubrey Pearre, Jr. garden in Baltimore, he had begun to conform to the new rules, listing plants in a form familiar to modern gardeners, such as *Arctotis grandis*, *Clarkia elegans*, and *Veronica spicata*.

A LITTLE *of* REYNOLDA *for* YOUR GARDEN

Because many names of plants of the pink and white garden design have changed since 1917, the planting process began with research. Even where genus and species names have remained intact, some varieties and cultivars known to gardeners in 1917 are no longer available. By tracing the name and description of each plant through publications copyrighted from 1892 to 1995, it has been possible to determine what changes have been made through the years. In the course of garden restoration, some plants similar in form to the original plants will substitute for those that are no longer available.

A few plants have remained the same as they were in 1917, and they are still widely available commercially. Among them, these three plants are good choices for local gardeners.

***Campanula persicifolia* 'Alba'**
the peach-leafed bellflower, is a sturdy, upright plant with two- to three-foot tall stalks of white bell-shaped flowers. It blooms from early summer until fall.

CULTURE
The bellflower can grow in full sun but benefits from some light shade in our area. It should be staked for best effect, as it tends to flop over as it grows. Be sure to stake it early in the season because the stems are brittle and

CONTINUED ON PAGE 6

PLAN B — THE PINK *and* WHITE GARDEN

by CAMILLA WILCOX, *curator of education*

This article is part of a continuing series on the individual gardens of the original plans.

The re-creation of the 1917 pink and white garden is the result of a blend of new technology, research, and perseverance. With the walls, grass paths, and irrigation in place and the boxwood hedges trimmed to size, the garden's walls and foundation are complete. The remaining element, the choice and placement of plants, completes the garden. Planting will begin in the fall of 1997.

The southwest quadrant of the sunken formal garden was devoted to pink and white flowering plants. Thomas Sears chose more than 42 varieties for this garden, specifying a total of almost 3,000 plants for this single space approximately 700 square feet in size. While there were large numbers of plants of many varieties in the overall plan, smaller numbers of each variety were planted in pockets throughout the garden.

Within a system of rectilinear grass paths, narrow plots provided space where each cluster of plants could receive conditions necessary for optimal growth, and where each could be seen and enjoyed. Hollyhocks (*Alcea rosea*), the tallest plants in the garden, grew in the outermost corners and adjacent to the boxwood hedge, alternating with slightly shorter clusters of tall phlox (*Phlox paniculata* 'Elizabeth Campbell') and other plants of medium height, like pink astilbe (*Astilbe arendsii* 'Pink Pearl') and peach-leafed bellflowers (*Campanula persicifolia* 'Alba'). Drifts of annual phlox (*Phlox drummondi*), annual periwinkle (*Catharanthus roseus*), and cottage pinks (*Dianthus plumarius* 'Brilliant') softened the borders of grass paths.

Like the other gardens of Reynolda, this section featured plants that spanned a long season of blooming and foliage, beginning in late winter with glory-of-snow (*Chionodoxa luciliae alba*) and continuing until after frost, with the last of several varieties of chrysanthemum and the lovely reddish foliage of the Carlesi viburnum (*Viburnum carlesii*). Though many of the early blooming plants entered dormancy soon after bloom, the foliage of later bloomers quickly filled in the blank spaces they left. For example, the poet's narcissus (*Narcissus*

EARLY PHOTOGRAPH OF THE PINK AND WHITE GARDEN.

poeticus ornatus and *N. p. grandiflorus)* were followed in summer by painted daisies (*Tanacetum coccineum*) in some areas and cultivars of tall phlox in others, then in fall by Japanese anemone *(Anemone hupehensis)*. Glory-of-snow was followed in one spot by cottage pinks and another by Siberian iris *(Iris orientalis* 'Snow Queen').

A Garden both Familiar and Unfamiliar

Many plants in the pink and white garden of 1917 would seem familiar to modern gardeners. A mix of perennials and annuals, the garden contained many flowers that are dear to modern gardeners; hollyhocks, asters, crocus, snapdragons, petunias, and baby's breath were all represented. But the garden would seem unfamiliar, too, because the forms of flowering plants grown in the early twentieth century were often different from plants that modern gardeners most often buy from nurseries and catalogs. Differences between the flowers grown in gardens eighty years ago and those we grow today are often subtle.

