

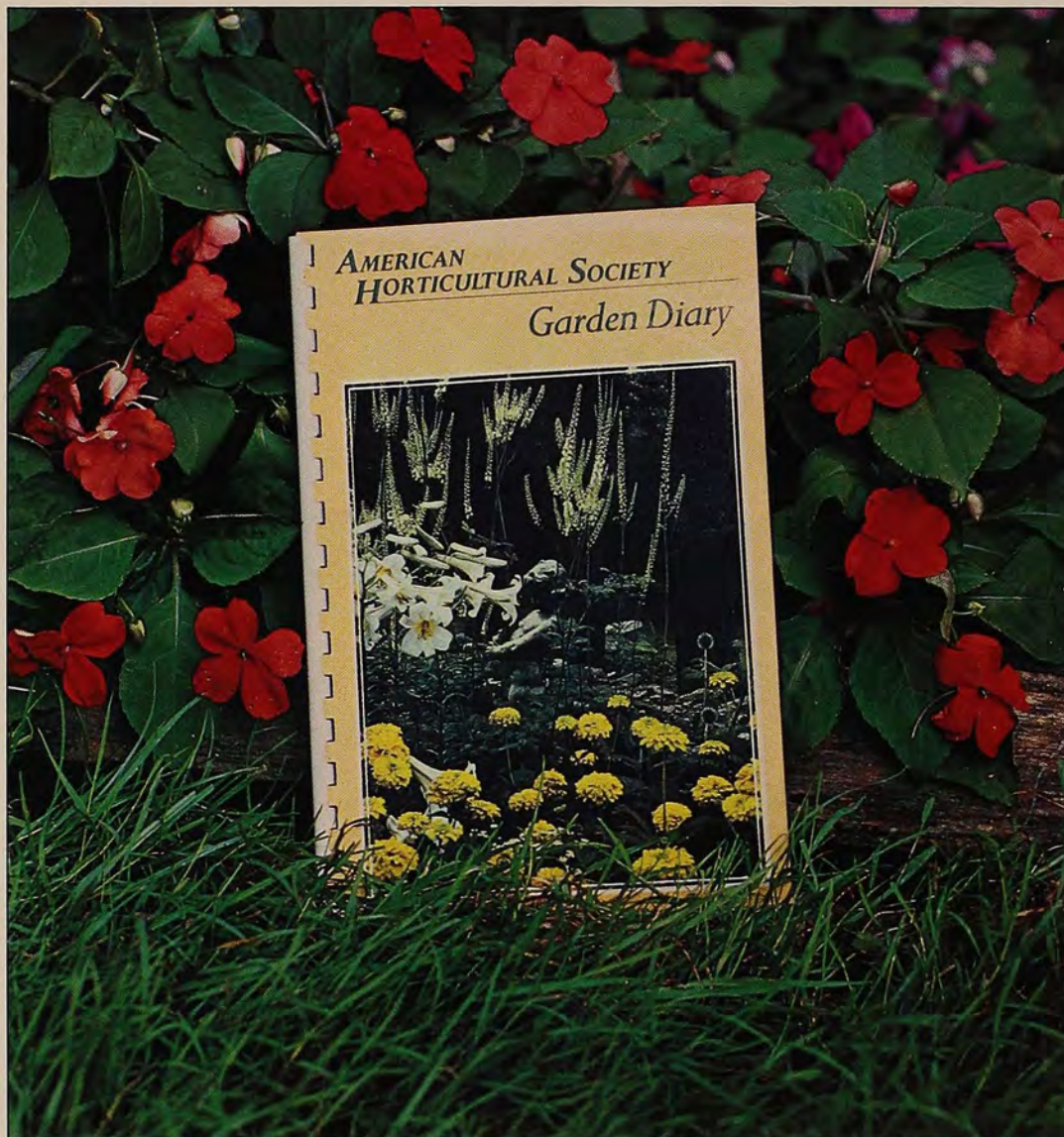
# AMERICAN HORTICULTURIST

OCTOBER 1983





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# AMERICAN HORTICULTURIST

VOLUME 62 NUMBER 10



*Phaseolus coccineus*, scarlet runner bean, is an attractive annual climber that is featured in the garden at The House of the Seven Gables and is also vividly described in Nathaniel Hawthorne's novel of that name. For more on this interesting garden turn to page 25. Photograph by George Taloumis.

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ON THE COVER: Fallen leaves of *Nyssa sylvatica* mark the coming of autumn. See Steve Bender's article on page 31 for more about this attractive tree. Photograph by Pamela Harper.





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# PRESIDENT'S PAGE



At our Board of Directors meeting in June of this year, the Directors of the Society heartily endorsed a new category of membership to be called the President's Council.

It has long been my feeling that continuing expansion of our membership will depend to a very large extent upon increasing the activities and benefits we bring to our constituents all around the country. It follows that one way to insure this expansion is to offer AHS activities regionally.

The President's Council will be composed of people from every state who are able and willing to assist us in these regional programs. A Council member might be called upon, for example, to help make the Society and its activities more widely known by participating in an event such as Boston's upcoming Arnold Arboretum plant sale and auction. Members of AHS within the greater Boston area will be invited, and a representative of AHS will be on hand to act as host. I would like to encourage more cooperation of this kind with local gardening groups and institutions, and President's Council members will play a vital part in making these jointly-sponsored events possible.

President's Council members will also be asked to help support the Society fi-

nancially with a contribution of \$1,000 annually. Of course, I know I am asking a great deal of President's Council members, but I also know that the Society is blessed with very dedicated people who will be willing to work toward the Council's goals. I need to rely on you to launch this program, and I know you will understand that an investment of this kind is the most effective way of insuring the growth of the Society and its ideals. Let's look forward to the day when this group, which I am sure will start with a few stalwart souls, grows rapidly to cover every state and every major community in the United States.

All of you who have called upon AHS to answer a question or solve a particularly troublesome gardening problem know Jane Steffey. From 1971 until she decided to retire this past summer, she served as the backbone of our popular Gardener's Information Service, corresponding with thousands of members, cheerfully answering countless telephone inquiries and helping the many visitors to River Farm with their gardening questions and problems. Many of us are better gardeners because of her invaluable help.

None of us on the AHS staff know quite what we will do without Jane or how to thank her for all she has meant to the Society. We are glad that she will continue to visit us through the pages of *American Horticulturist* in her popular "Strange Relatives" column, so we will all have the opportunity to continue sharing her overwhelming enthusiasm for gardening and her vast knowledge of the horticultural world.

I know I join the staff, the Board of Directors and all the members of the American Horticultural Society in thanking Jane Steffey for her invaluable help and guidance and in wishing her many years of happy retirement to come. ☺



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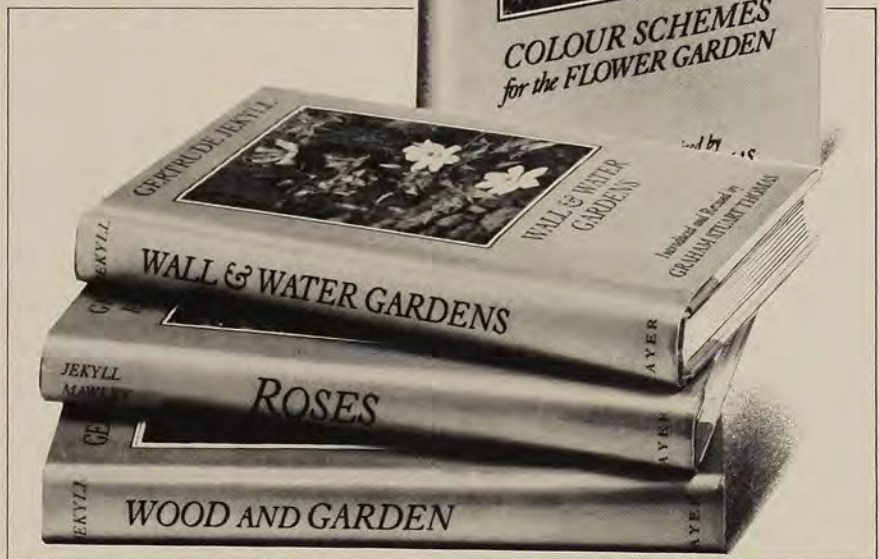
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# THE BOX FAMILY

The box family, Buxaceae, is a comparatively small but widely distributed family in temperate and subtropical regions. Of about seven genera, four are of horticultural interest: *Buxus*,

*Sarcococca*, *Pachysandra* and *Simmondsia*. It may seem strange enough to the non-botanist that common box and ubiquitous pachysandra are related, but the strange relative in the family is *Simmondsia*, com-

monly called jojoba, a native shrub of southwestern United States and Mexico.

