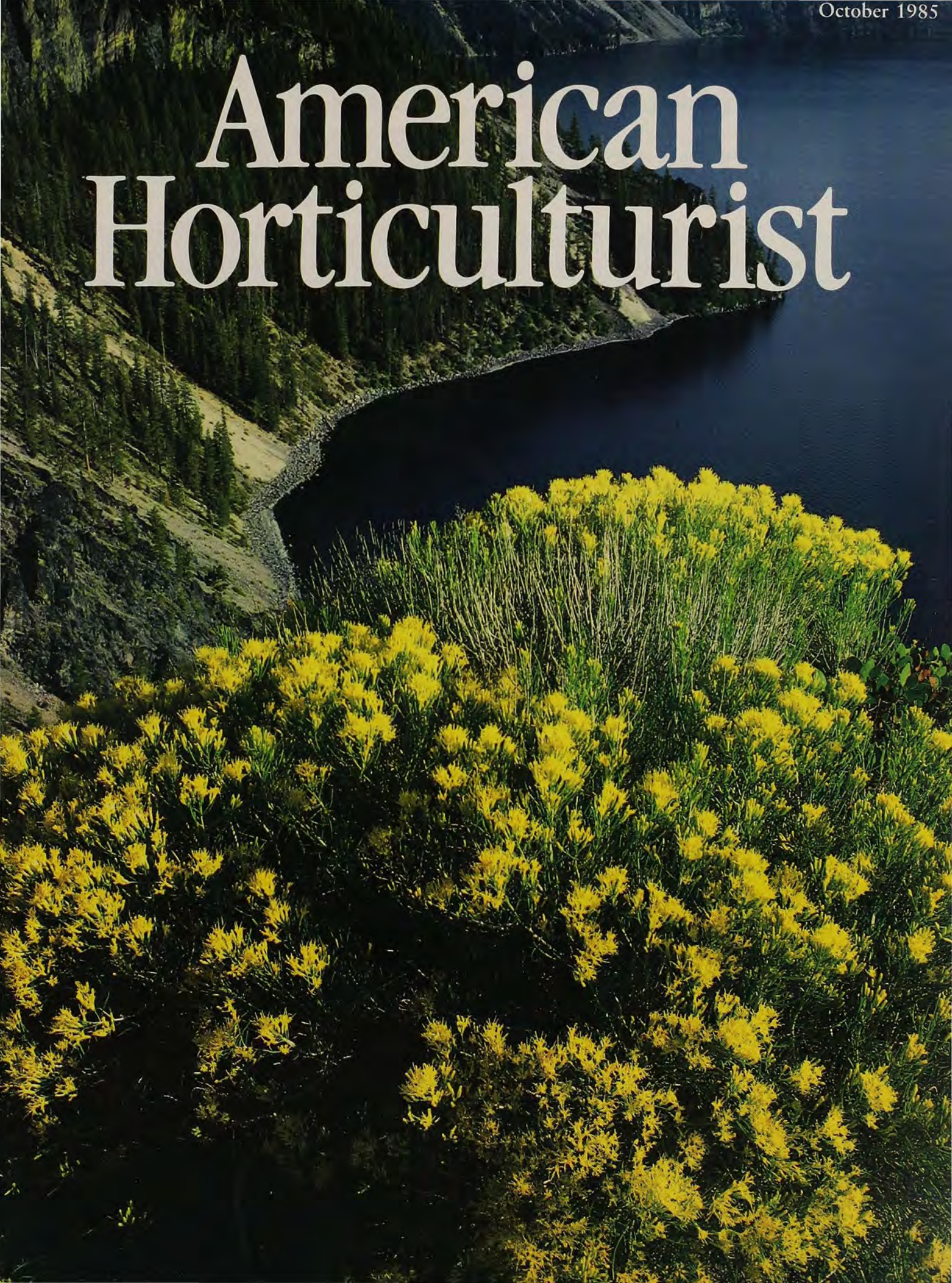


October 1985

American Horticulturist



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EDITORIAL

Plants and Publishing

The October issue of *American Horticulturist* marks an anniversary for me. As this issue goes to press, I will have completed my fifth year on the staff of the American Horticultural Society. I first came to AHS as Associate Editor, and since August 1983 I have been Publications Director and Editor of the Society's publications. It is hard for me to believe I have worked on 30 issues of *American Horticulturist* magazine—and as many newsletters—in what seems like such a short time!

Paging through those issues of the magazine and newsletter—re-reading favorite articles and enjoying the many photographs and illustrations that have appeared within our pages—has reminded me again of what a tremendous education I have received here at the Society. Although I was a lifelong gardener and a trained horticulturist when I first came to work here at River Farm, I knew almost nothing about producing a magazine. Copy deadlines, color separations, typesetting, advertising specifications, printing schedules, editorial calendars and all the innumerable details that must come together to make a successful publication were far removed from my experience with plants and gardening.

Fortunately, the subject matter of the Society's publications was far from new, for I have been a gardener as long as I can remember. Even when I was very little, gardens held a fascination for me. I have vivid memories of gardening as a child: tending my small strawberry tower, learning about rain gauges and scarecrows from a neighbor with a large vegetable garden, and finding out from another neighbor that red-flowered plants attract hummingbirds.

I also remember one of the first house plants given to me. It was a green-and-yellow-leaved coleus that my Great-Great-Aunt Hattie had grown. Like all of her house plants, mine was trained as flat as a pancake so it would fit on her windowsill. It also had a turquoise, plastic,

fan-shaped trellis for support. Although I never quite succeeded in training it to fill out into three dimensions, I loved it, and I have grown house plants ever since. Aunt Hattie also taught me how to knock petunias—her favorite flowers—out of clay pots and settle them in the soil. More importantly, she helped teach me to appreciate the many magical things plants can provide: the fragrance of hostas growing by a cellar door, the shade of passion vines covering a front porch, and the beauty of magnolias blooming in spring.

I learned about shade gardens and wildflowers long before I had a chance to garden in a sunny spot. My family lived in Columbus, Ohio, on nearly an acre of land that was partly covered with a young woods and partly with an overgrown apple orchard. Over the years, the woods became home to wildflowers rescued from areas near our home that were scheduled for development. Although my mother tried to grow roses, peonies and other such plants in the sunnier portions of our yard, the small patches of sun became ever smaller as the woods matured. Over the years, the garden and lawns have slowly been given over to hostas, ferns and other shade-loving plants.

I remember my frustration when I learned that we could not grow rhododendrons, azaleas and other acid-loving plants because we had decidedly alkaline soil. It was one of my many early confrontations with the horticultural facts of life. We could, however, grow many other spectacular plants, and my family spent many a crisp October afternoon planting hundreds of daffodils in our woods. Planting, digging, caring for, and giving away plants from our garden taught me many of the lessons a gardener needs to learn.

In addition to a love of gardening, I brought formal training and experience in horticulture with me when I came to the Society. After receiving a degree with a major in fine art from Kenyon College, I entered The Ohio State University to study

horticulture. The more I studied the subject—propagation, plant identification, greenhouse production, botany, entomology, soil science—the more fascinated I became. While at OSU, I spent a summer in Philadelphia working as an intern at a wholesale florist, selling cut flowers and florists' supplies. After graduation, I moved on to a job with a wholesale florist in Manhattan. There, I helped sell bulbs, seeds, plants and cuttings to wholesalers and retailers all over the country.

I tend a perennial border filled with plants I remember from my childhood, as well as many that contributors have written about.

In my present position with the Society, I am lucky to be able to combine a lifelong interest in gardening with formal training in art, horticulture and business. Like 75 percent of Society members, however, I am an amateur gardener first, and it is often my experience as an amateur gardener that helps me evaluate a manuscript or decide on a newsletter item that would be of interest to members.

When this workday draws to a close, I will put down my horticultural books and magazines and go home to my own garden. There, I tend a perennial border filled with plants I remember from my childhood, as well as many that contributors have written about in the pages of *American Horticulturist*. I'll also fuss over my house plants, and work on digging the water garden I have wanted for years.

There are many days when the business of producing a magazine and newsletter almost overwhelms me, and it seems my job has more to do with schedules and deadlines than with gardening. Fortunately, the gardens here at River Farm—and the many gardeners I've met through the Society, both via the mail and in person—help remind me that gardening is why I am here at AHS. I wouldn't trade the things I've learned here—and the vast amount I have yet to learn—for anything in the world. Five years and 30 magazines and 30 newsletters later, I am still learning every day.

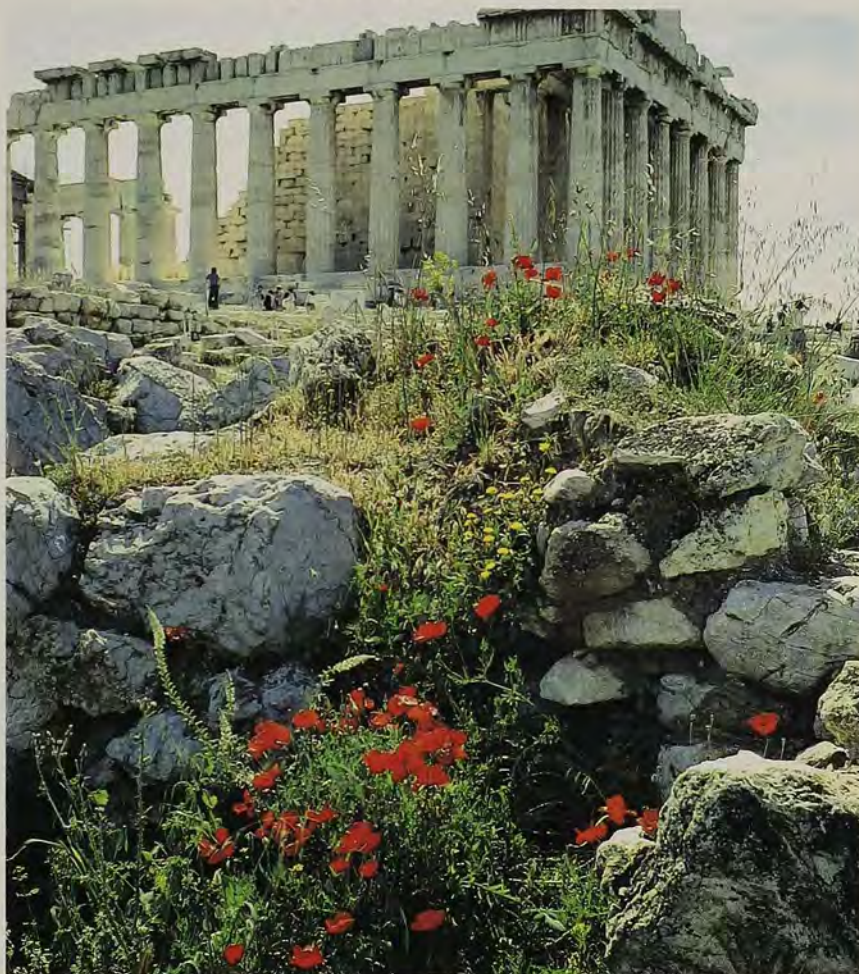
—Barbara W. Ellis
Publications Director/Editor



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Paul Aden— Hostas at Large

The journey by car to the home and garden of Paul Aden takes the driver along some of the busiest and most complex highways in the nation. The roads that ring New York City are choked with cars almost every day of the year, and to reach Baldwin on the south shore of Long Island—where Paul lives and gardens—one must brave these confusing, traffic-clogged roads.

Baldwin itself is a busy suburban town, within a reasonable commute to Manhattan but bathed in the soft glow of a clean atmosphere tinged by the Atlantic. Paul lives on a side street lined with trees and comfortable homes, each with a back yard, but only Paul has traded grass, swimming pools and lawn furniture for one-third of an acre of hostas in all shapes, sizes and colors.

Making an appointment to view the garden is difficult; Aden's schedule consists of equal amounts of gardening and traveling, much of it worldwide. We visited in June of last year, shortly after members of the Garden Writers Association of America had toured the garden and just before Paul left on a lecture tour to England. He drove over 2,000 miles while in England; the following quote from the newsletter of the Hardy Plant Society (HPS) is just a small sampling of his visit there: "In September, HPS members, together with the British Hosta and Hemerocallis Society, had the opportunity of meeting Paul Aden, American nurseryman and plant breeder. He gave us an entertaining lecture at Wisley and showed slides of tissue-cultured *Hosta* introductions such as *H. 'Reversed'* (a variegated sport of *H. fortunei* var. *hyacinthina*), *H. 'Zounds'* (heavily puckered golden foliage with a metallic sheen) and *H. 'Flamboyant'* (growing in the National Collection at Wisley). Aden also showed slides of other variegated perennial plants on his list: *Aquilegia flabellata* (formerly *A. akitensis*), *Arisaema sikokianum* and *A. asitense*, and *Bletilla striata* 'Variegata'."

A typical introduction to an Aden lec-



Peter Loewer

ABOVE: Paul Aden examining *Hosta fluctuans* 'Variegated' in his garden. LEFT: Daylilies, variegated yucca, liriopie and a variety of hostas make an attractive island bed in Aden's garden.

ture goes something like this: "Our speaker is a retired physics teacher and is often called 'Mr. Hosta.' He could also be called a true plant entrepreneur. His secret is that he has managed to make a good living in horticulture after only 40 years of effort. The pattern sounds simple enough: Paul discovers or develops variegated perennials, and gardeners in the United States, England, Europe and Japan buy lots of them every year. Although our guest believes that plants must sell themselves, his talk will focus on important shade perennials, with a particular emphasis on hostas."

Aden's garden begins the moment you step from your car onto his driveway. The front yard is a brilliant bed of *Hosta* 'Piedmont Gold', which has ruffled yellow leaves that sparkle in the morning sun. As you walk around the side of the house by way of a carefully tended grass path, you pass many more cultivars of these beautiful plants, until reaching the back yard, where a kaleidoscopic world of greens greets the

eye. Round and oval island beds divided by grass or stone paths cover the entire yard. One bed is a mix of blue, green and yellow hostas, their oval or arrow-shaped leaves set against three dwarf Alberta spruce. To one side are a dwarf rhododendron, a Japanese painted fern (*Athyrium goeringianum* 'Pictum') and variegated grasses. Another island consists of a border of variegated liriopie (*Liriope muscari* 'Variegata') surrounding a group of hybrid daylilies, including *Hemerocallis* 'Eenie Weenie', a vigorous dwarf with light yellow flowers that Paul developed.

It is in this garden that Paul Aden has studied and tested the most extensive collection of hostas available. His island beds are small laboratories where sun tolerance, drought resistance, flower quality and the stability of variegations can be observed and measured. And it is here that he works with Klehm Nursery of Illinois to hybridize and develop new American hostas for the gardens of tomorrow. In fact, much of the garden is in a continual state of flux, as new plants arrive for testing and older cultivars are removed; approximately one-third of the display changes every year.

As we walked around Paul's garden on that June morning, I asked him what was the long route (I knew it had to be) that eventually led him to hostas.

"I think back," he said, "to the war years when I was a merchant seaman who played a harmonica to ocean sing-alongs, then to being a film producer, to a fling at advertising with more travel than even I wanted to endure, to high school physics, and finally a hosta expert and plant developer."

"Bringing a plant to the point where it's ready for market is not an easy job. Every unusual hosta now in the garden catalogues represents years of growing and testing; most of the plants are thrown away as unsuitable."

