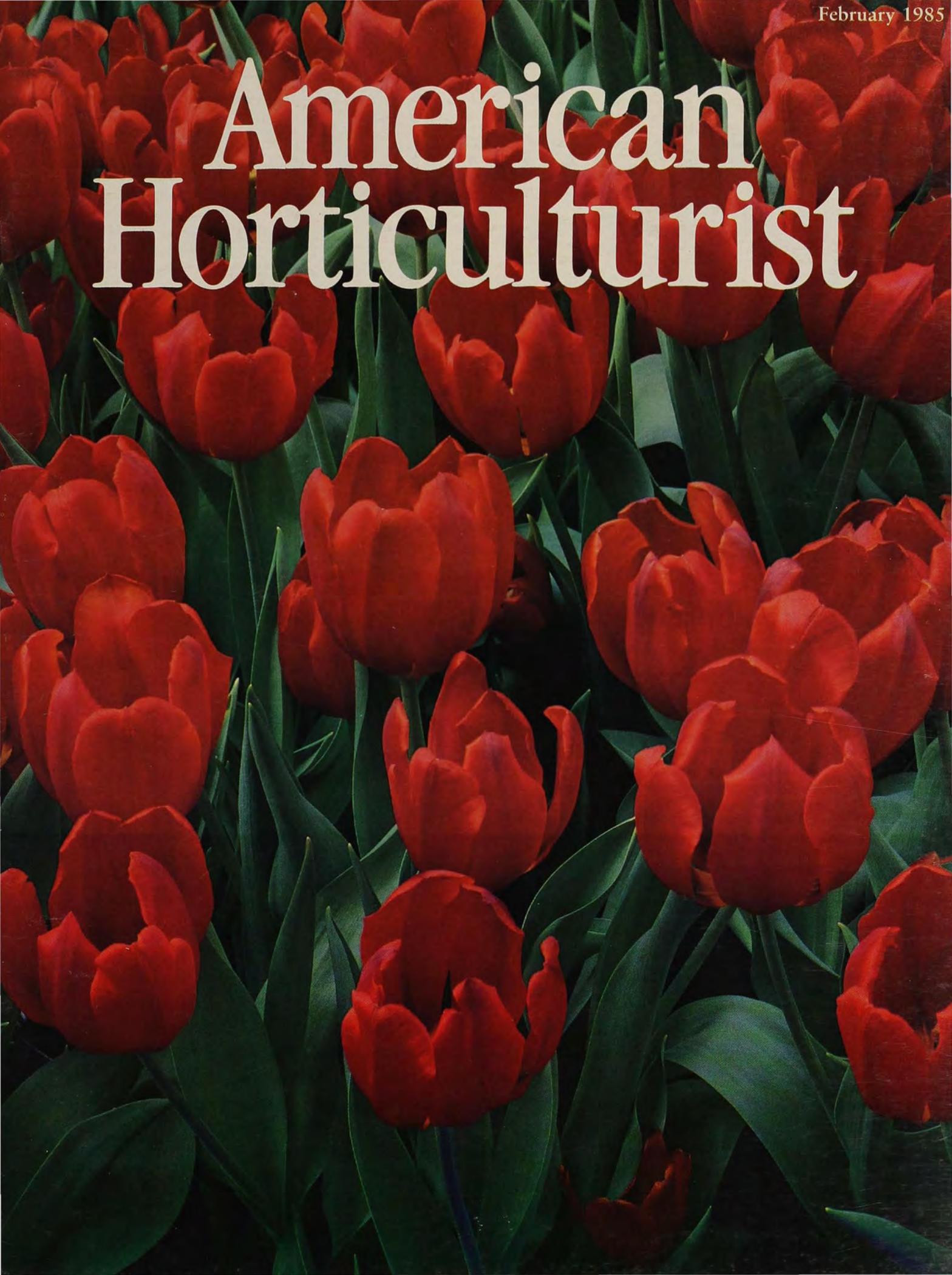
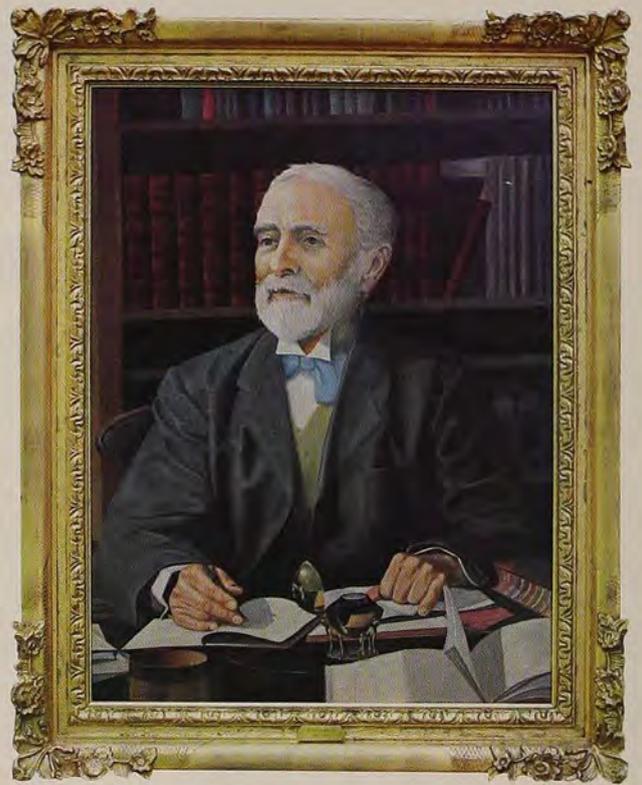


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American Horticulturist





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Gazania 'Mini-Star Tangerine' is an All-America Selections winner and just one of the many new plants available for the first time this season. For more on the new introductions we can look forward to this year, turn to page 22. Photograph courtesy of All-America Selections.

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On the Cover: In a few short weeks, spring bulbs such as these luscious red tulips will be gracing gardens across the country. Florists, flower stalls and grocery stores offer forced tulips and daffodils for sale to individuals who yearn for signs of spring. With the aid of a cold greenhouse, the gardener can produce his or her own pots of spring bulbs, as well as winter salad greens and seedlings for the vegetable garden, without spending a fortune on heat. To read more about the many uses for a cold greenhouse, turn to page 19. Photograph by Jerry Pavia.

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Urban Horticulture

As a national organization, the American Horticultural Society draws upon the resources of researchers and educators, as well as its members, for the latest information about trends and developing frontiers in horticulture and gardening.

Interest in urban horticulture, one of the newest areas of study, began in the 1960's with the Green Belt Beautification programs and continued to develop through the 1970's, when there was widespread interest in environmental affairs. Throughout this period, our living spaces—once large and luxurious—were reduced to smaller lots, smaller town houses and high-rise condominiums. As our gardening space continues to decrease, researchers have begun to study the needs of the urban gardener, as well as the demands the urban environment places on the gardener and the plants he or she grows.

Ideally, plants grown in urban gardens will be selected not only for their beauty, but also for their adaptability to urban situations. The search for adaptable, attractive plants will cause gardeners and horticulturists to pay more attention to the characteristics of specific cultivars and varieties. Since urban gardens are generally small and intimate, there will also be more emphasis on dwarf and compact plant habits, in addition to plants that appeal to our sense of touch and smell. Our smaller urban gardens will be viewed from close range, and, as a result, the detail of each plant in the garden will be more noticeable. Urban gardens will demand plants with a more delicate appearance.

In many urban settings, landscape plants never receive direct sunlight. Furthermore, plants in urban gardens are usually planted quite close together, so competition is high. Thus, future specifications for urban gardens will no doubt include requirements for propagation and production under specific light regimes. This way, growers will be able to produce plants that are more usable in low-light urban landscapes.

Most planting sites in urban areas have been excessively disturbed. Often, the urban gardener is left with only fill dirt on which to build a garden. This means that



This small urban garden is located behind historic St. John's-in-the-Village Church in New York's Greenwich Village. To read more about it, see *American Horticulturist*, April 1981.

normal capillary water movement within the planting area is impaired. Many authorities currently recommend amending the soil with large amounts of organic materials. However, many researchers now believe that we should select plants for urban gardens that can tolerate and grow in these unamended soil sites. Scientists are studying nitrogen-fixing bacteria (which are found in the roots of many legumes, for example) and the benefits they provide both the plant and the garden, as well as the allelopathic interactions between plants, in an attempt to identify and develop plants that will survive these conditions.

Scientists will also need to re-evaluate propagation and production techniques for plants that will be used in urban sites. Surprisingly, current market studies indicate that a larger number of landscape plants die after they are planted in the landscape than during the propagation and production phases. Many horticulturists believe that these losses are primarily due to the propagation and production methods used by nurserymen who supply these plants rather than to the gardener's insufficient care.

Scientists will also be involved in helping urban gardeners become more knowledgeable about the effects of environmental stresses on plants. A plant that appears normal to the human eye may, in fact, be affected by microclimatic stresses. For example, a factor such as a brief water short-

age during part of the day can be crucial to the health of a plant. Plants that are able to cope with such stresses will be less prone to insect and disease attacks.

A special area of interest to the urban gardener—and which will no doubt receive increasing attention—is drought-tolerant plants. In most areas of the United States, landscape plantings require irrigation during some portion of the year. As water shortages become more widespread, we will need to use more native plants and species that can withstand all of the climatic stresses in the garden.

The American Horticultural Society will continue to help you select and successfully grow plants in the urban environment. As an organization devoted to serving the needs of horticulturists across the country, we are concerned not only with the aesthetic function of plants, but also their architectural, culinary, physiological and climate control functions.

As we enter new frontiers in gardening, it will still be important to create a garden environment that meets the needs and lifestyle of each individual gardener. It will remain the goal of the American Horticultural Society to help each of you create that unique environment. ❁

—Dr. John A. Wott

Dr. Wott is a professor of urban horticulture at the Center for Urban Horticulture, University of Washington, Seattle. He is also a member of the AHS Board of Directors.



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Photograph of beaver-tail cactus, *Opuntia basilaris* by Pat O'Hara.



Philip E. Keenan

The Wood-Sorrel Family

The month of March is almost upon us. What could be a better “plant of the month” than the shamrock, the plant sold by florists and street corner vendors on March 17 in observance of St. Patrick’s Day?

Just what is the shamrock? Several different kinds of plants, all with three-parted leaves, go by the common name “shamrock.” In the United States, little white clover (*Trifolium repens* forma *minus*), a member of the pea family, is commonly sold as shamrock. Yellow clover, *T. procumbens*, is the official Irish shamrock in Dublin. However, many Irish traditionalists believe that the *true* shamrock—the species plucked by St. Patrick to demonstrate the Christian doctrine of the Trinity—is a creeping member of the wood-sorrel family called *Oxalis acetosella*.

Oxalis is one of seven genera in the Oxalidaceae, or wood-sorrel family. The name Oxalidaceae is based on the Greek word *oxys*, meaning sour. Family members are chiefly tropical plants with compound leaves. Flowers are solitary or grow in clusters; they are bisexual and regular, with five sepals, five petals and five or 10 stamens. The fruit is a capsule or berry.

Out of 1,000 species in the wood-sorrel family, 850 belong to the genus *Oxalis*. This large genus of sour-juiced plants, found on all continents, is most abundant in South America and South Africa, far from St. Patrick’s Ireland. It contains woody, cushion-like plants from the Andes, species with edible tubers of economic importance, beautiful wildflowers and some weeds. Three hundred species offer attractive flowers and foliage; *Oxalis* spp. are common in outdoor summer plantings as well as on winter windowsills.

Although the vast majority of these attractive plants are clearly recognizable as members of the genus *Oxalis*, it is often difficult to identify individual species. These generally small, herbaceous annuals or perennials are stemmed, stemless or oc-

casionally shrubby. Some have underground tubers, while others spread underground on fine, fleshy stolons. All of the South African species form bulbs, but many of the South American species do not. Furthermore, although all of the South African species are herbs of moderate size, several of the South American species are worthy of being called shrubs.

All *Oxalis* species have compound, clover-like leaves with at least three or four leaflets. The leaflets are always arranged palmately, in finger-like fashion. The species are differentiated by the various arrangements of the leaflets and their color or markings above and below, as well as by their marginal indentations. They are also distinguished by the characteristics of their roots, tubers or bulb growth. Leaflets are light-sensitive and fold up at night or in gloomy weather; in some species, flowers also close in low light.

Slender flower stalks carry solitary blossoms or few-flowered clusters and arise from the low-growing mounds of leaves. The flowers occur in most colors except blue. Although these flowers produce nectar and are visited by bees and other insects, some spring-flowering species such as *O. acetosella* are rarely cross-pollinated; viable seeds develop from a set of flowers that never open. In these flowers, pollen grains germinate inside the bloom and travel down the styles to fertilize the ovules. This method of pollination, which also occurs in other plant families, is known as cleistogamy.

Oxalis species bear their fruit in a capsule. When ripe, the capsules rupture with force and distribute seeds some distance from the mother plant.

Many woodland species of *Oxalis* are suited for the rock garden or wild garden. Irish shamrock or European wood sorrel, *O. acetosella*, is a perennial herb of European origin that is now widespread in temperate woodlands of the United States. *O. montana*, from America’s East Coast, is a closely related species. Both grow from creeping rootstocks. *O. acetosella* bears

Oxalis montana.



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STRANGE RELATIVES



Oxalis adenophylla, a species from Chile.

Pamela Harper

flowers that are white or white with purple veins; *O. montana* has white blossoms. *O. oregana*, redwood sorrel, and *O. trillifolia*, from the West Coast of the United States, are similar in habit but larger in size. Both bear either pink or white flowers.

O. violacea, violet wood sorrel, is a native American woodlander that grows from a small bulb. It is found in woods and prairies from Quebec to Florida and westward to the Rockies. It blooms in April and May, and again from August to October. The raw greens of this plant have been used as a blood tonic.

The juicy, green stems of the cosmopolitan weed known as lady's sorrel, *O. corniculata*, have a pleasant sour flavor. The plant's yellow blossoms have a faint fragrance. This is the sorrel or sour grass that creeps unwanted into flower borders or lawns, forming suffocating mats of delicate green foliage. It could be admired for its delicacy and its persistence if it weren't such a nuisance. *O. corniculata* and another European creeper, *O. europea* (formerly *O. stricta*), are hardy, and both have freely seeded themselves throughout the United States.

Outdoor gardeners in warm temperate areas can choose from among the many *Oxalis* species originating in South Africa, where over 200 species have been identified. These species have also enhanced indoor container gardens.

A widely known South African oxalis is Bermuda buttercup, *O. pes-caprae*, which, ironically, is neither a buttercup nor from

Bermuda. This African spring-flowering perennial produces showy, nodding, bright yellow flowers that are borne three to 20 in a cluster on stalks that are about a foot tall. A double-flowered form is also known. The plant, which grows from a deep, scaly bulb and thickened roots, is less compact and more sprawling than many other members of the genus. Its leaves have three leaflets that are triangular, with the points toward the center. It is the only tender, yellow-flowered, stemless oxalis in cultivation that bears clusters of yellow flowers; others have solitary blooms. Bermuda buttercup is naturalized in Bermuda, Florida and California. This species becomes disseminated easily; it produces large numbers of small bulbs and scatters them widely by means of its spreading root system. In some places, it has become a pest.

O. purpurea (formerly *O. variabilis*) is a bulbous species from the Cape of Good Hope. It is outstanding for its showy, silky-textured flowers, which are borne one to a stem. The flowers are two inches wide and appear in shades of rose, violet or white, with a yellow throat. The large clover-like leaves consist of three almost circular leaflets that have translucent dots and hairy margins. The 'Grand Duchess' series cultivars are especially showy and are widely grown as pot plants.

O. bowiei, Bowie oxalis, is the hardiest of the South African species; in sheltered spots, it survives the winters of New York City. It is a summer-blooming perennial with thickened roots and scaly bulbs. *O.*

bowiei produces clusters of three to 12 pink to rose-purple flowers, which are borne on 10-inch stalks that rise from among the leaves. The leaflets are almost circular and are notched at the outer rim.

Oxalis species occur over extended areas of South and Central America, and north to Mexico. These regions have produced an even larger range of cultivated species than has South Africa.

Of particular interest as a strange relative is *O. tuberosa*, commonly called oca. In the high Andes of Peru and Colombia, oca is cultivated for its tuberous roots. It is second only to the native potato in dietary importance and is still a staple of Indians living in Andean heights. Mountain Indians harvest the root and mellow it in the sun to rid it of its oxalic acid content. They then eat it raw or boiled, or dry and powder it to give starchy body to soup. The tubers are high in sugar content and have a pleasant, slightly acid taste. Although so far unknown in North America, oca has become popular in New Zealand as a backyard vegetable and

ornamental.