Identifying features of this family are watery sap and persistent foliage of leathery texture. The leaves are simple and opposite or alternate on the stem. Petalless flowers, which are either male or female, are borne in spikes on the same plant or on separate plants. The calyx usually has four lobes but may have as many as 12. Male flowers usually possess four prominent stamens, in some species more than four. There are generally fewer female flowers than male. The fruit is a capsule or a fleshy berry containing black shiny seeds.

The genus *Buxus* is comprised of several types of box, boxwood or box tree. Its small, shining leaves are opposite, evergreen and without marginal teeth. Small flowers in axillary or terminal clusters bloom in April or May. The cluster consists of a terminal female flower and several male flowers borne below it. The fruit, a three-horned capsule, ripens in June.

Of about 30 known species, two are common in cultivation—*Buxus sempervirens*, common box, and *B. microphylla*, littleleaf box. Common box, *B. sempervirens*, is a slow-growing plant originally from southern Europe. Its hard, uniform wood furnished Albrecht Durer with material for his woodblocks, and it is still used for this purpose today. This very hard, fine-grained wood is in demand also for engraving and fine turnery work, in pieces inlaid with ivory, for example.

Since the days of the Romans box has been the best of all plants for hedges and topiary work. The first home of common box in North America is thought to have been on a Long Island plantation where it was set out by Nathaniel Sylvester in 1652. Since colonial times box has been intimately associated with gardens of temperate sections of this country. Nowhere does it do so well as in Maryland and Virginia where the grace, charm and solidity of box enhance gardens large and small.

*B. sempervirens* produces leaves that are very variable in size, color and shape. The



Barbara W. Ellis

The boxwood walk at AHS's River Farm Headquarters serves as an attractive entrance to the garden even in the late fall and winter.



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## STRANGE RELATIVES CONT'D

most widely grown types probably are 'Suffruticosa' and 'Arborescens', both of which are cultivars of *B. sempervirens*. Sometimes called edging box, 'Suffruticosa' is a dwarf shrub often less than three feet tall at maturity. 'Arborescens' is larger, usually attaining the height of a small tree. Both have standard boxwood characteristics, namely, dense, evergreen foliage and full, billowy, rounded shapes. *Suffruticosa* means somewhat shrubby; *arborescens*, becoming tree-like. Incidentally, leaves and twigs of this species are toxic.

*Buxus microphylla*, the littleleaf box of Japan, reached America after 1860. Rarely over three feet in height, it is hardier than common box, which it resembles except that its leaves are smaller and its branches are prominently four-angled or winged. Littleleaf box flowers in early spring and is visited by bees.

There are several cultivars and varieties of *B. sempervirens* and many of *B. microphylla*. Observant plantmen have selected and perfected types for varied environments, so cultivars differ in their ability to withstand low temperatures. The beauty and popularity of box may tempt gardeners to grow it beyond its natural range of hardiness. Such venturesome growers must give attention to the known endurance of types that especially attract them.

*B. sempervirens* is regarded generally as hardy in U.S.D.A. Zone 6. Valuable discoveries of special hardiness include 'Northern Find' from Canada, 'Northland' from central New York, and 'Inglis' from Ann Arbor, Michigan. Flat-topped, wide-spreading, and only two feet tall is 'Varder Valley', another hardy variant found in the Balkans in 1930 and introduced to this country in 1957 by the Arnold Arboretum.

Some of the cultivars of *B. microphylla* are even harder than their parent plant. 'Compacta', introduced by Kingsville Nursery in Maryland and also known as 'Kingsville Dwarf', is reportedly hardy in southern Canada.

*B. microphylla* var. *japonica*, Japanese box, hardy to U.S.D.A. Zone 6, also is known for its adaptability to the warm, dry climates of the Gulf States. *B. microphylla* var. *koreana*, Korean box, is hardy in Zone 4; however, its foliage turns brown in winter and therefore it is not a box of choice for many landscape plantings. Its cultivars 'Tide Hill', 'Wintergreen' and others are considered improved selections for permanent green color in the garden.

Both Japanese and Korean box are very hardy, but they lack the pleasant fragrance characteristic of common box.

A small group of Asiatic and Malayan evergreen shrubs, the sarcococcas, provide two or three species for the shrub border and for ground covers. These plants, which are also commonly known as sweet box, differ from *Buxus* in having leaves that are longer and are arranged alternately on the stem. Leaves of both are leathery. Like box, sarcococcas are slow growing. Five species have been introduced to cultivation and have proved winter hardy in many parts of Great Britain. In the United States, two or three are planted for ornament. The flowers are small, whitish and without petals. Each plant bears clusters of male and female flowers in the leaf axils. Male flowers are borne above the female flowers. The male flowers, which are borne in great profusion, are showy because of their white, one-inch-long stamens tipped with pink or cream-colored anthers. Fruit is a black or dark red, fleshy berry with one or two seeds. The name, a tongue twister sounding almost like the name of a disease, is derived from Greek words meaning fleshy and berry, an allusion to the fruit.

Sarcococcas are most useful on the Pacific Coast and in southern states, U.S.D.A. Zone 8 southward. They are hardy in the north only in sheltered places. The four-to six-foot Himalayan sarcococca, *Sarcococca hookerana*, is cultivated in Washington and Oregon for its lustrous two-to three-inch, lance-shaped leaves. Fragrant flowers, borne in mid-spring, appear in short racemes, male and female in the same tuft. Its fruits, which ripen in autumn, are black berries. Half the height of *S. hookerana* and hardier is its variety *S. hookerana* var. *humilis*. This plant from western China can be used as a ground cover because it rarely exceeds two feet.

*S. ruscifolia*, which has leaves resembling the butcher's-broom, *Ruscus*, is fragrant sarcococca from central China. It flowers in great profusion and is extremely fragrant. Its dark scarlet fruits are persistent, so spring flowers and colorful fruits often appear together among the leaves. In cultivation it is not as tall as in the wild, making it a useful ground cover. It is more tender than *S. hookerana*, and blooms and fruits heavily in the San Francisco Bay area. Elsewhere it is suited for U.S.D.A. Zone 7.

*S. saligna*, whose name refers to its resemblance to willows, *Salix* sp., has droop-



ing willowlike branches. Its pale, bright green leaves, six inches long and one inch broad, are willowlike as well. In gardens where it can withstand the winters it is an attractive bun-shaped bush for the shrub border, but it is quite tender and suffers leaf tip burn quickly.

Two perennial herbs of value as ground covers in shade because of their more or less evergreen leaves are the spurges, *Pachysandra procumbens* and *P. terminalis*. Masses of leathery leaves, spoon-shaped and with irregularly toothed margins, produce low, dense growth. Their very early flowers are attractive to bees. A small white berry results from pollination.

These two species present a classic example of instances in which two closely related species have been found, one in eastern North America, and the other in eastern Asia. *P. procumbens*, mountain pachysandra or Alleghany spurge, is the American native. It was discovered in the southern Appalachians by the French botanist, Andre Michaux, during his travels in this part of the world in the late 1790's. Alleghany spurge is hardy far north of its natural range in the southeastern and south-central states. It is trailing at first, then becomes erect, reaching a height of about one foot. It may vary from deciduous to evergreen. If the foliage deteriorates in winter, flower spikes appear before the leaves in spring, but a solid leaf cover develops by May or June. Its summer foliage is a mottled, dingy gray-green. By fall and winter, it is bronze.

Although the leaves are alternate on the stem, they appear whorled because they are so closely spaced. Flower spikes three or four inches long arise directly from the rootstock. Individually small, but numerous enough to be conspicuous, these pinkish-white blossoms are pleasingly fragrant. Both male and female flowers occur on the spike, a few females at the base and abundant pink-stamened male flowers at the top. Fruits are inconspicuous and may not even develop in cultivation.