But why hostas? I asked.

"Because they are a perfect low-maintenance plant that serves people. Hostas

PLANTS & PEOPLE

are not, in my judgment, going to fade from the fashionable garden scene. They are a basic landscape tool that combines many color variations, has attractive flowers, does well in the shade and can live for over 100 years in one spot."

I thought of the old country gardens I've seen where a lifetime of toil has been overgrown with weeds and untended bushes and trees, but where, in one corner, a large clump of *Hosta fortunei* persists and blooms in the shade.

"While a few *Hosta* species come from Korea and China," he continued, "most have undoubtedly originated from Japan. They were named in honor of Nicolaus Host, a physician to the Emperor in Vienna in the early 1800's. And, I think, when originally called funkias, they were named after another German doctor, Heinrich Christian Funck."

We stopped to admire a fine clump of *H. fluctuans* 'Variegated', and in the distance heard the baseball game from the Baldwin High School athletic field that borders the back of the Aden garden.

"I'll never forget," he said, "the number of Japanese horticultural magazines that

printed pictures and articles featuring our *Hosta* hybrids, and how difficult it was to translate from the Japanese language. Then when the Japanese Horticultural Society invited me to visit and lecture on these plants, and were willing to provide a translator, I *had* to go. It was amazing to go back to a hotel after an interview and see myself talking in Japanese on a color TV."

We continued to talk as we walked past the perfectly tended beds of hostas in endless shades of green, yellow and white, many of which were in bloom or were sharing space with ferns, other unusual variegated plants (Paul has a special liking for these) and charming daylilies of all colors and sizes.

I expressed amazement at the sheer numbers of plants in a back yard garden.

"You don't need a lot of space to have a garden of your own," he said. "I feel sorry for people who have a vast tract of grass but feel they haven't the room for a grand garden. In this relatively small area I have three or four microclimates, and I feel like an amateur sleuth as I find out just what a particular plant will do."

The afternoon grew warmer, and the

sun could be felt even through the canopy of trees in the yard. I asked Paul how much shade these plants would endure.

"The blue-leaved types do their best in shade—full shade to one-half sun," he replied. "The greens adapt to most situations—one-quarter sun to full sun. The golds prefer a moderate amount of sun (from one-quarter to one-half), and the variegated varieties, one-quarter sun to three-quarters sun."

He paused to look at a new cultivar of *Athyrium goeringianum*, a beautiful fern that was growing next to a clump of *Hakonechloa macra* 'Aureola', that most magnificent of grasses from Japan.

"Another thing I noticed in Japan was that there were more hostas in gardens that belonged to older gardeners. Their reasoning was that most gardens get shadier as they get older, and most gardeners get older as their gardens get shadier."

We walked on in the shade. ☼

—Peter Loewer

Peter Loewer is a botanical artist and scientific illustrator who writes and illustrates his own books. He is the author of *Peter Loewer's Month-By-Month Garden Almanac*.

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Eliza Lucas Pinckney— Colonial Gardener

Women have always been at home in the garden, and Eliza Lucas Pinckney was no exception. A major pioneering horticulturist in the American colonies, she loved “the vegetable world extremely,” and experimented with growing ginger, cotton, alfalfa and cassava in an attempt to bring them “to perfection.” She is most famous for her experiments in indigo culture, which she began when she was 17 years old. Through her persistent efforts, indigo became a valuable cash crop in South Carolina.

Eliza was born on the island of Antigua in 1722 but, like most children of well-to-do English colonists, was educated in England, under the care of her parents’ friends, the Bodicotts. Her father, George Lucas, was a sugar planter and lieutenant colonel in the British Army. After living in Antigua for some time, he decided to move his two daughters and semi-invalid wife to South Carolina. He had inherited three plantations there from his father, John, who had also been an Antiguan sugar planter. George Lucas was hopeful that a change in climate would help his sickly wife. He also feared a renewal of hostilities with the Spanish, and thought South Carolina might be a safer place to live.

He settled his family on a 600-acre plantation along Wapoo Creek, six miles by water from Charleston and 17 miles over land. From there, he also directed the operations of 1,500-acre Garden Hill on the Combahee River, and the 3,000 acres of rice-growing lands he owned along the Waccamaw River.

The Lucases had barely begun their new life in South Carolina when, in 1739, the feared hostilities with Spain erupted, and Major Lucas was recalled to Antigua. He apparently realized what an extraordinary eldest daughter he had, for he seemed to have no qualms about leaving such a young girl in charge of his properties. Whether or not her father influenced her love of horticulture or merely cultivated an already existing passion, there is no doubt



Eliza Lucas Pinckney concentrated her horticultural energies on making indigo a viable export crop for South Carolina planters. Not only did indigo require careful soil preparation and cultivation, but the dye-making process was extremely complex, as this illustration depicts.

that Eliza was happy in her new, challenging life. Although she made friends easily and occasionally joined the social world of Charleston, she also had a “love of solitude” and a desire to succeed in the variety of tasks she had set for herself. “To be happy we must have one steady rule for our conduct in life. We must consult reason and follow where that directs,” she wrote to Mrs. Bodicott in England. And so she rigorously adhered to a daily schedule that appalled some of her more traditionally minded female neighbors.

Every morning she arose at 5:00 a.m. and read such writers as Plutarch and Locke. She particularly liked Virgil, whose “calm and pleasing diction about pastoral and gardening” seemed comparable to what she experienced during a South Carolina spring: “I am so much delighted that had I but the fine soft language of our poet to paint it properly I should give you but little

respice.” She did have, however, the deft pen of an indefatigable letter-writer, and enthusiastically described “the beauties of pure nature unassisted by art.” In one letter, for example, she noted that in spring “the majestic pine imperceptibly puts on a fresher green, the young myrtle joining its fragrance to that of the Jesamin of golden hue [which] perfumes all the woods and regales the rural wander[er] with its sweets; the daisies, the honeysuckles, and a thousand nameless beauties of the woods.”

All this and more Eliza observed beginning at 7:00 a.m., when she left her reading to walk in the garden and check that her “servants [were] at their respective business.” Then she had breakfast, followed by an hour of “musick,” which meant practicing the harpsichord. The rest of the morning she devoted to French, shorthand and teaching her younger sister Polly, as well as two little servant girls, how to read.



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GARDENING IN HISTORY

Dinner was followed by another hour of music. Then the rest of the afternoon, until candlelight, she spent at needlework. Reading or writing letters occupied the rest of her evening. Some days she visited nearby neighbors, helping the poorer ones by writing out wills for them, a skill she learned from reading Thomas Wood's *Institute of the Laws of England*. This, she admitted, was a dull and difficult tome to read and understand, but she felt an obligation to help her struggling neighbors.

Her mind seemed to buzz with horticultural schemes. She planted a fig orchard in hopes that someday she would dry and export the fruit. She also created "a large plantation of oaks," and in the spring of 1742, planted a cedar grove with the intention of eventually filling it "with all kind of flowers, as well wild as Garden flowers with seats of Camomil and here and there a fruit tree—oranges, nectrons, Plumbs."

Most of Eliza's horticultural energies, however, were concentrated on making indigo a viable export crop for South Carolinian planters. Others had tried before her but had not been successful, and England continued to purchase indigo dye cakes from French colonies in the West Indies. Letters went out to her father every year reporting her progress in growing indigo. By July of 1740, she felt she could make a success of it if he would only send her seed earlier the next spring. Apparently, even from that crop, which was killed by frost before it had dried, she managed to pick out some good seed to plant, but only 100 bushels came up. Nevertheless, she was certain that if her father sent her seed in time for her to plant it by the latter part of March, the crop would dry before frost.

Her father sent her not only seed but Nicholas Cromwell of Montserrat, who was an expert "indigo maker," as the head man was called. Expert or not, both he and his brother spoiled the dye during the crucial fermentation period—probably because they did not want South Carolina to rival their native island in indigo production. Lucas finally sent out an unidentified black man from one of the French islands to serve as chief indigo maker, and Wapoo produced its first successful dye cakes in 1744.

The cultivation of indigo was not easy. The soil had to be carefully prepared, and once the bushes began to grow they had to be watched until the crucial moment, just before blooming, when the leaves were

ready to be cut. The leaves were then steeped in water in large vats open to the sun until they fermented and turned the water a greenish color. This fermentation process took several days and was observed both day and night by teams of men directed by the indigo maker, who never left the premises. When he decided the process was complete, the solution was strained and poured into a second vat, along with a small amount of limewater, where it was beaten with paddles until it began to thicken. This agitation determined the final color of the dye, since the longer the mixture was beaten, the darker the color became. Finally, the solution was put into a third vat and allowed to settle before the clear water was drawn off, leaving a sediment that was formed into dye cakes. After the cakes were carefully dried in the shade, they were ready for market.

While Eliza struggled with indigo production, she continued to send progress reports to her father on other experimental crops. On June 4, 1741, she wrote from Wapoo that "the Cotton, Guiney corn, and most of the Ginger planted here was cut off by a frost" and, furthermore, that "the Lucern [alfalfa] is yet but dwindling." She decided, in 1742, to "try deferent soils for the Lucern grass." In addition, the ginger had turned out poorly.

Despite the horticultural tasks she had set for herself, Eliza always had time to enjoy the natural world around her. She took special delight in the mockingbird, "her little darling that sweet harmonist" who inspired her to write a poem while she was lacing her stays! And, in the spring of 1742, she spent one evening watching a comet: "To my unphilosophical Eyes [the light] seems to be natural and all its own. How much it may borrow from the sun I am not astronomer enough to tell."

Such an active, intelligent girl did not go unnoticed among Charleston's gentry, and Eliza was invited to many social gatherings. Evidently, she made enough of a stir to excite the interest of at least two men who asked her father for permission to marry her. But Eliza turned them both down, writing to her father that "a single life is my only choice and if it were not as I am yet but Eighteen, hope you will [put] aside the thoughts of my marrying yet these 2 or 3 years at least."

In the meantime, Eliza continued to accept as many invitations as she could find time for. She seemed particularly fond of Elizabeth Pinckney and her niece, who was

visiting from England. When the three women were not together, letters flew back and forth between Wapoo and Bellmont, the Pinckneys' plantation. Elizabeth's husband, Charles Pinckney, also liked Eliza, especially since she enjoyed reading so much. It was he who lent her books and talked to her about them, and his name was always mentioned in Eliza's letters to his wife and niece.

Elizabeth, who had been an invalid for years, died of an enlarged spleen in January 1744. At the same time, George Lucas decided he would never be able to return to South Carolina, since he had been made lieutenant governor of Antigua, so he sent his son George to Wapoo to bring his wife and daughters back to the West Indies. It looked as if Eliza's days of experimenting were over.

Suddenly, to everyone's surprise, Charles Pinckney proposed to Eliza, and she quickly accepted. By May of 1744 they were husband and wife, and Eliza entered the most joyful years of her life. Despite the age disparity (he was 45 and she was 22), there was no doubt that it was a love match. Charles was a successful lawyer and planter with "a charming temper and disposition, gay and courteous manners, well-looking, well-educated and of high religious principles." Eliza, as usual, revealed her feelings by letter: "I have the greatest esteem and affection imaginable for you; that next to Him that form'd it, my heart is entirely at your disposal."

She moved to Bellmont, which was only 15 miles from Charleston and overlooked a tributary of the Cooper River, but she and Charles continued to oversee the cultivation of indigo on both their own and her father's plantations. The summer after their marriage, they gave indigo seed to any planter who promised to raise and export it, and Charles sent six pounds of the blue dye made from the Wapoo crop to South Carolina's London agent, James Crockott, for an expert opinion on its quality. It turned out to be excellent, and a worthy substitute for the West Indies product. In 1745 indigo valued at 225 English pounds was exported to London from the Lucas Combahee plantation alone. Other planters who had gotten seed from the Pinckneys were equally successful. Eliza Lucas Pinckney had fulfilled her primary horticultural dream: to make indigo a profitable crop for South Carolina. As historian Edward McCrady put it, "Indigo proved more really beneficial to Carolina

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GARDENING IN HISTORY

than the mines of Mexico or Peru were to Spain. . . . The source of this vast wealth . . . was the result of an experiment by a mere girl."

But Eliza was now a wife and a mother. Charles Cotesworth was born in 1746, followed in 1747 by George, who was named for Eliza's father. Little George did not survive his premature birth, which was caused by Eliza's shock when she learned that her father had died. Eliza took the losses of both Georges hard, but her daughter Harriott, born the following year, eased her heartache. In 1750 the birth of the Pinckneys' last child, Thomas, completed the family circle.

While Eliza struggled with indigo production, she continued to send progress reports to her father on other experimental crops.

During her early years as a wife and mother, Eliza probably still wrote letters, but most of them have not survived. She evidently continued her interest in horticultural experiments, planting trees at Belmont and embarking on the cultivation of silk. She sent to Europe for the eggs of the silkworm, and planted mulberry bushes. Slave children gathered the mulberry leaves and fed the worms while Eliza and her maids wound the silk.

Charles, in the meantime, continued to rise in his profession, and in 1752 he was appointed chief justice of South Carolina by the Royal Governor. However, his career took a sudden turn for the worse the following year when the King of England made his own counter-appointment—Peter Leigh, formerly high bailiff of Westminster, London, and evidently a political thorn in the King's side. Embittered by the way he had been treated, Pinckney decided to take his family to England. Eliza had remembered her school days there with fondness, and both parents wanted their children to have the benefits of an English education. As a consolation prize to Charles, the governor appointed him special agent for South Carolina in London.

This temporary position lasted for four years while Eliza, whose letters resumed during her English sojourn, enjoyed renewing old friendships and making new

ones. In 1757 Charles's special position ended. At about the same time, he learned his brother, who had been overseeing his affairs in South Carolina, had suffered a stroke. Charles decided it was time to return home to set his affairs in order, and he and Eliza, with their daughter Harriott, set sail in May 1758. The boys stayed in England with friends to continue their education.

The Pinckneys received an enthusiastic welcome from their friends and neighbors, and Charles immediately set out to revive his neglected plantations. But summer in the southern countryside was dangerous, and many planters moved into Charleston to escape the fever. Charles almost immediately contracted malaria, and within three weeks he was dead.

It seemed to Eliza as if her life had ended on July 12, 1758. "Earth has no more charms for me," she wrote to her mother in Antigua. Only her belief in an afterlife and her responsibilities toward her three children sustained her during the next four years. Eliza mourned long and bitterly, and at least twice came close to dying herself from mysterious illnesses and fevers. Slowly,

painfully, letters went out to friends, to her London agent, to her sons and their guardians, to her sister and mother, telling of her great loss. "I had lived for more than 14 years in the most uninterrupted felicity with one of the most worthy and best of men, that ever woman was blessed with; his mind and temper were the most unexceptionable I ever met with or heard of in a human being, and to me the most tender, partial, and affectionate of husbands, nor had ever an angry moment in that time. He was every thing that was amiable to me," she wrote to her friend Mrs. King in England.

Once again her interest in horticulture occupied her time, helping to turn her sorrowful mind from death back to life. Someone had to oversee the plantations and make them profitable enough to support a widow and three children. "It requires great care, attention and activity to attend properly to a Carolina Estate," she wrote, "tho' but a moderate one, to do ones duty and make it turn to account, that I find I have as much business as I can go through of one sort or other. . . . But a variety of employment gives my

thoughts a relief from melloncholy subjects, . . . and gives me air and exercise."