- In some cases, the flowers of the period were single, not double. For example, the milfoil *(Achillea ptarmica* 'Perry's White') on the plan was very similar in growth habit to 'The Pearl', a cultivar that is still popular today. Both have a loose, open form, but the flowers of 'Perry's White' were single instead of double, as are 'The Pearl's, making 'Perry's White' appear to be the more delicately flowered of the two plants.

- Some of the plants themselves were smaller and weaker than their modern counterparts. The stonecrop *(Sedum spectabile)* specified on the plans and clearly shown in early photographs of the garden, is very similar to today's popular cultivar 'Autumn Joy'. But in comparison with 'Autumn Joy', the flower heads of the *S. spectabile* of the early garden were more flat than rounded, the plants were slightly smaller with numerous delicate stems, and the flowers turn more pink than bronze in the fall.

- Some plants were much larger in scale than might be chosen today for a small space. For example, the 57 hollyhocks in this garden, each potentially eight feet or more in height, would be considered overwhelming for a modern garden of more intimate scale. Cultivars are now available that are more suitable for smaller gardens, and these are the ones that gardeners usually grow now.

Garden Care

This garden required vigilant maintenance because of the choice and placement of plants and because of the plant cultural practices of the time. The main problems Southern gardeners faced, heavy clay soil and summer drought conditions, had to be addressed in the beginning to make the intensively planted garden possible. An irrigation system served the entire formal garden area, helping to relieve the most common problem for Southern gardens of the period. Irrigation was especially important because the ground in all of the individual gardens was left bare, not covered with mulch as is the usual practice in modern gardens. If the Reynolda gardeners followed standard practice of the day, they amended the heavy clay soil with manure. Chemical fertilizers and pest control methods were available to them, though many may have been mixed from formula on site.

Many plants like peach-leafed bellflower, hollyhocks, and tall phlox varieties required staking. Even the familiar rose-colored deutzia (*Deutzia gracilis)*, today a common flowering shrub, was probably staked as well. At the time this garden was installed, gardeners ordinarily bought clumps of deutzia roots in the fall, then potted and grew them in greenhouses for winter bloom or for forcing early spring bloom in the garden. After blooming, plants generally were removed from the garden and left to stand in beds of ashes for the summer. They were pruned and repotted in the fall. Four frames permanently installed in the center of the pink and white garden may have supported the deutzias when they were in bloom.

Within the design, some plants were placed more closely than they would be today, due to advances in our knowledge about plant culture and our desire to keep maintenance chores to a minimum. But even in 1917, gardeners already knew that plants like hollyhock and phlox were susceptible to mildew and related problems in the South, and they knew that good air circulation around plants helped prevent these problems. Even so, Thomas Sears specified that these plants were to be planted very close together. The densely planted clusters of both gave a dramatic show in mid- to late summer, despite increased demands on gardeners' time.

The success of the pink and white garden, like the success of all of the individual flower gardens of Reynolda, ultimately relied on the teamwork of the dedicated owner of the garden, the landscape architect who designed it, and the horticulturist who planted and cared for it.

A Little of Reynolda

Continued from page 4

break easily when handled. It can be planted in spring or fall. Give it a light dressing of fertilizer in early spring.

Dicentra spectabilis, the bleeding heart, has been cultivated in the West almost continually since it was brought from China in 1810. Its many graceful stems of pink and white flowers are highlights of any spring garden. In the 1920s, gardeners bought dry roots of many plants, including the bleeding heart, from bulb brokers in the fall. Today, gardeners plant bleeding heart plants in the fall or spring, wherever they are to grow in the perennial border.

Culture

Dicentra spectabilis prefers to grow in moist soil in partial shade but can tolerate more sun if the soil does not dry out. Because the foliage dies back after blooming, it should be planted where other plants will grow up around it. Planting annuals to fill the empty space can damage delicate roots. In the pink and white garden, bleeding heart was paired in various places with summer-blooming astilbe, tall phlox, and hollyhocks. The bleeding heart thrives if left to grow in one spot for a long period. Mature plants do not tolerate transplanting well. Plants can be divided in early spring.