*P. terminalis*, Japanese spurge, is truly evergreen, with thick glossy foliage forming a dense mat. It succeeds in either sun or shade and has been a favorite ground cover for many years. It spreads by underground rootstocks and has a tendency to crowd out some delicate things that get in its way. The small white flowers, borne in May, come at the top (*terminalis*) of the stem, which distinguishes this spurge from *P. procumbens*. The cultivar 'Variegata'

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## STRANGE RELATIVES CONT'D

has leaves splashed with white. The plant reaches a height of about one foot.

*Simmondsia*, a genus with only a single species, has come to the forefront of public attention only in recent years, not for its garden interest but for its economic value. The species, *S. chinensis*, is the source of jojoba oil for some of our toiletries and cosmetics and for certain industrial uses. Although it is an American native, this plant was named for a nineteenth-century English naturalist, F. W. Simmonds. It is the only member of the box family native to California. Jojoba occurs naturally over an extensive area in the Sonoran Desert that covers parts of Arizona, California and Mexico. It is an evergreen xerophyte, meaning a plant adapted to withstand extremely dry conditions. Because of its evergreen habit and the relatively large size of its leaves, it is exceptional among North American desert plants, where the great majority of woody perennials have small and ephemeral leaves.

Jojoba plants are dioecious: male flowers are borne on one plant, female, on another. Female flowers are small, solitary and appear at alternate leaf axils. Male flowers, on the other hand, are more showy. They are clustered in pale greenish-yellow axillary heads. It is the pistillate, or female, plant that bears the seed, an acornlike one-seeded capsule. The plant does not reach seed-bearing maturity until it is four or five years old, and the sex of the plant cannot be determined until it flowers. Seed productivity varies considerably from year to year, and it is in the seed-bearing capacity of the plant that its economic importance resides.

This subtropical North American desert plant is unique in the vegetable kingdom; it secretes liquid wax in its seeds rather than the glyceride oils secreted by other plants. Liquid waxes are important to industry. They are difficult to synthesize and the only other source of such wax is the sperm whale.

In the 1970's jojoba became the subject of intensive research as a source of oil usable as a substitute for sperm whale oil in a variety of industrial uses such as in lubricants for high-speed machinery, and as an ingredient of soaps, cosmetics, floor wax, auto wax and furniture polish. According to the National Academy of Sciences, the development of jojoba as a crop promises to provide important economic benefits to arid tropical and subtropical regions. The plant tolerates extreme desert tempera-

tures, thriving under soil and moisture conditions not suitable for most agricultural crops.

In 1977 the NAS concluded that the future of a jojoba industry lies in developing the natural shrub into a cultivated crop. In consequence, significant research is being conducted at Boyce Thompson Southwestern Arboretum, the University of Arizona's Office of Arid Land Studies and Department of Plant Science, and at other research institutions.

The British periodical, *New Scientist* (December 23-30, 1982), reported that "a laboratory in Britain has demonstrated a way of building up a bank of male and female clones of jojoba by plant tissue culture . . . a vast supply of identical, disease-free plants. The laboratory is exporting its first plants in a ratio of one male to seven females to Arizona and the Middle East."

Meanwhile, the ornamental potential of jojoba has not gone unnoticed by horticulturists, who point out that its habit of growth is reminiscent of boxwood. Like common box, it is evergreen, and its numerous branching stems produce attractive hemispherical mounds of foliage. Because of this similarity, *Simmondsia* might well be used in the Southwest as a substitute for box. Under normal conditions it should require little or no training; its compact habit would lend itself to judicious clipping or shearing as required to keep the plant shapely. Although it is not widely recognized as a subject for ornamental planting, it is seen in a few Southwestern gardens and growing under natural conditions in arboreta. It is grown from seed and is listed by at least one western seed source as a dense mounding evergreen of four to eight feet in height. Although native to frost-free areas (U.S.D.A. Zone 10), at maturity it is hardy to 15° F.

River Farm, our headquarters property, is graced by some handsome members of the box family—our old box hedges. A former owner purchased some of these plants for his estate in the early 1920's when old boxwood plants were being assembled for landscaping the grounds of the Lincoln Memorial in Washington, D.C. They thrive here still and are much admired always. ☼

—Jane Steffey

Jane Steffey recently retired as the Society's horticultural advisor. She is now an active AHS volunteer and will continue to serve as Editorial Advisor to *American Horticulturist*.



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Michael A. Dirr. *Stipes Publishing Company*. Champaign, Illinois. (3rd edition.) 1983. 826 pages; softcover, \$19.80; hardcover, \$28.80. AHS discount prices, softcover, \$17.85; hardcover, \$25.95 including postage and handling.

This updated edition of a very useful book includes 300 new species and 500 new cultivars not found in earlier editions. There are also over 300 new line drawings. Excellent information on size, hardiness, habit, growth rate, culture, diseases, landscape value, cultivars and propagation of each woody plant.

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Jane Brown. *Van Nostrand Reinhold*. New York, New York. 1982. 208 pages; hardcover, \$29.95. AHS discount price, \$22.50 including postage and handling.

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R. John Little and C. Eugene Jones. *Van Nostrand Reinhold Company*. New York, New York. 1980. 400 pages; hardcover, \$18.50. AHS discount price, \$16.05 including postage and handling.

A botanical dictionary covering all aspects of the plant sciences. Indispensable to the professional or the serious amateur who makes frequent use of the literature. The perfect gift for the student of botany or horticulture.

## **Japanese Maples.**

J. D. Vertrees. *Timber Press*. Forest Grove, Oregon. 1978. 178 pages; hardcover, \$39.50. AHS discount price, \$30.89 including postage and handling.

An authoritative work on a group of plants with tremendous variety—Japanese maples. Describes and illustrates the more than 250 cultivars of *Acer palmatum*, plus many other species of *Acer* found in Japan. Enjoyable reading and beautifully illustrated.

## **Gardens Are for People.**

Thomas D. Church. (Edited by Grace Hall and Michael Laurie.) *McGraw-Hill Book Company*. New York, New York. (2nd edition.) 1983. 256 pages; hardcover, \$37.50. AHS discount price, \$31.50 including postage and handling.

An updated edition of a classic work in landscape architecture that includes Thomas Church's thoughts on design principles. All of the illustrations are new, and most of the gardens shown are ones Church designed after 1955. Destined to set new standards in the field of landscape architecture.

## **The Complete Book of Roses.**

Gerd Krüssmann. *Timber Press*. Portland, Oregon. 1981. 436 pages; hardcover, \$50.00. AHS discount price, \$43.75 including postage and handling.

Updated and translated from the original German edition of 1974, this is THE definitive study of the rose from prehistoric times to 1981. Describes each variety of rose, with information on the originator, date of introduction and parentage of the hybrids. Various rose-related topics include paleontology, mythology, commercial production, propagation and plant breeding. Includes rose species, old garden roses and modern hybrids.

## **The Life and Travels of John Bartram.**

Edmund Berkeley and Dorothy Smith Berkeley. *University Presses of Florida*. Tallahassee, Florida. 1982. 376 pages; hardcover, \$25.00. AHS discount price, \$22.50 including postage and handling.

A fascinating account of the life and travels of John Bartram, one of America's foremost botanists and plant collectors. His travels in search of plants took him to most parts of the eastern United States, and his unusual plant collections had a profound influence on horticulture and botany in the eighteenth century. A book for all plant lovers.

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Alvilde Less-Milne and Rosemary Verey (editors). *Merrimack Book Service*. Salem, New Hampshire. 1980. 156 pages; hardcover, \$24.95. AHS discount, \$17.95 including postage and handling.

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# Alice Eastwood

BY MARCIA BONTA

Of all her outstanding traits, Alice Eastwood was best known for her hardiness. Why else would the Arnold Arboretum have asked her to go to the Yukon in 1914 when she was fifty-five years old to collect willow samples? Evidently they believed her when she wrote, "I don't mind anything when I want to get something."

"Anything" in the Yukon consisted of a rough cabin, a defective wood stove, insufficient food and a floor coated with ice during the winter. In the spring and summer it meant hordes of mosquitoes, which she ignored as she resolutely collected willows and other botanical specimens. Alice Eastwood worked alone, hiked miles into the back country and made many new friends.

None of this was unusual for her. She had been doing it all her life. At the age of six, she had been introduced to the world of plants by her uncle, William Eastwood. Thrilled with the interest of his orphaned niece, this doctor and experimental horticulturist gave her books on plants and taught her Latin plant names.