Any list of *Oxalis* species of horticultural interest is replete with names of familiar flowers. Two plants—*O. rosea* from Brazil and *O. rubra* from Chile—have been termed “grandmother’s favorite house plant.” Usually, the plant offered is *O. rubra*, which is grown as an indoor pot plant and outdoors in mild regions. Its thick, woody root crown and tuber produce clover-like foliage and pink, bell-shaped blossoms in clusters; its cultivar ‘Alba’ is white-flowered. *O. rosea* is highly recommended for the rock garden.

Fire fern, *O. alstoni*, was known until 1978 as *O. hedysaroides* ‘Rubra’. This shrub-like oxalis is said to grow three feet tall in its native territory in South America. When grown as a pot plant, it is considerably smaller and can be kept within bounds by judicious pruning. This species is characterized by leaves composed of three small, heart-shaped leaflets that are an intense maroon-red. The brilliant foliage color, the source of the plant’s name, makes the species a very attractive pot plant. The

leafy, wiry stems are crowned with a profusion of bright chrome-yellow flowers. Fire fern is a sensitive plant, folding its leaves when touched. The leaves also exhibit a peculiar up-and-down movement during the day instead of folding at night, as do the leaves of many species of *Oxalis*.

O. regnellii is undoubtedly as widely recognized as any of the other *Oxalis* species. Its distinctive, large, parasol-like leaves attract attention. The leaflets are purple on the underside and broadly triangular, with the broad side facing away from the center and a slight notch in the margin. *O. regnellii* is an ever-blooming pot plant with dainty clusters of white flowers on four- to six-inch stems.

The red velvet shamrock, *O. siliquosa* (formerly *O. vulcanicola*), is a sprawling, fibrous-rooted annual with a profusion of thin red stems and coppery-red leaflets borne in threes. It is ever-blooming, indoors or out, and has golden-yellow flowers that appear in clusters. This plant from El Salvador and Costa Rica provides another example of the curious leaf move-

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STRANGE RELATIVES

ments of *Oxalis* species; when physiological conditions are not optimal (for instance, when light conditions are extreme), the plant folds its leaves down tightly.

Thimble of gold, *O. lobata*, is another South American species. Notably, this bulbous plant has two periods of growth per year: a short one in April and May, when only a few leaves are formed; and a much longer one in the fall and early winter, when both flowers and leaves are produced. The latter period is especially long if the plant is grown in the greenhouse. The blooms, which appear in October, are borne on long, single-flowered stalks. The corollas—the crowning glory of the species—are nearly an inch in diameter and are a rich golden yellow in color, with reddish lines that radiate from the throat. The petals overlap slightly, forming the "thimble." Foliage and flowers rarely exceed four inches in height, making *O. lobata* valuable for small areas of the rock garden and as a pot plant.

Two Chilean species have been dubbed "oxalis freaks" because of their foliage. *O. adenophylla* and *O. enneaphylla* have compound leaves consisting of nine to 20 leaflets that are attached at the top of the petiole like the propeller of a helicopter. Both species are tuberous and produce delicate blossoms in few-flowered clusters. *O. enneaphylla* is native to the Falkland Islands and the Strait of Magellan. It became known to navigators as scurvy grass because of its use in treating sailors with that disease.

Still other *Oxalis* species attract attention because of their foliage. *O. tetraphylla* is a Mexican species that produces stout, four- to eight-inch petioles, each of which is topped with four, or rarely three, leaflets. The leaflets form a two- to four-inch-wide pattern resembling a Maltese cross. Each leaflet is distinguished by a zigzag band of purple. *O. deppei*, good-luck plant, is also a native of Mexico and has four leaflets per leaf. This plant, a desirable flowering species, produces edible tubers and was once cultivated for food. *O. corymbosa* (formerly *O. martiana*) has a checkered botanical background, perhaps due to its aggressive nature. It appears to be the source of a popular indoor plant sold as *O. 'Aureo-reticulata'*, whose bright green leaflets are veined with gold.

The only other genus of Oxalidaceae whose members are commonly cultivated is *Averrhoa*. The name commemorates Averroes, a Spanish-Arab philosopher of the twelfth century. At first sight, the two

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species in the genus *Averrhoa*—both evergreen trees from tropical Southeast Asia—seem far removed from *Oxalis*. Yet these species share the wood-sorrel family characteristics. For example, both have alternate leaves that are compound—in this case, pinnately, that is, with leaflets arranged like feathers along the axis or rachis. Their tiny, fragrant flowers are succeeded by fleshy, drooping fruits that are edible. *Averrhoa* species are chiefly grown for this fruit; both *A. bilimbi* and *A. carambola* are now grown in southern Florida, southern California and Hawaii.

A. carambola is the hardier of the two species. Under favorable conditions, it produces two or three crops of fruit a year on a 20- to 25-foot tree. The fruit—known as carambola, star apple or country gooseberry—is waxy, a greenish-yellow or golden-brown, five inches long and furrowed with three to five ribs. In cross section, it is star-shaped; slices of carambola are a decorative and tasty accent in a fruit or salad dish. The fruit can be sour or sweet, and can be eaten raw or used in juice drinks. Unripe fruit makes good jelly. Carambola was introduced in Florida by the U.S. Department of Agriculture around 1923. It is now appearing with increasing frequency in the fresh produce departments of supermarkets outside of Florida.

A. carambola produces dense evergreen foliage. Each leaf is half a foot long and consists of five to 11 leaflets borne in pairs; the odd leaf is at the tip. Clusters of tiny white and purple flowers appear on bare branches or at leaf bases. Like the leaves of *Oxalis* species, young carambola leaves are sensitive to the touch.

A. bilimbi, cucumber tree or tree sorrel, is quite different. In the tropics, it attains a height of 50 feet. It has hairy shoots and leaves with 23 to 45 leaflets. Red-purple flowers grow on the trunk or bare branches. The two- to four-inch-long, waxy fruit is greenish-yellow, gherkin-like and borne in drooping clusters. The very sour, juicy pulp of this plant is used in preserves, jellies or candies. The sour juice can also be used to remove stains from cloth.

The above is far from an exhaustive list, particularly of the species in the genus *Oxalis*. The wood-sorrel family is a gold mine of edible fruits, as well as plants with beautiful flowers and distinctive foliage suitable for gardening both indoors and out. ☉

—Jane Steffey

Jane Steffey is an active AHS volunteer and serves as Editorial Advisor to *American Horticulturist*.

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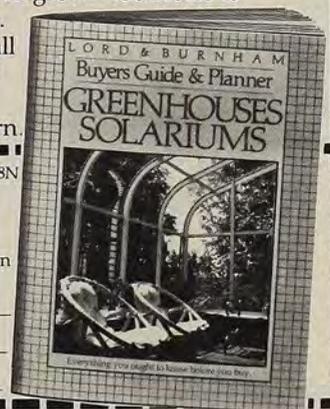


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A CATALOGUE REVIEW

BY PETER LOEWER

Ralph Waldo Emerson once said, "Never read any book that is not a year old." In this age of cheap paper, glued bindings, unpleasant inks and artful advertising copy, perhaps his advice should be taken to heart. Fortunately, for people who love to both read and garden, there are plenty of used and rare gardening books available. These books have withstood the test of time both in content and condition. They have thick, off-white pages securely stitched—pages covered with advice written by people who were truly happy in the garden and wanted to share their experiences. The following 19 book dealers sell such books through catalogues, with titles numbering in the thousands—titles that should awaken the collecting instincts of any gardener alive. (Unlike the specialty dealers, who deal only in books on a particular plant group, these dealers offer a cross section of titles.)

Each of the dealers listed below became involved in books out of a love for the printed page. Many started as hobbyists and, in time, found more enjoyment in selling a book than in working for someone else. The books selected to highlight the listings are American and illustrate the fact that some of the best garden books in the world have their origins here.

The American Botanist sends its catalogue from America's heartland. Keith Crotz, who has a master's degree in botany, divides his time between building up his collection of books on North American medical botany, searching for books and doing research in botany. "I conduct searches for titles in the general area of herbals, scholarly botany, horticulture and agriculture," said Keith. His most recent catalogue included Vernon Quinn's *Stories and Legends of Garden Flowers* (1939), Elvin McDonald's *The World Book of House Plants* (1963) and Norvell Gillespie's *Pacific Coast Gardening Guide* (1949).

Anchor & Dolphin Books is owned by

James A. Hinck and Ann Marie Wall. "Our involvement in the book business happened gradually over the years," said Ann. "We can't remember a time when we were not pursuing elusive and unusual books of some sort. Years ago, while doing research for a medieval garden, we became fascinated with the literature of garden history, and now our two strongest interests—rare books and garden history—have naturally merged." Whether you are looking for a rarity like Loraine M. Cooney's *Garden History of Georgia* (1933) or the more down-to-earth *Modern American Garden Designs* (1967) by James Rose, I recommend visiting their bookstore.

Each of these dealers became involved in books out of a love for the printed page.

George A. Bibby started in the garden book business back in 1967 when he and his wife Beth (she ran an iris nursery for 20 years) bought a mailing list from a neighboring dealer. In 1976 George retired from the railroad, and he and Beth devoted all of their time to books. "I'm a true bookaholic," said George, "and I have always loved books, especially on garden and natural history." Although George works alone now, the business continues to expand. Current catalogues have included Rickett's *Wild Flowers of the United States, Volume 3: Texas* (1966), Peggy Schultz's *Gloxinias* (1953) and Lester Roundtree's book on American alpenines, *Hardy Californians* (1936).

Warren F. Broderick also sells old books of interest to gardeners. "About eight years ago," said Warren, "I started dealing in garden books. Up until then, I both gardened and read, and occasionally wrote a few articles. Soon I began to run out of space and decided it was time to specialize. So I chose good British imports and some of the best American garden books of the twentieth century. And I love books!" The following three books were listed in the pages of a recent catalogue: Joseph Hudak's *Gardening With Perennials Month by Month* (1970), Grace Niles's *Bog Trotting for Orchids* (1904) and Alice Coats's *The Book of Flowers* (1974).

Editions is a large book dealership that opened in 1948. Book categories run the gamut from animals and American history to dance, espionage and gardening, with natural history on the side. Its founder, Norman Levine, said: "I began as a graduate student in literature, thinking I would deal expressly with selling books to graduate students and professors. I soon found that many of them do not have the money to buy books, and I gradually had to cover all the subjects. I love to sell gardening books because people who buy them really want them to use, not just to sit on coffee tables." A typical catalogue lists some 70 titles—always changing—and has included Helen S. W. Goddard's *Gardener's Book of Arrangements* (1970) and Harold

Hume's *Gardening in the Lower South* (1949).

Hortulus Books offers books in the fields of architecture, gardening, horticulture, landscape design and botany. Owners Linda and Bruce Marshall have both had careers outside of gardening that have required them to spend time away from home, and much of Bruce's passion for gardening has had to be satisfied through books. "We now reside in an old tin-sided house in Toronto," said Linda, "where we carry on business usually by catalogue but have retail hours by appointment. We love the opportunity of writing and talking to customers all over the world, and I wish that publishers could be provoked into publishing better researched work and reprinting the great classics." Individuals browsing in the pages of their catalogue will find such books as E. M. Bett's *Thomas Jefferson's Garden Book* (1971), H. R. Ely's *The Practical Flower Gardener* (1911) and Ann Leighton's *American Gardens in the Eighteenth Century* (1976).

Hurley Books began in 1967 when Henry and Janet Hurley left the Boston area and carried their book business to New Hampshire. At the time they began their agricultural and horticultural book collection, they were raising goats. "There were several books that we wanted badly," said Henry, "and it seemed that many other people we knew were looking for similar books, so we combined our existing business with the new interests and have been issuing a catalogue a year." Recent selections have listed Hildegard Hawthorne's *The Lure of the Garden* (1911), P. A. Rydberg's *Flora of Colorado* (1906) and Francis Guenon's *A Treatise on Milch Cows* (1846). Their shop is open to browsers, but please call first.

Ian Jackson handles a very select number of garden book titles. "I had a large number of books," he said, "and no employable skills, so I became a garden book dealer." He does admit, though, to having a very small garden. A recent catalogue featured Clement G. Bowers's *Winter-Hardy Azaleas and Rhododendrons* (1954), D. C. Eaton's *Ferns of North America* (1879) and John Macoun's *Catalogue of Canadian Plants*, published from 1883 to 1890.

Lion's Head Books is owned by Spalding McCabe. "I've been a dealer in books for over 10 years," said Spalding, "and before that, I worked in various book businesses in Boston. I've been in gardening books for some seven years, after the requests from so many customers increased.

I don't carry the real rare books—though some are hard to find—and generally collect twentieth-century American and English books." He doesn't publish a list at this time, but will gladly respond to a search request and has a continual turnover in stock. Recent books in his store have included two volumes first published in the 1920's: Louise Sheldon's *American Gardens* and Fletcher Steele's *House Beautiful Gardening Manual*.

Timothy Mawson found that flowers were one of the most important things in his life. "I began selling books some 10 years ago," he said, "and soon began to specialize in horticulture and garden books, along with books on wine and food—country living in general. A good friend gave me a list of books to find that dealt with gardening, and I became so interested in the search and the wonderful people that you meet in this business that just like Topsy, it grew!" Recent catalogues have included Alice Sloane Anderson's *Our Garden Heritage* (1961), John T. Faris's *Old Gardens In and About Philadelphia* (1932) and Stanley Schuler's *Gardening in the East* (1967).

Pomona Book Exchange is operated by Fred and Walda Janson. "Starting as a food scientist and a product development manager," said Fred, "I now devote all my time to books. I garden, practice rural living and have about 200 trees in our present orchard. I sent out the first catalogue in 1951 and was joined by Walda, an accountant, in 1977 when I retired. We now publish three catalogues a year. Walda is the good spirit in the flower and vegetable garden, as well as in the general ledger." The Jansons' catalogue often contains over 1,000 items devoted to gardens, botany and the floral arts. Its pages list back issues of the *American Camellia Society Yearbooks*, R. A. Malby's *The Story of My Rock Garden* (1917) and Bebe Miles's classic, *Bulbs for the Home Garden* (1976).

Savoy Books is owned and operated by Robert Fraker. "I became enamored with the used book business," he said, "by hanging out in old bookstores during my college years." He has dealt with antiquarian garden and farm books for over 13 years. His book lists have included such titles as Thomas Green Fessenden's *The New American Gardener* (1828), Peter Henderson's *Henderson's Handbook of Plants* (1881) and William Tricker's *The Water Garden* (1897).

Second Life Books is owned by Russell and Martha Freedman. "We've always had an interest in books," said Russell, "but

we sort of slid sideways into the book business. We live in the country, in a big old house with an orchard and an antique perennial border, and had to buy books to find out what to do. Our interests expanded, the books increased, and the garden grew, so in addition to agriculture, horticulture and the rural arts, we stock rare old books of all kinds." Past lists have featured Benjamin W. Douglass's *Orchard and Garden, A Guide Book for Beginners* (1918), Leicester B. Holland's *The Garden Bluebook* and Norman Taylor's *The Garden Directory* (1936).

Edward F. Smiley is a bookseller and searcher. "I have a modest business," he said, "but one which does specialize in providing out-of-print gardening and horticultural books. Most of my work is in the searching, but I try to keep a few sets on hand, like L. H. Bailey's *The Standard Cyclopedia of Horticulture*, or books like Stout's *Daylilies* or Blasdale's *Primulas*. Remember, it's not the selling, it's the finding." So if there's a specific book you've been trying to find for years, just drop Mr.

Smiley a line, or give him a call.

Jane Sutley Horticultural Books sells books related to gardening, farming, forestry and natural history. "We got into the business," said Jane, "by subscribing to the philosophy that a person will work hardest and best at work that is personally meaningful and enjoyable. It seemed logical to combine two great loves—gardening and reading—into a business." Jane and her husband, Bruce, deal chiefly in books on practical horticulture of the current century, though they will gladly search for older books. In the pages of one catalogue were such gems as Louise Beebe Wilder's *Adventures With Hardy Bulbs* (1936), Donald Wyman's *Dwarf Shrubs* (1974) and Doretta Klaber's fascinating *Gentians for Your Garden* (1964).

Sweetgrass & Company is owned by Jim and Jeanne Howard. "My wife and I run a travel agency," said Jim. "Jeanne is a travel writer who loves to write, while I have a degree in plant pathology. We're newcomers to the business but found that while traveling, we could bring back books

from all over the country and the world. I must admit, it's the best job I've ever had." Their most recent list included Alex Cumming's *Hardy Chrysanthemums* (1945), Montague Free's *All About African Violets: The Complete Guide to Success With Saintpaulias* (1951) and Albert D. Taylor's *The Complete Garden* (1921).