Eliza devoted much care and attention to Belmont. As the head gardener, she worked hard to revitalize the garden, which she had found in ruins when she had returned from England. Not only did she have a wood to clear, she also wanted to plant groves of trees and to modernize the old garden. Nursery planting, sending seeds to friends in England, reading and raising Harriott were her chief occupations.

Harriott, it turned out, was "fond of learning." "I indulge her in it," Eliza wrote. "It shall not be my fault if she roams abroad for amusement, as I believe tis want of knowing how to employ themselves agreeably that make many women too fond of going abroad." Women, she believed, were capable of both friendship and business, so she trained her daughter as she had been trained: "to love a book and a garden."

She also continued to write letters. Her most important correspondents were her two young sons in England, whom she encouraged to be upright and honorable, as their father had been. Although she did not see them again until they had finished

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GARDENING IN HISTORY

their law training, they became the kind of sons she had hoped for.

Her children, her horticultural interests, her reading and her memories of Charles kept her occupied and happy for the rest of her long life. She did receive at least one marriage proposal, sometime in 1761. However, as she wrote to Mrs. King, she was not interested: "In point of fortune [it] must have been to my advantage, but as entering into a second marriage never once entered into my head and as little into my inclination—and I am persuaded never will—the affair took not a moment's hesitation to determine."

Eliza was a lover of trees, particularly of the "oaks which we have of Various sorts [and] fine Magnolia which in low moist land . . . grow to a very great height." She planned to send acorns and seeds from the trees and to "plant a nursery here to be sent you [the Kings] in plants at 2 year old." The following year, in 1761, she sent Mr. King seeds of magnolia, which she thought was "the most beautiful of all trees." The palmetto royal, which she called "Pennento Royal," was another favorite of hers: "[It] bears the most noble bunch of flowers I ever saw. The main stem of the bunch is a foot and a half or two foot long with some hundreds of white flowers hanging pendant upon it!"

She sent the seeds of myrtle to her friends in the belief that the plant would do well in England: "Our winters are sometimes very cold. They grow in the woods and are never hurt." According to Eliza's biographer, Harriott Horry Ravenel, this myrtle was the sweet myrtle that now grows throughout the southern coastal regions and produces berries from which pale green candles were once made.

The decades passed pleasantly for Eliza. She spent four or five months of the year at Bellmont, "quite in a forrest where I find much amusement . . . and where I have room enough to exercise my [gardening] Genius." Harriott married an older planter, Daniel Horry, when she was 19, and Eliza often visited her at her home, Hampton Plantation. Her sons, who finally returned to South Carolina, married and started their own families, and Eliza was content.

But the war with England soon broke out, and her sons and son-in-law did not hesitate to join the American cause. Eliza, too, never wavered from her support of the patriots, despite strong ties to English friends and to American royalists—in particular, her horticultural friend, Dr. Alex-

ander Garden. Even when she lost most of her hard-earned financial stability through the years of British occupation of South Carolina, her patriotism was unwavering.

Once the war ended, her sons were able to care for her. By then Harriott, like her mother, was a widow left with a daughter to raise, so they all lived together at Hampton Plantation. Shortly thereafter, Charles Cotesworth's wife died, leaving three young daughters, whom Harriott and Eliza also decided to raise. One day in 1791, this proud household of females hosted George Washington at breakfast. Washington knew of Eliza's sons, both of whom had distinguished themselves during and after the war, just as their father would have wanted. Charles Cotesworth, a prominent lawyer, was sent as one of South Carolina's delegates to the Constitutional Convention in 1787, and Thomas was governor of South Carolina and the man who negotiated the Pinckney Treaty with Spain.

Eliza's blood was in her sons, too, since both enjoyed experimenting in horticulture as much as their mother always had. Charles Cotesworth, who had inherited Pinckney Island from his father's estate, was one of the early planters of sea-island cotton. Thomas hired a Dutch engineer named Van Hassel, who devised a system of embankment that made the salt marshes along the Santee River profitable for planting rice. In addition, Thomas shared his scientific farming expertise with his fellow planters, much as his mother had shared her knowledge and her indigo seeds 50 years before.

A year after Washington's visit, Eliza was stricken with cancer. She traveled to see a cancer specialist in Philadelphia, where she died on May 26, 1793. Ironically, Eliza Pinckney—the woman who had done so much for South Carolina—was buried in St. Peter's churchyard in Philadelphia. President George Washington was one of her pallbearers, at his request. Washington probably recognized that in addition to raising two fine patriotic sons, the remarkable little woman, who had been "very early fond of the vegetable world" and "an inthusiaste in her Veneration for fine trees," had left her adopted country a fine horticultural legacy. —Marcia Bonta

Marcia Bonta, a weekly columnist for the *Altoona Mirror*, has written for *The Conservationist*, *Bird Watcher's Digest* and *Pennsylvania Heritage*. Her most recent article in *American Horticulturist*, "Alice Eastwood," appeared in October 1983.

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In gardening, as in life, the most interesting things happen when we are forced to discard old perceptions and look at the world with a fresh, unprejudiced eye.

The current, almost exploding interest in drought-tolerant and soil-indifferent native shrubs in the High Plains and Rocky Mountain West started with the disenchantment of fatigued gardeners in this area of the country. Too few of us can afford to maintain lush landscapes that need good soil, tropical breezes and enough water to float an ocean liner.

But everywhere gardeners are in search of that Holy Grail, the beautiful garden, and few become attached to ugly shrubs, no matter how practical. So in the semiarid land of the intermountain West—with its poor soil, hot summers and cold winters—shrubs must be like the heroines in old Westerns: tough but beautiful.

The semiarid country of the western United States is roughly defined by the western third of the Dakotas, down to west Texas, across to eastern California, north through Nevada and the eastern end of Washington, ending in Montana at the Canadian border. Although this area includes frost-free, low-elevation deserts (for example, in southern Arizona and southern California), much of the semiarid country is high plains or mountains, where temperatures range from below zero in winter to the low 90's in summer. Annual precipitation ranges from as little as eight inches on the high plains to as much as 40 inches in the alpine zone.

The East Coast, West Coast or mid-western gardener who wants to grow shrubs that are native to this large area should keep in mind the immense variation in growing conditions in the mountain and high plains states. The massive thrust of the Rockies affects many things: winds, temperatures, precipitation and soil pH, among others. At lower elevations, where vegetation is sparse, soils are apt to be sandy or clay-like and alkaline (pH 7.5 to

BY IRENE MITCHELL

8.5). At high altitudes, increased precipitation and larger amounts of rotting organic matter create neutral or slightly acid soils.

Botanical diversity is guaranteed by the altitude extremes (from 2,000 feet to over 14,000 feet above sea level) in this region. A hiker can start a walk up a mountainside in the cactus zone, continue to the wetter and colder hardy conifer zone, and finally end up in a zone where melting glacial snows feed wet areas inhabited by plants such as the bog orchids (*Habenaria* spp.) and hardy water lilies.

The one common denominator that all of the zones have is the climate, which is usually harsh. Because of the mountains, most of this area does not enjoy the modifying effects of adequate periodic precipitation. Many of the shrubs from this area are successfully cultivated in other parts of the country simply because they can adapt to extremes of climate or humus-poor soils like those of their native habitat. For example, Rocky Mountain juniper, sumac and shrubby potentilla—all arid western natives—grow well throughout the country because they are tough plants that can adapt to extremes.

The plants recommended below are not cold-tender, low-desert plants. Although most do not thrive with wet feet, even the drought-adapted shrubs easily endure sub-zero temperatures, which are common in the semiarid, pinyon-pine-juniper zone (located about 5,000 to 7,000 feet above sea level in New Mexico and Colorado). Those native to the higher country (above 9,000 feet), where more moisture and richer soils prevail, often endure snow-blanketed winters of -40° F.

In general, the shrubs described here are probably adaptable to most parts of the country, except for the Southeast or rainy Northwest, where highly acid soils and excessive soil moisture may interfere with

good growth. Where soils are slightly wetter than in the plants' native habitat (for example, the North-Central or midwestern states), a gardener can often succeed by simply planting these shrubs on sloping ground, in raised planters, or slightly above the normal soil level. (At one time, English gardeners effectively used yuccas in their soggy gardens by putting the plants on a mound of soil; this practice also created an interesting change in terrain.)

In gardens of the mountain and high plains region, these shrubs harmonize with the existing landscape and are, of course, already well adapted to existing conditions. Because they need no supplemental watering, they are valuable to gardeners who are concerned about dwindling water supplies.

In other parts of the country, these shrubs can be grown for their unusual coloration or form—to provide a contrast to the prevailing lush greenery or a grouping of boulders. They are worth trying in difficult places, such as seaside gardens, along roadsides, in spots where erosion control is necessary, or in wildlife habitat. Some are restrained enough in growth (or can be contained enough by pruning) that they could easily fit into the conventional garden as long as their soil and light requirements are met.

A gardener accustomed to the lush green foliage and bright flower colors of rhododendrons may at first be disappointed in native western shrubs. But a closer look reveals a beauty that is far more subtle—specifically, a beauty that relies on unusual foliage colors (such as silver-grays or blues), unique foliage shape or branching patterns, winter color and dainty—often ethereal—flowers and seed heads. Like the plants in an Oriental garden, these shrubs have a kind of austere grace that invites contemplation, and are therefore appro-

Sagebrush, *Artemisia* sp., is a member of the daisy family, Compositae. Its striking silver-blue foliage can lend a dramatic touch to a dry, sunny spot.





priate for use as specimen plants.

The tallest of these intermountain shrubs are most interesting when used as specimen plants, either singly or in small groups. Few shrubs can outshine the red-osier dogwood, *Cornus sericea* (formerly *C. stolonifera*), in winter. About six feet high and almost as wide, it produces a vase-shaped clump of scarlet branches that bring fire to the snowy landscape. Native to mountain streamsides, red-osier dogwood prefers a sunny spot in woody soil and an occasional deep soaking during droughts. Maintenance usually consists of pruning—to the ground—some of the older canes each spring to encourage growth of new, more brilliantly colored young canes.

More interesting for its fiery-red autumn foliage is *Rhus glabra*, commonly called smooth sumac. It is a close relative of *R. typhina*, the staghorn sumac listed in many nursery catalogues. Both are large shrubs: *R. glabra* ranges from nine to 15 feet tall, depending on soil moisture; *R. typhina*, which can grow to 25 feet or more, is the size of a small tree. Neither is suitable for the small garden, but both make brilliant additions to the fall foliage display if planted in clumps at the edge of a sunny meadow. These pest-free plants need pruning and thinning only when their natural aggressive tendencies threaten the rest of the landscape.

Although the two species closely resemble each other, *R. glabra* has smooth branches, while *R. typhina* has fuzzy ones (hence its common name). My personal preference is for *R. typhina* 'Laciniata' (*Hortus Third* lists cultivars by this name under both species), which has delicately cut leaves that add to the plant's charm. Cut-leaf sumacs are equally at home in swamps or deserts, sandy or clay soils, and their lacy appearance belies their ruggedness.

Like the sumacs, plants in the genus *Sambucus* bear attractive fruits that delight both the eye and the bird population. Red elderberry, *S. pubens* (also listed as *S. racemosa* subsp. *pubens*), is often spotted along mountain passes in the Rockies. It is a bushy plant with pinnately compound leaves, a creamy-white flower head composed of many tiny florets, and brilliant scarlet, bitter-tasting berries that appear in large clusters from midsummer to fall.

In rich soil with adequate water, elderberry can grow as tall as eight to 10 feet and as wide as six feet, though it is easily

kept more compact by pruning. It would make a nice specimen plant in a large garden, since it is attractive throughout the seasons. Hardy to at least -20° F, elderberry will also survive considerable drought.

Picturesque in a more sophisticated way is the cool silver-blue *Artemisia tridentata*, the West's famous big sagebrush. This craggy bush, which normally reaches a height and width of seven feet, can be pruned severely to a compact shape rem-

thamnus nauseosus, is a fast-growing shrub with gray-green stems and foliage and a loose, airy habit of growth resembling that of broom. About five feet tall and five feet wide, it makes a fine informal hedge and is crowned each October with a sunny blaze of goldenrod-like flowers. *C. nauseosus* endures alkaline soils, heat and drought, but must have good drainage. Easily started from seed, it makes an effective erosion control planting in a year's time. Because



iniscent of an iced-over waterfall in the moonlight. One landscape designer has used sagebrush, combined with a stark setting of gravel and river rocks, to dramatize a small, sunny, square courtyard at the entrance to a townhouse. Deep but sandy, well-drained soil and a location with full sun encourage compact growth and bluer foliage.

Some native junipers are straggly trees, but the evergreen Rocky Mountain juniper, *Juniperus scopulorum*, has been an accent plant in gardens all over the country for years because of its columnar shape and neat, blue-green foliage. The many cultivars differ mainly in foliage color and compactness. The tall evergreen spires, which often reach 12 feet or more in height but only one to two feet in width, are well suited for growing in narrow places. Some of the newest cultivars remain tight, narrow cones of feathery foliage and are good choices for smaller gardens. Graceful, weeping forms have also been developed. All retain their compact growth and finest color in full sun, although they will adapt to shade.

Several high plains and mountain shrubs are of more compact growth than the above, or, at least, can be kept lower with pruning. Rabbitbrush or chamisa, *Chryso-*

it tends to become invasive, it should be restricted to meadowland or roadsides.

Mountain mahogany, *Cercocarpus montanus*, is an excellent plant for use as an individual specimen. Its burgundy-colored branches bear small, deep green, crinkled and serrated leaves. This shrub has an upright, vase-like shape and grows to about six feet high and three to four feet wide at the top. Its flowers are barely noticeable; the shrub's real appeal is in the seed heads, whose plumed, feathery curls cover the plant in the winter.

Mountain spray or rock spiraea, *Holodiscus dumosus*, is often mistaken for some kind of wild spiraea. It has leaves much like those of spiraea, as well as exfoliating reddish bark and large, often pendent plumes of creamy flowers. Ornamental enough to serve as a specimen, this species grows about six feet high and about four feet wide, in a graceful, arching fountain shape. It is a fast-growing and potentially very useful species that is relatively unknown even in the Rockies, its native habitat. Like mountain mahogany and rabbitbrush, it needs full sun and good drainage.

Another seldom-cultivated shrub with unusual seed heads is *Fallugia paradoxa*. Its common name, apache-plume, aptly

LEFT: Red elderberry, *Sambucus racemosa*, is known for its attractive fruit and creamy-white flowers. ABOVE: Clumps of smooth sumac, *Rhus glabra*, would provide stunning autumn color in any large garden.



describes the pinkish, feather-duster-like seed heads, which are often present at the same time as the flowers. A slow grower, apache-plume is a member of the rose family and bears one-inch, white flowers in May and June, like those of the strawberry. The waving seed heads quickly attract attention in the autumn sun.

F. paradoxa is a three-foot-high shrub with a spreading vase shape. Because it is native to dry, rocky slopes at the lower elevations of the Rockies, it may be difficult to cultivate in gardens in wetter portions of the United States. However, its resistance to drought makes it a likely candidate for a south-facing exposed slope where nothing else will grow.