She was a serious-minded, conscientious child who had been born in Toronto, Canada on January 19, 1859, the eldest child of Colin Skinner and Eliza Jane Eastwood. Unfortunately, her mother died when Alice was six, but before she did, she summoned the little girl to her bedside and made her promise to take care of her four-year-old sister and fourteen-month-old brother. Solemnly, Alice agreed.

Perhaps her mother realized that her husband would not be as reliable. Immediately after her mother's death, her father parceled his children out among relatives and left for parts unknown. He did maintain sporadic contact with them, and when Alice was eight she even lived with him for a time. But the grocery store he had started failed, and once again the children were divided up. This time her brother was left with relatives while she and her sister were put in Oshawa Convent in Toronto. Uncle



William kept a solicitous eye on them and continued to influence Alice's botanical leanings, but at the convent she found another mentor, an old French gardener-priest.

Physically, the convent was dank and cold. It also provided very little in the way of intellectual stimulation, and the food that was served was often inadequate. Yet Alice, the eternal optimist, made a friend of one nun, studied diligently and watched over her sister. Her happiest hours were spent in the garden with the priest.

In 1873, when she was fourteen, her life changed radically. Her father had made a new life for himself as a storekeeper in Denver, Colorado, and he offered a home to the sisters. The move to Denver was both a joy and a disappointment—a joy because Alice could attend East Denver High School and a disappointment because her father barely made enough money to keep the little family going. Alice's persistence in attending school baffled him. He needed her to work and bring in money, so work she did while still graduating as valedictorian in 1879. She then began her career as a high school teacher.

From all accounts, she was an excellent teacher, but she lived for the summers when she would scrape a little money together and spend the season in the high Rockies

learning to identify wildflowers and collecting specimens for her herbarium. In those frontier times of the 1880's, she went far beyond the stage stops, traveling alone by foot or on horseback. She often encountered rough miners, cowboys and ranchers, but she always maintained, "Never in all my experiences have I had the slightest discourtesy and I have never had any fear. I believe that fear brings danger." Carrying a gun, in her opinion, was showing fear, so she never carried one.

"What grand times I had in the southwestern part of Colorado," she wrote much later, "wandering around alone over those beautiful mountains where the alpine regions far surpass in abundance, variety and beauty of the flowers anything I have seen in any other region." She quickly became an institution in Denver. Everyone knew that Miss Eastwood could tell a person more about native wildflowers than anyone else. So when the famous English naturalist, Alfred Russel Wallace, visited Denver and said he wanted to explore Gray's Peak, she was volunteered as the only person equipped to be his guide.

Off they went together, the famous man in his sixties, the unknown young woman in her twenties, for three days on what she called "a glorious adventure." They easily climbed 1,170 feet in a day, stayed the nights in rough cabins with miners, and finally ascended Gray's Peak. Wallace mentioned in his autobiography, *My Life*, that he found many new alpine plants and altogether was well satisfied with the journey. Alice, in her own account, was enthusiastic about her encounter with the great man.

One of Alice's favorite companions was Al Wetherill. He and his brothers had just discovered Mesa Verde on their land and Alice was privileged to explore the area with them. On one trip, Al lost his way and lowered her and the baggage down the steep slopes of Montezuma Canyon by rope while he went off to find help. She spent the night alone on a shelf between





LEFT: Alice Eastwood, in 1929 or 1930, sitting on the bench dedicated to her in the Shakespeare Garden at Golden Gate Park. ABOVE: Alice Eastwood as a young woman in 1912. The photographer, Gustav Eisen, was Curator of Zoology and one of Eastwood's colleagues at the Academy.



the top of the canyon and the river, but she maintained that she "wasn't at all worried. I knew if I followed the creek up that I would reach Monticello eventually and I am a good walker." Since she always carried matches ("If one is lost the smoke of a fire will tell your location and if the need is warmth, that also is met"), she remained relatively warm and dry until a very concerned Al returned the next day to guide her out.

All through her twenties she continued teaching, collecting and exploring. Every penny she made was shared with her family or used to finance her botanical summers. Her father had remarried in 1880, his fortunes had improved, and he and Alice were able to make some astute real estate purchases in the fast-growing city of Denver. By the time she was thirty-one, those investments paid enough to give her a small but assured income. That was what she had been waiting for. She quit her teaching job and decided to spend the rest of her life studying botany.

By then her reputation had spread to San Francisco, which, with its California Academy of Sciences and its able botanists T. S. and Kate Brandegee, was a center for western botanical research. With her spare cash, she took the train to San Francisco to visit the Academy. There she met the Brandegees and impressed them with her knowledge and enthusiasm. They encouraged her to write articles for their journal *Zoe*, and when she returned to Denver, they decided to woo her back to San Francisco.

At first they offered her \$50 a month to help organize the Academy herbarium, but in 1892 they upped the offer to \$75 and the position to Curator of the Academy. Still, leaving her beloved Denver was difficult. Her biographer, Carol Green Wilson, claimed that about that time she met a tubercular Eastern journalist who had come to Denver to get well, and that he and Alice planned to get married. However, he died, and almost immediately she accepted the Brandegees' offer. In her own biographical notes Alice never mentioned the romance, if indeed there had ever been one. But then she was always reserved about her private life; what mattered most was her life as a botanist. To Carol Green Wilson she insisted, "I never had time for a man, but I've *always* had men friends. I just couldn't let any one of them interfere with my work."

It is not really clear whether it was an affair of the heart that brought her to San Francisco or her own desire to advance

her career in a more stimulating intellectual atmosphere. However, the results of her move certainly were clear. It was at the Academy where she built a reputation as one of the finest botanists of her time.

She moved to San Francisco in 1892 and was immediately elected a member of the Academy. For its time, the Academy was quite advanced. Albert Kellogg, one of its founders, set the tone back in 1853 when he resolved "that we highly approve the aid of females in every department of natural history, and that we earnestly invite their cooperation." But even he could not have foreseen how important one woman would be to the Academy.

For the next fourteen years she spent her time organizing the Academy's botanical collections and adding to them through her own expeditions. At her own expense, she began botanizing in the Sierra and Coast ranges by stage, horseback and on foot. Often she went alone and made friends with the people she encountered on lonely ranches. Sometimes she found ill women and hungry, poorly clad children. She would always stop to help them and share her provisions, and when she returned to San Francisco she would send clothing and food back to the needy families. Alice loved her plants but she loved people more. Once she wrote about the isolated ranches of the Santa Lucia Mountains: "To me human beings are as interesting as the plants and there were situations here that were unusual because of the isolation."

Despite her bold spirit, she was not a loner. As often as not, she would go off exploring with other intrepid companions although, as she confessed, "I am not a true mountain climber as I go only for the flowers and views to be had from the lofty heights." But go she did, clad in buttoned, denim skirts she designed herself with a heavy cotton nightgown as a bustle. She could walk four miles an hour and never seemed to tire.

"The Hill Tribe," a group of San Francisco residents who enjoyed roaming nearby Mt. Tamalpais on Sundays, welcomed her in their midst. One member remembered her as "a hatless, short-skirted, broad-shouldered woman of wonderful strength—who used to trudge easily twenty miles a day with the sun in her serene bronze face and the wind in her flying hair, carrying her heavy plant presses on her back." She was also asked to join a men's hiking group, the Cross Country Club, which explored the Sierras. Of course, the men appreciated the fact that Alice did not mind being cook and bottle washer while they tended to the

horses, the fire and the water. All through her life, cooking for her friends remained the one domestic task she enjoyed, probably because food and the appreciation of it meant a good deal to her.

If her friends were not available, she did not hesitate to tackle mountain climbing on her own. One day she set off by herself to collect specimens on Mt. Shasta. As she started up the mountain, she encountered a party of six men intent on climbing to the top who persuaded her to accompany them. Years later she recalled the joy she experienced during the descent when she donned a burlap sack, diaper-fashion, over her skirts and slid down the snow-covered slopes on it: "Our path was a beautiful rosy pink from the snow algae of which I had heard but now saw for the first time. It was a wonderful experience and I have always wished that I could do it again. However, at the lower levels the snow was soft and my skirt became very wet along the bottom and heavy and for the first and only time [I] wished that I could have been dressed like the men."