Gary Wayner, Bookseller has a master's degree in botany. Because of the limited number of teaching positions available in that subject, he eventually went into the book business. "I now have customers from all over the world—Australia, France, Sweden, and naturally, the States," he said. His catalogue covers botany, horticulture and gardening, including many books on mushrooms, lichens and mosses. If you are looking for a copy of L. H. Bailey's *The Garden of Gourds* (1937), Asa Gray's *A Manual of Botany of the U.S.* (1848) or I. Tidestrom's *Flora of Utah and Nevada* (1925), this is the place to try.

Robin Wilkerson Books opened seven years ago. Its founder decided that since she had collected books all her life—and gardened, too—it was time to go out on her own. "I worked for Scribner's in New York," she said, "so I got a lot of background information before I started. I sell helpful gardening books. Since I'm a gardener myself, I look for books that can be used." Her list covers landscape design in addition to general gardening. A recent catalogue highlighted *House & Garden's Second Book of Gardens* (1927), edited by Richardson Wright and Robert Lemmon; Lena May McCauley's *The Joy of Gardens* (1911); and M. E. Bottomley's *The Design of Small Properties* (1927).

Elisabeth Woodburn of Booknoll Farm went into the garden book business in 1946, when garden books were not exactly in great demand. "I had to endure the sneers of other booksellers who didn't see this as a realistic market," she said. "Sometimes I was tempted to agree—especially during the first few years, when I only had three customers!" But luckily, times do change, and one of her current catalogues (they are published in three sections) is mailed to nearly 1,500 people. Among the titles mentioned were Charles van Ravenswaay's *A 19th Century Garden* (1977), S. B. Sutton's *The Arnold Arboretum* (1971) and Mrs. Francis (Louisa Yeomans) King's *Pages From a Garden Note-book* (1921).

—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*.

Mail-Order Addresses of Book Dealers

Unless otherwise noted, the following book dealers charge \$1.00 for a copy of their current catalogues:

- **The American Botanist**, P.O. Box 143, Brookfield, Illinois 60513, (312)485-7805.
- **Anchor & Dolphin Books**, 20 Franklin Street, P.O. Box 823, Newport, Rhode Island 02840, (401)846-6890.
- **George A. Bibby**, 1225 Sardine Creek Road, Gold Hill, Oregon 97525.
- **Warren F. Broderick**, 695 4th Avenue, P.O. Box 124, Lansingburgh, New York 12182, (518)235-4041.
- **Editions**, Boiceville, New York 12412, (914)657-7000.
- **Hortulus Books**, 101 Scollard Street, Toronto, Canada M5R 1G4, (416)960-1775.
- **Hurley Books**, Westmoreland, New Hampshire 03467, (603)399-4342.
- **Ian Jackson**, P.O. Box 9075, Berkeley, California 94709, (415)548-1431. There is no charge for the catalogue.
- **Lion's Head Books**, Mr. Spalding McCabe, Academy Street, Salisbury, Connecticut 06068, (203)435-9328.
- **Timothy Mawson**, 134 West 92nd Street, New York, New York 10025, (212)874-6839.
- **Pomona Book Exchange**, Highway 52, Rockton, Ontario LOR 1X0 Canada, (519)621-8897.
- **Savoy Books**, Box 271, Bailey Road, Lanesborough, Massachusetts 01237. There is no charge for the Savoy Book list.
- **Second Life Books**, P.O. Box 242, Quarry Road, Lanesborough, Massachusetts 01237, (413)477-8010.
- **Edward F. Smiley**, RFD 5, 43 Liberty Hill Road, Bedford, New Hampshire 03102, (603)472-5800.
- **Jane Sutley Horticultural Books**, 1105 W. Cherry Street, Centralia, Washington 98531, (206)737-5251.
- **Sweetgrass & Company**, P.O. Box 711, Alhambra, California 91802, (213)283-5223.
- **Gary Wayner, Bookseller**, Route 3, Box 18, Fort Payne, Alabama 35967, (205)845-5866.
- **Robin Wilkerson Books**, 24 Groveland Street, Auburndale, Massachusetts 02166, (617)969-2678.
- **Elisabeth Woodburn**, Booknoll Farm, Hopewell, New Jersey 08525, (609)466-0522. Miss Woodburn's Landscape & Garden Catalogue is \$2.00.

One Woman's Garden

TEXT & PHOTOGRAPHY BY ELISABETH SHELDON

This is a short account of “the agony and the ecstasy” of one woman’s attempt to make an English mixed border in Upper New York State—English, because while the garden was being planned, the only reference books available were those in the library of the British Council in Algiers, where my husband George was directing a program in English and Linguistics at the university. (At that time, the American library in Algiers had been closed down, along with all the other American installations.)

Just before leaving for Africa, we had bought an old farm on the east side of Lake Cayuga—a wonderful place with a big Victorian house, woods and fields sloping west towards the lake, a stream that runs into a hemlock-clad gorge and lots of waterfalls.

It was then that the gardening passion struck me hard, as it does to many people in middle age. I had always gardened, more or less, wherever we had lived—around Washington, D.C., and in different places overseas; it provided a change from painting, which was my real work when I wasn’t being what is currently called a homemaker. But at the first sight of the farm, the blood of my gardening forebears surged up and claimed yet another devotee, or one might say “victim.” As I stood behind the old farmhouse before we left for Algiers, I had a clear vision of a long flower border in stunning, shimmering, refined yet radiant color. It was an exalting experience. I took some snapshots of the area as it actually was before the vision: an unkempt strip of calf pasture and weedy no man’s



Ridge House Garden’s east border glows with tall Blackmore and Langdon hybrid delphiniums, the white blooms of *Aruncus dioicus* (commonly called goatsbeard) and a host of other perennials.

land between the house and the vegetable garden plot (which my husband claimed), accented by a whirling clothes pole, a privy, a red-painted brick and concrete outdoor fireplace, a metal Quonset hut and a dilapidated shed.

The snapshots should have sobered me as I pored over them in Algiers, with graph paper and English gardening books piled high before me. But no: On I charged, reading about plants, their requirements, growth habits and blooming times; tracing out straight lines, curves and circles on my paper; establishing the location first of trees and shrubs, walks and wall, and finally—with delicious thrills of anticipation—putting in the perennials with little blobs of color.

I wanted a long stone wall to separate the flower border from the vegetable garden and to serve as a background for the flowers and shrubs. I knew that our land abounded in the flat, gray, straight-edged, slate-colored rocks that are typical of the region. I drew the wall straight, to run east and west, parallel to the house and beyond. Then I played curves against it, cutting out openings to the vegetable garden. The little

sassafras grove at the east end was to be a woodland garden.

After deciding on the general design of the garden—that is, the borders and the plantings around the house and in the area between the house and the barns—I selected trees and shrubs, both deciduous and evergreen. I had absorbed a lot of advice from books about structure; for example, that one should make a good basic design that includes woody plants as well as flowers in order to make the garden attractive at all

times of the year. (I didn’t know then that I’d be ruining the appearance of the garden in winter by covering the tender plants with not only pine boughs, but also inverted bushel baskets, boxes and even old plastic garbage cans. Once we have a deep snow it doesn’t look quite so bad—just a bit lumpy.)

As I was selecting plants, I wrote to nurseries in the United States for catalogues. These materials gave me an idea which plants would be available at home. However, since at that time nursery catalogues didn’t provide the USDA hardiness zone maps and estimated zone numbers for the plants they offered, I could not tell which plants in the catalogues and in the English books would be suitable for the Finger Lakes.

Luckily, I had learned about the Gulf Stream in geography class and had sense enough to know that, although the latitude of Great Britain is much farther north than that of New York State, the difference in climate is not what one might expect. It seems unfair, but there it is. All through my Algerian gardening notes I find pathetic little entries, such as “*Ceanothus*—



Old shrub roses grow along the edge of the border leading to two barns on the author's property, located on the shores of Lake Cayuga.

gorgeous blue shrub. Hardy?" Then, often a sad afterthought: "Prob. not." Nevertheless, I worked out a pretty fair plan, based on what I remembered my parents grew in Illinois and on hardiness clues gleaned from learning the countries of origin of some of the plants. I regretfully discarded all thoughts of any plant the British cheerfully assured me could "tolerate a few degrees of frost."

When I began this project, my gardening experience had consisted mostly of planting vegetables in straight rows and of sticking flowers or shrubs in wherever there seemed to be an available space. It began to occur to me as I read Sackville-West, Jekyll, Hyams and Roper that this might not be the best way to go about it. I realized it was advisable to draw up an overall plan ahead of time—to scale, if possible—keeping colors, shapes, values and lines, as well as the blooming seasons and cultural demands of the plants, well in mind. I learned, too, that colors should not be allowed to just fight things out among themselves; rather, they could and should be subtly orchestrated. Gertrude Jekyll says in *Wall, Water and Woodland Gardens*, "The very

best effects are made by the simplest means, and by the use of a few different kinds of plants only at a time. A confused and crowded composition is a fault in any picture; in the pictures that we paint with living plants just as much as in those that are drawn and painted on paper or canvas. Moreover, the jumbled crowd of incongruous items, placed without thought of their effect on one another, can only make a piece of chance patchwork; it can never make a design."

I wrote down maxims of Edward Hyams that I found in his *An Englishman's Garden*: "Plants should not be allowed to count for more than their contribution to the total effect"; and "The proper progression is from the whole to the parts, from the vistas to the details, which must be interesting." I referred to these whenever I felt myself getting out of hand. One of the writers (I have forgotten which one) cautions about the gold rush madness that is apt to hit the beginning gardener and that causes the acquisitiveness that leads to chaos, or to overplanting, at the very least. He or she says that if you see a new plant and try to decide where to put it, you are

a plant collector and not a gardener. A true gardener sees a spot that needs something and tries to decide what plant would go best there. These are harsh words, but I suspect they are true.

I had been painting vigorously while in Algeria, so I held an exhibition of my work before leaving. I sold enough paintings to enable me to buy everything I yearned to have to begin my garden.

I could see immediately that one part of my plan had to be changed. I had provided for planting around one of the sheds near the house, which I had planned to use as a tool shed. However, I began to realize that the shed—along with a collapsed corncrib, many dead elms, a manure loader and other assorted machinery—obstructed a view of the fields and lake. I set about sawing the small dead elms and hauling them away, hoping to get help with the big obstacles as I went along.

So I realized that the border could not curve to a close around the shed as I had planned; rather, it would sweep out into the view. The whole character of the garden would be different: it would open out instead of closing in. That meant that I

would have to forgo using the “theory of the unexpected,” which I had been trying mentally to adapt to our terrain. I got the idea from the British, and would have loved to have incorporated at least a modern version of it into the design of our place. The idea is that it is much more desirable to have a series of outdoor rooms, as it were, with garden opening into garden and always something new and exciting ahead, than to see all of a garden at once. In England, this effect is created using yew or beech hedges and stone or brick walls. Of course, with only me to do the work, I had not planned on a reproduction of the gardens at Sissinghurst. But I *had* thought to close in one end of the borders with shrubs and the tool shed, then have a walk



Heaths and heathers thrive at the edge of the woods garden.

through to the other side, where there would be a wall garden. There was going to be a separate herb garden beyond it. I had thought, too, of enclosing a garden just this side of the big barn with hedges—of having a “secret garden” there, with a gate. The idea of going into it and closing the gate was delightful, bringing back memories of Frances Hodgson Burnett. I even planned how my secret garden would be designed and planted. But when I got home and faced the geographical facts, I saw that it wouldn’t do. The view was there, just waiting to be exposed, and the space this side of the barn was necessary to help set the stage for it. My garden was not destined to tantalize, intrigue or lure anyone forward. Except for the woods garden, it would be taken in at a glance. Since my design would harmonize with the house and the countryside, which is “Rule Number One,” I would have to be satisfied, I realized.

As I worked, I translated the pencil lines on my graph paper into three-dimensional form by laying hose through the weeds to indicate the design, then rushing up to the roof or a second-story window to check on the lines before driving in the marking

stakes. Then I would chop down the weeds with a sickle and dig. On one side of the markers was to be the flower garden, the other side, the lawn. All weed roots, rocks and trash had to be removed and carted away. I seemed to have chosen the area where people had been pitching rocks and whatever else they didn’t want for 100 years or so. This complicated my digging operations, but I was happy to see that the soil in this area was more fertile than the land that had been gardened or farmed. This was a secret observation; no announcements were made lest they give my husband the idea of using the area for vegetables.

I was capable of removing rocks and trash, but the sheds and privy couldn’t be trundled away in a wheelbarrow. Since my husband really wanted these to stay where they were, this operation took some time. After five years, the last of them finally disappeared due to my powers of persuasion—or, I should say, due to poor George’s finally succumbing to my gentle but unremitting pressure.

The outdoor fireplace was a real problem; even George couldn’t deal with that.

I was able to remove all the bricks with a crowbar and mallet, but the cement foundation proved to be resistant to any warlike implement with which I attacked it. I needed, but didn’t happen to have, a pneumatic drill. At length, a miracle occurred: The chap who was digging our new septic system and who had observed my gardening and mining operations had heard my wails of frustration over the block of cement. He simply got behind the thing with his bulldozer one day, and gently pushed it across the backyard into the ravine, and neatly covered it over. Bless the man! If it were not for him, there would be an irrelevant excrescence in the border covered with something like sedum, which was all that had occurred to me in my desperation.

In building the wall, I had intended to dig down below the frost level and lay the stones properly, but I found that it was about all I could do to gather them from the surrounding fields and woods, and to lay them just under the surface of the soil. My husband helped me bring in many of them on the tractor wagon. The plans stipulated that the wall should be four feet high; it turned out to be about two feet high. Behind the wall, I planted shrubs.

Year after year, I read gardening books, learned to propagate from seeds and cuttings, and studied plants growing in the gardens of the Cornell Plantations. I also *dug*, putting in lawn, flower border or wall, depending on the weather and the season.

I fetched many sacks of soil from the hemlock grove, taking a bit here and there so as not to deprive the trees. I would prepare the sacks and drag them to a loading zone (I couldn’t lift them), and George would bring them back on the tractor wagon when he went down to get logs.

The hemlock grove soil was for the woods garden. The area I planned to use for this garden had once been the calf pasture, so the soil was rich, but I wanted to acidify



Silver-king artemisia, pink- and red-flowered *Sidalcea*, delphiniums and *Achillea taygetea* complement one another in a section of a Ridge House Garden border.

it for rhododendrons, azaleas and other ericaceous plants. Just west of the woods garden I spread wood soil, sand, peat and sulfur for heaths and heathers. (Since then, periodic pine needle mulches seem to have maintained the necessary pH.)

In the woods garden, I planted most of the early-blooming things, including almost all the bulbs: *Scilla*, *Muscari*, *Chionodoxa*, *Iris reticulata*, *Anemone blanda*, the glorious species of *Erythronium* from the Western United States, and tiny *Narcissus triandrus* var. *albus*. A variety of ferns went in, too, such as the beautiful Japanese painted fern, *Athyrium goeringianum* 'Pictum'. To these I added *Daphne mezereum* and *Adonis amurensis*, which start blooming in March or April. *Trillium* species, transplanted from the back woods, have grown much more splendidly here, and are now spreading rapidly. Bloodroot, Jack-in-the-pulpit and bluebells (*Mertensia*) are also doing quite well. Other plants now thriving in the woods garden include *Primula denticulata*, *P. sieboldii* and *P. × polyantha* in blue, yellow and white. A colony of *Aquilegia canadensis* would take over if it weren't for the cardinal flowers

that grow to 5½ feet tall and have seeded themselves by the hundreds; they must be dealt with firmly. Off in the background stands a clump of imposing great Solomon's-seal (*Polygonatum commutatum*), as well as double bloodroot (*Sanguinaria canadensis* 'Multiplex'), *Epimedium* and *Astilbe*.

After planting the woods garden, I dug steadily westward, laying the last stone on the wall exactly six years from the time I began. Since then, I've added only a small raised bed against the pasture fence at the west end. George thought I wouldn't stop digging until I got to the lake.

The British books I had studied were really of great value to me both horticulturally and aesthetically as I designed my garden. My original idea had been to make a garden that would be a three-dimensional painting, so when I found Gertrude Jekyll approaching the problem of garden design just that way, I was overjoyed and felt certain that I was on the right track. I also learned to appreciate plants for their foliage and growth habits rather than value them only for their fleeting flowers. Naturally, I didn't order any of the plants

I had been reading about without making a final check on their hardiness. Cornell and the Cooperative Extension were both extremely helpful, and, once back in this country, I had access to books in both the public and the Cornell libraries.