An eye-catcher in all seasons is the mountain ninebark, *Physocarpus monogynus*, whose leaves resemble those of a currant and whose spring flowers are borne in small, pink-white umbels. In autumn, the foliage turns bright red. Winter reveals the interesting red-brown bark, which, like that of the birch, tends to peel off in thin curls.

As far as I know, rabbitbrush, mountain mahogany, mountain spray, apache-plume and ninebark have not been extensively cultivated in other parts of the country, but there is no reason why an experimentally minded gardener cannot try them if he or she can provide sunshine and well-drained soil. Sagebrush, which has similar requirements, has been grown successfully in midwestern gardens.

Few gardeners or landscape designers need to be introduced to the yellow-flowered shrubby cinquefoil, *Potentilla fruticosa*. A neat, two- to three-foot shrub that never grows out of bounds, this species is rugged and pest-free, and adapts to almost any garden. There are many cultivars of shrubby potentillas, all of which will stay below three feet in height and form rounded shrubs. Some cultivars are even more compact, however, reaching only 18 inches in height. Because there are so many good cultivars with flowers of yellow, white, red or orange, most nurseries offer these improved versions rather than the original species. The yellow- or white-flowered cultivars are the most dependable.

Lest I give the impression that growing conditions are always hot and dry in the West, I would like to mention two shrubs that are native to the moister, cooler and richer soil that borders the high country's

snow-fed streams. Thimbleberry, *Rubus parviflorus*, grows well in rich soil in a partially shaded spot. It has a loose, branching growth habit and usually grows no higher than four feet. This shrub—with wide lobed leaves like those of a maple, and a graceful, two-inch flower like a single rose—belongs in woodland areas. Flowers are followed by edible, raspberry-like berries.

Another shade-lover, *Symphoricarpos*



Irene Mitchell

occidentalis, commonly called Indian currant snowberry, bears porcelain-pale pink berries. This plant's neat, four-foot-tall growth habit and pretty berries that attract birds make it suitable for use as a low, untrimmed hedge. Like potentillas, snowberries have long been recognized by the nursery trade, and there are several attractive cultivars, including one with coral-colored berries.

In the higher country (above 7,000 feet), where soil is less alkaline than on the plains, shrubs that are related to East Coast plants appear. Two creeping, two-inch-high evergreen ground covers are bearberry, *Arctostaphylos uva-ursi*, and mountain-lover or Oregon boxwood, *Paxistima myrsinites*. Both have tiny, leathery leaves and are often mistaken for each other. However, *P. myrsinites* has a symmetrical leaf arrangement with opposite leaves, while bearberry displays an alternate leaf arrangement. Also known as kinnikinick, bearberry has dainty, pink, urn-shaped flowers, which are followed by bright red berries. Because it is evergreen, it is used as a substitute for holly in Christmas decorations. Though fairly slow-growing and difficult to transplant, both of these tiny broadleaf evergreens make durable and very neat ground covers.

Creeping holly grape, *Mahonia repens*, is another good ground cover, though it often reaches a foot in height. This plant has blue-green, toothed leaves, much like the leaves of the taller, more familiar Oregon grape, *Mahonia aquifolium*. It is unusual in that it thrives in dry, shady spots. Like its larger cousin, it bears pretty yellow flowers in spring, followed by clusters of blue-black berries that are attractive to birds.

All three plants—*Arctostaphylos uva-ursi*, *Paxistima myrsinites* and *Mahonia repens*—would be good choices for covering the bare soil under a large tree. They are well adapted to growing in dry, poor soil in the shade, and will send runners and roots down far enough to compete with the roots of large trees.

Although all of these shrubs can tolerate poor soils and require very little watering once established, they do need the same attention given to other shrubs during their first year. Compacted clay soils should be loosened with organic matter and sand. In moister climates, plant these shrubs on a slope or mound of soil to provide good drainage. During the first season, soak the soil weekly (when there is no rain) and add a moisture-retentive mulch to encourage strong, deep root development.

In subsequent years, such plants need watering only when there has been a prolonged drought lasting six months or more. Withholding fertilizer and pruning once a year will help preserve the natural, compact growth habit of these tough western beauties. ☼

Irene Mitchell is a garden writer with a special interest in native plants. She gardens at an altitude of 7,000 feet in Santa Fe, New Mexico.

LEFT: Thimbleberry, *Rubus parviflorus*, and western sword ferns, *Polystichum munitum*, thrive in shade and rich soil. INSET: The flowers of *Rubus parviflorus*. ABOVE: *Potentilla fruticosa* is a well-known western native that is both rugged and pest-free.



The Abby Aldrich Rockefeller Garden

BY MARGARET PARKE

Once in a while, if you are lucky, you enter a garden where the true meaning of “the art of landscape design” is realized. When this happens, the experience forever changes your notion of what a garden is—or can be. This may happen on a grand scale—perhaps while visiting Sissinghurst or Hidcote—or unexpectedly, when a newfound friend modestly shows you his or her garden, the result of 30 years of dedicated nurturing and love.

The Abby Aldrich Rockefeller Garden is such a garden. Located on 2½ acres at Seal Harbor on Mount Desert Island, Maine, it is distinguished by a unique blend of East and West that is hauntingly unforgettable; antique Asiatic sculptures inhabit the garden alongside opulent English flower borders that take one’s breath away. Moreover, beginning with the rosy-red stucco wall, which encloses the garden on three sides and glows through the evergreen forest as one approaches, the garden is a place where the line between fantasy and reality is blurred.

On most days there is an unobtrusive sign, similar to others along the sun-bleached roads on the island, near the driveway entrance that says “Private Property.” On the approximately six days in late summer when the garden is open to the public, no sign marks the entrance. If you were to drive from Northeast Harbor along Route 3 to Seal Harbor hoping to come upon the Rockefeller Garden without further directions, chances are you would pass by it, for the garden is not visible from the road. Fortunately, the road

ends about a mile further down the road, at Seal Harbor, and any of the local people can direct you to your landmark—a gray stone church on the left, then to the first driveway on the right.

Most visitors come to Mount Desert Island to pitch their tents on the several campsites operated by the National Park Service, or to trek through Acadia National Park, or to sail their yachts. However, old-time Island residents still recall those halcyon days when lavish estates lined the shore at Bar Harbor. About the turn of the century, wealthy families began coming to Mount Desert for their summer retreat. The rich coastal scenery and the sparkling summer days had already drawn artists to the Island, where, it is said, the sun first touches the nation each morning atop 1,530-foot-high Cadillac Mountain.

In 1910, Mr. John D. Rockefeller, Jr., and his wife, Abby Aldrich Rockefeller, purchased a house and 16 acres of land at Seal Harbor from Samuel F. Clarke, a uni-



Photographs by Alan Ward



ABOVE: This 1935 photograph of the garden depicts the lavish perennial borders, which at that time surrounded a central area filled with flowers for cutting. In the distance, Korean tomb figures stand along the Spirit Path. BELOW: A photograph of the Sun Garden and pagoda, also taken in 1935, shortly after the major work on the garden was completed.



Courtesy Rockefeller Archive Center

versity professor. They hired architect Duncan Candler to transform the house, and soon a three-story Tudor structure containing almost 100 rooms rose on the site, a high bluff overlooking the Cranberry and Sutton Islands. The house was named "The Eyrie," a popular name on the Island for lofty places used as nesting areas for birds. After Mr. and Mrs. Rockefeller both died, The Eyrie apparently became a "white elephant," and the house was torn down in 1963. A small building—formerly the children's playhouse but now used by Mr. and Mrs. ("Peggy") David Rockefeller, the current owners, as a guesthouse—remains on the property, and there is a tennis court.

The visitor can take a nostalgic stroll to the spot where the house once stood by walking a short distance up from the improvised parking lot to a circular grassy plateau. The only remnant of grander days gone by is a partly demolished balustrade and stone terrace looking out to the sea. Fifty old-fashioned pink rosebushes recently planted near the rim now frame the view.

The garden is northeast of the terrace and is reached by a pleasant stroll along a pine-needle path through the woods. From the very beginning the garden was located

away from the house, so there was not the usual architectural dictum to make the garden an extension of the house. The garden's makers were free to follow their fancy, as is revealed as one ventures further.

Even before stepping foot into the garden, the visitor is seduced into an Oriental mood. This feeling is sustained throughout the garden by architectural features, garden artifacts and, more subtly, by the sensitive placement of statues and shrines, and their tranquil interaction with nature.

A pagoda roof made of glazed, ochre-yellow tiles caps the southwest entrance gate. (One can easily imagine Marco Polo entering such a gate when he went to meet Kubla Khan.) These same glistening tiles are used in the coping around the wall. They are fascinating historically; many are two centuries old and once graced the coping on the Red Wall of the Forbidden City of Peking. The tiles (there are approximately 10,000 of them, including about 2,000 broken ones) were imported by the Yamanaka Company in Boston in 1927 for use in the Rockefeller Garden when parts of the Red Wall were demolished. Recently the wall has undergone repair. In fact, repairmen are using facsimile tiles obtained by David Rockefeller from the same factory in China that has made all the tiles

for the Forbidden City for the past 700 years.

China, "Mother of Gardens," was the catalyst for the Oriental mood of the garden. In 1921, Mr. and Mrs. John D. Rockefeller, Jr., made a four-month trip to the Orient, primarily on a Rockefeller Foundation mission to Peking, China. (Their itinerary also included sojourns in Formosa, Japan and the Philippines.) The couple was impressed by the Asian shrines, architectural landmarks and gardens they saw, and thus began their lifelong love affair with Oriental culture. Their garden at The Eyrie was originally to have been an English-style flower garden, but as plans evolved, many Oriental aspects were integrated into the design. Also, as time went on, Mrs. Rockefeller's collection of Asian sculptures and artifacts grew, and the garden was chosen as the place to display them.

In 1926, the Rockefellers tapped the skills of the most sought-after landscape architect for country estates of that time, Beatrix Jones Farrand, to help them build the garden. (For more on Farrand, see "A Portrait of Beatrix Farrand" in the April 1985 issue of *American Horticulturist*.) Mrs. Farrand was 54 years old at the time, and had a reputation as a rather imperial, erudite figure. Farrand's professional work had expanded to include university campuses, and she had already had some involvement with Rockefeller-related projects. She had been spending summers at her family home, Reef Point, in neighboring Bar Harbor, so Mr. and Mrs. Rockefeller were probably familiar with other gardens she had designed on the Island.

Although Farrand had designed a garden with Oriental motifs for the Willard Straights on Long Island, she had never set foot in the Orient. To prepare for The Eyrie project, she immediately began to study books, articles and photographs on China—even picture postcards sent from the Orient by one of her employees. She could also look to Mrs. Rockefeller, who had a knowledge of and uncommon sensitivity to Eastern culture.

Correspondence between the two women during the garden's creation reveals that Mrs. Rockefeller lent Farrand the *Chinese Book of Gardens* out of concern that the garden's Moon Gate might be "too much in the spirit of Ching Lung and not in enough harmony with the Sung figures." The Eastern concept of symmetry, Mrs.

The pagoda-roofed South Gate, which leads to the Spirit Path, is guarded by a pair of stone rams from Korea. The ochre-yellow tiles once graced the Great Wall of the Forbidden City of Peking.

Rockefeller notes in one of her letters, included “just enough asymmetrical so that the formality of true symmetry was not oppressive.”

In September 1928, after the second summer of work on the garden, Farrand wrote a lengthy letter to Mr. Rockefeller on how best to physically incorporate the wall into the garden site without disrupting the natural harmony of the setting. She ended the letter on a prophetic note: “Please forgive so long a letter . . . but [the garden] is frankly so absorbing my thoughts, and it will be such a joy if it can be made a success and happiness to you and Mrs. Rockefeller, that I am throwing myself into the work with my whole heart.”

And so she did. Her enthusiasm is all the more amazing considering that from 1926 to 1930—the years during which the basic and hardest work was accomplished on the Rockefeller Garden—she was also working on her “magnum opus” at Dumbarton Oaks, the garden she built for Mr. and Mrs. Robert Woods Bliss in Washington, D.C. In addition to these two monumental projects, there were other commissions as well; although these were administered by Farrand’s offices in New

York and in California, Mrs. Farrand was very much at the helm.

Despite the conflicting demands on her time and energy, Farrand, as well as others involved in the project, was apparently completely absorbed with the garden at The Eyrie. She contemplated such matters as grading, the laying of walks and walls, matching the color of stones and tile, moving trees, and, of course, the plantings themselves, as well as the placement of gates, shrines and statues, and the design of the Moon Gate, wall coping and other Oriental motifs. No detail, however small, escaped the scrutiny of both designer and client, who reached the larger decisions only after carefully studying plans or sketches (usually several for each subject). Mockups of architectural features such as the Moon Gate were made first, then placed in position in the garden.

Small dramas marked the evolution of the garden, such as the tiff between gardener and grounds superintendent over how deep the topsoil should be (Farrand’s suggestion of one foot for the lawn and 18 inches for the garden prevailed) and the proper size for the bulb storage cellar. Compliments were also extended. Mr.

Rockefeller, for example, commended Farrand for submitting her expenses “as usual in apple-pie order.” Farrand, in turn, notes in a letter that “the work Mr. Candage has done on the steps is beyond all praise. We have all fussed over stone after stone, altering here and there and the stairway is not only handsome but appropriate and easy in its progression.”

Mr. Rockefeller showed a keen interest in every step of the garden’s creation. Even after his wife’s death, he was concerned that the garden be maintained in accordance with her wishes. “The old-fashioned pinks, wherever they appear, are lovely and most appropriate,” he wrote to Mrs. Farrand in August, 1950. “The carnations just coming into bloom seem to me, so ignorant as I am about a garden although such a lover of its beauty, out of place and incongruous wherever I see them. . . . Would their replacement another year by more of the old-fashioned pinks be a detriment? . . . I am wondering whether they were in the garden when Mrs. Rockefeller was here and had her approval. If so, I withdraw even these comments and will like them.”

The basic work on the garden was com-





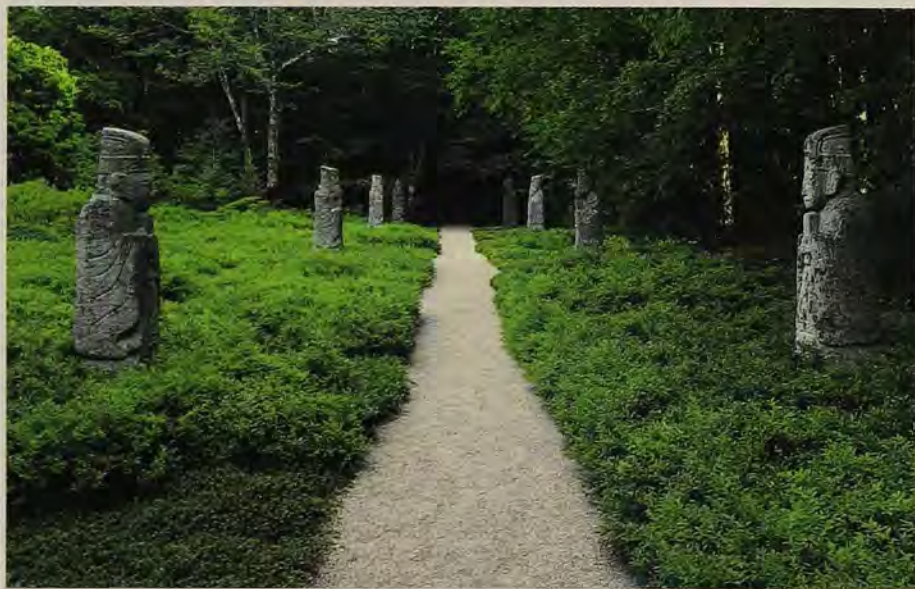
ABOVE: A magnificent spruce surrounded by clematis, yellow pansies, giant cow parsnips, and a host of other plants.
RIGHT: The 1,200-foot-long Spirit Path is lined with pairs of Korean stone statues.

pleted about 1930. In 1935, Mrs. Rockefeller assumed the major responsibility for her garden, and Farrand remained as consultant. The two women continued to fine-tune the garden for the next 10 years. As it turned out, Farrand was involved with the garden for almost a quarter of a century. During this time, she also became a valued advisor to Mr. Rockefeller on another project dear to his heart—that of beautifying areas on Mount Desert that are now part of the National Park Service. The letters kept in the Rockefeller Archives in Tarrytown, New York, span this entire period. They reflect a relationship between the Rockefellers and Mrs. Farrand marked by mutual and, at times, touching courtesy and respect.