Continued on page 7

Hollyhocks *for your* Garden

by Mary Chrestman, *horticulturist*

Hollyhocks, those beautiful and stately plants of yesteryear, are as popular today as ever. A member of the mallow family, *Alcea rosea* is the common hollyhock seen in nearly all respectable cottage gardens. It was one of the first plants introduced into North America by the English. *Alcea* was first given the name "holy-hock" by Crusaders returning from the Holy Land, distinguishing it from the herb *Althea officinalis* or "hock-heal" as it was called at that time.

Alcea rosea is a true biennial, producing foliage one season, then flower, fruit and seed the next. Seeds should be sown in the fall, about two months before frost. Protect the large leaves with winter mulch. In the spring, pull back the mulch and move the plants to their permanent location if necessary. In our area, zone 7, they will bloom by midsummer. Some hollyhocks are grown as annuals or perennials. Annual varieties need five months of growth before they bloom. They should be started indoors in late winter.

The large, showy blossoms, single- or double-flowered, begin opening on the lower portion of the stem and progress upward. As with most flowers, you can pinch off fading blooms to enhance flowering. If you intend to collect seeds, do so as they ripen on the stalk. If not, cut the stem back to the lowest point after flowering is finished.

Hollyhocks will cross-pollinate so, if you expect to collect seeds, group single-colored flowers together in planting areas with ample room allowed between color groups. Division of existing plants will ensure propagation of true-color offspring. Many gardeners prefer to let plants self-seed and then simply enjoy the mixed colors that result.

Hollyhocks are best used as a vertical accent toward the back of a border or to highlight a wall or fence. Most hollyhocks reach heights of five to eight feet when fully grown, so be sure they have room to grow. Plants should be spaced two to three feet apart for good air circulation. The soil should be high in organic matter, and plants need to be fed throughout the season, using any flower fertilizer. Hollyhocks prefer a moist but not wet spot that receives at least one-half day of full sun.

While being relatively easy to propagate, hollyhocks are not pest-free. In our area, Japanese beetles and slugs may be a problem, as well as the rust fungus, *Puccinia malvacearum*, which thrives in humid conditions. Rust appears as dark brown bumps with yellow rings on the foliage. It can be controlled by removing and destroying any discarded foliage. Preventive measures include good air circulation and removing the lower leaves from the plant in the spring. Since rust is a fungal disease, it is spread by spores living in the soil. During rainy weather or even during watering, these spores are apt to splash onto the lower leaves. Flowers appear to be unaffected by this disease.

Many of the hollyhocks listed in catalogs as "old

fashioned" varieties are the tall types, while some of the more recently introduced annual varieties, considered dwarf or semi-dwarf, are in the three to five foot range. Following are some good cultivars for this area.

Annuals

'Indian Spring', a 1939 AAS silver medal winner, grows four and one-half feet tall. It comes in shades ranging from pink to rosy carmine. Flowers may be double or semi-double and are sometimes fringed.

'Silver Puffs' was an AAS winner in 1971. It grows to a height of two to two and one-half feet. Its double two inch flowers are silvery rose-pink. The plant is rust resistant.

'Summer Carnival', a 1972 AAS winner, grows to a height of four to five feet. The flower is unusual, with a double rosette center surrounded by an outside row of single petals. Flowers are rose, pink, crimson red, light pink, salmon, yellow, and white.

Biennials

'Majorette' is a biennial that is often grown as an annual. Flowers are double, mostly pastel. Plants are two feet high and one foot wide.

'Chater's Double' grows six to eight feet tall and two feet wide. Its peony-shaped flowers come in vivid colors.

'Chater's Mix' was developed in the late nineteenth century. Flowers are double, pastel pink, butter yellow, deep red, and white. Plants are six feet tall, one and one-half feet wide.

'Nigra', also called 'The Watchman', has striking dark maroon flowers. The plants are smaller than some hollyhocks, growing to five feet tall, one and one-half feet wide.

'Country Garden Mix' is a very tall, old-fashioned single-flowered hollyhock. Colors are mahogany, rose, pink, apricot, and ivory.

A Footnote *to* Hollyhock History

Old varieties of hollyhock are becoming popular once again, but a hollyhock blight that occurred in the middle 1800s threatened to erase them from the landscape and garden.