By 1906, Alice had the Academy's botanical collections in good shape, but some inner voice had warned her to separate out the irreplaceable type specimens and put them together in one place where she could easily find them during an emergency. Her foresightedness was all that saved 1,211 botanical items when the San Francisco earthquake and fire hit the city on April 18, 1906. She awoke that fateful day to feel the tremor, but it did not particularly worry her since it was felt less in her part of the city. After breakfast she went down to the Academy, but could not get in. No one was there, doors were locked and all around her buildings had been destroyed. The Academy was partially ruined, but what really worried her was the nearby fire. What if the Academy were to burn down?

At last she located a male friend who managed to get her into the front hall, where others were frantically rescuing library records. But the botanical collection was on the top floor, and the marble staircase was in ruins. "We went up," she wrote in a letter that was later published in *Science*, "chiefly by holding on to the iron railing and putting our feet between the rungs. Porter helped me to tie up the plant types, and we lowered them to the floor of the museum by ropes and strings tied together. Not a book was I able to save, nor a single thing of my own, except my favorite lens, without which I should feel helpless."

By the time they got everything to the





TOP: Alice Eastwood and John Thomas Howell in the Mojave Desert, on a botanical expedition to Utah and Arizona in 1933. Photograph by Ynez Mexia, who accompanied them. BELOW: Eastwood and Howell on Mt. Rainier, Washington in 1937. Photograph by Edith H. English.

street, the fire had reached the building next door. The military was letting no one take possessions out of the area, but Alice pleaded for her specimens and the records of the Academy and eventually had them transported out of immediate danger by private conveyance. From there, with the help of friends, she took them to Russian Hill, and when that seemed threatened, moved them on to Fort Mason.

With all her concern for the Academy's property, she neglected her own private quarters, which were completely burned: "All my pictures and books are gone and many treasures that I prized highly; but I regret nothing for I am rich in friends and things seem of small account." About the Academy she wrote, "I do not feel the loss to be mine, but it is a great loss to the scientific world and an irreparable loss to California. My own destroyed work I do not lament, for it was a joy to me while I did it, and I can still have the same joy in starting it again." Which is exactly what she did. Undaunted and forty-seven years of age, she set out for the mountains to recollect the many specimens that had been lost. There was no money for the project; she used her own small income. And from then until her death, whenever she received gifts of money on her birthday or other holidays, she always spent it on books for the Academy.

The University of California at Berkeley offered her research facilities in the botany department, but for nearly six years her position at the Academy remained in limbo. In addition to recollecting the plants, she had to verify the plant names from the original specimens. She visited the National Herbarium in Washington, D.C., the New York Botanical Gardens and, finally, the Gray Herbarium at Harvard.

As usual, Alice quickly gathered new friends around her and obtained a job as staff assistant at the Herbarium. She worked there for two years and then took her savings and went to Europe to check original plant specimens.

It was like a homecoming for her, meeting well-known scientists and studying the collections at the British Museum of Natural History, the Royal Botanic Gardens at Kew in England, and the Natural History Museum of Paris. But finally she returned to Cambridge and received the call she had been waiting for: the California Academy of Sciences wanted her to rebuild their Herbarium. They had decided to reestablish themselves in Golden Gate Park which, from Alice's standpoint, was an excellent plan. Not only did she have a her-



barium to tend, she also had unlimited land to turn into gardens.

She enlisted the help of the park superintendent, Scotsman John McClaren, and together they worked to educate people about both the foreign and domestic species of plants they grew in the gardens. Every week she decorated the entrance lobby of North American Hall, the new Academy headquarters, with an educational flower show. Each specimen was carefully labeled with its name and country of origin. The show became the longest continual floral exhibition in the world. In addition, she drew up a tree map of the park.

Alice Eastwood was a friend of horticulturists in addition to being an outstanding field botanist. One nurseryman, Victor Reiter, Jr., wrote that "it was not until Alice Eastwood became head of the Department of Botany that ornamental horticulture had its champion. . . . Not only did she establish the herbarium of cultivated exotics [in 1915] but she was able to accumulate a library which includes many books necessary for their study." In his opinion there was "nothing to equal [this] herbarium of cultivated plants west of the Rockies and perhaps west of the Atlantic seaboard."

Miss Eastwood also recognized and assisted many horticultural groups, becoming the founder and leader of a study group called the California Botany Club and forming the influential California Horticultural Society. The California Spring Blossom and Wildflower Association, which spread a love for flowers and gave conservation lessons to children, made her its Honorary Life President, and she was named the "Sweetheart of the Businessmen's Garden Club" in San Francisco.

She published a wide variety of articles on cultivated plants for both popular garden magazines and scholarly journals. Many of those articles cleared up the confusing nomenclature of bottlebrushes, escallonias and pittosporums and frequently, according to Reiter, "exposed plants masquerading under wrong names." California nurserymen, in fact, were often heard to say, "If you do not know what it is, send it to Miss Eastwood."

Her love for gardening and gardeners led her to encourage the use of California native plants in gardens throughout the world. For, as she wrote to E. P. Killip, Curator of Plants at the National Herbarium, her interest in plants "take[s] in the whole world. . . . This also brings me in contact with all the garden people and I love all those who love plants. They are

the finest people in the world and all are my good friends."

Until 1929 she conducted the Academy botanical classes alone, but at that time John Thomas Howell was hired as her assistant. Later, when she grew older and it became necessary for the automobile to replace walking, he drove her to places where she could still collect. She never did like to drive, though, and always maintained that "there is no way so good for a knowledge of the plants as walking through a region."

It was Howell's remembrances of her that have painted the most vivid portrait of Alice Eastwood as a person. "She took delight in flouting trivial social conventions," he wrote. She liked simple food and clothes, chamber music, poetry and the works of English and American nineteenth-century novelists—particularly Henry James. Her favorite magazine was *The Saturday Evening Post* and she read mystery novels for pleasure and relaxation. She loved to talk about food and memorable meals and enjoyed making jellies, preserves and pickles for herself and her friends.

As a teacher, she was experimental, interesting and adventurous, using anecdotes and appropriate allusions to literature and the arts. "With Miss Eastwood," Howell wrote, "nothing of knowledge or wisdom was reserved—her table was a veritable feast spread out for anyone who wished to sample or to partake deeply. . . . Anyone with a sincere love of flowers or beauty could have known Miss Eastwood."

She maintained her love of humanity and her almost childlike belief in goodness until the end of her long life. Perhaps because she had such a generous, outgoing and giving spirit she could not conceive of evil in others, and, by and large, her beliefs were well founded. As decade followed decade, through the 1920's, 1930's and 1940's, she became the grand old lady of the Academy. Honors were heaped upon her—the California Spring Blossom and Wildflower Association dedicated a redwood grove to her at Prairie Creek Redwoods State Park, the Arboretum she had dreamed of became a reality, the Shakespeare Garden she started contained a rose-granite bench dedicated to her by the California Botany Club. Because she helped to found the American Fuchsia Society, nurserymen named a fuchsia for her. There was also an Alice Eastwood lilac and an Alice Eastwood orchid. Two botanical genera honor her—*Eastwoodia* and *Aliciella*.

She continued working hard both in the field and at the Academy. From 1912 until 1949, she added 340,000 specimens to the Herbarium, many of which she discovered and named. With Howell's invaluable help she started the quarterly *Leaflets of Western Botany*, which contained scholarly articles about both cultivated and wild plants. She also encouraged other, younger female botanical explorers like Louise A. Boyd, who went to the Arctic, and Ynez Mexia, who penetrated remote areas of Mexico and South America.

Despite all the honors she received, there was one she would never accept. Because she had been self taught and had never received a college degree, she refused any honorary degrees offered to her. In that refusal can be seen a little of the curmudgeon personality that Howell briefly alluded to: "Her impatience could be as violent as her kindness and generosity were great, and the force and bite of that impatience were dreaded by all who ever encountered it."

The rebellious Alice claimed that she followed the command of Emerson to "scorn conventions and you always can." Even in religious matters she was unconventional, mentioning in her notes the "absurdity of dogmas in religion and philosophy and the insoluble mysteries of time, space, life and infinity. One can build up any kind of a system on a predicated hypothesis. To me the feeling that comes from the order and law of the universe is truly religious and I think that every scientific person must be religious without any belief in a dogma of any kind." Her life's work continued until she was ninety, when she retired and was made Curator Emeritus. Howell, her assistant for many years, took her place as Curator. In 1950, at the age of 91, she flew to the Seventh International Botanical Congress in Sweden, where she served as honorary president. They sat her in Linnaeus' chair, this tiny, indomitable woman who had followed the teachings of Linnaeus throughout her long and fruitful lifetime.