It is now almost 60 years since the garden was begun. It has been looked upon as a living memorial to Abby Aldrich Rockefeller by the Rockefeller descendants, who have preserved the basic design of the garden much as it was when she was alive. Students of landscape architecture study the Rockefeller Garden as one of the few surviving examples of Beatrix Farrand's garden designs (she died in 1959) and as a representative garden of what has come to be known as the "country-place era" in American landscape history.

When entering the garden through the pagoda-roofed entrance gate, the visitor first sees the Spirit Walk, designed in the tradition of an eighth-century Chinese nobleman's burial ground. A long walk, flanked by six pairs of guardian-like Korean statues, begins at the entrance and ends in the distance at a stele. The path, known as the Spirit Path, runs parallel to the garden's main axis and flower beds, which are out of sight, over the granite wall on the right. The Spirit Path is 1,200 feet long, but the distance appears greater because the figures are arranged along the path in descending size to create a false perspective (a design ploy that Farrand used in other gardens as well). From the stele one can see Long Pond at the foot of wooded hills.

The massive tomb figures rise from carpets of low-growing plants that are native to the Maine woods. These are all simple and winsome—red-berried *Cornus canadensis*, lowbush blueberries, highland cranberries, bearberry and, perhaps the most elegant of all, haircap moss. Nothing is allowed to detract from the dignity and repose—qualities that are at the heart of Oriental culture and philosophy—of this part of the garden. *Osmunda* spp., ostrich ferns (*Matteuccia* sp.), native shrubs and small trees are carefully graded to fill in the background along the granite wall that



Alan Ward

separates this part of the garden from the flower borders on the other side. Halfway down the Spirit Walk, the sound of falling water lures one along a by-path to a stone bench overlooking a pond—a perfect place for contemplation as frogs leap in and out of the water near their stone counterpart. According to Gary Solari, the head gardener, this is "the best spot in the garden."

Halfway down the Spirit Path, it is possible to enter the inner flower garden from a crosswalk, which passes through an opening in the granite wall. But a more subtle way is through the Bottle Gate. This is the route that Mrs. Rockefeller preferred, as revealed in a letter written by Mrs. Farrand to Mr. Rockefeller in 1950, two years after his wife's death: "As I remember it, she said she tried to control her guest visitors and bring them in by this entrance rather than by the cross walk. Once inside the gate at the path with the Korean figures, she hoped her guests would pause a moment and see the quiet simplicity of this first view. Then she meant to take her guests through the little wood and the Bottle Gate to the platform and then let the brilliance of the garden come as a surprise after the greenery and quiet of the other two views."

The Bottle Gate, so named because of its shape, leads first into another restful garden, the Sun Garden or Ellipse, with its central oval lawn and rectangular reflecting pool. The lawn is framed by borders of hostas (still labeled *Funkia*), several kinds of subdued white and pale pink *Astilbe*, *Filipendula ulmaria* (commonly called queen-of-the-meadow) and the dramatic foliage of *Rodgersia tabularis*. Single specimens or small groups of laburnum, moosewood and other shrubs and trees—mostly native plants—fill in the background. This peaceful oasis lies at the

southern end of the garden's main axis, and here, as well as throughout the garden, pagodas, shrines, Buddhas, steles and other secret delights in shaded niches can be found in abundance. At the end of a short footpath leading from the oval lawn is the twelfth-century Arhat Bhadra, Buddha's disciple, with a tiger cub. Considered the finest sculpture in the garden, it should not be missed.

From the Sun Garden looking northward, the visitor can take in the whole visual climax of the garden in one sweep of the eye. If the weather has been hot and sunny, the garden picture will be one of sparkling splendor: the uninterrupted emerald-green velvet of a large, central, sunken, rectangular lawn, appropriately called the Greensward; myriad-colored flower borders on two levels framing the Greensward; and a magnificent spruce in front of a rosy-red wall at the opposite (north) end of the garden. All paths and borders appear to meet at the spruce. Behind it, the round Moon Gate pierces the north wall and invites the visitor to venture into the fern glen beyond the garden.

Farrand used trees artfully for architectural effects and would try to work her design around those already existing on a site. In the Rockefeller Garden, a majestic maple towers over the north wall, lending its strong vertical emphasis, along with companion yellow birches, lindens and red spruces. All three sides of the garden have a fine backdrop of northern hardwoods, combined with fir, spruce and pine.

The two tiers of flower borders surrounding the central Greensward are about six feet wide and parallel wide flagstone walkways. In the borders on the left or western side, billowing drifts of flowers in watercolor tints and hues—muted blue, li-

Continued on page 44

The Wild Cyclamen



Pamela Harper

BelleVue, Heartsease, Pilgrim's Rest, Seven Hearths. . . Such pleasingly named houses dating from the eighteenth and early nineteenth centuries so abound in this charming, somewhat sleepy colonial town of Hillsborough, North Carolina—about a half-hour's drive from the horrendous traffic jams and high-tech bustle of the Research Triangle, which is North Carolina's answer to Silicone Valley and Route 128 around Boston—that no one has ever gotten around to putting a historical marker at the driveway that leads up to the huge white house with its spanking new greenhouse just off the kitchen. But a marker would be entirely justified. The house itself dates back only to the late nineteenth century, but it's the third one to be built on these 60-odd acres of lawn, woodland and meadow since 1781, when Lord Cornwallis camped here in his war against the rebellious colonists. Some original outbuildings remain, including a barn, a smokehouse (still used until a few years ago), and the simple but capacious and appealing one-story wooden frame building that William A. Graham—who was governor of North Carolina, secretary of the Navy under Millard Fillmore, and an unsuccessful candidate for the vice-presidency of the United States—put up in 1842 to serve as his law office.

The place is named Montrose, after the Graham family's ancestral home in Scotland. Here Nancy Goodwin, a very soft-spoken but highly determined woman, wages a crusade to save as many species of cyclamen as she can from extinction in Turkey, Greece and elsewhere around the Mediterranean Basin, where they are being collected in the wild and shipped, quite illegally, to gardeners in Great Britain and the United States.

Many of us who have bought cyclamen in the past don't realize that the bulbs have been collected, that extremely rare sorts are often misidentified as more common ones, and that in our entirely understandable yearning to grow these tiny but charming

ABOVE: *Cyclamen hederifolium* 'Album'. RIGHT: A brand-new greenhouse at Montrose is used to propagate species of *Cyclamen* from all over the world.



of Montrose

BY ALLEN LACY



Allen Lacy



Pamela Harper

ABOVE: *Cyclamen repandum*. RIGHT: In addition to *Cyclamen* spp., Nancy Goodwin grows a wide variety of other perennials at Montrose.

wildflowers we contribute to their extermination in their native habitats. The World Wildlife Fund and other conservation organizations have recently called attention to the plight of wild cyclamen, but word on such matters spreads much more slowly than juicy pieces of gossip about politicians and rock musicians. In the meantime, a devoted gardener and cyclamen-lover in Hillsborough is doing everything she can to ensure that we can have these treasures growing on our own piece of earth without aiding their extirpation where they originated.

Before talking about the reasons wild cyclamen are endangered and about her crusade on their behalf, Nancy Goodwin takes me on a tour of the grounds at Montrose, occasionally stopping to bend down and pull up a stray weed that has invaded the immaculately tended flower beds surrounding the house and William A. Graham's old law office, now a studio where she gives piano lessons. We admire the splendor of a *Cardiocrinum* sp., a lily-like plant with greenish-white buds and blossoms like trumpets. It rises so high above a boxwood hedge that it would take a stepladder to find out if it's as fragrant as it looks. We walk toward the vegetable garden, where her husband Craufurd, an economist who is dean of the Graduate School of Arts and Sciences at Duke University, grows his corn and tomatoes. On the way, we pause to admire a sprawling colony of *Clematis integrifolia*, a low, non-vining sort with lovely nodding blossoms the color of sapphires and twisted, silvery seed heads as handsome as any flower. We amble through an immense cutting garden, radiant with yellow and ivory *Anthemis*, to some rows of raspberries ripe for the picking—a pleasant place to stand and talk while eating handfuls of berries.

I ask Nancy Goodwin about her career as a gardener. Apparently, it's a lifelong thing—"probably hereditary." One grandmother had a wonderful rock garden in middle Tennessee. Another, in Georgia, grew old-fashioned plants like larkspur, poppies and love-in-a-mist, all of which are abundantly in evidence at Montrose. Her mother was never happier than when the lady's-slippers came into bloom in her shady garden in Durham, and her father, who recently retired as a professor of Victorian literature at Duke University, has long been locally celebrated for his success at raising vegetables.

"My first experience with gardening was a dismal failure," she explains, "but then disappointment is hardly a stranger to gardeners. My parents gave me an iris to tend, cautioning me to keep the soil off the top of the rhizome. The thing never bloomed, not even once. I started gardening in earnest in 1963, when Craufurd and I bought a house in Durham. That summer



we went to England, where I saw my first wild cyclamen, which simply enchanted me. I ordered some tubers that fall, and then began to raise them from seed. Before long I was totally consumed by a passionate interest in horticulture. I planted an herb garden. I joined the American Horticultural Society. I looked up the botanical names of everything I grew, determined to master the basic terminology of something that was more to me than a newfound hobby.

"I hated to leave that garden in Durham, but I must admit that it meant leaving behind some bad mistakes in judgment, especially about color. I had put things that were separately wonderful right next to each other, where they clashed—red *Monarda* with big, hot gloriosa daisies, to name a particularly dreadful and loathsome combination."

When the Goodwins bought Montrose in 1977 from the great-grandsons of its original owner, there was no garden to speak of—merely some fine old boxwood hedges and shrub borders, some venerable oaks and other native trees, as well as a rock garden dating back to the nineteenth century. The rock garden—developed during Graham's service as secretary of the Navy, when Commodore Perry sailed to Japan to open that country to the West—may be one of the earliest examples of Oriental influence on American horticulture.

On this unusually sultry June morning, we have walked down a grassy path leading to a good-sized pond fit for both swimmers and turtles, its creek- and spring-fed waters eventually tumbling over some small waterfalls to the Eno River, one of the nation's



Allen Lacy

least celebrated watercourses. Here, after crossing through the stubble of a new-mown field and entering the welcome shade of a woodland strewn with boulders, my guide cries out in warning: "Watch out!" Fearful of copperheads and rattlesnakes, I halt in my tracks. But there's no snake—just a small plant of *Cyclamen hederifolium* I'm about to trample underfoot. Nancy Goodwin is fiercely protective of cyclamen wherever they grow, at Montrose and elsewhere.

This woodland, recently cleared of poison ivy and brambles, was once farmed. Signs of plowing still remain in the form of curving terraces that protect against erosion. The forest litter of decaying leaves is deep, and everywhere there are cyclamen, which Nancy Goodwin identifies on sight—*C. cilicium*, *C. coum*, *C. graecum*, *C. pseudibericum*, *C. trochopteranthum* and a varietal form of *C. hederifolium* with extraordinarily complicated leaf markings, which the noted British garden writer E. A. Bowles named 'Apollo'. Much of this planting is only one year old. With time, and continuing vigilance against the inroads of poison ivy, it should become one of the glories of Hillsborough, since every year the tubers will grow fatter, the blossoms more abundant, until each plant produces up to 100 delicate blooms during its season.

We are back in the house Graham's son built in 1898—a commodious place with enormous rooms and ceilings so high that air-conditioning isn't always needed to combat the fierce summer heat of the Carolina Piedmont. Nancy Goodwin fixes tall glasses of iced tea with lemon slices and crushed leaves of

spearmint, and we slip into the greenhouse, where thousands of little cyclamen grow in the plastic pots they will be shipped in to customers. (This cuts down on the disturbance to the plants' root systems and guarantees them a better start once planted.) Summer isn't really their season, so the bloom in the greenhouse is scanty. But the leaves look healthy, and each plant has formed a tuber, either on top of the soil or beneath its surface, depending on the species. (*C. coum*, for example, stays high and dry; *C. repandum* buries itself all the way to the bottom of the pot.)

When Nancy Goodwin speaks about the very first cyclamen she ever ordered, she mentions with some horror her conviction that they had been collected. I am reminded of St. Augustine, who, from the perspective of a reformed sinner, tells in *Confessions* of his youthful transgressions in stealing pears, as well as some steamier deeds. The tubers were shriveled, indicating a long and hot journey from the eastern Mediterranean; they were pocked with marks from the poor, stony soil of their native habitat; and they were gnarled and irregular in shape. (Usually, though not always, cyclamen tubers grown in cultivation from seed are smooth and rounded.)

It was only after Goodwin had already begun to raise as many different species of *Cyclamen* from seed as she could lay her hands on—seed she got from plant societies, seed exchanges, botanical gardens and other gardeners in the United States and abroad, as well as commercial sources—that she came to understand the enormity of the chain of events that was putting tubers of cyclamen into the hands of many gardeners. These tubers—some of them of species rare to the point of extinction—were being greedily stripped from the wild, held for a year or two by several bulb dealers in western Europe, and then placed on the retail market, generally in poor condition and often misidentified. Seeing a need for reliably named, seed-grown cyclamen for American gardeners, she stepped up her program of propagation. She germinated seed from her own rapidly growing collection in her basement and on the windowsills of her piano studio, and then raised them in pots on a screened porch, until last year, when she put them in a greenhouse. The result is Montrose Nursery, which issued its first slender catalogue last year. The catalogue was enlarged this fall to list many additional species and to include a great deal of practical cultural information based on Goodwin's keen and close observation of her favorite genus of flowering plants. (For more information, see "Sources" on page 39.)

Nancy Goodwin makes no claim that she's a lone voice crying in the wilderness. Some other nurseries, including We-Du Nursery in Marion, North Carolina, and Russell Graham in Salem, Oregon, also sell seed-raised cyclamen. But in her view, these graceful wildflowers deserve to be more widely grown in American gardens—though not at the expense of their continued existence in the places where they grow wild. She's doing what she can to help. ☐

Allen Lacy, a professor of philosophy at Stockton State College in New Jersey, is the gardening columnist for *The Wall Street Journal*. He is the author of *Home Ground: A Gardener's Miscellany*, as well as *Farther Afield: A Gardener's Excursion*, which is scheduled for publication in April 1986.