In England through the middle of the nineteenth century, gardeners were intrigued with hollyhock culture. Many hybrids were produced within a short period, and many of the new cultivars were widely grown and prized as exhibition flowers. Suddenly the fungus *Puccinia malvacearum*, commonly called rust, attacked the wild members of the hollyhock family, then swept through the garden hollyhock population, wiping out every hollyhock and hollyhock relative in Great Britain within a matter of weeks.

Even with both wild and cultivated plants gone, gardeners continued to want them in their gardens. They soon found that seeds were not affected by the fungus, so for many years hollyhocks were produced for garden culture by seed only, rather than by other propagation methods that would transfer the disease organism to the offspring. In *Beautiful Flowers and How to Grow Them*, an English gardening book of 1922, the advice of horticultural scientists for gardeners was to stay with hollyhocks grown from seed, "the cost of which is small and entails no serious loss if the plants die away."

Although such a dramatic blow to a plant population may not have occurred in America, it is likely that gardeners here grew them from seed also on the advice of English growers and perhaps from their own experience. Thomas Sears referred to the hollyhocks in this garden as "Hollyhock (Althaea) pink" and "Hollyhock (Althaea) white." He did not provide any other information about the plants or cultivar names. The photograph at left shows two hollyhock varieties in the pink and white garden.

A Little of Reynolda

Continued from page 6

Lilium candidum, the madonna lily, was a favorite potted plant for greenhouse culture in the early 1900s. It has long been a favorite garden flower as well, cherished for the fragrant white blooms that appear in July. Each stalk produces from five to twenty flowers. The plant is sometimes short-lived in Southern gardens.

Culture

Natives of Europe, madonna lilies in the wild grow where the base of the stalk is protected by vegetation while the upper leaves and flowers are in full sun. This environment can be recreated in the garden by placing madonna lilies with other tall or dense plants. In the 1917 pink and white garden, madonna lilies were paired in various places with tall white phlox, with pink painted daisies, with white bellflowers, and with pink asters. Madonna lilies must have perfectly drained soil containing a high percentage of organic matter. Like other lilies, they are susceptible to problems with viruses of the cucumber-mosaic group that are spread by aphids. Fungal disease is common also. The planting hole and bulb can be treated with fungicide before planting, then a Bordeaux mix or other fungicide can be applied weekly. A light application of organic or slow-release fertilizer in the spring is beneficial. Lilies grow well in any soil pH.

New Plants *for an* Old Garden

by Kim Tilley, *assistant superintendent*

Fig

Cherry

Blackberry

Since the beginning, experimenting with new varieties of plants has always been a focus at Reynolda. Many different fruits, berries, vegetables, and flowers were grown in the upper utilitarian plots that were named the "Nicer Fruit and Vegetable Garden" by Thomas Sears. Today the space is used for display and testing of modern varieties and for the All-America Rose Selections garden.

A small portion of the rose garden was removed in the spring of 1996 so that we could show visitors more of the fruits and berries that once flourished here. Because the original plans do not list specific named varieties for any fruits or berries, the staff decided to continue experimenting with new varieties, just as Katharine Reynolds did, and testing their performance in this region. Looking through numerous catalogues, we came up with a list of plants to try. The named varieties follow, with a brief description of each and information on plant care.

Figs

'Alma' was developed by Texas A and M for productivity. It is said to be one of the best figs for the South.

'Kadota' does well in hot climates. It produces a late main crop.

'Black Jack' grows well in warmer climates and is small enough to be grown in containers.

'Celeste,' a Southern favorite, fruits on last year's wood and is small enough to be grown in containers.

Culture

Figs need a very sunny location and protection from winter winds, but they thrive in poor soils. Covering them in winter when temperatures drop below 10°F should be attempted. Trim plants in spring and fertilize them lightly. Once they are established, water only during times of drought.

Cherry

'Jan' and **'Joy'** are fall fruiting bush cherries, growing only four feet tall and producing a year after planting.

Culture

Plant different varieties of bush cherries together for better pollination and higher fruit yield. Space three to four feet apart in a well drained organic soil. Cherries need at least six hours of sun a day. They have a high tolerance to cold temperatures.

Thornless blackberries

'Navaho' canes grow six to eight feet tall.