But even books don't keep one from making mistakes. For example, for those who lack experience, it's very difficult to plant things the correct distance apart. We always seem to err by putting plants too close together, due, I suppose, to our inability to visualize how big the plants will become, even when we know the dimensions. Perhaps it's also due to a desire to have the appearance of the planting immediately harmonious: impatience. Big empty spaces between spindly, new plants look pathetic, and we hate to explain to visitors that in time it will look right. So sometimes we knowingly put things too close together, exchanging present pleasure for future pain, saying to ourselves that when things get too crowded we'll transplant them. I hope that I have learned not to do that again, at least with shrubs and trees. With perennials it is not as serious,

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The Cold Greenhouse

BY ANTHONY DE BLASI

Henry Ford once advertised, “There’s a Ford in Your Future.” Today, builders of greenhouses might, with equal accuracy, predict, “There’s a greenhouse in your future.” For with today’s energy-efficient construction and solar designs, capturing the heat of the sun through glass or plastic is no longer of interest only to gardeners. Many greenhouses are now used to stretch the energy dollar as well as to grow plants.

Before fuel prices soared, it was customary for greenhouse managers to set the thermostat according to the temperature requirements of the plants they wished to grow. Ah, the luxury of having a choice north of Zone 6! Begonias, orchids? Sixty degrees. Geraniums, cyclamen? Fifty-five. Wedgwood iris, acacia? Fifty. Now, to save fuel, hobby gardeners and commercial growers in the North choose what will grow at a lower temperature. Some actually “turn off” their greenhouses during winter, then restart them in spring with seed sowings and cuttings. But not having plants growing and blooming through the winter months defeats the main purpose of a greenhouse in a cold climate, which is to thwart winter.

Picture the following scene, if you will: In a greenhouse where the thermostat won’t kick on until the floor temperature drops to 35° F, picture-perfect flowers such as primroses and carnations—unspoiled by wind or precipitation—glow on benches, along with a variety of herbs like oregano, dug from the garden before the November freeze. A woman in a cardigan picks tender and tasty lettuce, sown after Labor Day, from a deep wooden planter on the floor. She snips parsley, then gathers a handful of sweet peas and asparagus fern for the table. On her way back to the kitchen, she squeezes past a 10-year-old just back from school, checking a large flat of pansy seedlings he started in December. He will sell the pansies, which are now ready to transplant to fiber boxes, to a local garden center in April for \$1.00 a box. By the time the 36 square feet of space allotted for his 100 boxes is needed for Dad’s tomato



LEFT: Calamondin (*Citrofortunella mitis*) is an ornamental tree that is perfectly happy in the cold greenhouse. It is hardy to about 30° F, USDA Zone 9b. ABOVE: Florist’s cineraria (*Senecio × hybridus*) prefers cool temperatures. In fact, it requires several weeks of temperatures below 55° F to set buds.

Pamela Harper

plants, the pansies will be moving out to market. His father, home from a day of pecking at a computer terminal, looks under a dark bench at some pots of tulips resting on the floor. Yellowish leaf tips spearing the soil surface are a sign that it is time to start moving the pots to the top of the bench. This will be done at weekly intervals, in order to provide a succession of bright tulips for late winter and early spring. After helping his son clear a space for the pansy boxes, he pulls a radish to nibble on and plucks a vivid red carnation. Pausing at the door on his way into the house, he gloats over a potted ‘Ponderosa’ lemon bearing five huge fruits, which are destined for lemon meringue pies. The lemon tree is resting for the winter near a gardenia that his son bought for Mother’s Day a few years ago. He knows that in May the gardenia will wake up from its

lethargy and bloom through the summer on an east-facing porch. He has trained some other plants to do things they’re not supposed to, while training himself to live with a cold greenhouse—like storing amaryllis bulbs during the winter in paper bags under the bench, and planting them out in the border to bloom during the summer.

Although the calendar says January, and temperatures in this greenhouse hover between 35° F at night and 65° F during the day (depending on weather conditions and the intensity of the sun), it’s spring in the greenhouse. Arctic winds blow, and snow piles in drifts outdoors, but in this cold greenhouse—despite the relatively cool temperatures—the air is calm and mild from the sun, and the smells of earth and green growing things are everywhere.

The cold greenhouse is much more than

a walk-in refrigerator that allows a gardener to store dormant plants until spring. In effect, it is a subtropical envelope within a harsher temperate zone, like a bubble of Florida air in Maine. In winter, the temperature of the subtropics does not remain a placid 60° F at night but instead, tumbles into the 40's and 30's, brushing occasionally with frost. Members of some genera, such as *Citrus* spp., go dormant or set a new crop of flower buds under these conditions. In contrast, plants that love cold weather, including violas and primroses, celebrate the respite from heat with a burst of growth and bloom. Making the most of the different responses of plants to cold temperatures (above freezing) is the key to a useful, productive and economical greenhouse in winter.

Gradual exposure to a frigid, but frost-free, night temperature forces most plants to do one of three things: grow more slowly, go dormant until favorable temperatures return (as in spring), or give up and die. Those tropical plants that are active in winter are apt to perish in frustration, but while a cold greenhouse is inhospitable to many tropicals, some adapt. Then there are rule-breakers, like lobelia and lettuce,

that either don't mind or actually *prefer* chilly temperatures.

The following is a brief summary of uses for a cold greenhouse besides *growing cool-weather crops*:

To winter-over bonsai and potted plants that are not hardy. Some "naturals" for this treatment are acacia, tender azaleas, citrus, oleander, sweet olive, asparagus fern, jasmines, geraniums, and tender perennials and herbs. These plants would not survive the winter unprotected but will happily rest through the winter in a cold greenhouse.

With tropicals, the cold treatment in winter is "iffy." Some don't mind the wind-down; others resent it and give up. Among the stalwarts are lantana, lemongrass, orchid cactus, lemon verbena, gardenia and fibrous begonias. These will wait out the cold and resume growing in the spring. Experimenting will reveal others, but don't turn a rare or pet tropical into a guinea pig unless you can spare it. My list of losses includes *Antigonon*, *Cassia*, *Cestrum* and *Stephanotis*.

To force spring-flowering bulbs. Daffodils, tulips, crocuses and other spring-blooming bulbs—potted in the fall and kept

moist on the greenhouse floor in the shade of a bench until January—hardly know they are being forced when they are moved up to the benches, into the increasing sunshine of late winter. To speed them up, when the tops are well developed, bring the pots inside the house during the night and return them to the greenhouse by day.

To store summer-blooming bulbs. There is no better place for these than a cold greenhouse. I use brown grocery bags for bulbs like gladiolus, tuberose, amaryllis, zephyr lily, oxalis and tuberous begonias. Keep the bag shaded from the sun. Dahlias store better in a loose medium such as peat moss, and should be sprinkled occasionally to prevent shriveling.

To take fall cuttings of woody plants. These include honeysuckle, grape, rose, jasmine. . . . The list is endless. Cuttings of many woody plants will be well rooted by spring planting time. Depending on the ease of rooting, take between three and 10 cuttings for each new plant you wish to have, just to be safe. Use deep boxes, planters, flats or large pots. Keep them uniformly moist and out of direct sunlight. Be sure you are not propagating patented cultivars.

To start seeds. Although seeds can be started in a warm greenhouse, or indoors, for that matter, something should be said for starting seeds without heat, in unsterilized soil. Before you shrink with horror, consider nature's success in the great outdoors. Aside from plants like iris that prefer getting started in cold soil in the fall, there are a surprising number of flowers and vegetables that will germinate well *when planted at the right time* in a cold greenhouse. The healthiest seedlings I have grown, from ageratum to zinnia, came from seeds that were planted "outside" (in the cold greenhouse) in deep boxes, large flats or planters filled with loose, humus-rich soil.

The main reason commercial growers—and by extension, the hobbyist—start most of their seed crops in sterile media, with a steady source of artificial heat, is to ensure quick and uniform germination. Target sales dates demand that seedlings, like chickens and cattle, fall in line with a market-oriented routine. But the practice is not necessary in non-commercial gardening. The more natural approach provided by direct seeding in deep soil, on the right date, eliminates most of the drawbacks of forcing: too-lush growth, the need to harden-off, spindly stems, damping-off and other problems associated with an artificial environment not carefully and strictly managed.

Seeds that are not artificially induced to sprout are not exactly at the mercy of the

Cool-Weather Crops

Plants that perform in night temperatures below 50° F:

Ageratum	Endive	Rosemary
Alyssum	Freesia	Schizanthus
Beet	Lobelia	Snapdragon (<i>winter-blooming</i>)
Broccoli	Looseleaf lettuce	Spinach
Cabbage	Oregano	Spring bulbs
Calendula	Pansy	Stock
Camellia	Parsley	Sweetpea (<i>winter-blooming</i>)
Carnation	Primula (<i>winter-blooming</i>)	Swiss chard
Carrot	Radish	Viola
Chives	Romaine	
Cineraria		

Seed-Sowing Dates for a Cold Greenhouse Zones 4 & 5

February 1	.....Carnation, Lobelia
February 15	.....Dusty Miller
March 1	.....Nicotiana, Leaks Parsley, Portulaca
March 10	.....Ageratum, Scabiosa
March 15	.....Alyssum, Stock
March 21	.....Cosmos
April 1	.....Aster, Basil, Lettuce, Marigold
April 15	.....Swiss chard
April 20	.....Mimosa pudica
May 1	.....Broccoli, Brussel Sprouts, Cabbage, Squash, Zinnia
December 1	.....Pansy

elements. In fact, most have spunk enough to play games with the weather. Like tiny weather stations, they seem to sense and analyze temperature patterns and become suddenly bullish when conditions are favorable. With the soil moist but not soggy, and temperatures on the rise, they burst out of limbo and quickly set a root down. At this stage, they are prepared to stop growing if the soil cools suddenly, as on a dull, cold day. They work swiftly during sunny spells to unravel themselves from the embryo, stopping if necessary during several days of bad weather before exposing their baby leaves and showing remarkable resilience. Since no two seeds behave exactly the same way, this is an excellent system for overcoming the inertia of dormancy while coping with the vagaries of weather. Of course, an abnormally prolonged period of dull, cold weather will kill a batch of seeds that may have begun to germinate during a promising spell of weather. *C'est la vie.*

The natural way to start seeds takes a little longer, but seedlings handled this way need no pampering. They emerge healthy and remain sturdy and stocky throughout their early stages. As a general rule, seeds should be sown in a cold greenhouse at least two weeks earlier than they would be if they were started in a warm greenhouse or germinated with heating cable. Adjust the sowing date according to how fast they normally germinate. Sow more seeds than you need seedlings. Make sure the soil is loose; I "plow" rows in the seed flat with an old dinner fork. Keep the soil barely moist, erring on the side of dryness in dull weather and sprinkling the surface in sunny weather if it's dry. Keep notes, and don't experiment with expensive seeds, such as hybrid tomatoes.

A little common sense goes a long way toward acclimating both grower and plant to the rigors of a cold greenhouse. Avoid suddenly exposing a plant that is accustomed to a warm environment to a cold one, and vice versa. Traffic between house and greenhouse is safest when the temperatures match, give or take five degrees. This usually occurs in the morning and again, late in the afternoon. I keep pepper seedlings and other tender types worth fussing over inside during the night and in the greenhouse by day before their final hardening-off. Unless you are hot-blooded, choose a sunny day to work in the greenhouse.

Plants brought in from the garden, such as parsley, should be thoroughly washed with a jet of water and isolated during an aphid watch. Plants not actively growing should be watered sparingly. Many plants sense the short days of winter and slip into



Pansy seedlings can be started in a cold greenhouse in December and planted out in the garden in early spring.

Betsy R. Crowder

dormancy, despite the enticing greenhouse environment. Don't feed them. Keep succulents *almost* dry.

Stay ahead of bugs. If you notice a mass of aphids on a plant, toss the plant out if you can spare it, or else wash them all off. With any luck, by keeping a watchful eye and squelching the few bugs detected on your daily rounds, you can avoid such build-ups. Be sure to look under the leaves of plants like fuchsia and pansy geranium, and squash any whiteflies you find. These pests are called "flying dandruff" by some, since they flutter away when disturbed, like tiny white flecks. With your fingernails, gently scrape off any tiny oval "pimples"—the whitefly larvae. If there is a concentration of them, clip off the leaf and discard it somewhere *outside* the greenhouse. Check older leaves for these and other pests, such as spider mites. If you can see a spider at arm's length, leave it alone; it's a friend.

If your greenhouse is too large or you don't have time for such individual attention, you may spray with an insecticidal

soap that kills aphids, mealybugs, mites and whiteflies. When using standard insecticides or smoke bombs, wear protective gloves and a respirator, and adhere strictly to manufacturers' instructions. In general, however, uncrowded, healthy plants in a cool, airy greenhouse don't need spraying. Opening vents to keep temperatures from soaring above 65° F on clear, sunny days is a preventive worth more than any pound of cure.

If you are a northerner and expect to pick tomatoes in January, or dream of orchids fluttering in sprays among tropical ferns and lush exotics, then either forgo a cold greenhouse, take a trip to Florida or visit a conservatory. If cutting the fuel bill by at least one-half appeals to you, then take the primrose path to winter flowers and vegetables by lowering the thermostat in your greenhouse to 40° F and taking full advantage of the subtropical winter thus created. ☼

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New Plants for 1985

This year's search for the best new plant introductions uncovered something for everyone. Water gardeners have two new water lilies to try. Northern gardeners will want to look closely at the exceptionally hardy deciduous azalea that is now available, as well as 'Kristin', a very hardy sweet cherry cultivar. There are also other new fruits, several vegetables, house plants, perennials and exciting flowering trees. We hope you enjoy this brief look at the introductions that are ready to tempt us this spring. Sources for these new plants are listed on page 42.

① *Clematis* 'H. F. Young'. This large-flowered *Clematis*, which will be featured in the Wayside Gardens spring catalogue, bears six- to eight-inch flowers in early summer, and blooms again later in the season. Established plants produce 1,000 or more Wedgwood blue blossoms per season. An easy-to-grow cultivar, 'H. F. Young' reaches a height of eight to 12 feet.

② *Anemone japonica* 'Bressingham Glow'. Selected and named by Alan Bloom, renowned British plantsman, 'Bressingham Glow' is a new introduction from Wayside Gardens. Its semi-double, red flowers appear in the fall on compact, two-foot plants that never need staking. This cultivar does well in full sun in northern areas and prefers partial shade in the South (USDA Zones 5-8).

③ *Nymphaea* 'White Delight'. A tropical day-blooming water lily, 'White Delight' bears fragrant

blossoms that will reach 10 to 12 inches in diameter if the plant is given enough room. The flowers of this new introduction from Lilypons have a soft yellow cast, and the petals acquire a pink tip about the third day after opening. Well-grown plants generally have more than one bloom at a time, and the flowers remain open about one hour later in the evening than most water lilies.

④ *Rudbeckia* 'Goldilocks'. An unusual new introduction available from Geo. Park Seed Co., 'Goldilocks' is the first *Rudbeckia* cultivar with fully double flowers borne on a dwarf plant. The 3½-inch flowers are golden-yellow and last a long time both in the garden and when cut. This cultivar, which retains the rugged constitution of the well-known wildflower, black-eyed Susan, is well-suited to garden beds. It is also heat-resistant and drought-tolerant.

In the foreground is another





Park Seed introduction, Basil 'Spicy Globe'. This neat, ornamental herb can be used as an edging plant, in containers or in the border. It maintains its compact 12- to 15-inch size without pruning and also has all the qualities of true Italian basil. The leaves are excellent fresh or dried.

⑤ **Rose 'Sweet Chariot'**. An excellent plant for a hanging basket, this new miniature rose is available from Moore Miniature Roses. It bears dozens of very double, one- to 1¼-inch flowers in clusters of five to 15. The flower color is fuchsia, lilac or lavender to purple, depending on the time of year and available light. The flowers are very fragrant, and the plant spreads to about 24 inches.

⑥ **Rhododendron 'White Lights'**. With the introduction of 'White Lights', gardeners in the northern reaches of this country now have the opportunity to grow beautiful new deciduous azaleas. This cultivar was developed by the University of Minnesota and is hardy to -40° F, making it the hardiest deciduous azalea available. Its lightly fragrant

flowers are white with a pink tinge, and it grows to about five feet in 10 years. 'White Lights' is an introduction from Greer Gardens.

⑦ **Magnolia 'Yellow Bird'**. This exciting new magnolia was developed by the Kitchawan Research Station of the Brooklyn Botanic Garden. Its large, deep yellow flowers have a good tulip shape, and plants bloom at an early age. Fortunately, this beautiful new cultivar blooms late enough to escape damage from late spring frosts. It is hardy in the North (*M. acuminata*, one of the parents, is hardy to USDA Zone 5), and it does equally well in the South. 'Yellow Bird' is available from Louisiana Nursery.

Magnolia enthusiasts will not want to miss another new introduction from Louisiana Nursery, *Magnolia* 'Peter Smithers'. This new cultivar combines the hardiness of *M. soulangiana* 'Rustica Rubra' with the beauty and tree-like form of *M. campbellii*, which is very popular in the Northwest and in the British Isles. 'Peter Smithers' produces deep pink, 10- to 12-inch blooms that

appear late enough in the spring to avoid damage from late spring frosts. The leaves of this Gresham hybrid are deep green and very attractive. The plant reaches 30 feet in height and is an upright, bushy grower.