As one person declared at the celebration the Academy held for her in honor of her fiftieth working year, "There has never been anyone like her on earth and there never will be, if I am permitted to prophesy." ❁

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Marcia Bonta writes a weekly column for the *Altoona Mirror*. Her articles have appeared in *The Conservationist*, *Bird Watcher's Digest* and *Pennsylvania Heritage*. Her first book, *Escape to the Mountain*, was published in 1980.





Alice Eastwood, at age 80, studying a lupine specimen at the Academy in 1939. The instrument in front of her, basically a hand lens mounted on a stand, was commonly used for examining and dissecting plant specimens.





Peter Loewer

# A Garden Small

BY PETER LOEWER

**H**awley, Pennsylvania is a typical small town. Its main street is wide, with room for parked cars on either side, and it supports a working Victorian hotel, an authentic '30's diner, a railroad track (only at one end) and, nestled between tree-covered hills, a small grid of tree-lined side streets with well-cared-for homes. The fishing is fine in the spring, baseball reigns all summer long (the ballfield is next to the fire company) and every fall hunters journey from Philadelphia to try for their first buck in the thick forest that begins just the other side of the town line.

Just east of the town proper, high on one particular hill, a few small homes are perched on the hillside. One particular house on a two-acre lot boasts a small clearing, some 2,500 square feet carved out of living rock, that easily holds thousands of individual plants and over 600 rare and unusual species from literally every corner of the world. It is the rock garden of L. Budd Myers.

My first visit to the garden left me speechless for an hour. Only then did I begin to mouth the platitudes and cliches to hide my astonishment at the plants growing at my feet. There was no way to prepare for the carefully worked patchwork quilt of color that existed a half mile from an A & P and a mile from the hotel on that sunny day in June.

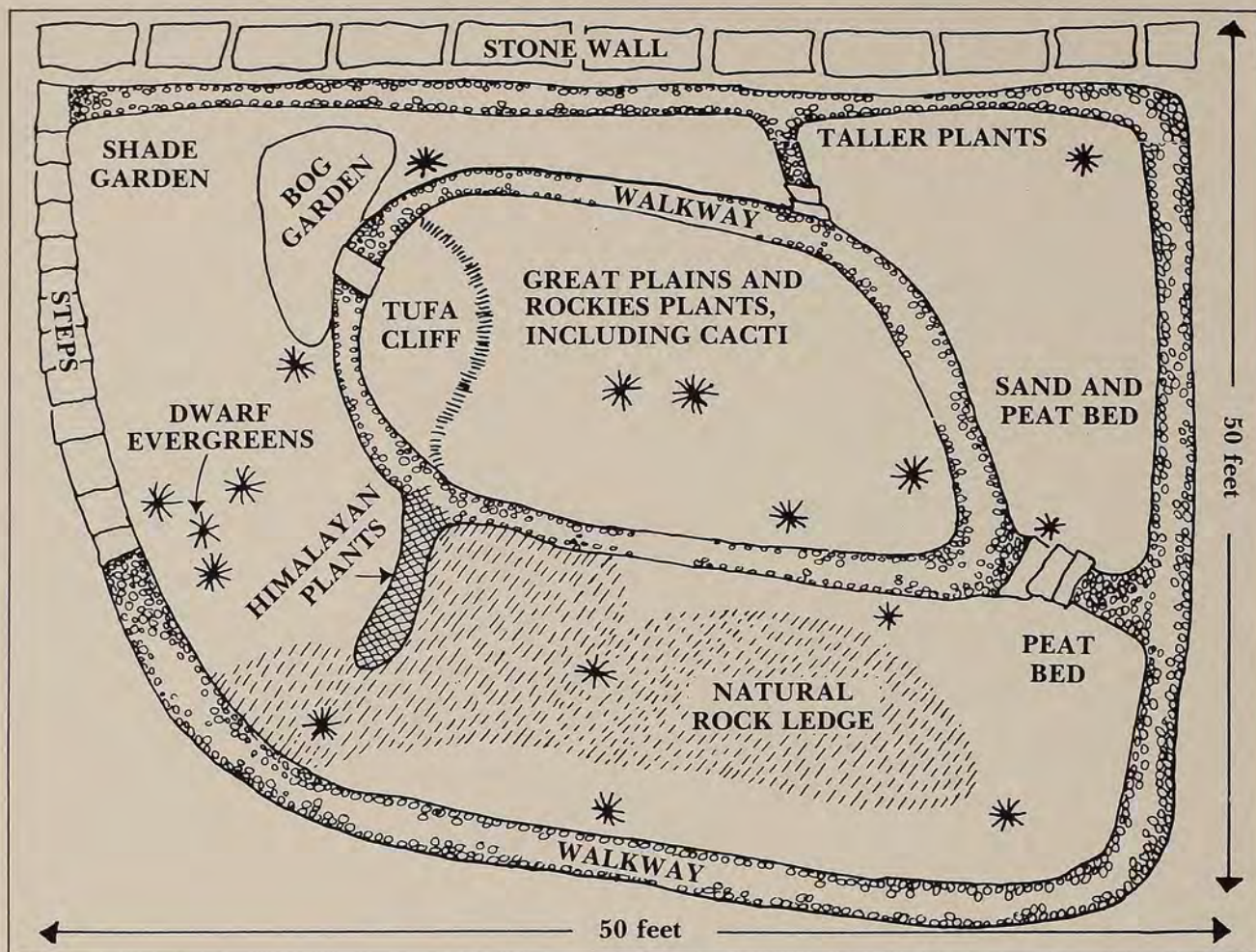
"There's much more color in early May," said Myers. "Last winter we had enough snow cover to protect many of the more

ABOVE: Bud Myers at work in his garden. RIGHT: A small area of Myers' garden set aside for propagation.









Peter Loewer

tender alpine, and the fence held back the usual onslaught of deer. I woefully discovered months after the rock garden was under way that it was created in the path of a deer run. The fence is a hateful but necessary limitation, but it stopped plants from being mangled by deer hoofs."

We walked to the large natural rock outcrop, just back of the center of the garden, where I saw a blooming eastern bear grass (*Xerophyllum asphodeloides*) below the edge of the rock. "That only blooms every other year at the best, but this is the finest it's been in recent memory," Myers said. He arched his hand over his left shoulder as he looked down the hill. "Up there is the pea tree (*Caragana arborescens* forma *Lorbergii*) and some of the wildflower collections. Down to our left, at the bottom, is the bog garden. Then along the old rock wall I've put taller plants for a good background—many others that just don't fit anywhere else—then I've put invasive plants on top of the wall, like *Coreopsis verticillata*, a tickseed."

"Starting up from the bottom right are many plants collected in the western states—there are some dozen species of columbine here (*Aquilegia* spp.). . . . Then directly to our right is a collection of a dozen cold-hardy rabbit-eared cacti (*Opuntia* spp.) from the Great Plains and a few other types of plants from that area."

"I started fifteen years ago," he continued, "with a bulldozer hired for the day. We cleared all the soil from the tops of the rock outcrops—the driver was a bit confused by the whole thing—and put all the collected soil to one side. The garden became rather like a small and square amphitheater with the rocks becoming the tiers of seats and the point at the center of the old stone wall being the open arena. After the big digging was over,

then I started on my own. I covered all the areas that would not get immediate treatment with black plastic to kill existing weeds and to keep more from sprouting. I trucked in gravel from a nearby bank. Then, working with a general mix of sand, gravel, peat moss, some composted soil and a dash of powdered manure, I began to move in fill. The first plants to enter the garden were dwarf evergreens to create focal points: hemlocks, spruces and rhododendrons."

It was beginning to get warm by now, the sun heating the tops of the gravel chips and the areas of bare rock, so I asked about watering.

"I rarely water," he said. "This is a weekend garden; it must be on its own—often for two weeks or more—without much help from me. The top dressing of small gravel chips that covers the entire garden acts as mulch to preserve moisture. During the winter months, the garden is also on its own. Years without snow always take their toll of plants, but the majority usually recover."