'Arapaho' has the same growth habit as the 'Navaho' but ripens over a two week period instead of two months. This one is great for making jams and jellies.

Culture

Little care is needed to grow blackberries. 'Navaho' and 'Arapaho' are among the erect growing blackberries that do not require the support of trellises and fences. Plant them in acidic soil. Trim and fertilize them lightly in early spring. Water only during extreme dry weather once they are established.

Rhubarb

'Valentine' is the best variety for retaining its rosy color after cooking.

'MacDonald' has bright red color, tender skin, and excellent flavor.

Culture

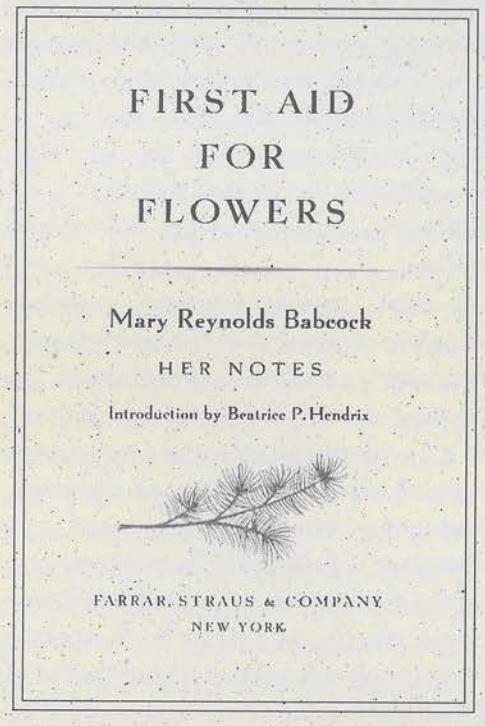
Plant rhubarb in a well drained acidic soil in full sun or mixed shade. Rhubarb prefers a highly organic soil enriched with cow manure or compost. To ensure years of return, plant in a space where you won't be tilling or digging. Separate crowns every four to five years in early spring when the first few sprouts appear.

Mrs. Babcock's flowers

"To prolong the life of flowers, understand them."
—Mary Reynolds Babcock

Mary Reynolds Babcock grew up at Reynolda and later, with her husband Charles, owned Reynolda for over twenty years. She was known by her friends and family for her love of flowers. A small book compiled from her notes, *First Aid for Flowers*, was privately printed by Charles Babcock in 1954 as a gift for family and friends. Another edition copyrighted 1954 by Old Salem, Inc. was published by Farrar, Straus and Company, New York. Proceeds from sales were earmarked for the new Old Salem restoration fund. The book represented a collection of her notes from many sources on the selection and preparation of plant materials for arrangements.

Mrs. Babcock's directions for cutting, caring for, and arranging flowers clearly express her fascination with the individual characteristics of each flower. She explains how botanical structure guides methods used to prolong the beauty of cut flowers and branches, and describes the trees, shrubs, and flowers useful for the flower arranger's art. Then, she gives detailed advice on the preparation and use of specific plants. Some selections from her advice:



Above: Book's title page. ***Right:*** Illustrations from its pages.

Cabbage

Garden variety — Harden by soaking in ice water overnight. Next gently roll back leaves shaping it to appear like an opening rose.

Cowslips

Give them a weak solution of tobacco juice.

Columbine

Dip in oil of peppermint for a second before placing in water. Or rub dry salt into the cut end of the stem.

Forget-me-nots

Plunge tips of stems in boiling water and then in cold water.

Hollyhock

Char cut stem end or dip in 1/10th of 1% solution of nitric acid or dip in a solution of 1/10th of 1% permanganate of potash or of potassium nitrate.

Thistle

Do not put them in water for awhile. When they begin to wilt char the end of the stem and let soak in cold water. Or rub salt into the end of the stem or dip into alcohol or peppermint oil for a second or two.

Zinnia

Wilts quickly, so place in water as soon as you cut. Never let zinnia leaves go below water or touch water, because they decay rapidly and then have an unpleasant odor. Zinnias should be hardened in water before attempting to arrange them. They seek light. The flowers last longer if you remove the leafy side shoots from the main stem. Use zinnia foliage only when it is cut separate and is without a flower or bud.