⑧ **Cornus kousa 'Rosabella'**. This pink-flowered cultivar of Chinese dogwood was discovered by a world-renowned tree and shrub specialist, the late Herman J. Grootendorst, who brought the cultivar home to Holland to propagate. Like most shrubs, this new Wayside Gardens introduction takes several years to become established and bloom fully. *Cornus kousa* will take full sun in the North and prefers light shade in the South. It can be grown from USDA Zone 4 through Zone 9.

⑨ **Portulaca 'Sundance'**. An exceptional F₂ hybrid mixture, 'Sundance' bears large, semi-double flowers that were bred to stay open most of the day—longer than most other portulaca cultivars. The flower colors are bright and clear, and the mixture contains red-, orange-, yellow-, cream- and white-flowered plants. The plants, which are uniform, vigorous and covered in blooms, will be available at garden centers and greenhouses this spring. Seed will be available from major mail-order catalogue firms.

⑩ **Nymphaea 'Edward D. Uber'**. A tropical day-blooming water lily, 'Edward D. Uber' boasts electric-purple blooms with golden centers. This new introduction from Van Ness Water Gardens also has deep jade-green leaves and will perform well in a wide variety of locations, including cool and shady ponds (up to 60 percent shade). The leaves are viviparous, meaning they will produce new plants with roots and tubers. These new plants can be stored over winter and started year after year.

⑪ **Iris 'Warrior King'**. This new tall-bearded iris represents a step toward producing a true red-flowered cultivar. 'Warrior King' bears deep velvet-red



New Vegetables

⑪ **Carrot 'Lindoro'**. According to horticulturists at Geo. Park Seed Company, this new carrot has the best flavor and texture of any cultivar they have ever grown and eaten. It is long, cylindrical, uniform and bright orange in color. 'Lindoro' is very adaptable and performs well in all parts of the country. Gardeners can expect to harvest these carrots 63 days after sowing. 'Lindoro' has a crisp texture when eaten fresh and retains its tenderness and sweet carrot flavor when cooked.

Tomato 'Lemon Boy'. Tomato enthusiasts will want to try this new mild-flavored, lemon-yellow-fruited tomato, which is available from Henry Field's and Gurney Seed & Nursery Company. 'Lemon

Boy' is indeterminate (that is, it produces new fruit all season long), and it out-produced all other golden-fruited tomatoes in Gurney's trials. The fruits are large and average seven ounces in weight. The plants are resistant to verticillium wilt, fusarium wilt race one, and root knot nematodes.

Snap Pea 'Sugar Daddy'. Snap pea fans will want to grow this new, completely stringless cultivar. The pods are quite similar to 'Sugar Snap' in both size and flavor, but they are darker green in color. The plants are easy to grow, since they are only 24 to 30 inches in height at maturity. 'Sugar Daddy' is available from Gurney Seed & Nursery Co., Henry Field's and Geo. Park Seed Company.



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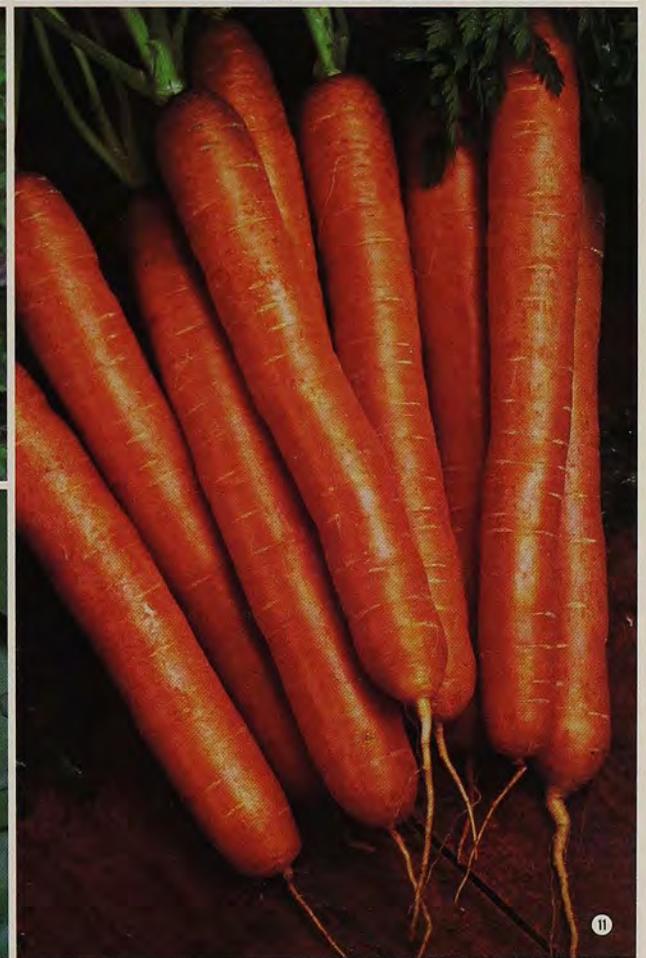
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blooms that have good substance and do not fade even in intense heat. Blooms stand 36 inches high, and each stalk carries eight or more buds. 'Warrior King' is being introduced by Schreiner's Gardens.

⑭ *Tagetes* 'Red Marietta'. New single-flowered marigolds have been relatively rare in recent years. 'Red Marietta' bears attractive two-tone flowers that are a deep orange-red with a golden-orange edge. It should be available from seed companies and bedding plant dealers.

⑮ *Pelargonium* 'Prairie Dawn'. This flaming pink-flowered cultivar represents a new line of geraniums introduced this year from Logee's Greenhouses. These cultivars have won acclaim for their vigor, ease of cultivation, and the wide range of colors available. 'Prairie Dawn' produces plump umbels of

semi-double flowers from summer into winter if the plants are grown in the greenhouse or outdoors in frost-free climates.

⑯ *Saintpaulia* 'Rainbow's End'. Another introduction from Lyndon Lyon Greenhouses, 'Rainbow's End' is a semi-miniature cultivar with trailing foliage. Its beautiful, very double white flowers are tipped with green on the upper edge.

⑰ *Globba winitii*. This ornamental ginger family member is commonly known as dancing ladies, a name that aptly describes the pendulous inflorescences, which consist of nodding yellow flowers set off by showy, lilac-purple bracts. This species, a new introduction from Logee's Greenhouses, blooms year-round and reaches a height of approximately two feet. It is a native of Thailand.

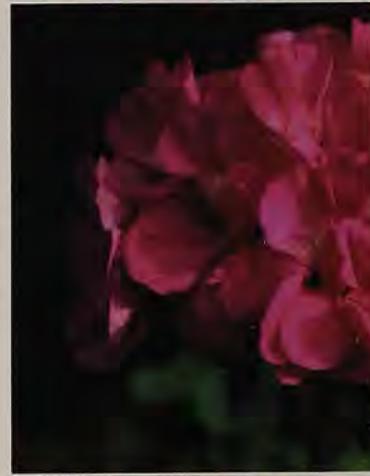
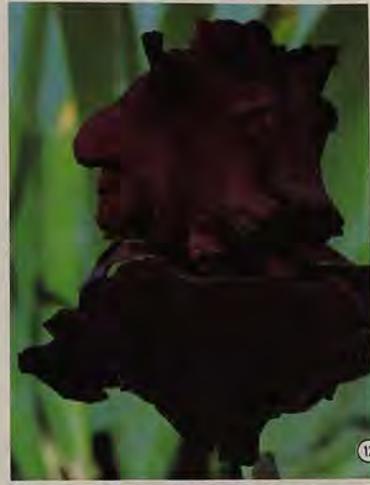
⑱ *Saintpaulia* 'Midnight

Romance'. African violet lovers will want to try this new cultivar from Lyndon Lyon Greenhouses. It bears dark bluish-purple, semi-double flowers that have attractive white edging on the upper petals. The flowers are attractively set off against variegated foliage.

⑲ *Rhododendron* 'Cream Delight'. This new introduction from Greer Gardens is most notable for its ability to withstand heat when in flower. First tested in Australia, where high temperatures during the blooming season are a particular problem, 'Cream Delight' has proved to be an outstanding new hybrid. It grows to about five feet in height in 10 years, and is hardy to about -10° F. When the buds are first showing color, they are pink; as the flowers open, they turn a cream color, with yellow markings on the upper petals. The foliage is a deep forest-green and about six inches in length.

⑳ *Gazania* 'Mini-Star Tangerine'. This new gazania, just one of seven All-America Selections winners for 1985, bears daisy-like flowers that are a unique clear orange in color. The flowers are 2½ to three inches in diameter and are borne on seven- to eight-inch plants. 'Mini-Star Tangerine' is adaptable to a wide variety of climates; it prefers full sun and will tolerate dry conditions once established. This cultivar is also a Fleuroselect Winner, the European equivalent of our AAS award. Plants of 'Mini-Star Tangerine' will be available at garden centers and greenhouses this spring. Seed will be available from major mail-order catalogue firms.

㉑ *Pelargonium* 'Speckles'. An F₁ hybrid seed geranium, this Thompson and Morgan introduction represents a new color break in seed geraniums. The petals are white, cream, rose or light salmon, and heavily speckled with splotches of scarlet, deep salmon and cerise. The foliage is an attractive green with a brilliant bronze zone. ●



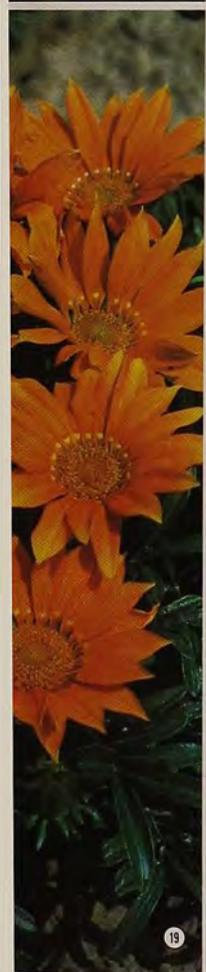
New Fruits

㉒ *Sweet Cherry* 'Kristin'. A cultivar destined to be known for its outstanding hardiness, 'Kristin' has been tested and found hardy in Montana, New York and Norway. Although some trunk injury occurred on the southwest side of the trees during severe winters, the Montana tests proved 'Kristin' to be hardier than both 'Bing' and 'Chinook'. It is a sweet, black cherry with one-inch fruits that have firm, meaty, juicy flesh. The skins, which are tender, are a glossy dark blue to purplish-red. The fruits of this new introduction from Miller Nurseries ripen in July. 'Kristin' is a seedling grown from a 1938 cross between 'Emperor Francis' and 'Gil Peck'. Until this year, it was available only on a limited scale from the New York State Fruit Testing Station.

Blueberry 'Northblue'. 'Northblue' is a new introduction available from Gurney Seed & Nursery Company. This cultivar,

developed by the University of Minnesota, combines the hardiness of lowbush blueberries with the fruit quality of highbush blueberries. 'Northblue' will tolerate temperatures of -30° F and still produce three to five pounds of fruit if it has adequate snow cover. The plants, which are 20 to 25 inches high, produce dark blue fruit and have dark green leaves that turn red in the fall.

Pear 'Luscious'. Gardeners in the northern Great Plains will welcome the introduction of this new dessert pear, which is available from Gurney Seed & Nursery Company. Developed by South Dakota State University, 'Luscious' has a flavor that is similar to, but more intense than, 'Bartlett'. The bright yellow pears have a firm flesh and develop an attractive red blush when they ripen in mid- to late September. This new cultivar needs a pollinator to set fruit, and it is more resistant to fire blight than other pear cultivars.





Lilium regale, *Cimicifuga racemosa* and *Heliopsis* 'Gold Greenheart' grace the main border of the author's garden in Norfolk, Connecticut.

COMBINING PERENNIALS

TEXT BY FREDERICK MCGOURTY

PHOTOGRAPHY BY PAMELA HARPER

In the United States, the cultivation of plants takes many forms. There are African violet hobbyists, gladiolus growers, hosta lovers, bonsai buffs, greenhouse plant gurus, orchid and rhododendron specialists, primulologists, cannaphiles, devoted students of the genus *Saxifraga*, gerbera groupies, and many veterans of the vegetable patch. More than 60 plant societies are active these days, not to mention 10 societies devoted specifically to irises.

On occasion, I have attended the meetings of such organizations and found them fascinating, not only for the animated and detailed discussion of special plants, but also for the human participants, many of whom are quite special in their dedication. If a hemerocallis meeting had taken place on the last voyage of the Titanic, its members would have been oblivious to the main problem at hand, at least until the last stanza of "Nearer My God To Thee" was sung. Lifelong friendships are made at such get-togethers, and a certain number of lasting enmities, too. I remember one speaker showing 140 consecutive slide close-ups of gentians. As a result, I have developed what will probably be a lifelong coolness toward this otherwise innocuous group of plants.

But is all this emphasis on individual plant groups really gardening? Perhaps it is, if we consider gardening in a very strict sense, as the collecting of cultivars. To me, however, the subject has always implied something more: the creation of aesthetically pleasing arrangements of plants, as well as the culture of those plants. It is the combination of different forms—the coarse with the refined, the light with the dark—as well as their synergistic effects, that truly make a garden distinct from a collection of plants.

The late Vita Sackville-West put it another way. She once remarked that successful gardening was largely a matter of good marriages, albeit arranged ones for the most part. She was referring, of course,

to plant combinations. Some are not lasting affairs, despite impeccable lineage and spectacular honeymoons. A shocking number were just never meant to be because of the roving nature of one of the partners. In some cases, there can be no recourse but divorce, by the yanking out of one or more of the incompatible parties. (*Ménage à trois*—or *quatre*—requires extra-special circumspection in the floral kingdom.)

Our own garden is full of divorces, as are the gardens of friends who also care about the compatible display of plants. We don't like to talk about skeletons in the family closet, at least not in print. If we are dealing with trees and shrubs, permanent scars can be inflicted on the landscape by the wrong combinations. Fortunately, with perennials the simple corrective is a trowel. Perennials can be moved! Many of them have traveled long distances in our own garden. Had they belonged to an airline travel club, I am sure a few would have won a trip to Hawaii by now.

Color and Timing

The mixing of flower colors from different parts of the spectrum, such as yellows and pinks, frequently causes squabbles. Oranges and pinks always bring about pitched battles while the gardener looks on helplessly. Counseling doesn't work under such circumstances, though buffering the contending parties with plenty of silver foliage, white or blue flowers, or green foliage can turn adversity into diversity.

Timing is of the essence in avoiding some fierce battles. Each year there is a collision in one of our lightly shaded borders between two sound perennials—*Astilbe* 'Rheinland', which has lovely 18-inch-tall steeples of clear pink flowers, and the common 'Enchantment' lily, whose flower color has been described as vermilion or nasturtium-red by polite authors. Actually, it is traffic-cop orange, which is a hard tint

to use in the garden, though there is hope if one keeps it several hundred feet from the house. Fortunately, in the half-dozen years of this partnership, the astilbe has finished doing its thing two or three days before the lily starts. Someday the weather conditions may cause the blooms to overlap, and if they do, I will be prepared to scythe the astilbe in one fell swoop. Being a peace-keeper forces one to make difficult decisions.

In some parts of the country, climatic conditions may routinely cause the astilbe and lily to overlap. Clearly, some of the floral combinations that work for us in New England don't in Georgia or California, even though the plants may grow well there. The United States is a large country, and gardeners must work out their own plant marriages according to their own regions and, indeed, the microclimates in their own gardens.

But suppose we would like to avoid going down to the wire with color clashes in our own garden. One way might be for us to plant *Astilbe* 'Rheinland' with other astilbes having slightly different tints of pink. In another part of our garden, in fact, we alternate the mid-pink 'Rheinland' with another cultivar, 'Peach Blossom', which has pale pink flowers. Usually, colors close to each other combine quite well. (The summer phloxes, which some gardeners are apt to dismiss with the epithet magenta, are a good example.) One exception is red; if one tint is orange-red, as in the Maltese-cross (*Lychnis chalconica*), and the other is pinkish-red, as in the rose campion (*Lychnis coronaria*), the combination can be like squeaky chalk on a blackboard.

If In Doubt, Use Silver

An increasing number of gardeners are beginning to appreciate silver foliage for its value as a straight man that can bring out the best flower color in other plants. These days, probably the most widely sold perennial in the Northeast is a plant called

silver mound, *Artemisia schmidtiana* 'Nana' of the trade. In one section of our garden, it is used as an edging for a drift of *Astilbe* 'Peach Blossom'. It provides early summer elegance, but then silver mound would complement anything except a giant sequoia. Even brassy yellows and oranges look dignified in its presence.