A Longing for Lithops



Photographs by Ed Storms

Like my *Lithops*? They're my favorite plants."

My smiling guests peer into the flowerpot I hold before them. After a moment they look up with weaker smiles, silently wondering if I've lost my mind. The bravest speaks: "But . . . there are no plants in here. This is just a pot full of stones."

Grinning triumphantly, I point out half a dozen tiny plants barely distinguishable from the colored pebbles surrounding them. Ah, yes, now they see them. My *Lithops* trick has amazed my friends once again.

Lithops are amazing plants—but not only because they make a good cocktail party prop. *Lithops* have evolved uniquely ingenious traits that enable them to survive in their hostile native habitat. These same traits make *Lithops* beautiful and durable house plants for the neglectful plant lover.

The genus *Lithops* belongs to the Aizoaceae (formerly Mesembryanthemaceae), or carpetweed family. The name *Lithops* is both singular and plural, and comes from the Greek words for "stone" and "like." Appropriately, *Lithops* are

commonly called living-stones. These names reflect the trait that makes *Lithops* unique; they look, quite frankly, like colorful little stones. A plant's visible portion consists only of two squat, succulent leaves that barely protrude from the soil. The leaves form an inverted cone about one to two inches wide, split across the middle by a narrow cleft. Fused at their apexes, the leaves join a short, cylindrical stem that, in turn, attaches to a deep taproot.

Lithops' colors, which range from shades of brown and gray to green and tan, allow the plants to blend with the stony, sandy soil of their native habitat, the Orange River Basin of South Africa. Some have channels, dots and margins in tones that contrast with the main color. Often, hints of pink, blue and green suffuse the leaves. This subtle disguise hides them from thirsty rodents who savor their succulence.

To survive in the arid desert, *Lithops* have become masterpieces of water-conserving ingenuity. Their plump, compact leaves grow flush with the soil surface to avoid the drying desert winds. *Lithops* have few stomata (the pores that lose moisture

through transpiration), and a thick cuticle and waxy covering further protect the leaves.

Lithops also use water wisely through their growth and flowering habits. Once each year a new pair of leaves develops in the cleft, drawing moisture from the old leaves and reducing them to crusty shells at the base of the plant. *Lithops* flower only when the annual rains come; then they plump up and push out of the soil, and a daisy-like yellow or white flower emerges from the cleft.

If the plants are to set seed, cross-pollination must occur between plants of the same flower color. A multi-segmented seed capsule perches above the cleft on a dry, sand-colored stem. Lids on each segment

TOP LEFT: *Lithops hallii* growing in its native habitat. BOTTOM LEFT: Three plantings of blooming *Lithops* spp., including *L. olivacea* in the small pot; *L. dinteri* var. *brevis* (yellow flowers) and *L. karasmontana* var. *tischeri* (white flowers) in the large bowl; and *L. fulleri* (white flowers) and *L. lesliei* var. *bornii* (yellow flowers) in the flat bowl in the foreground. RIGHT: *Lithops bromfieldii* var. *glaudinae*.

hold the seeds in place until a strong rain pops them open and washes the seeds onto the soil surface. There, seeds can remain viable for several years, until they receive enough moisture to germinate. The young seedlings grow near their parent plant, eventually forming a colony that looks like a collection of randomly tossed pebbles.

These water-saving adaptations also create a problem, however. With most of the leaf buried, the plants have little surface area available for photosynthesis. Evolutionary wonders that they are, *Lithops* have developed a compensating trait: the tops of the leaves are translucent and act like windows to let the sun's rays penetrate into the leaves' fleshy core. The light strikes the inner walls, which are lined with chlorophyll-containing chloroplasts responsible for photosynthesis. Thus, *Lithops* make up for the lack of photosynthetic surfaces on the outside by putting them on the inside.

However, there are times when *Lithops* must limit the amount of light reaching the inside in order to avoid overheating. As the desert sun grows more intense towards midsummer, opaque islands form on the top of the leaves. These islands act like shades on the translucent windows by blocking out excess light. The leaves—brightly colored when first formed—become mottled and take on subtle hues as the islands develop. The changing pattern of windows and islands gives *Lithops* their unique and fascinating beauty, and guarantees that no two plants are identical.

Lithops have other characteristics that endear them to the lover of strange plants, including a wide variation in size as well as color. Although most species have yellow flowers, some have white; a few even have scented flowers. Several species defy the norm of forming one two-leaved head each year and produce multiple heads. *Lithops*' diversity ensures their collector a lifelong hobby.

Perhaps the quality that makes *Lithops* most wonderful is that they demand so little care. They are ideal for people who forget to water, or who vacation frequently, or who hate anything that requires constant attention.

One warning before beginning your *Lithops* collection: The variability within species makes identification tricky. If you want correctly named plants, be sure to order them from a conscientious supplier. (See the sidebar on "The Classification Mystery.")

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iful, wrapped in slips of paper, it is important to make them feel at home. First, find a suitable pot. Plastic is cheap and easy to sterilize, but ugly. It is also non-porous and may keep the soil too moist. A clay pot is more expensive, but its earth tones flatter *Lithops*. Because clay is porous, it will compensate somewhat for over-watering. Whichever type of pot you choose, it must have good drainage, be three to four inches in diameter, and be deep enough to accommodate the taproot. Also, be sure it is not garish; pink flamingo planters clash with *Lithops*. Terrariums, which are muggy, are also unsuitable.

Lithops need a loose, quickly draining soil like that found in the desert. To make a simple potting mix, combine one part sterile potting soil with one part coarse, clean sand. Or mix one part sandy soil, one part sharp sand, one part peat and one-half part fine gravel. You can modify these suggestions, but remember that the soil should feel gritty and should not form a ball in your hand when wet.

Fill the pot with dry soil, make a hole with a pencil, and slip the plant into place.

The Classification Mystery

The variability that makes *Lithops* such unusual and wonderful house plants has also made them a taxonomic nightmare. Leaves, the most obvious portion of a *Lithops*, are not normally considered a reliable diagnostic characteristic. And considering that markings and colors not only change on individual plants over time but also vary among individuals, it is no wonder the identification and classification of *Lithops* have been confused since the genus's discovery in 1811.

Within the last decade, the work of Desmond T. Cole has brought some order to the confusion, conflicts and inconsistencies surrounding *Lithops*' classification. Cole, who lives in Johannesburg, South Africa, has been able to study *Lithops* in their native habitat. Combining his observations of the geographical distribution of individual species with extensive studies of leaf characteristics throughout the growth cycle, Cole identified and described 37

species, and 93 varieties and forms. Since he published his list in 1973, he has described another species, *L. naureeniae*, which he named after his wife.

Other researchers have studied everything from pollen structure to seed morphology in an attempt to find a reliable, consistent identification trait. Variability is again the obstacle; enough exceptions exist for each rule to make generalizations useless. Furthermore, research has been sporadic. As Ed Storms, owner of the largest *Lithops* greenhouse in the United States, says, "There's not much financial support for this kind of research; after all, nobody eats *Lithops*. So, as far as identification goes, we're pretty much stuck with what they look like and where they grow."

Storms anticipates that researchers will revise the classification of *Lithops* during the next few years as they sort through the literature for incorrectly identified species that have received multiple names.

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Leave about one-third to one-half of the plant exposed above the soil surface. Tap the pot lightly to settle the soil, then water lightly to establish good root-to-soil contact.

At this point your creativity comes into play. To mimic *Lithops*' natural surroundings, try covering the soil with a thin layer of sand. Or add a layer of pebbles similar in color to your plants (pet stores often carry them). You can group several plants in one pot, but be sure they are on the same watering cycle. To be safe, put only plants of the same species together.

Keep the newly potted plants in a lightly shaded area for the first few days, then begin moving them into direct sunlight for a few hours each day. Eventually, you can leave them in a sunny spot permanently.

WATERING: The secret to caring for *Lithops* is to remember that they are desert plants suited to a dry, hostile environment. All cautions against over-watering house plants apply several times over here. Over-watered *Lithops* quickly become unidentifiable mush.

Lithops do not need to be watered when they are actively growing, since they draw all the moisture they need from the old leaves. As the active growth phase begins, you will notice that the cleft in the center of the plant begins to widen. New leaves will slowly push through the crack, separating the old leaves. During the eight to 12 weeks required for the new growth to emerge fully, the old leaves will shrink and wither at the base of the plant.

Begin watering in the spring when the old leaves are nearly consumed. Then water when you notice that the plants are slightly shriveled; the frequency will depend on soil, humidity, ventilation and all the other variables that make setting up a watering timetable impossible. Never water when your *Lithops* look plump, fleshy and content.

Lithops require only an occasional watering during the humid summer. A slight sprinkling when the leaves look unusually wrinkled should be sufficient. If you over-water, you will end up with *Lithops* soup.

When fall's cool days arrive, return to the watering program you followed in the spring. Your *Lithops* will reward you for your infrequent attention by flowering late in the season (unless they're very young, in which case you will just have to be patient). Stop watering entirely once flowering ends, usually in late November or early December. Do not start again until the new leaves have consumed the old ones.

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If, for some irrational reason, you are compelled to water your plants too often, you will produce large, fleshy monsters that may impress your cocktail party guests but will appall the true *Lithops* lover. Over-watered *Lithops* will be abnormally large and may produce leaves and flowers several times during the year. But these victims of your indiscriminate watering are doomed to an early death. Therefore, be sure to exercise restraint when watering.

LIGHT: *Lithops* can handle all the light in your brightest window if you live in a northern climate. In the South, give them about 20 percent shade. In either case, they will do better under natural, rather than artificial, light.

FERTILIZING: Over-fertilized *Lithops* look as silly as over-watered ones. If your potting mix contains garden or commercial soil, there is no need to fertilize. If you use a soilless mix, fertilize rarely. Dilute the fertilizer to one-tenth the recommended strength, and apply it when you water. Do not fertilize during the summer or non-watering phase of the cycle. Over-

A Shopping List for *Lithops*

If you are looking for *Lithops* with specific qualities, consider these possibilities:

WHITE FLOWERS: *L. bella* var. *bella*; *L. fulleri*; *L. marmorata*

SCENTED FLOWERS: *L. bromfieldii* var. *insularis*; *L. aucampiae*; *L. olivacea*; *L. ruschiorum*; *L. verruculosa*

LARGE PLANTS: *L. aucampiae*; *L. lesliei*; *L. marmorata*; *L. pseudotruncatella*; *L. turbiniformis*

SMALL PLANTS: *L. bella*; *L. dinteri*; *L. herrei*; *L. optica*; *L. wernerii*

MULTI-HEADED: *L. aucampiae*; *L. lesliei*; *L. marmorata*; *L. salicola*; *L. turbiniformis*

DIVERSE SPECIES: *L. aucampiae*; *L. fulleri*; *L. halli*; *L. julii*; *L. lesliei*

UNIFORM SPECIES: *L. divergens*; *L. meyeri*; *L. optica*; *L. viridis*

fertilized *Lithops* will be big, but their colors and patterns will be unspectacular. They also run the risk of an early grave.

HUMIDITY: *Lithops* detest stale, muggy air almost as much as over-watering. Keep your plants in a well-ventilated area.

PESTS: *Lithops* are blessedly pest-free. (Once a chipmunk took a bite out of a friend's plant, but that's the only complaint I've heard. Fortunately, the new leaves weren't damaged, so her plant will outgrow its injury.) Mealybugs are occasionally a problem. By removing the old leaves once they have dried up, you will eliminate the bugs' hiding place and prevent an attack.

If you respect your *Lithops*' need for dry periods and restrain any urge to fuss excessively with them, they will entertain you by changing color, flowering and growing a new body each year. And, of course, they will give you a conversation piece for your next cocktail party. ☼

—Erin Monica Hynes

Erin Hynes is a technical writer for the Institute for Scientific Information in Philadelphia. *Lithops* are her favorite plant.

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Pronunciation Guide

Achillea ah-KILL-ee-ah
Allium albopilosum
 AL-ee-um al-bow-pill-LOW-sum
A. christophii a. kris-TOE-fee-eye
Anemone × *hybrida*
 ah-NEM-oh-nee HY-brid-ah
Anthemis AN-them-iss
Aquilegia akitensis
 ak-qui-LEE-jee-ah ah-kit-EN-sis
A. flabellata a. flab-ell-AY-tah
Arctostaphylos uva-ursi
 ark-toe-STAFF-ill-ose OO-va UR-see
Arisaema akitense
 air-iss-SEE-mah ah-kit-EN-see
A. sikokianum a. si-koe-kee-AY-num
Artemisia tridentata
 ar-tem-EASE-ee-ah try-den-TAY-tah
Astilbe ah-STILL-bee
Athyrium goeringianum
 ah-THIGH-ree-um gair-rinj-ee-AY-num
Begonia evansiana
 be-GO-nee-ah/be-GOAN-yah
 ee-van-see-AY-nah
B. grandis b. GRAND-iss
Bletilla striata bleh-TILL-ah stry-AY-tah
Campanula kam-PAN-yew-lah
Cardiocrinum car-dee-oh-CRY-num
Cercocarpus montanus
 sir-koe-KAR-puss mon-TAN-us
Chrysothamnus nauseosus
 kris-oh-THAM-nus naw-see-OH-sus
Cimicifuga racemosa
 sim-i-si-FEW-gah ray-si-MOH-sah
Clematis integrifolia
 KLEM-ah-tiss/klem-AT-iss
 in-teg-ri-FOE-lee-ah
C. × jackmanii c. jack-MAN-ee-eye
C. × jouiniana c. jew-in-ee-AY-nah
C. lanuginosa c. la-new-gin-OH-sah
C. montana c. mon-TAN-ah
C. virginiana c. ver-jin-ee-AY-nah
Cleome hasslerana
 clee-OH-me has-ler-AY-nah
Colchicum autumnale
 KOL-chi-kum aw-tum-NAL-ee
Coreopsis kor-ee-OP-sis
Cornus canadensis
 KOR-nus can-ah-DEN-siss
C. sericea c. ser-EE-see-ah
C. stolonifera c. stow-low-NIFF-er-ah
Crocus CROW-cuss
Cyclamen cilicium
 SYKE-lah-men/SICK-lah-men sill-ISS-ee-um
C. coum c. KOOM
C. graecum c. GREE-kum
C. hederifolium c. head-er-i-FOE-lee-um
C. pseudibericum c. sue-di-BEAR-i-kum
C. repandum c. re-PAN-dum
C. trochopteranthum
 c. troh-kop-ter-AN-thum
Delphinium del-FIN-ee-um

Dianthus die-AN-thuss
Eustoma grandiflorum
 you-STOW-mah grand-i-FLOOR-um
Fallugia paradoxa
 fal-LOO-jee-ah par-ah-DOCKS-ah
Filipendula rubra
 fill-i-PEND-you-lah REW-brah
F. ulmaria f. ul-MARE-ee-ah
Funkia FUN-kee-ah
Gypsophila jip-SOF-i-lah
Habenaria ha-ben-AIR-ee-ah
Hakonechloa macra
 hak-on-eh-KLOR-ah MACK-rah
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H. fortunei var. *hyacinthina*
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L. bella var. *bella* l. BELL-ah BELL-ah
L. bromfieldii var. *insularis*
 l. brom-FIELD-ee-eye in-sul-AIR-iss
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L. divergens l. die-VER-jens
L. fulleri l. FULL-er-eye
L. halli l. HALL-eye
L. herrei l. HER-eye
L. julii l. JEW-lee-eye
L. lesliei l. LESS-lee-eye
L. marmorata l. mar-more-AY-tah
L. meyeri l. MY-er-eye
L. naureniae l. naw-REEN-eye-ee
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L. optica l. OP-tik-ah
L. pseudotruncatella
 l. sue-doh-trunk-ah-TELL-ah
L. ruschiorum l. rus-key-OR-um
L. salicola l. sal-i-KOE-lah
L. turbiniformis l. tur-bin-i-FOR-miss
L. verruculosa l. ver-oo-koo-LOW-sah
L. viridis l. VEER-i-diss
L. wernerii l. WER-ner-eye
Lycoris squamigera
 lie-CORE-iss skwa-mi-JER-ah
Macleaya cordata
 MACK-lee-yah kor-DAY-tah
Mahonia aquifolium

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M. repens m. REE-penz
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Matteuccia mat-TOO-see-ah
Monarda moh-NARD-ah
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 po-ten-TILL-ah froo-ti-KOE-sah
Rhus glabra ROOS GLAY-brah
R. typhina r. ty-FY-nah
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Sources

ELIZA PINCKNEY

Readers who would like to learn more about Eliza Pinckney will want to look for the following books and articles about her:

Berkeley, Edmund, and Dorothy Smith. *Dr. Alexander Garden of Charles Town*. Chapel Hill, North Carolina. University of North Carolina Press. 1969.