"And," he added, "under the walkway at the very lowest center of the garden, I installed a system of perforated drainpipes that are embedded in the gravel fill so water can never stand or stagnate."

Looking down towards the stone wall, I said that although the garden was only 50 by 50 feet, it never seemed small or overly crowded; there always seemed to be room for more.

"The levels of rock help to give the garden breathing room," he said. "I've had to prune a few dwarf conifers over the years when they grew enough to block out a view—it's easy to forget that, even if a plant only grows an inch a year, when you're



J. H. Hawkins



J. H. Hawkins



Peter Loewer



Peter Loewer



TOP LEFT: A diminutive bellflower, *Campanula dasyantha* (formerly *C. pilosa*). TOP RIGHT: Native Eastern prickly pear cactus, *Opuntia humifusa*. BOTTOM LEFT: Candytuft, *Iberis sempervirens* and tiny *Iris pumila*. BOTTOM RIGHT: *Haberlea rhodopensis*, a gesneriad, and Japanese painted fern, *Athyrium goeringianum* 'Pictum', hug the edge of a rock.

dealing with a limited space the ten-year total can make a statement."

"I've tried to shy away from hard and fast rules," he explained. "You remember: don't put a shocking pink next to a bright red, etc., but when you're dealing with a world of alpiners and the like, it's impossible to tone most of them down." He pointed to a new lily blooming at the foot of the wall. "Speaking of intensity, that will have to go. It's called 'Headlight' and it sure is; much too bright next to grey rock. Oh, it will never be finished; a garden is a living thing. And plants die. You would not believe the number of plants that have not survived or seeds that never germinated."

Seeds are one of the clues to the complexities of Myers' garden. For many years he has belonged to the various alpine and rock garden societies both here and in England and Scotland. It is by the judicious use of the various seed exchanges that he has been able to build such a vast collection of plants.

"It's easier to start from seed," he said. "Aside from the sheer excitement of shepherding a plant from seed to flowering, it gives a plant the opportunity to adapt to differences between here and its original home, whether in the Himalaya Mountains or Kew Gardens. And there are differences. I've often felt that if a plant can survive the rigors of the Northwest, it can do well most anywhere. We can never predict snow cover, amount of rainfall, or temperatures from week to week. Last year was going to be the worst in a decade and instead it was very, very mild.

Oh, it did hit all right, but only about the beginning of April when you would least expect it. Then there were the rains this year. That dwarf *Yucca* from Utah (probably a form of *Y. glauca*) is planted in sand and rock, but it rotted out with all that water. But there's a new sucker at its base, so maybe next year.

"Starting plants from seed and bringing them on has been one of the goals: it's sometimes satisfying, always interesting. But creating the appropriate settings within this small rock garden has tended to be the astonishing outcome of needs imposed by the plants themselves."

Some plants are collected by Myers in his annual fall jaunt to the mountains of the far West and often southwest Canada. There he visits other collector-gardeners and conservation groups associated with botanical gardens: "It's amazing, but often many nursery plants collected from the Pacific west coast do not survive for long here in the East. They should, by all reasoning, but they often don't."

"And you never know what is blooming right over the next hill," he continued as we walked over to a small cleft in the rocks and bent down to see a diminutive Jack-in-the-pulpit, a three-inch blossom on a six-inch plant. "I found this beauty in the woods above the garden, just across the street. It's held its dwarf size for two seasons now."

Just to our left a cloud of candy-striped *Lewisia* (*L. cotyledon* 'Sunset Strain') blossoms began to move in a slight breeze, unaware that they were no longer in the mountains in Oregon; to





ABOVE: Two plants native to the eastern United States. On the left is *Chamaelirium luteum*, commonly called blazing-star or fairy-wand. On the right is pitcher plant, *Sarracenia purpurea*. RIGHT: Along the edge of the garden, yellow-flowered pea tree, *Caragana arborescens* forma *Lorbergii*, blooms above a remarkable assortment of dwarf conifers and other flowering plants.

our right a group of American columbine (*Aquilegia canadensis*) perched over a bed of *Aurinia saxatilis* (formerly *Alyssum saxatile*) 'Citrinum', while a few steps more took us to a large bed of *Haberlea rhodopensis* in full bloom, gently nestled against a clump of Japanese painted fern (*Athyrium goeringianum* 'Pictum').

I asked Myers about the biggest insect problem in his garden. "Slugs!" he spat. "I come out at night with a flashlight to collect them, and this has to be the worst year for them in living memory. All that rain has led to some of the largest I've ever encountered. The pitcher plant in the bog (*Sarracenia purpurea*) has happily gorged itself on them this spring."

We followed the path past the mounds of tufa rock, brilliant with the bright yellows of *Draba rigida* and the *Douglasia vitaliana* (sometimes listed as *Vitaliana primuliflora*) down to the small bog garden.

"I planted an old concrete-stoppered porcelain bathtub here," said Myers. "I added a rotted log and filled it with thoroughly soaked peat moss, then, as in the rest of the garden, started most of the bog plants from seed. The first plant used was truthfully a minor reason for the establishment of the bog. It was a *Geum pentapetalum*, in turn raised from one seed that alone germinated from a seed exchange packet of many years ago. Before the bog, it languished for several years in the scree, but now, after moving it to the lip of the tub, the shrublet has thrived and gnarled itself into a splendid natural bonsai."

There are sharp inclines on either side of the buried tub, held back by a naturalistic wall of squarish rocks that edge the bog to make it a level below the rest of the garden—a manmade, cirquelike basin.

I looked to the right and saw a collection of small succulent rosettes only inches high and all covered with brick-red blossoms. "Those are *Rosularia paniculata*," he said, "surely one of the most beautiful reds in the garden."

We walked back to the rock ledge. It was now late afternoon, and the sky in the west was getting heavy with rolling grey clouds. A soft murmur of thunder was the only noise.

"We're going to get one of those storms that run through this valley like an express train with no local stops," said Myers.

I looked over the garden, still amazed by the many different plants around me. Then I noticed an empty spot of dirt way over to the right, close to the fence. It was about three feet square and very conspicuous now that I became aware of it. I asked what grew there.

"Nothing yet," answered Myers. "It was recently reclaimed from a stand of sedums that went wild and is now ready for a few choice plants from next year's crop of seedlings." ❁

Peter Loewer is a botanical artist and scientific illustrator who writes and illustrates his own books. His latest book is *Evergreens: A Guide for Landscape, Lawn and Garden*.







# Jasmines

BY ANTHONY De BLASI

They're only beautiful," insisted the woman, in a tone of contempt, as she examined the pot of brilliant tulips held up to her by an enterprising youngster who had managed to get them to flower out of season. "They have no fragrance!"

The woman—my mother—was passing her strange floral judgment on an early horticultural venture of mine. Her disparaging remark rubbed the shine off my face. I thought I had pulled off a rather nifty trick by conjuring an exuberant potful of springtime in the dead of winter! But that is how she judged plants. They fell into three categories for her—worthless; nice-to-look-at (such as my tulips), which were okay; or super, meaning for her, pleasantly scented. This olfactory bias puzzled me at first. Beauty headed my list. But later it dawned on me that if I had spent my childhood in a Mediterranean city where poet's jasmine climbed rampantly over balconies to flood the air with its addictive perfume, my eye might also have yielded to my nose in establishing the value of plants.

As it turned out, I inherited the sniffing habit, and I have been haunted by some of my mother's favorite odors to this day: the sunny scent of acacia, warm with honey and spices, entering the sinuses with a cushioned attack; the seductive vapors of a rose; the piercing sweetness of jasmine with its hint of acetone and spare but provocative overtones, crisp and essential as a Brahms intermezzo.

The mention of jasmine brings romantic thoughts to many minds, but seldom does it suggest a group of plants that are worth growing. It seems a pity to me, since they are among the friendliest of plants, unfussy, long-lived, and obligingly pest-free. And while most of them are not hardy, they don't mind living in containers and spending northern winters in a sunny plant room.