Silver mound performs best in the cooler parts of the country, but even there it has a tendency to flop open halfway through the season, resembling a silver cloud—sometimes a cirrus one at that. If you like tight little mounds, grow it in very sandy soil in full sun. I don't mind the former effect as long as the cloud has a silver lining, but there are situations where this plant should be pruned sharply in mid-summer if it is to look well the rest of the growing season. If summers in your area are very hot, consider substituting lavender cotton, *Santolina chamaecyparissus*, for the same silvery effect, but be aware that this delightful subshrub has yellow flowers in summer that will clash with pinks. Some gardeners routinely remove these flowers, as they do the flowering stalks of another useful silver-leaved plant, lamb's-ears (*Stachys byzantina*), but the discord that results from leaving them on is not serious.

A Rose is Not Necessarily a Rose

Let us return for a moment to rose campion, *Lychnis coronaria*. There is precious little that is "rose" about it. It is a color that, because of its vulgar loudness, appeals mainly to people with "tin eyes." We evicted this old-time, free-seeding, short-lived perennial from our garden with a vengeance after discovering young plants cavorting with 'Enchantment' lilies. The first-year foliage rosette is a wonderfully seductive, satiny gray, but we can have that in a white-flowered form with *L. coronaria* 'Alba', which comes true from seed if kept away from the loud type.

No flower color is intrinsically bad, but I have the highest regard for any gardener who uses rose campion well. Such a person is Mildred Van Vlack. (See the April 1983 issue of *American Horticulturist*.) Mrs. Van Vlack's Connecticut garden is at its peak in the latter part of June, when old roses and the first wave of delphiniums are in fine fettle. The rose campion has a backdrop of good, pink old roses, and there are several perennials nearby with good green foliage, as well as a smattering of plants with white flowers. It is a winning combination, and I often think of it, though I have never actually tried it. Mrs. Van Vlack is a bolder person than I am.

Stretching It Out

Floral combinations with perennials are

transient, because most plants bloom for just three weeks or so. Perhaps that is just as well, because we can have a succession of combinations through the season, with something new to look forward to as the months go by. Lately, I have had a special interest in extending the period in which the garden is attractive further into autumn. Normal people admire sugar maples or watch football games in fall. My taste runs more toward combating seasonal senescence in the garden, delaying the inevitable, and more positively, preserving beauty. Summer in the North is too short, and I don't see any reason to throw in the trowel on Labor Day, particularly when some of the year's best weather is yet to come.

Of course, there is always the chrysanthemum, which seems to be a tyrant of fall gardens. When I visit a garden center in September, I get the uneasy feeling that every flower in the world has a rounded form. Chrysanthemums have become events rather than garden plants. In recent years, they have evolved apart from the garden and are now to many people just an extension of a florist crop. It is hard to classify the autumn chrysanthemum taxonomically and even seasonally; it is not quite a perennial, it is not an annual, and many of the cultivars start to flower by late July. Of course, if we want such flowers programmed into bloom, we can go to a florist even in March.

I do not really care to see a chrysanthemum in March nor in July, and I do not think that poodle-ization has made the plant prettier. Do not mistake me: I am fond of the chrysanthemum—single-flowered and pompom sorts that will bloom in September and October and maybe even November in the severe land where I live, and ones that will survive winter in good shape and not need yearly division or staking. A dream, you say? No, I see these in older gardens from time to time, and ask for cuttings. Unfortunately, they do not seem to be in the trade anymore.

How much richer our gardens would be if we thought of the chrysanthemum as one of autumn's plants rather than its exclusive one. That time of year may be top-heavy with daisy flower forms, but there are other plants that can relieve the possible monotony. Foremost are the spikes of the late-blooming snakeroot, *Cimicifuga simplex*, whose pure white bottlebrushes on three- to six-foot-tall stems rise from the sea of chrysanthemums, each complementing the other. The spikes of a September-flowering false dragonhead, *Physostegia virginiana* 'Bouquet Rose', are useful with white chrysanthemums, since the latter are apt to fade to a purplish-pink



and need some visual support so as not to appear tatty. Chrysanthemums, like most plants, should have their spent flowers removed. In this case, removing the flowers can extend the season of effective bloom considerably. Pink turtlehead, *Chelone lyonii*, can serve much the same function as false dragonhead, though its individual flowers are hunchbacked.

My favorite combination for autumn doesn't include a chrysanthemum, and the blooms last a long time. This is a *ménage à trois* combining *Sedum* 'Autumn Joy', with flat clusters of Indian-red flowers on two-foot-tall stalks; Canadian burnet, *Sanguisorba canadensis*, whose five-foot-tall stalks topped by white bottlebrushes are less showy but more frost-resistant than those of *Cimicifuga simplex*; and the fall monkshood, *Aconitum carmichaelii* (sometimes listed as *A. fischeri*), with clear blue flowers on stalks that usually attain three feet. A fourth partner is evident in the background if it is a cool summer and flowering is delayed. This is *Helenium* 'Copper Spray', which is four to five feet tall, yellow, orange and showy. Off to another side is *Rudbeckia nitida* 'Goldquelle', with yellow flowers that are fully double. This plant resembles a scaled-down version of golden-glow, *R. laciniata* 'Hortensia', the dowdy, turn-of-the-century matron one still encounters near old farmhouses. A few New England asters, the

ABOVE: *Sedum* 'Autumn Joy', *Sanguisorba canadensis* and *Aconitum carmichaelii* provide an autumn display in the garden.



white-flowered *Boltonia asteroides* 'Snowbank', and a tall ornamental grass or two (for example, *Miscanthus sinensis* 'Silver Feather', or zebra grass, *M. sinensis* 'Zebrinus', with its horizontal yellow bands) would provide a quite tolerable autumn border—enough to wean all but die-hard machos away from the television set on a Saturday afternoon in October. They probably wouldn't even notice that chrysanthemums were missing.

Shade

To the innovative gardener, shade is an opportunity, not a problem, and in warmer parts of the country it is a blessing for plants as well as for people. Approximately 40 percent of the best-known perennials demand shade or are shade-tolerant (there is a difference between the two). This gives the gardener who is looking for aesthetically pleasing combinations plenty of plants with which to experiment. The warmer the area, the greater the number of plants that welcome some shade, especially in the afternoon.

Plant partnerships are not forever, but one I like very much is the European wild ginger, *Asarum europaeum*, planted in front of maidenhair fern, *Adiantum pedatum*. The deep green, leathery, chunky foliage of the former is enhanced by the light-textured, delicate green of the latter. In time, the fern grows too tall, and the combination must be reworked periodically. If you can obtain the more compact-growing Aleutian form of maidenhair fern (*A. pe-*

datum var. *aleuticum*) from a rock garden nursery, you might use it as a substitute. Another variation of the theme is to substitute one of the southern wild gingers—either *Asarum shuttleworthii* or *A. virginicum*, with their attractively marbled foliage—for the European species.

Foliage combinations are more durable than floral ones because the leaves are present throughout the growing season. In the case of the three wild gingers I have mentioned, the leaves are, in fact, evergreen. Should you want to add an attractive floral partner, Korean goatsbeard (*Aruncus aethusifolius*), with feathery, astilbe-like foliage and eight-inch-tall stalks of white flowers, is a fitting companion. The foliage itself is winning, and the plant makes a fine ground cover in a small area.

Another low-growing foliage combination for the shade is *Hosta venusta* and a dwarf meadow rue, *Thalictrum minus*, which grows only one foot tall in its better forms and has small, lacy foliage that looks best after a rain, when beads of water cling to it. *H. venusta* is the smallest true species of hosta (only a couple of inches high), but with a blocky effect. One variant even smaller than that, *H. venusta* 'Minus', is useful for rock garden troughs. Both the thalictrum and hosta bloom, but the flowers are irrelevant, except perhaps to the plants and to the sort of gardener who judges plants only by blossoms.

The above combinations are satisfactory in fairly deep shade, but the number of choices increases in light shade. The focal

point in July and August in our main border, in a section that receives less than five hours of sun each day, is a grouping of five plants of a largely neglected American woodlander, the black snakeroot (*Cimicifuga racemosa*). These were planted in a woody, moisture-retentive soil in 1964 and have not been divided since, nor have they been fertilized more than two or three times over the years.

The actual flowering period of the black snakeroot in our garden is no longer than a month, but the six- or seven-foot-tall stalks are prominent for two weeks before the pearl-shaped white buds open, and the stalks have architectural merit for several more weeks after flowering. I was not much of a gardener in 1964, and my immediate aim then was to hide a statue of a little girl my mother left me. The snakeroot did not perform its task very well, though it did soften the statue, and the main beneficiaries have been the surrounding plants that were selected for summer bloom: *Hebe* 'Gold Greenheart'; magnificently scented regal lilies; and clear pink summer phlox 'Sir John Falstaff', which will linger in bloom until September if the old flower heads are removed and if we have been conscientious in applying the fungicide Benomyl to control mildew.

Grasses

There is a rustle of interest in ornamental grasses these days—an interest that, to my way of thinking, is long overdue. Fine public displays are evident around some of the federal buildings in Washington, D.C., where the grasses are used particularly in conjunction with *Sedum* 'Autumn Joy' and *Rudbeckia fulgida*, the perennial black-eyed Susan. My own initial acquaintance with these grasses was at the Brooklyn Botanic Garden, where a substantial border was given over largely to them, with a sprinkling of hemerocallis, yuccas and bulbs. In November this "monocot" border was striking in the morning sun, which provided a brilliant backlighting effect. It was, in a sense, "a garden of a golden morning"; the foliage of the seven- or eight-foot-tall grasses took on wonderful tints of yellow, and gossamer seed heads of *Miscanthus* and ravena grass (*Erianthus ravennae*) waved in a soft wind. Many of these ornamental grasses can actually be attractive until late in the winter even in the colder reaches, turning the color of parchment by mid-winter. Combined with evergreens, birches and winterberry holly (*Ilex verticillata*), they add interest to what is all too often a desolate landscape. ☼

Frederick McGourty and his wife, Mary Ann, own Hillside Gardens, a perennials nursery in Norfolk, Connecticut.

ONE WOMAN'S GARDEN

Continued from page 17

but I have struggled desperately, trying to dig up and move one birch, one *Oxydendrum* (which I moved twice, poor thing), one mockorange, two dogwoods and two bush cherries—all of which I had light-heartedly stuck in what I *knew* to be the wrong place, “just for now.” I’ve found that it’s not like putting a piece of furniture in the wrong place; with plants, there’s the devil to pay later.

I finally had to get my husband’s help with the bush cherries, which were beginning to claim a whole semi-circle of border for themselves. In fact, they had grown so large in two years that I couldn’t budge them, even after cutting them way back and spending a long time excavating with shovel and digging bar. And since George had warned me from the beginning that I was embarking on a mad enterprise—that it would all be far too much work and too exhausting—I hesitated to ask him for help. Even though he doesn’t permit himself to say “I told you so,” I know what he’s thinking.

I shift perennials about so often, it seems that I’m carrying on a game of musical chairs every spring with them. It is as if I made things difficult for myself on purpose. When I have to move small seedlings, I lay many of them in a basket or flat and move them sensibly, all at once. But when the plant is any size at all, in order to disturb it as little as possible, I dig the new hole, then dig up the plant, cutting all around and lifting it on the shovel. I tuck the long handle of the shovel under my right arm, support the tip of it with my left hand and then trot gently over to the prepared hole and slide in the plant, which hasn’t even had time to know what has happened. This sounds all right to the reader, I’m sure, but as my garden has gotten longer and longer, I’ve had farther and farther to trot. If I want to move something from the east end to the west end, and there are five of them, I hate to think how far I’ve traveled by the time they’re all tucked in. I always hope George is too busy to notice this operation, for he would surely think me demented for not laying all the plants carefully in the wheelbarrow and rolling them to their new spot in one trip, even if a little earth *should* fall from their roots. He’s right: it probably wouldn’t hurt them a bit, and I’m probably as over-anxious a gardener as I was a parent.

In the case of evergreens, of course, it pays to be a little anxious. One has been warned so often about those delicate, hairy



The author planned her garden while living in Algiers, and used snapshots of the farm to help remind her of what the area actually looked like. The snapshots did not discourage her despite the fact that they showed an unkempt strip of pasture, “a whirling clothes pole, a privy, a red-painted brick and concrete outdoor fireplace, a metal Quonset hut and a dilapidated shed.”

roots that one hardly dares use a rude shovel and fork. Actually, it’s probably easier to move a rhododendron than a deciduous shrub, because the rhododendron is so shallow-rooted that it doesn’t have to endure the inevitable shock of having some of its roots severed in the process. As long as you ease a rhododendron up out of its bed onto a piece of burlap and carry it cautiously so that the earth doesn’t fall away, it seems to settle into a new place without a hitch. Even so, since the books say not to tramp on the earth around the base of a newly planted evergreen, I worry about air pockets, and stuff the peaty soil in around the edges with my fingers, giving the plant a good soaking afterwards. Air pockets can cause slow death, as I found with a miserable mountain laurel whose affliction I failed to diagnose until it was too late.

Having lived for many years in countries around the Mediterranean, I have come to love the tough, moundy, aromatic plants that cling to those dry, stony hills: *Cistus*, *Pistacia lentiscus*, myrtle, thyme, horehound and even those prickly little kermes oak bushes (*Quercus coccifera*) that scratch the legs. Although *Cistus*, which thrives in England, will not grow here, I have been able to give part of the border a Mediterranean look, I fancy, by using selections of *Helianthemum*, *Thymus*, *Santolina*, *Lavandula* and other dwarf shrubs. They do need protection from the winter winds and, for this reason, are the principal cause of the unsightly lumps in our winter garden. However, they are worth the drawbacks for the joy they give the rest of the year.

In spite of all precautions, it has taken me a long time to find out what plants would and would not be happy here. I had to learn through bitter experience that it isn’t only the cold one has to worry about, but also the heat. I lost many a dear little

alpine before I realized that, although it would perch on my rocks happy as a clam through -20° F, August would do it in, slowly but surely, while I stood by wringing my hands. Neither water nor contrived shade will solace a *Soldanella* at 95° F. And in an area where May often brings a week of 92° F that melts the rhododendron and primrose blossoms *as they open*, reducing them to limp rags, July and August are bound to bring the *coup de grâce* to any high alpine. A week of stifling heat might easily be followed, I might add, by the thermometer’s plunging to 28° F or lower. The plants that survive here have to learn to adjust their juices in a hurry; it’s adjust or perish. It’s not only the extremes of temperature but the manic-depressive pattern that does a lot of damage. After winter temperatures of -20° F or more, roses and other tender plants may be alive to the tips of their shoots in March and exit in April.

Besides these hazards, there is the problem of the ever-present wildlife—deer, groundhogs, rabbits, chipmunks, squirrels, mice and voles, all chewing away ceaselessly, relentlessly, at their different levels, from the high buds of the azaleas to the roots of the heather. One does what one can with hardware cloth, deer repellent, mothballs, orchard bait and pine boughs. George is slowly building an outer barrier to protect our castle against the deer, using multi-flora roses and interwoven tree branches. It helps, but our garden is far from impregnable.

However, amazing as it seems, there are hundreds of perennials that flourish here, bravely battling the weather and the fierce winds that can whip in from across the lake. There are masses and billows of species and cultivars of *Lavandula*, *Salvia*, *Helianthemum*, *Anemone*, *Aquilegia*, *Centranthus* and *Geranium*. We also have splendid delphiniums, until we get a thun-

derstorm and the double ones have their heads knocked over. Fortunately, I can shore up the *Delphinium* × *belladonna* cultivars (often listed as *D.* × *bellamosum*), which have less pronounced central spikes, and they continue to look lovely.

In among all of these, the colors silver and gray are repeated, in part, with artemisias of many kinds: *Artemisia ludoviciana* and tall, plummy silver-king (*A. ludoviciana* var. *albula*); and *A. absinthium* and its cultivar, 'Lambrook Silver', the most glorious of the tall ones. The soft, silver feathers of the latter stand behind the crimson blooms of 'Donald Prior' roses, making them glow like rubies. There are also many plants of *A. schmidtiana* 'Silver Mound', as well as a plant I bought as 'Silver Frost' and have failed to identify.

So it is that the garden is all blues, whites, pinks, lavenders and pale lemon-yellows, with an occasional spot of crimson, all woven together with gray. Silvery-gray is provided by *Artemisia*, *Veronica*, *Santolina* and *Cerastium*, and green-gray or blue-gray is brought to the garden by *Dianthus*, *Nepeta*, *Ruta* (rue), *Aethionema* and *Lavandula*. I especially like the round, soft, bristly humps of blue-gray *Dianthus gratianopolitanus* (formerly *D. caesius* and commonly called cheddar pinks), even when these plants aren't carrying their masses of small, single, fragrant, pink flowers. Gray wafts even into the center of the heather and small shrub section of the border, where the furry, gray ears of *Stachys byzantina* (formerly *S. lanata*) and feathery artemisias end in a sort of apotheosis of gray: a clump of tall, lavender-tipped Russian sage, *Perovskia atriplicifolia*, which makes a fountain of radiant, delicate silver.