Pinckney, Elise, editor. "Letters of Eliza Pinckney, 1768-1782," *South Carolina Historical Magazine* (July 1975) Vol. 76, No. 3, pp. 143-170.

Pinckney, Elise, editor. *The Letterbook of Eliza Lucas Pinckney*. Chapel Hill, North Carolina. University of North Carolina Press. 1972.

Pinckney, Eliza. *Letterbooks*. Library of Congress, Manuscript Division. Washington, D.C.

Ravenel, Harriott Horry. *Eliza Pinckney*. New York, New York. Scribners. 1896.

Williams, Frances Leigh. *A Founding Family: The Pinckneys of South Carolina*. New York, New York. Harcourt Brace Jovanovich. 1978.

WESTERN SHRUBS

Many of the plants mentioned in Irene Mitchell's article should be available from well-stocked garden centers and nurseries. The following two companies offer seed of these plants via mail order:

Forest Farm, Box AH, 990 Tetherow Road, Williams, OR 97544, Catalogue \$2.00.

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Road, NW, Salem, OR 97304, Catalogue \$2.00.

We-Du Nursery, Box AH, Route 5, Box 724, Marion, NC 28752, Catalogue 50¢.

LITHOPS

Unnamed *Lithops* are available from a variety of sources, including garden centers and nurseries across the country. To order plants that are identified with their correct botanical names, write to one of the following companies:

Ed Storms, Inc., Box AH, PO Box 775, Azle, TX 76020, Catalogue \$1.50.

Lauray of Salisbury, Box AH, Undermountain Road, Route 41, Salisbury, CT 06068, Catalogue \$1.50.

OLEANDERS

Gardeners who are interested in learning more about oleanders will want to join the National Oleander Society. Members receive a quarterly newsletter, and the Society will also supply seeds and, when available, cuttings. Memberships are \$5.00 for individuals and \$8.00 for couples. For a brochure on the Society, send a self-addressed, stamped envelope to National Oleander Society, PO Box 3431, Galveston Island, TX 77552.

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Gardens of Costa Rica (February 16-March 1) Visit private and public gardens, and tour commercial nurseries and natural areas in a horticultural paradise. See mature collections of orchids, aroids and bromeliads at Lankester Garden, and stay at an Organization for Tropical Studies field station near the Panamanian border. Tour Leader: Mildred L. Mathias, Emeritus Professor of Botany, UCLA.

Holland at Tulip Time (April 27-May 11) Admire spectacular Dutch flowers in Amsterdam and Aalsmeer during tours to bulb fields, private gardens and nurseries. Spend one week on a luxury canal barge cruise.

Kenya and East Africa (March 5-24) Visit private gardens, arboreta and great tea estates in this exotic part of the world. Learn about the botanical wonders of the lake, mountain, rain forest and moorland habitats throughout Kenya. There will also be many opportunities to view the vast array of African wildlife. Tour Leader: Dr. Gilbert Daniels, Past President of AHS.

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MAIL TO: Robin Williams, American Horticultural Society, PO Box 0105, Mount Vernon, VA 22121.

Oleanders

The oleander is a fascinating plant whose associations with man date back to Biblical times. Originally found from the Mediterranean region to Japan, this lovely shrub occupies a unique place in the horticultural history of this country. Early immigrants, especially from the southern European countries, brought double rose- and white-flowered cultivars of oleander with them to the United States. This beautiful plant was especially popular among the Pennsylvania Dutch, and could be found from the Shenandoah Valley to the valley of the Delaware and westward to Kansas. Oleanders were grown in tubs so they could be protected from the northern winters. Plants were passed from generation to generation and provided a feeling of continuity with ancestors and life long past. Southward, along the eastern seaboard, oleanders were planted outdoors.

Oleanders still flourish outdoors in our southern climes. In the North, they are still found growing in tubs and containers, gracing patios and indoor gardens. These lovely shrubs belong to the Apocynaceae, or dogbane family, and are classified in the genus *Nerium*. *Hortus Third* recognizes two species in the genus, only one of which, *N. oleander*, is in cultivation. This is the common oleander, also called rosebay. Although *N. indicum* and *N. odorum* are often listed as separate species, bota-



ABOVE: Oleanders frame many of the homes and other buildings in the historic district of Galveston, Texas. LEFT: 'Mrs. Agnes Campbell' is a magnificent, single-flowered cultivar.



Some nurseries now offer dwarf and semi-dwarf cultivars of oleander.

nists do not consider these two taxa to be distinct from *N. oleander*.

Oleanders can become overwhelming if left to their own devices. Bushes can grow to a height of 25 to 30 feet and can form dense windbreak fences. In areas where oleanders grow luxuriantly, it is important to keep them well pruned and trimmed to shape. They are able to survive the heat and dryness of summer, and basically require little attention. Because of their adaptability and easy maintenance, oleanders make excellent median breaks along highways. Oleanders can also be trained in a tree form. However, oleander seed is not widely available, and nurseries rarely

offer many cultivars for sale. Furthermore, information on the plant's culture can be difficult to obtain, and is rarely found in any detail in gardening books.

Fragrant blossoms of oleander can be seen from California through the Gulf and southern states. Blossoms of all shades of white, yellow, pink and salmon line the streets and flank the gardens of Galveston, Texas, which has been named "The Oleander City." Over 60 cultivars have been named in this island city, many bearing the names of prominent persons in the history of Galveston. In 1841, a trading schooner from Jamaica brought some oleanders to Galveston in rum barrels, and

after a few years, oleanders were growing all over the city. Dr. Ferdinand Roemer, who wrote a book about his travels throughout Texas from 1845 to 1847, was struck by the beauty of the plants: "The city with its cheerful white houses and pretty gardens, in which roses and oleanders were in full bloom, pleased me still more than on my first visit."

After a devastating hurricane in 1900, the women of Galveston organized to replant the streets and avenues with palms and oleanders. City residents gradually became interested in the many different cultivars of oleanders that had developed over the years, and in 1967, founded the National Oleander Society.

One of the aims of the National Oleander Society is to clarify the confusion concerning the cultivars of oleanders, many of which no doubt have multiple names. One publication, *The Nerium Oleander in Israel*, lists 18 cultivars prevalent in that land, with names set by the Hebrew Academic Society. *Galveston, The Oleander City*, written by Clarence Pleasants, details some of the history of the oleanders and lists 60 cultivars of the plant; this list is based on research done in 1966. The April 1978 issue of *Southwest Gardener*, the official publication of the Dallas Garden Club of Texas, includes a comprehensive review of the various types of oleanders that are listed by the National Oleander Society and in nursery catalogues and botanical and horticultural literature. Since these publications appeared, additional dwarf cultivars have been introduced commercially, including 'Casablanca' and 'Algiers'. A newly patented cultivar listed as 'Little Red' can reportedly withstand temperatures below 10° F.

Some nurseries now offer dwarf and semi-dwarf cultivars of oleander, as well as the larger, more common ones. (Galveston is one of the few places where all of the varying shades and flower types are readily available.) The dwarf types grow approximately two to four feet in height, and the semi-dwarf cultivars, four to six feet. The larger cultivars can grow as high as 20 to 30 feet.

Some cultivars of oleander are more hardy and resist freezing temperatures better than others. In fact, some will withstand temperatures down to the teens. For those gardeners who grow oleanders in less temperate areas, the red- and white-flowered selections are recommended, although there are some pink- and salmon-flowered cul-

tivars that will also survive the colder winters. In areas that have prolonged periods of sub-freezing temperatures, cut plants back to several inches from the ground, cover with sand or peat moss after applying a general insecticide and a fungicide, then top with a covering of plastic or other protective material. As soon as the last freeze has passed, uncover the plant so that it can sprout. In extremely cold climates, keep the plants in containers that can be brought indoors during the winter.

A spring application of a fertilizer that is high in phosphorus (the middle number in the nitrogen-phosphorus-potassium formulation on the fertilizer container) will help oleanders bloom and grow in all climates. Aphids, mealybugs, scale and wart-like galls are the principal pests and diseases that afflict oleanders. Use any common garden spray for insect pests. Cut off and burn the galls, which are caused by bacteria, and disinfect shears afterward. Fungi also cause a leaf spot disease on oleanders; diseased leaves should be picked off and destroyed as soon as they are discovered.

It is important to remember that caution is in order when handling oleanders, since they are poisonous. Fortunately, oleander's sap is extremely bitter and is a deterrent to ingesting the plant. According to *A Colour Atlas of Poisonous Plants*, "The plants contain cardiac glycosides of the cardenolide type in all parts, but it is only from the seeds that a large number of such compounds has been isolated. . . . The bitter taste of the cardenolides is a deterrent to excessive consumption of the plant." Vomiting, often a side effect of this type of poisoning, prevents the absorption of large amounts of poison, so "although the plant is very dangerous, serious poisonings are rare."

Oleanders can be propagated by both cuttings and air layering. Cuttings of mature wood can be easily rooted in water or sand. In the spring and summer, cuttings of mature wood stripped of leaves will send out roots within seven to 14 days. In the fall, the rootlets take longer to appear. Cuttings rooted in water should be handled with extreme care, as the roots are very brittle and will break off easily. Rooted cuttings are best left in pots for a year and then transferred to the spots where they are to grow; they will bloom the second year of growth. Air layering has also been extremely successful, and if one chooses the proper branch, the new plant may bloom

in a matter of weeks.

Oleander seeds should be sown in a good sterile medium such as vermiculite or perlite. Pat the seeds down into the dampened medium and cover lightly. It normally takes two weeks for the seeds to germinate.

To create a standard or tree-form oleander, cut a piece of mature wood four to six feet tall that is at least one inch in diameter at the base. Strip the leaves from the branches and place the cutting in water in a non-metal container. Keep the water level about eight to 10 inches deep. After three to four weeks, place the rooted trunk in a container filled with a mixture of peat moss and garden soil. Water well for at least six months before planting the tree in a permanent location. Support the plant with a stake, and strip all new shoots from the trunk except at the top. Trim to shape.

In moderate climates, some cultivars of oleander have a blooming season that extends into the late fall; others burst into a mass of blooms in the spring, but after several spectacular weeks they are through blooming for the season. The flowers, which are borne in terminal branching cymes, may be used in floral arrangements and for corsages. (In the early 1800's, women wore clusters of oleander blossoms on their bosoms for decoration, and the plant was considered a status symbol.) The flowers of some cultivars last longer than others when cut; one should experiment in advance with the type to be used. Cut blossoms in the early morning or late evening, and place them in deep water in a cool place before using.

The shape of oleander blossoms varies. Single blooms can be pinwheel- or star-shaped, buttercup-like, square-ended or full-petaled. The double blossoms look something like gardenias, carnations or roses. Oleander blossoms are prevalent in the historic sections of Galveston, such as the East End Historical District, where many bushes are well over 50 to 75 years old. The large, old bushes provide a beautiful, old-fashioned frame for the lovely homes. In May, the yearly Historic Homes Tour occurs at the height of the blooming season, and visitors leave with a vivid impression of the flower-laden avenues. Indeed, the city is a garden tended by many hands, and the thoughts of residents and visitors alike often turn to the famous flower of Galveston. ❁ —Elizabeth S. Head

Elizabeth Head is a resident of Galveston, Texas, and a former president of the National Oleander Society.

Book Reviews

ENCYCLOPAEDIA OF AUSTRALIAN PLANTS SUITABLE FOR CULTIVATION.

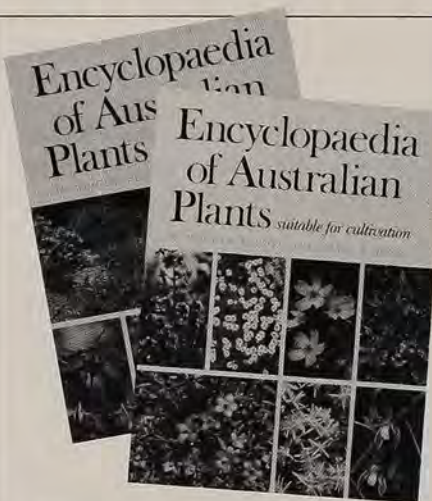
VOL. 1: *Introductory Volume*. 1980. 336 pages; hardcover, \$40.00. AHS member price, \$34.00. VOL. 2: *A-Ca*. 1982. 517 pages; hardcover, \$59.95. AHS member price, \$50.95. VOL. 3: *Ce-Er*. 1984. 516 pages; hardcover, \$59.95. AHS member price, \$50.95. W. Rodger Elliot and David L. Jones. Lothian Publishing Company. Melbourne, Australia.

The Australian flora, which includes some 15,000 species of plants, has long been of major interest to botanists and adventurous gardeners in other parts of the world. Unfortunately, it has been relatively ignored in its native land. The purpose of this multi-volume encyclopedia is primarily to introduce this remarkable and highly varied flora to the Australian gardener. However, it also provides an unprecedented source of information on Australian plants to gardeners around the world.

The five major divisions of Volume 1 include "Introduction and History of Australian Plants in Cultivation," "Selection and Cultivation of Australian Plants," "Pests and Diseases," "Propagation" and "Plant Lists" (for selection and use of plants in special situations). It is interesting to note that the chapter on the "History of Eucalypts in Cultivation" deals mainly with early attempts at developing a hardwood lumber industry in California.

Volume 2 onwards is an alphabetical account by genus and species of thousands of Australian plants suitable for use in the garden. The treatments are extensive; for example, *Acacia* fills 121 pages and *Dendrobium*, 37 pages. For each species, a description is followed by information on the natural habitat and notes on any special considerations for cultivation and propagation. Many excellent color photographs and black-and-white line drawings also accompany the descriptions. This new reference work is for adventurous gardeners everywhere—particularly in the Southeast, South and West of the United States. It should be in every serious gardener's home library and on the reference shelf in every public library.

—Gilbert S. Daniels



GROWING AND PROPAGATING WILD FLOWERS.