Pesticide Safety: Protecting the Garden and the Gardener

by John Kiger,
buildings superintendent

A pesticide, as described by *Webster's Dictionary* is "a chemical for killing insects, weeds, etc." With all the pesticides on the market today, how can you choose products that are effective and safe? Before I address that question, let's look back seventy years and see what pesticides were available then.

Pesticide use in the 1920s was a crude practice measured by today's standards. Then, just like today, people used what was readily available. Pesticides were marketed in ready-mixed, ready-to-use formulas. Experts recommended that homeowners use only these products, but many people often used what I call "home brew." Some of these formulas included kerosene, nicotine sulfate, and arsenic.

In the 1921 book, *The Complete Garden*, a chapter is devoted to pest control . Below are a few examples of pests and what was used to control them:

Cutworms— a bait: one pound white arsenic, one pound of sugar or molasses in six pounds of bran

Sow bugs — a bait: slices of potatoes dipped in dry arsenic

Plant lice — a spray: 2 gallons kerosene, 1 gallon of soft water, and one-half pound of soup

Scale — a spray: 2 gallons kerosene and one gallon sour milk

Army worms — a spray: arsenate of lead dissolved in 50 gallons of water and sprayed on the lawn until it is white. This mixture did rid the yard of army worms, but it also killed other worms that are beneficial to the lawn and garden. The practices used in the twenties probably created as many problems as they solved.

By the 1950s, products had changed. In the 1957 booklet entitled *The Gardener's Answer Book*, authors recommended that gardeners use Chlordane and DDT. A new product, Malathion, which would replace DDT and is still in use today, was just being introduced as a general purpose insecticide. According to the article, it was "effective on plant lice, mealy bugs, spider mites, scale and a variety of other insects." The writers also boasted that Malathion was not so poisonous as DDT, indicating that concern for chemical toxicity was mounting at the time.

In the 1950s, DDT (now called Chlorophenothane) was used to combat a number of pests including beetles, corn borers, fleas, and mosquitoes. Though it was very effective in controlling insects, it was found that when birds and fish fed on infected insects, they suffered toxic effects. As insect species grew, they became resistant to the chemical. With regard for public health, the United States government banned DDT in 1972.

Chlordane was used in the garden and around the house to control termites, ants, thrips, and leaf hoppers. The main problem with Chlordane was that it remained in the soil for a long period. Studies have found that areas treated with this chemical 20 years ago still show residue present in the soil today. Chlordane was banned in 1973, but it is still produced here and shipped to twenty countries worldwide. By the early 1970s, other chemicals were banned, including Methoxyclor, Lindane, Heptaclor, and the list goes on.

To return to my original question, yes I believe we do have chemicals that are less toxic than those used in earlier years and that perform adequately in controlling pests; however, there are still pesticides that are just as deadly today as those that were produced years ago. Gardeners should still use care when they apply any pesticide. In order to protect yourself, look for the signal words on the label. Signal words are Danger, Warning, and Caution. Homeowners are advised to use only products labeled Caution. Below is the toxicity of each signal word and the approximate amount it would take to kill an

average person, according to the North Carolina Cooperative Extension Agency. Reading the labels on the products we purchase is the first step toward safe pesticide use.

Danger
Highly toxic: a taste to a teaspoonful

Warning
Moderately toxic: a teaspoonful to a tablespoon

Caution
Low order toxicity: an ounce to more than a pint ❦

Northern Plants *for a* Southern Garden?

Southern gardeners know that there are some plants, including lilacs, some varieties of apples, heliotropes, and delphiniums, that are better off in the gardens of our northern neighbors, where conditions for growing them are more favorable than they are here. Why, then, were these plants specified for this garden? Was it a mistake?

A number of explanations have been advanced over the years. Some have speculated that perhaps they were special favorites of Thomas Sears. In supporting this theory, we can point to the fact that these plants were used in other plans. For example, in his 1921 plan of the perennial garden for the Pearre family in Baltimore, he specified many of the plants he had used in the 1917 plans for Reynolda, including delphinium and heliotrope. In addition, some have thought it possible that these plants were special favorites of the owners, who had traveled extensively by the time the garden was installed and had surely seen the plants used in other gardens. And last, some have suggested that Thomas Sears was unfamiliar with the special vagaries of the Southern climate. After all, this was his first garden in the area.