Another of Hyams's maxims that I wrote down is that "one should confine oneself to placing discreet bursts of suitable color in a green landscape." He probably wouldn't approve of the way my garden looks in June, I think, feeling guilty as I secretly glory in it. But except for that month, what I trust are suitable colors show themselves in discreet bursts in, if not a green, at least a green and gray landscape. When I stand by the woods garden on a fine summer day and gaze at the borders moving in and out towards the west with the blue hills beyond them, the whole scene looks almost as good to me as my original vision. ☉

Elisabeth Sheldon manages a small perennial nursery in Lansing, New York. A former painter and teacher, she currently writes and lectures on horticultural topics.

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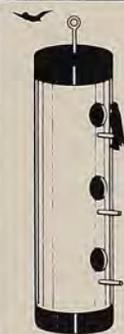
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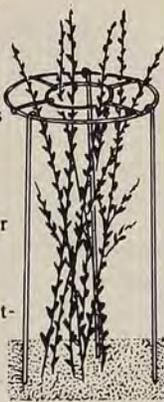
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Spring Gardens of the Southern United States (March 30-April 21) Visit the most beautiful gardens in New Orleans, Natchez, Savannah, Charleston and Atlanta during the height of the spring blooming season. Tour leader is Liberty Hyde Bailey Medal winner and Emeritus Professor of Botany at UCLA, Dr. Mildred Mathias.

Spring in the Mediterranean (April 8-24) Cruise the Mediterranean and stop at ports in Greece, Turkey and Yugoslavia during the height of the spring wildflower season. Alfred Evans, Assistant Curator of the Royal Botanical Gardens in Edinburgh, will lead the tour. Botanical shore excursions and lectures on board are scheduled.

Belgium & Holland by Road & Waterway (April 21-May 4) Join AHS members for a tour of historic Brussels, the Royal Botanical Gardens and greenhouses, Amsterdam, the tulip festival in Haarlem and Keukenhof Gardens. Also scheduled are a visit to the famed Floralties, held every five years, as well as a barge trip on the canals of Holland during tulip time. Tour leader is Richard Hutton, AHS Board Member and President of Conard-Pyle/Star Roses.

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Book Reviews

THE ENGLISH FLOWER GARDEN. William Robinson. *The Amaryllis Press.* New York, New York. 1984. (Facsimile reproduction of the 15th ed.) 761 pages; hardcover, \$35.00. AHS discount price, \$32.10 including postage and handling.

William Robinson is often considered "the father of modern gardening," and *The English Flower Garden* is said to be the most important of his many books. First published in 1883, it has gone through 16 editions. The fifteenth edition was chosen for this facsimile reproduction because it was the last edition fully edited by Robinson himself. The first half of the book is devoted to Robinson's thoughts on gardening; the second half is an encyclopedia of plants that includes descriptions and cultural information, in addition to Robinson's comments on the garden value of each plant. This old standby, which has long been out of print, should be included as a basic reference work in any gardening library.

THE CAMELLIA. T. J. Savige. (Paintings by Peter Longhurst.) *Bay Books.* Sydney, Australia. 1982. 158 pages; hardcover, \$41.50. AHS price, \$41.50, including postage and handling.

This book, in the old tradition of finely illustrated botanical plate works, has 53 full-page color paintings of *Camellia* species and cultivars. Following a brief introduction on the botanical and horticultural history of the genus are four sections on camellias in the Orient, Europe, America and the Antipodes. A history of the plant accompanies each plate.

PLANTS THAT MERIT ATTENTION—VOL. 1: TREES. Janet Meakin Poor (editor). *Timber Press.* Portland, Oregon. 1984. 375 pages; hardcover, \$44.95. AHS discount price, \$39.70 including postage and handling.

This significant work describes and illustrates 150 species and cultivars of trees that should be grown more often. Many of the species included in this volume may be common in particular locales, but these trees are not generally common on a national basis, and merit greater attention

for use in the landscape. Color photographs present the overall appearance of each tree, as well as notable details, such as flowers, fruit and bark. The descriptions include cultural information, a discussion of landscape value, and locations where mature trees may be found. A series of appendices include nursery sources for all species, in addition to several lists of trees suitable for special uses or conditions. This significant contribution to horticulture was prepared by the Horticultural Committee of the Garden Club of America and is definitely a book that merits attention.

THE SALAD GARDEN. Joy Larkcom. *The Viking Press.* New York, New York. 1984. 168 pages; hardcover, \$27.50; softcover, \$12.95. AHS discount price, \$26.25 (hardcover), \$13.15 (softcover) including postage and handling.

If you grow food, you'll find some new ideas in this excellent book. If you have never gardened for food, this book may inspire you to do so. Salad makings you can cultivate include flowers and wild plants, as well as the more conventional inhabitants of the vegetable garden. *The Salad Garden* includes excellent color photographs of all these plants, and the whole subject is rounded off with a mouth-watering section on salad making. Cultivation information is good, and the breadth of plant material presented will surprise even the most advanced gardener.

COLOUR IN THE WINTER GARDEN. Graham Stuart Thomas. *J. M. Dent & Sons, Ltd.* London, England. 1984. 209 pages; hardcover, \$24.95. AHS discount price, \$21.45 including postage and handling.

This is the third and fully revised edition of a work that first appeared in 1957. The title is self-explanatory, and the plants mentioned in the book contribute to color in the winter garden in many different ways. Most of the information will apply directly in the case of foliage and bark, but because this is an English book, all of the flowering dates must be adjusted for application to the United States. Many of the winter-flowering plants are actually early spring-flowering plants for us, and some of them

won't flower at all in the colder areas of the U.S. Like most English gardening books, this one is full of good ideas for the advanced gardener.

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THE CONCISE ENCYCLOPEDIA OF GARDEN PLANTS.

Kenneth A. Beckett. Orbis Publishing, Ltd. London, England. 1984. 440 pages; hardcover, \$19.95. AHS discount price, \$17.45 including postage and handling.

This encyclopedia lists and describes over 7,000 species of garden plants, both herbaceous and woody. In addition, more than 2,000 species are illustrated in color photographs. The cultural information is brief but adequate, and the descriptions will fill in many a gap when you are looking for something different for the garden. Unfortunately, Beckett does not provide any information on plant hardiness. This is a good reference work for the more adventurous gardener and is a terrific value for the money in today's book market.

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VOL. 2: VEGETABLES. 1984. 96 pages; hardcover, \$62.50. AHS discount price, \$54.60 including postage and handling.

DIAGNOSIS OF HERBICIDE

DAMAGE TO CROPS. 1981. 70 pages; hardcover, \$35.00. AHS discount price, \$31.25 including postage and handling. All three books published by Chemical Publishing Co. New York, New York.

All three of these books were originally published by the British government. Although the tests are technical, the many color illustrations are useful to the non-technical reader. If you have problems in your garden, you may find the answers here. These reference works are suitable for both the advanced gardener and the agronomist. ☉ —Gilbert S. Daniels

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

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Steps & Stairs

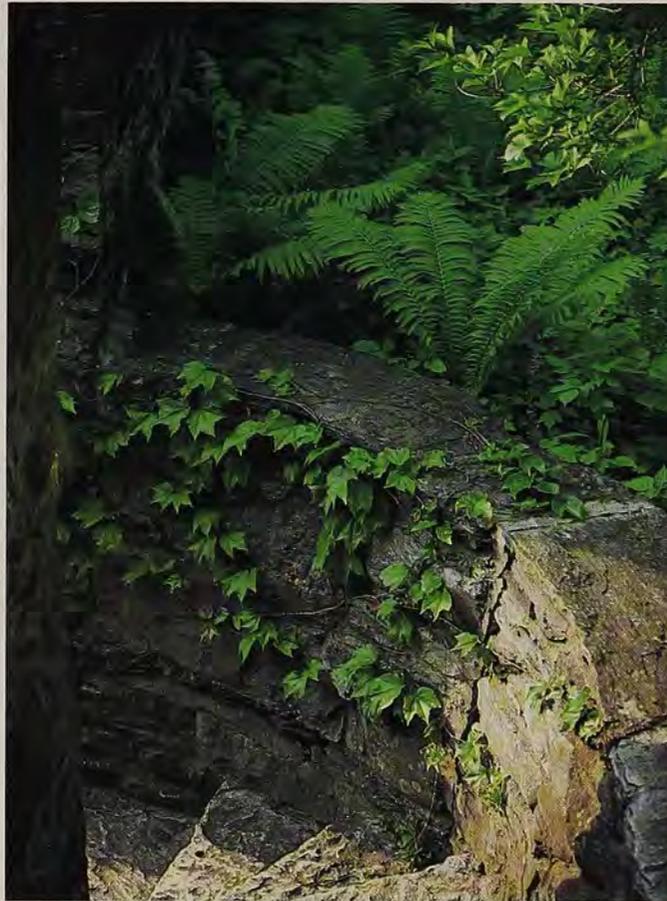
Steps and stairs are so fundamentally practical, many of us take their presence for granted in a garden. Most gardens have some kind of steps, however simple, leading up, down and around, or strategically placed to prevent family and friends from unintentionally tobogganing down slippery lawns.

Despite the intrinsic practicality of steps, there is something alluring about even their simplest forms—something capable of creating a keen sense of anticipation. The very existence of a stairway implies something worthwhile at the top or bottom; otherwise, why would the steps be there in the first place? At the top of the steps there is, presumably, something new, or at least, a more elevated perspective.

When considering the purpose and poetry of stair and step, two very different gardens come to mind. In both Hestercombe in Somerset, England, and Dumbarton Oaks in Washington, D.C., stairs are placed to lure unsuspecting visitors from one area of the garden to the next, to frame views into or out of the garden and to create a keen sense of place and/or enclosure. Not only can stairs be used to define a garden area, but the architectural style and the materials used to build the steps can reinforce the character of an area in a garden.

The garden at Hestercombe is a result of the collaboration between the architect Edwin Lutyens and Gertrude Jekyll. At the center of the garden, a lawn known as The Great Plat is divided into a series of parterres, planted with Jekyll's selections of roses, herbaceous plants and ground covers, and surrounded by Lutyens' walls and pergolas. Lawns and terraces of varying sizes and shapes, at different levels, are all linked by stone steps and stairways.

As a result of this highly architectural approach, a singularly boring site with an equally lackluster view has become a gar-



Steps built of natural stone help develop the character of a Massachusetts garden.

Margaret Hensel

den of comings and goings and constantly changing perspectives—a place fraught with expectations and discoveries for visitors as they come upon yet another set of stairs leading into garden rooms of sunlight and shadows.

Dumbarton Oaks, the work of American landscape architect Beatrix Farrand, has its share of monumental stairways and architectural contrivances. Built on a steep hillside in Georgetown in Washington, D.C., the garden's lawns, various features, borders and woodlands are, of necessity, linked by stairways and stepped paths. Here, there is an even more intimate relationship between natural terrain, steps and stairs. The roughly cut stones Farrand used look like highly stylized outcroppings of native stone and are in keeping with the character of the woodland or hillside of naturalized daffodils.

Throughout Dumbarton Oaks, woods

and garden, and brick and stone steps have been handled as metaphors; the relationship between them is so stretched and so finely drawn that the synthesis of poetry and pragmatism is practically invisible unless someone is looking for it.

An excellent way to get a feel for what stairs and steps contribute to a garden is to walk up and down as many different kinds of stairs as you can find. Dumbarton Oaks is a good place to observe the placement and stylistic diversity of step and stair, but be forewarned: Georgetown's summer heat and humidity can turn even the hardiest stair-stepper towards the nearest air-conditioned tea-room.

Dumbarton Oaks is unusually lovely in spring and autumn. During these seasons, it is possible to experience how the length and steepness of a stairway affect your sense of anticipation or how that same sense is heightened when your line of sight up and beyond the steps is obstructed by a gate or tree.

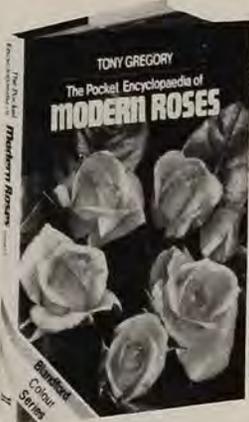
While it may be impractical or stylistically ill-advised to transfer the features of one garden directly to your own, some of the basic principles can be used effectively. For example, although flights of stairs in a large garden that lead through clouds of dogwood blossoms can create an undeniable drama, even half a dozen steps can become practically irresistible if the view at the top is cut off by a gate. There needn't be anything extraordinary behind the gate: perhaps a few choice hostas or a particularly fragrant climbing rose. But at the bottom of the stairs, there is no telling what awaits us, and the imagination knows no bounds. ♣

—Margaret Hensel

Margaret Hensel is a landscape designer and writer living in South Lee, Massachusetts.

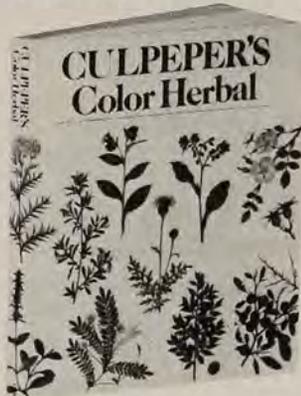
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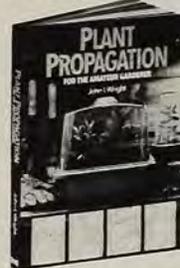
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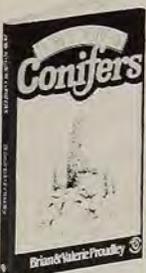


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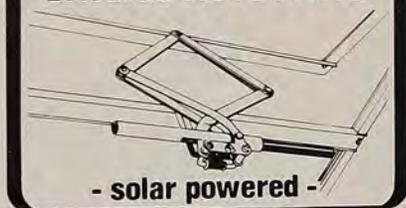
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Lauray of Salisbury, Undermountain Road, Route 41, Salisbury, CT 06068, catalogue \$1.50.

Logee's Greenhouses, 55 North Street, Danielson, CT 06239, catalogue \$2.50.

NEW PLANTS FOR 1985

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Gazania 'Mini-Star Tangerine', *Tagetes* 'Red Marietta' and *Portulaca* 'Sundance' will be available from major seed companies and local garden centers and nurseries.

Henry Field Seed and Nursery Company, 407 Sycamore St., Shenandoah, IA 51602, catalogue free.

Greer Gardens, 1280 Goodpasture Island Road, Eugene, OR 97401, catalogue \$2.00

Gurney Seed and Nursery Company, Yankton, SD 57079, catalogue free.

Lilypons Water Gardens, PO Box 10, Lilypons, MD 21717, catalogue \$3.50.

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May 9 - 24, 1985

The British are often labeled the keenest gardeners in the world. Our visit includes some of the best spring gardens in England, both public and private. They have been chosen for their bloom, their variety, and their uniqueness.

This year's spring itinerary concentrates on Devon, the sub-tropical area of Cornwall, and lovely Bath with its 15th-century abbey and unique Georgian crescents. Gardens include Stourhead, the famous 18th-century landscape garden; the Royal Horticultural Society's Gardens at Wisley; Buckland Monachorum in Cornwall, one of England's finest; the National Trust Gardens of Trelissick and Trengwainton. Highlights for rhododendron and azalea fans will include Exbury Gardens and the Dell at Kew.

An entire day at the famous Chelsea Flower Show has been planned as well as other sightseeing around London. This itinerary has been carefully planned; the majority of time will be spent in gardens and not on the bus.

For a free brochure, please write to the Education Department, American Horticultural Society, Box 0105, Mt. Vernon, VA 22121. Or call collect: (513) 281-7000.

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Moore Miniature Roses, Sequoia Nursery, 2519 E. Noble Avenue, Visalia, CA 93277, catalogue free.

Geo. W. Park Seed Company, Inc., PO Box 31, Greenwood, SC 29647, catalogue free.

Schreiner's Gardens, 3625 Quinaby Road, N.E., Salem, OR 97303, catalogue \$2.50.

Thompson and Morgan, PO Box 100, Farmingdale, NJ 07727, catalogue free.

Van Ness Water Gardens, 2460 North Euclid, Upland, CA 91786, catalogue free.

Wayside Gardens Company, Hodges, SC 29695, catalogue \$1.00.