Harry R. Phillips. The University of North Carolina Press. Chapel Hill, North Carolina. 1985. 331 pages; hardcover, \$24.95; softcover, \$14.95. AHS member price, \$19.95 (hardcover), \$11.95 (softcover).

No wildflower enthusiast should be without this useful, informative book, which thoroughly covers the essential aspects of growing and propagating many species of wild plants. The introductory chapter on cultivating native plants covers such topics as soil preparation, planting and design, as well as pests and diseases. There is also an excellent chapter on propagation, which includes discussions on seed collecting, cleaning, storing, dormancy and pre-germination techniques, as well as asexual propagation. The majority of the book is devoted to extensive discussions of individual wildflowers, each of which includes information on fruit and seed characteristics, how to clean and store the seed, propagation, cultivation and landscape uses. This section is somewhat confusing to use, since the plants are not arranged in alphabetical order, but rather according to blooming time. Fortunately, however, a complete index makes the individual descriptions readily accessible. The author has also devoted an entire chapter to ferns, which includes an explanation of fern life cycles and propagation methods, as well as descriptions of 15 ferns.

With the exception of an eight-page section of color photographs, *Growing and Propagating Wild Flowers* is illustrated with

black-and-white line drawings of the individual plants. An appendix—with a chart of production timetables, recommended books, a glossary and an index—completes this valuable reference work.

A GUIDE TO ENJOYING WILDFLOWERS.

Donald and Lillian Stokes. Little, Brown and Company. Boston, Massachusetts. 1985. 371 pages; hardcover, \$18.95. AHS member price, \$17.05.

This attractive, field-guide-sized book will appeal to anyone who loves wild plants and wants to learn more about them. The book contains fascinating profiles of 50 forest and roadside plants that are common to urban and rural areas across North America and that represent a variety of life cycles and habitats. The featured plants include common clover, chicory, columbine, milkweed, skunk cabbage, thistle, trillium, lady's-slipper and yarrow. The authors introduce each plant with a general section on lore about the genus or the particular species, including name origins, herbal and medicinal uses, history, and any interesting stories that have been associated with the plant. Also included in the discussions of each plant are sections on wild and garden relatives, interesting characteristics about the plant that an individual can observe, enjoyable features of the flowers, and the characteristics of the plant through the seasons. Nature-lovers and gardeners alike will enjoy this interesting guide.

THE FLORISTRY HANDBOOK.

Harold Piercy. New Century Publishers, Inc. Great Britain. 1985. 149 pages; hardcover, \$17.95. AHS member price, \$16.15.

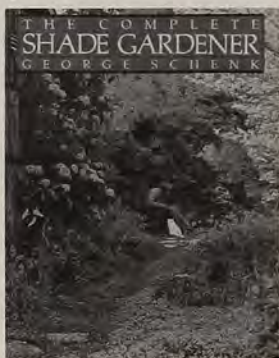
The Floristry Handbook is an informative reference for both the amateur and the expert flower arranger. This is a British book, written by an individual who has had 25 years of experience in the floral industry. The author explains many of the techniques used by professionals in making flower arrangements. The first section of the book deals primarily with flower arranging and decorating, and includes chapters on handling flowers and foliage, materials, basic flower designs, dried flow-

ers, and wedding and church decorations. The second part of the book is devoted to floristry, and focuses primarily on the many ways flowers can be wired together to form bouquets, headdresses, buttonhole sprays and other arrangements. Each chapter includes detailed instructions for many individual projects. An entire chapter explains floristry terms and methods, while another sets forth the methods used to wire flowers. The final section of the book covers some of the details of running a flower shop.

New In Paperback

THE COMPLETE SHADE GARDENER.

George Schenk. Houghton Mifflin Company. Boston, Massachusetts. 1984. 278 pages; softcover, \$14.95. AHS member price, \$13.45.



Shade gardeners everywhere will find something of interest in *The Complete Shade Gardener*. Schenk had consultants from all over the country, and includes suggested shade plants for gardens throughout the United States in his plant lists. The book—illustrated with black-and-white photographs as well as a few color plates—is divided into chapters on design and cultural practices. The major portion of the book, however, is devoted to a section of chapters with descriptive lists of shade-loving plants such as shrubs, ferns, perennials, annuals and edibles. (Since species appropriate for all zones are included, be sure to verify the hardiness of any of the listed plants in another reference work.) In short, this book would be a useful addition to any shade-gardener's library.

—Barbara W. Ellis

Barbara Ellis is Editor of *American Horticulturist* and Publications Director for the American Horticultural Society.

Gilbert S. Daniels is the Immediate Past President of the American Horticultural Society.

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THE ABBY ALDRICH ROCKEFELLER GARDEN

Continued from page 25

lac, lavender, delicate mauve, pink and soft yellow—meld with each other. These are interplanted with white-flowered and gray-foliaged plants, which act as buffers. The west borders betray the American penchant for English flower gardens, particularly for one in the style of Gertrude Jekyll, the great English garden designer whom Farrand admired. (Jekyll favored the use of native plants, as well as subtle blendings of color for total effect—techniques that became the hallmarks of a Farrand garden as well.)

Tucked into the northwest corner of the upper terrace is an inviting stone bench set among pale pink 'Catherine Woodbury' daylilies, white *Filipendula*, gray-leaved thistle, hostas, *Santolina* and blue pansies. Other stunning plant combinations include dwarf *Delphinium* 'Blue Mirror', backed by *Thalictrum*, *Liatris* 'Cobalt', and blue and white campanulas; and spires of *Filipendula rubra* 'Venusta' and *Achillea* 'The Pearl', grouped with *Gypsophila* 'Pink Fairy' and *Monarda* 'Croftway Pink'. Creamy and white *Matricaria* and marguerites add a gentle touch to the plantings.

The eastern side of the garden receives more sun, and the beds are more suitable for the hot-colored flowers that bloom there in gay profusion—various kinds of marigolds, sunflowers, annual phlox, zinnias and salvia. Here the visitor finds *Oenothera missouriensis*, as well as *Dianthus* 'China Doll' and *D. 'Danielli'* (a deep, bright rose double with unusual broad-leaved, gray-green foliage). The vivid purples and reds, burnt oranges, bright yellows and many shades in between attest to what Mrs. Rockefeller called the "courage of color."

Many visitors come mainly to see the flowers and to enjoy their rich color, form, texture and fragrance. On one hot afternoon last summer, as the sweet scent of heliotrope 'Royal Fragrance' wafted through the air, I counted 22 clematis scampering up the walls of the inner garden. Also in this living catalogue of flowers were both common and uncommon cultivars of alyssum, petunias, pansies, phlox, ageratum, geraniums, snapdragons, veronica, lilies, penstemon and others. Purple *Eustoma grandiflorum* (formerly *Lisianthus russellianus*), commonly called prairie gentian, was grown in the garden for the first time last year. They made a stunning show in August after a slow beginning. (Mr. Solari says he will sow seeds

a month earlier next time—perhaps in late December for July bloom, since Maine's summers are so short.)

The garden was built on what was once marshland. Originally, two magnificent red spruce grew in a woodland on the site that is now bordered by the north wall; a circular Chinese Moon Gate was centered behind the two trees. Now, only one of the spruces survives. (Its existence is precarious, however, as it was doctored for root rot about 10 years ago and still wears scars in the form of cement-like filling poured into the wounds.) This venerable sentinel is underplanted with a miniature fairyscape of purple lobelias ('Cambridge Blue' and 'Crystal Palace') and blue violas ('Admiration' and 'Blue Perfection'). The ubiquitous *Veronica repens* carries the blue along the paths throughout the garden.

The plantings for the north wall were selected to avoid any jarring effect with the red stucco. They are interesting more for their form and texture than for their colors, which are a neutral gray, white and mauve. Peggy Rockefeller, in her essay on the garden in *The American Woman's Garden*, explains that the north wall garden was planned to reflect the tranquil mood of the green oval garden at the opposite end, as well as to provide an interlude between the colors of the east and west borders.

The showstoppers along the north wall are giant seven-foot cow parsnips (*Heraclium sphondylium* subsp. *montanum*), a wild species spreading white umbels like delicate parasols. They are paired with airy plumes of *Cimicifuga racemosa*, black snakeroot. A bold planting of *Macleaya cordata*, commonly known as plume poppy, is also an eye-catcher. It could easily overpower most gardens, but here it is kept in check.

The central sunken Greensward did not exist until 1940; before that, the entire area was a sea of flowering annuals that provided cut flowers for the many rooms of The Eyrie. The planting design was geared for a profusion of colors during July and August, when the family was in residence. (It has been said that during Mrs. Rockefeller's and Farrand's trial-and-error experiments with color schemes and textures over a 10-year period, more than 1,000 plants were subjected to their meticulous standards.) Eventually, the annuals were replaced with lawn in order to create more space in the garden and to reduce maintenance.

Another architectural modification was made in 1946, when the opening from the central sunken panel into the oval garden was widened from six to 11 feet. The change was designed by Farrand and her associate on Mount Desert, Robert Patterson. Mr. Patterson, an architect who still lives on the Island, later worked with Peggy and David Rockefeller to restore the Greensward to its present form.

Peggy Rockefeller, "cattle breeder by vocation, gardener by avocation," has been chief gardener at The Eyrie since 1960. Each fall, about October, she and Gary Solari meet to weigh the successes and failures of the past summer and to plan the garden for the next season. Experiments and changes are still being made. The biggest change, sparked by David and Peggy Rockefeller's visit to English gardens several years ago, has been the gradual introduction of new perennials into the garden. Previously, about 85 percent of the border space was devoted to annual flowers; now, perennials fill most of the top tier on both sides of the garden. The annuals are still being replaced gradually, as other perennials are found that can withstand Maine's harsh winters and still bloom profusely in late summer.

Since the mid-1960's, the Rockefellers have been sharing the garden with the public on a limited basis. However, there is concern about the garden's vulnerability to large crowds of visitors. It is obvious that the maintenance, in the hands of a staff of six gardeners, is unstinting and meticulous. Nevertheless, compacted soil, damaged turf and trodden-upon plantings can only be repaired to a point. Children who are allowed to stray off pathways and wander through the garden unsupervised pose another problem. The Rockefellers are exploring possible solutions to these problems with the Island Foundation, a non-profit organization that also acts as guardian for other notable gardens on Mount Desert.

But perhaps there's hope. One day while in the garden, I watched as a lad of about five, holding onto his father's hand, stepped through the Moon Gate by the old spruce. He stopped, looked ahead at all the colors of the garden, and said, "This must be the best part of the world—right here!" 🍀

Margaret Parke is a free-lance writer and photographer whose articles have appeared in *Organic Gardening* and *The New York Times*, as well as in former issues of *American Horticulturist*.

Jack-in-the-Box Planting

All of us have read the gardening sage's advice to plant annuals in spaces where bulb foliage dies down in late spring. However, there is another technique that will allow you to enjoy two or more displays in the same spot while avoiding the yearly ritual trip to the garden center. Known as companion, multiple-tier or jack-in-the-box planting, this technique will help you make the most of your gardening space and time.

Instead of planting annuals that disappear after one season, try using self-sowing annuals, which will repeat their show every year. At River Farm, the American Horticultural Society's headquarters, daffodils and tulips grow in the perennial borders. Soon after the flowers fade, self-sown larkspur grows up through the bulb foliage. The larkspur's feathery leaves disguise the bulbs without completely blocking the sun, allowing the bulb foliage to produce food for next spring's display. By the time the larkspurs bloom, the daffodils and tulips are yellowing and collapsing out of sight—without our having to remove them or plant something in their place. Then, as the larkspurs set their seeds and as their leaves yellow, spider flowers (*Cleome hasslerana*) grow large enough to disguise them. The spider flowers carry the floral display until frost; in the meantime, they drop their seeds for next year's show. All told, we enjoy three very different garden pictures in the same spot, with little effort on our part.

Shade gardeners can repeat another successful River Farm combination growing happily in our Ballroom Yard. Hellebores bloom in March, followed by bluebells and bright red tulips in April and May. As these spring flowers fade, hardy begonias (*Begonia grandis*, formerly *B. evansiana*) appear and quickly hide their predecessors. In August, the begonias' cheerful pink flowers provide a month or more of color, giving us a completely different effect from the blue and red of spring. This planting carries the jack-in-the-box idea one step further, however. In spring, upstaged by the bluebells and tulips, the strappy foliage of magic lily (*Lycoris squamigera*) grows in lusty profusion, eventually disappearing among the begonia leaves. Then, just be-



Raymond J. Rogers

The dramatic blooms of *Allium christophii* overshadow the foliage of anemones, which come into bloom in the late summer when the alliums fade.

fore the begonias bloom, the magic lilies pop up their leafless flower stalks to produce umbels of pink flowers. Many visitors, unaware of the two different plants growing in the same place, may think that the pink flowers grow on the plants with the begonia-like leaves. In fact, the begonias bloom soon after, repeating the pink theme a bit more subtly.

This little bit of garden theater also works well with so-called autumn crocus (*Colchicum autumnale*) planted with *Pachysandra*. The leaves of *Colchicum* do not stand out in spring, but be prepared for many questions and comments when the bright pinkish-violet colchicums suddenly appear among the plain-Jane *Pachysandra* in fall. For a change of pace, try planting *Colchicum*, *Sternbergia lutea* and true autumn crocus (*Crocus spp.*) among ground-hugging junipers, English ivy (*Hedera helix*), periwinkle (*Vinca minor*), *Liriope* or other low evergreen plantings.

Another superb combination grows at Sissinghurst, the masterpiece garden of the late Vita Sackville-West, located southeast

of London. In June, the silvery-purple balls of *Allium christophii* (formerly *A. albobilosum*) appear like fireworks above the still-low foliage of fall anemone (*Anemone × hybrida*); the anemones neatly conceal the unsightly allium leaves near the ground. The anemones grow upward through the fading allium blooms and seed heads, which help support the sometimes-floppy anemones. The white or pink anemone blossoms appear in late summer, creating a very different picture in the same space the alliums dominated in June. Spring-flowering bulbs would add a third season of color in the same spot.

This technique has its practical aspect, aside from avoiding the need to replant annuals every year. Some perennials emerge from the ground rather late in spring. Those of us who cannot remember the location of every plant in the garden might be seized by a zealous urge to cultivate the soil to remove spring weeds, just as the late emergers are pushing through. With one spirited whack of the hoe, we unknowingly decapitate a balloon flower (*Platycodon*), discovering our misfortune when we uncover the remains. If early-blooming bulbs or annuals had surrounded the nascent perennial, we would not have disturbed it, thereby saving ourselves a bit of anguish.

Be sure to match your plants' cultural needs when attempting to create jack-in-the-box combinations. For instance, most irises grow in such tight clumps that nothing (except weedy grasses) will come up through them, and irises need plenty of sun throughout the growing season to produce a good show of flowers the next year. As a general rule, loosely growing plants such as baby's-breath (*Gypsophila*), flax (*Linum*), tickseed (*Coreopsis*) and meadow rue (*Thalictrum*) combine well with those plants that take up little vertical space (such as many bulbous plants), or with those that die down soon after appearing in spring.

Think of yourself as an imaginative garden matchmaker, and try new combinations of plants to grow and enjoy in the same space. ☛ —Raymond J. Rogers

Ray Rogers is Education Supervisor/Horticulturist at the American Horticultural Society.

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