But none of these answers was completely satisfactory. After all, he had received his education at Harvard's school of landscape design. He possessed a sophisticated knowledge of plant culture, as well as a thorough knowledge of the architectural and engineering aspects of landscape design.

Perhaps an answer to the puzzle can be found in the 1921 garden manual called *The Complete Garden*. A map of hardiness zones in that volume, compiled by the USDA from data collected by reporting stations throughout the country, shows that the Philadelphia area, where Sears' practice was located, was considered to be in the same planting zone as Winston-Salem. This region, the Upper Austral zone, stretched from the western piedmont and mountain regions of Georgia through the coastal regions of the northeast. This area includes parts of zones 6, 7, and 8 today.

The closest reporting station to Winston-Salem was located in the upstate of South Carolina. Their report said that this area "has such short winter interruptions that it practically offers a continuous working period from fall to spring." To a landscape architect studying the area, it must have seemed to have an ideal climate for gardening, where the plants of northern gardens could be enjoyed throughout a long growing season.

But the discussion on planting zones ends with this caveat, one that may have proved prophetic for some of the plants of the early garden: "It is probable that as time goes on much more detailed and complete data will be published regarding safe planting seasons for the different life zones of the country, thus enabling planters to eliminate nearly all of the guesswork which now exists, when one is called upon to execute on unfamiliar territory." ❦

Gardener's Journal

The Gardener's Journal continues a tradition that began in the early twentieth century, presenting up-to-date horticultural information to the public. *The Journal* includes advice for home gardeners on plant culture in the Piedmont region and helps readers understand the choice and care of the plants featured at Reynolda Gardens. Information is presented within horticultural and historical contexts.

The Journal is published twice yearly by Reynolda Gardens of Wake Forest University. A calendar of events is published separately in January and September. Communications about Gardens development should be addressed to Preston Stockton. Correspondence concerning *The Gardener's Journal* should be addressed to Camilla Wilcox, editor. Layout by David Fyten. Photographs on pages 1 and 2 by Ken Bennett. Early photographs courtesy Reynolda House archives.

Printed on recycled paper with 60% postconsumer waste.

Snippings

Thanks to ***Back to Earth Resources, Inc.*** of Dallas, Texas, for the donation of cotton burr compost soil conditioner to help restore the soil in the sunken garden in preparation for planting.

Interns ***Anna Harris*** of Wake Forest University and ***Cornelia Lambert*** of Salem College assisted with Gardens development and education projects during the spring semester of 1997.

Greenhouse manager ***Tom Pratt*** has earned professional certification from the International Society of Arboriculture, a scientific and educational organization devoted to the dissemination of information on the care and preservation of shade and ornamental trees.

The ***Reynolda Gardens restoration project*** is included in the 1996 edition of *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.* A Jaeger Company drawing of the formal garden with overlays of the plantings of distinct periods of the garden illustrates how restoration decisions are made.

A certificate of achievement for outstanding rose garden maintenance in 1996 was awarded to Reynolda Gardens by ***All-America Rose Selections, Inc.*** Reynolda Gardens is one of 136 public gardens nationwide that display collections of the best new rose varieties introduced each year. AARS public gardens meet strict requirements, especially in the areas of upkeep and display. All-America Rose Selections is a non-profit association for rose research and promotion.

"Breaking Ground: Examining the Vision and Practice of Landscape Restoration" is the title of the eleventh ***Restoring Southern Gardens and Landscapes Conference*** to be held on the campus of Salem College October 2-4. The lectures, workshops, and case studies will focus on current issues in landscape preservation and solutions to modern pressures on historic landscapes. Speakers will discuss a range of properties, from small home gardens to plantations and parks. Reynolda Gardens, Old Salem, The Museum of Early Southern Decorative Arts, Historic Stagville, and The Southern Garden History Society sponsor the conference. Proceedings of the tenth conference, ***The Influence of Women on the Southern Landscape,*** have been published by the conference committee. The volume includes the presentation *The New Southern Landscape: Gardens, Science, Art and the Environment* by Reynolda Gardens curator of education ***Camilla Wilcox.***

WAKE FOREST UNIVERSITY

REYNOLDA GARDENS

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