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The accent, or emphasis, falls on the syllable that appears in capital letters. The vowels that you see standing alone are pronounced as follows:
 i—short sound; sounds like i in “hit”
 o—long sound; sounds like o in “snow”
 a—long sound; sounds like a in “hay”

Aconitum carmichaelii
 ak-oh-NY-tum car-my-KELL-ee-eye
Adiantum pedatum var. *aleuticum*
 ah-dee-AN-tum pe-DAY-tum
 al-ee-YEW-ti-kum
Adonis amurensis
 ah-DON-iss a-mure-EN-sis
Aethionema ee-thee-OH-nee-mah
Anemone blanda
 ah-NEM-oh-nee BLAN-dah
A. japonica a. ja-PON-i-kah
Antigonon an-TIG-oh-non
Aquilegia canadensis
 ak-qui-LEE-jee-ah can-ah-DEN-sis
Artemisia absinthium
 ar-tem-EES-ee-ah ab-SIN-thee-um
A. ludoviciana var. *albula*
 a. lood-oh-viss-ee-AH-nah al-BEW-lah
A. schmidtiana a. schmidt-ee-AH-nah
A. versicolor a. ver-si-KOL-or
Aruncus aethusifolius
 ah-RUN-kus ee-thus-i-FOL-ee-us
Asarum europaeum
 ass-AIR-um your-oh-PEE-um
A. shuttleworthii
 a. shut-el-WER-thee-eye
A. virginicum a. ver-JIN-i-kum
Astilbe ah-STILL-bee
Athyrium goeringianum
 ah-THIGH-ree-um gair-rinj-ee-AH-num
Averrhoa bilimbi
 ah-ver-ROW-ah bil-IM-bee
A. carambola a. kar-am-BOL-ah
Boltonia asteroides
 bol-TONE-ee-ah ass-ter-oh-EYE-deez
Cassia KASS-ee-ah
Ceanothus see-ah-NO-thus
Centranthus sen-TRAN-thus
Cerastium ser-ASS-tee-um
Cestrum SES-trum
Chelone lyonii kell-OWN-ee LION-ee-eye
Chionodoxa ky-on-oh-DOCK-sah

Cimicifuga racemosa
 sim-i-si-FOO-gah ray-si-MOH-sah
C. simplex c. SIM-plex
Cistus SIS-tus
Citrus SIT-rus
Clematis CLEM-ah-tiss/clem-AT-iss
Cornus kousa KOR-nus KOO-sah
Daphne mezereum DAF-nee mez-ER-ee-um
Delphinium × *belladonna*
 del-FIN-ee-um bell-ah-DON-ah
D. × bellamosum d. bell-ah-MOH-sum
Dianthus caesius dy-AN-thus SEE-see-us
D. gratianopolitanus
 d. grah-tee-AH-no-pol-i-TAY-nus
Epimedium ep-i-MEE-dee-um
Erianthus ravennae
 er-ee-AN-thus rah-VEN-nay-ee
Erythronium ee-ree-THRO-nee-um
Gazania ga-ZANE-ee-ah
Geranium jer-AY-nee-um
Globba winitti GLOB-bah win-IT-tee
Helenium hell-EN-ee-um
Helianthemum heel-ee-AN-the-mum
Heliopsis heel-ee-OP-sis
Hosta venusta HOSS-tah ven-OO-stah
Ilex verticillata
 EYE-lex ver-tiss-ill-AY-tah
Iris reticulata
 EYE-riss re-tick-yew-LAY-tah
Lavandula lah-VAND-yew-lah
Lychnis chalcidonica
 LICK-niss kal-see-DON-i-kah
L. coronaria l. kor-o-NAIR-ee-ah
Magnolia mag-NOL-yah
Mertensia mer-TEN-see-ah
Miscanthus sinensis
 mis-CAN-thus sin-EN-sis
Muscari mew-SCARE-ee
Narcissus triandrus var. *albus*
 nar-SIS-us tri-AN-drus AL-bus
Nepeta ne-PEE-tah
Nymphaea nim-FAY-ee-ah
Oxalis acetosella
 ox-AL-iss ah-see-toe-SELL-ah
O. adenophylla o. ah-den-oh-FILL-lah
O. alstoni o. al-STOW-nee
O. bowiei o. bow-EYE-ee-eye
O. corniculata
 o. korn-i-koo-LAY-tah
O. corymbosa o. kor-im-BOW-sah
O. deppei o. DEP-ee-eye
O. enneaphylla
 o. en-nee-ah-FILL-ah
O. europea o. your-oh-PEE-ah
O. hedysaroides
 o. head-ee-sar-oh-EYE-deez
O. lobata o. low-BAH-tah
O. martiana o. mar-tee-AH-nah
O. montana o. mon-TAN-ah
O. oregana o. or-ee-GAN-ah
O. pes-caprae o. pes-KAP-ray-ee

O. purpurea o. pur-pur-EE-ah
O. regnellii o. reg-NELL-ee-eye
O. rosea o. ROSE-ee-ah
O. rubra o. REW-brah
O. siliquosa o. sil-i-QUO-sah
O. stricta o. STRICK-tah
O. tetraphylla o. te-tra-FILL-ah
O. trillifolia
 o. tril-ee-i-FOL-ee-ah
O. tuberosa o. too-bur-OH-sah
O. variabilis o. var-ee-ah-BIL-is
O. violacea o. vy-oh-LACE-ee-ah
O. vulcanicola o. vul-can-i-KOL-ah
Oxydendrum ox-ee-DEN-drum
Pelargonium pell-ar-GO-nee-um
Perovskia atriplicifolia
 per-OV-skee-ah at-ri-pliss-i-FOH-lee-ah
Physostegia virginiana
 fy-so-STEE-jee-ah ver-jin-ee-AY-nah
Pistacia lentiscus
 pis-TAH-see-ah len-TIS-kus
Polygonatum commutatum
 po-lig-oh-NAY-tum com-mew-TAY-tum
Portulaca por-tew-LACK-ah
Primula denticulata
 PRIM-yew-lah den-tick-you-LAY-tah
P. × polyantha p. pol-ee-AN-thah
P. sieboldii p. see-BOLD-ee-eye
Quercus coccifera
 QUER-kus kok-SIFF-er-ah
Rhododendron row-doh-DEN-dron
Rudbeckia fulgida
 rood-BECK-ee-ah FULL-jid-ah
R. laciniata r. la-sin-ee-AY-tah
R. nitida r. NIT-ed-ah
Ruta ROO-tah
Saintpaulia saint-PAUL-ee-ah
Salvia SAL-vee-ah
Sanguinaria canadensis
 san-gwin-AIR-ree-ah can-ah-DEN-sis
Santolina chamaecyparissus
 san-toh-LEE-nah kam-ee-sy-pair-ISS-sus
Saxifraga sacks-i-FRAJ-ah
Scilla SILL-ah
Sedum SEE-dum
Soldanella sold-ah-NELL-ah
Stachys byzantina
 STACK-iss bi-zan-TY-nah
S. lanata s. lan-TAN-ah
Stephanotis stef-ah-NO-tiss
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Thalictrum minus
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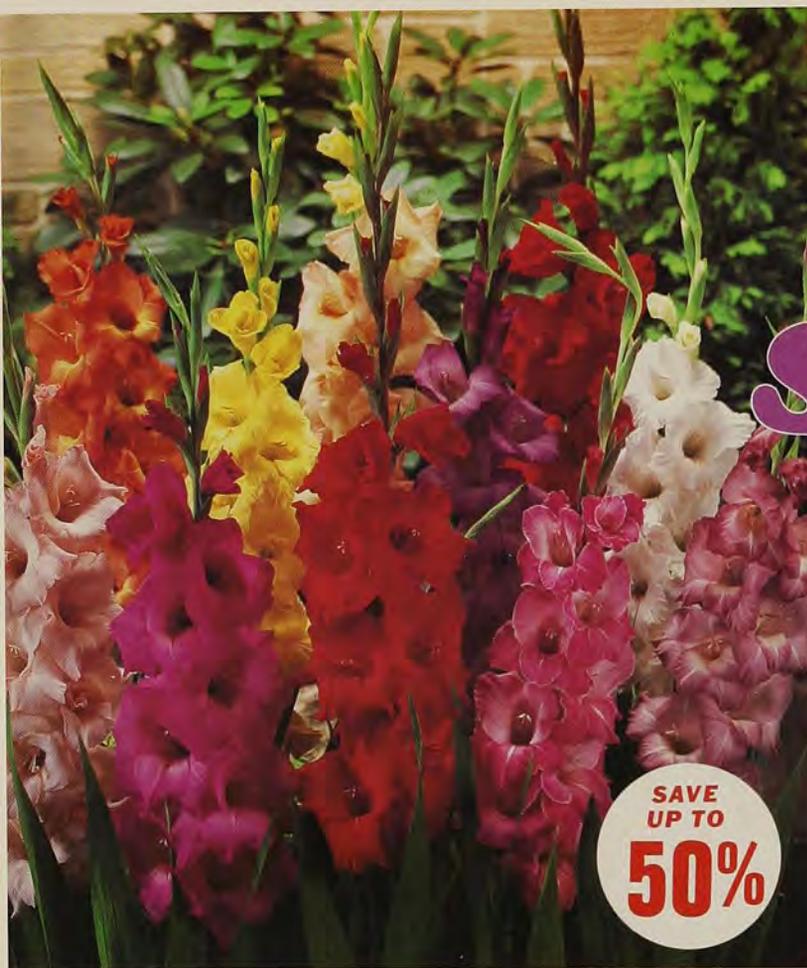
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Camellia Begonias



Asiatic Hybrid Lilies



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Pronunciation Guide

The accent, or emphasis, falls on the syllable that appears in capital letters. The vowels that you see standing alone are pronounced as follows:
 i—short sound; sounds like i in “hit”
 o—long sound; sounds like o in “snow”
 a—long sound; sounds like a in “hay”

Aconitum carmichaelii
 ak-oh-NY-tum car-my-KELL-ee-eye
Adiantum pedatum var. *aleuticum*
 ah-dee-AN-tum pe-DAY-tum
 al-ee-YEW-ti-kum
Adonis amurensis
 ah-DON-iss a-mure-EN-sis
Aethionema ee-thee-OH-nee-mah
Anemone blanda
 ah-NEM-oh-nee BLAN-dah
A. japonica a. ja-PON-i-kah
Antigonon an-TIG-oh-non
Aquilegia canadensis
 ak-qui-LEE-jee-ah can-ah-DEN-sis
Artemisia absinthium
 ar-tem-EES-ee-ah ab-SIN-thee-um
A. ludoviciana var. *albula*
 a. lood-oh-viss-ee-AH-nah al-BEW-lah
A. schmidtiana a. schmidt-ee-AH-nah
A. versicolor a. ver-si-KOL-or
Aruncus aethusifolius
 ah-RUN-kus ee-thus-i-FOL-ee-us
Asarum europaeum
 ass-AIR-um your-oh-PEE-um
A. shuttleworthii
 a. shut-el-WER-thee-eye
A. virginicum a. ver-JIN-i-kum
Astilbe ah-STILL-bee
Athyrium goeringianum
 ah-THIGH-ree-um gair-rinj-ee-AH-num
Averrhoa bilimbi
 ah-ver-ROW-ah bil-IM-bee
A. carambola a. kar-am-BOL-ah
Boltonia asteroides
 bol-TONE-ee-ah ass-ter-oh-EYE-deez
Cassia KASS-ee-ah
Ceanothus see-ah-NO-thus
Centranthus sen-TRAN-thus
Cerastium ser-ASS-tee-um
Cestrum SES-trum
Chelone lyonii kell-OWN-ee LION-ee-eye
Chionodoxa ky-on-oh-DOCK-sah

Cimicifuga racemosa
 sim-i-si-FOO-gah ray-si-MOH-sah
C. simplex c. SIM-plex
Cistus SIS-tus
Citrus SIT-rus
Clematis CLEM-ah-tiss/clem-AT-iss
Cornus kousa KOR-nus KOO-sah
Daphne mezereum DAF-nee mez-ER-ee-um
Delphinium × *belladonna*
 del-FIN-ee-um bell-ah-DON-ah
D. × *bellamosum* d. bell-ah-MOH-sum
Dianthus caesius dy-AN-thus SEE-see-us
D. gratianopolitanus
 d. grah-tee-AH-no-pol-i-TAY-nus
Epimedium ep-i-MEE-dee-um
Eryanthus ravennae
 er-ee-AN-thus rah-VEN-nay-ee
Erythronium ee-ree-THRO-nee-um
Gazania ga-ZANE-ee-ah
Geranium jer-AY-nee-um
Globba winitti GLOB-bah win-IT-tee
Helenium hell-EN-ee-um
Helianthemum heel-ee-AN-the-mum
Heliopsis heel-ee-OP-sis
Hosta venusta HOSS-tah ven-OO-stah
Ilex verticillata
 EYE-lex ver-tiss-ill-AY-tah
Iris reticulata
 EYE-riss re-tick-yew-LAY-tah
Lavandula lah-VAND-yew-lah
Lychnis chalconica
 LICK-niss kal-see-DON-i-kah
L. coronaria l. kor-o-NAIR-ee-ah
Magnolia mag-NOL-yah
Mertensia mer-TEN-see-ah
Miscanthus sinensis
 mis-CAN-thus sin-EN-sis
Muscari mew-SCARE-ee
Narcissus triandrus var. *albus*
 nar-SIS-us tri-AN-drus AL-bus
Nepeta ne-PEE-tah
Nymphaea nim-FAY-ee-ah
Oxalis acetosella
 ox-AL-iss ah-see-toe-SELL-ah
O. adenophylla o. ah-den-oh-FILL-lah
O. alstoni o. al-STOW-nee
O. bowiei o. bow-EYE-ee-eye
O. corniculata
 o. korn-i-koo-LAY-tah
O. corymbosa o. kor-ih-BOW-sah
O. deppei o. DEP-ee-eye
O. enneaphylla
 o. en-nee-ah-FILL-ah
O. europea o. your-oh-PEE-ah
O. hedsaroides
 o. head-ee-sar-oh-EYE-deez
O. lobata o. low-BAH-tah
O. martiana o. mar-tee-AH-nah
O. montana o. mon-TAN-ah
O. oregana o. or-ee-GAN-ah
O. pes-caprae o. pes-KAP-ray-ee

O. purpurea o. pur-pur-EE-ah
O. regnellii o. reg-NELL-ee-eye
O. rosea o. ROSE-ee-ah
O. rubra o. REW-brah
O. siliquosa o. sil-i-QUO-sah
O. stricta o. STRICK-tah
O. tetraphylla o. te-tra-FILL-ah
O. trilliifolia
 o. tril-ee-i-FOL-ee-ah
O. tuberosa o. too-bur-OH-sah
O. variabilis o. var-ee-ah-BIL-is
O. violacea o. vy-oh-LACE-ee-ah
O. vulcanicola o. vul-can-i-KOL-ah
Oxydendrum ox-ee-DEN-drum
Pelargonium pell-ar-GO-nee-um
Perovskia atriplicifolia
 per-OV-skee-ah at-ri-pliss-i-FOH-lee-ah
Physostegia virginiana
 fy-so-STEE-jee-ah ver-jin-ee-AY-nah
Pistacia lentiscus
 pis-TAH-see-ah len-TIS-kus
Polygonatum commutatum
 po-lig-oh-NAY-tum com-mew-TAY-tum
Portulaca por-tew-LACK-ah
Primula denticulata
 PRIM-yew-lah den-tick-you-LAY-tah
P. × *polyantha* p. pol-ee-AN-thah
P. sieboldii p. see-BOLD-ee-eye
Quercus coccifera
 QUER-kus kok-SIFF-er-ah
Rhododendron row-doh-DEN-dron
Rudbeckia fulgida
 rood-BECK-ee-ah FULL-jid-ah
R. laciniata r. la-sin-ee-AY-tah
R. nitida r. NIT-ed-ah
Ruta ROO-tah
Saintpaulia saint-PAUL-ee-ah
Salvia SAL-vee-ah
Sanguinaria canadensis
 san-gwin-AIR-ree-ah can-ah-DEN-sis
Santolina chamaecyparissus
 san-toh-LEE-nah kam-ee-sy-pair-ISS-sus
Saxifraga sacks-i-FRAJ-ah
Scilla SILL-ah
Sedum SEE-dum
Soldanella sold-ah-NELL-ah
Stachys byzantina
 STACK-iss bi-zan-TY-nah
S. lanata s. lan-TAN-ah
Stephanotis stef-ah-NO-tiss
Tagetes TA-je-teez
Thalictrum minus
 thal-ICK-trum MY-nus
Thymus THY-mus/TY-mus
Trifolium procumbens
 try-FOH-lee-um pro-KUM-benz
T. repens forma *minus*
 t. REE-penz MY-nus
Trillium TRILL-ee-um
Veronica ver-ON-i-kah

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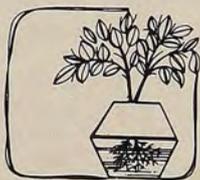
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