The true jasmines—also called jessamines—belong to the genus *Jasminum*. These vines and shrubs of the olive family are natives of tropical and subtropical regions of Asia, Europe, Africa and Australia. Their tubular, often star-shaped

flowers are cradled in calyxes that are sectioned into five, often threadlike sepals that look like eyelashes. The blossoms are frequently grouped in clusters that hover acrobatically in the aerial spaces provided by the willowy stems and sometimes ferny foliage. The green stems, angled in *J. officinale* and other members of the genus, gradually turn to a dense wood with a rough bark. The increase in diameter is slow and it is not unusual to see an old specimen with a "square" trunk one inch across after decades in a container. The foliage is generally pinnate, the oval-to-lance-shaped leaflets are often pointed; some species have a single, large leaflet. The fruit is a small berry.

*Jasminum officinale*, common white jasmine, poet's jasmine or Chinese tea, is to the odor of jasmine what the damask rose is to attar of roses. It is the "official" bearer of the essence from which jasmine perfume is made. If you wish to saturate your head with this superb fragrance, visit a blooming poet's jasmine at sunrise. The flower buds of this species are initiated in the long days of summer and it flowers incessantly into December, at which time the plant stalls and slips into dormancy. Happily, this jasmine is easy to care for, does not mind being pot-bound, and can be trained as a small shrub instead of the climber it prefers to be. As with other jasmines that have an urge to climb, training is accomplished by an annual spring pruning of one-year-old stems back to one or two leaf nodes. For a unique taste experience, drop a few fresh blossoms in a cup before you pour your tea.

*J. volubile*, formerly *J. gracile*, the angel-wing jasmine or royal jasmine, is a bushy, glossy-leaved shrub forever pumping fountains of showy white stars. The nine or so slender petals of each star separate from the center like the ribbons on a Lilliputian maypole. This jasmine's popularity as a pot plant is well deserved. It is attractive, evergreen, ever-blooming, slow-growing and undemanding. Its haunting scent evokes a rainbow of impressions. When I sniff this one I inhale the vernal air of a flower show where azaleas glow







Pamela Harper



ABOVE: Fragrant, spring-blooming *Jasminum polyanthum*. LEFT: *J. mesnyi*, primrose jasmine, bears its blooms in late winter.

Anthony De Blasi

along a damp slate walk edged with moist sod and leading to a display of hyacinths framed by *Viburnum carlesii*.

*J. sambac*, Arabian jasmine or zambac, with its big, slightly wrinkled, pale-jade leaves, is a refreshing plant to look at. The odor of its petite white flowers, with dainty, spoon-shaped petals that turn purple with age, is sweet and penetrating, especially in the morning. It will climb if allowed, but is easy to keep clipped as a shrub.

*J. sambac* 'Grand Duke' is the maverick of the group. Not only does it not conform to the roughly one-inch flower dimension of the genus, but it capriciously assumes the form of a peony or chrysanthemum with many tightly packed white petals. Like the species, it purples with age, but unlike it, this cultivar is shrubbier and a darker green. The strange, large blooms intoxicate with their strong brew of hyacinth, stocks and paper-white narcissus odors steeped in acetone. Although it looks like it ought to be plucked and inserted into a lapel or a corsage, 'Grand Duke' may be too assertive to trust at a party.

*J. polyanthum*, french perfume, delivers its masses of rosy pink buds and clusters of star-shaped blooms ahead of summer. It resembles *J. officinale*, with which it is sometimes confused, but its mass-blooming habit in the spring (strictly single blooms) and extra folds in its thinner leaves set it apart. And there can be no confusing the two odors—for me it is a smell-salad consisting of the cloying sweetness of sun-heated privet blooms mixed with mown grass and freshly cut cucumbers.

*J. humile* is a lusty vine with lush green foliage and sunny yellow blossoms with the scent of jonquils. This refreshing jasmine exemplifies the easy disposition of the genus.

*J. rex* is a handsome jasmine, with impressive two-inch, pure white single flowers on a vigorous vine of luxurious, four-to eight-inch leaves. The waxy, tropical blossoms invite the nose, but alas, they have no scent!

*J. mesnyi*, primrose jasmine, is the show-off of the group. In late winter or early spring, masses of two-inch yellow flowers with thin orange rays surrounding the eyes sprout from the green stems, ahead of the new growth. Forsythia does not stage a more lavish show of yellow. It would seem to be asking too much that such attractive blooms be fragrant, and they are not.

*J. multiflorum*, formerly *J. pubescens*, is sometimes listed as star jasmine, but might also be called the hairy jasmine. The occasionally double, fragrant white blooms

*Continued on page 38*







# The Seven Gables Garden

TEXT AND PHOTOGRAPHY BY GEORGE TALOUMIS

I grew up in Salem, Massachusetts, but it was not until my college years that I visited one of its most talked-about attractions—the House of the Seven Gables. Built in 1668, it is probably one of the best-known houses in American literature. It was once the home of Susan Ingersoll, whose cousin Nathaniel Hawthorne assured it a place in American tradition by basing a romantic novel on his impressions of the house.

Hawthorne's *The House of the Seven Gables*, which was published in 1851, was inspired not only by the unique, seven-gabled building, but also by the garden. According to Daniel Foley, curator of the garden today, the Gables garden of Hawthorne's time was typical of the nineteenth century—a conglomeration of flowers and fruits, such as lilacs, pear trees, quince bushes, grapevines and scarlet runner beans.

While there is no evidence that he was a gardener himself, Hawthorne had great respect for horticulture, probably partially due to the influence of his uncle, Robert Manning. Manning gained a reputation as the foremost horticulturist in America. His book on the culture of pears drew visitors from across the nation to see his orchard and garden.

The Gables garden described in Hawthorne's masterpiece was already begin-

ning to decay: "The enclosure had formerly been very extensive, but was now contracted within small compass, and hemmed about, partly by high wooden fences, and partly by the outbuildings of houses that stood on another street. In its center was a grass plat, surrounding a ruinous little structure, which showed just enough of its original design to indicate that it had once been a summerhouse. A hopvine, springing from last year's root, was beginning to clamber over it, but would be long in covering the roof with its green mantle."

Another reference reveals the condition of the plants in the garden: "When Phoebe was quite dressed, she peeped out of the window, and saw a rosebush in the garden. Being a very tall one, and of luxuriant growth, it had been propped up against the side of the house, and was literally covered with a rare and very beautiful species of white rose. A large portion of them, as the girl afterwards discovered, had blight or mildew at their hearts; but, viewed at a fair distance, the whole rosebush looked as if it had been brought from Eden that very summer together with the mold in which it grew."

The Gables garden with which Hawthorne was so intrigued eventually deteriorated completely, and it was not until 1910, when the house itself was restored, that attention was paid to the garden once again. Luckily for visitors today, the view

of the ocean is not obscured by the fences and outbuildings that Hawthorne described, and the shimmering water provides an unusually dramatic backdrop.

The present-day garden, which was designed by Boston landscape architect Arthur Shurcliff, was developed with the knowledge that the house and garden would be open to the public. A simple knot garden, with boards along the beds to provide formal precision and a sense of neatness, gives the feeling of colonial America while controlling foot traffic to protect plants from the many visitors who tour the garden annually.

"This is a patterned [Jacobean] garden," says curator Foley. "Important are lilacs, many of which were here when I came, and the large boxwoods, which I was able to bring in from a large estate. It is these two plants that give character to the garden, a sense of proportion, a feeling that this is a garden that has long been here, which it has."

Shurcliff's plant selections are truly a reflection of history, as Foley notes: "The collection of plants we have is an example of kinds that have been grown for 400 years. They include foxgloves, peonies, hostas, herbs, clove currant (*Ribes odoratum*), yews, hollies, snapdragons and lilies, including *Lilium speciosum*, which was introduced at the time Hawthorne wrote the story. We have marigolds, gaillardias, delphiniums, shasta daisies, sweet Wil-

LEFT: Tulips fill the garden at the House of the Seven Gables in early May.







liam, pansies . . . bittersweet, bayberry, rugosa and hugonis roses, baby's-breath and bouncing Bet."

The Gables garden is planned for all-season color. In this respect it is surprisingly successful, considering the harsh New England climate. Fortunately, its seaside location keeps killing frosts away most years until early December or so.

The scarlet runner beans, *Phaseolus coccineus*, are one of the major attractions of the Gables garden. Grown on trellises on the garden side of the house, this annual climber has brilliant scarlet flowers and long pods similar to those of wisteria. The scarlet runner bean is vividly described in Hawthorne's classic: "When the bean vines began to flower on the poles, there was one particular variety which bore a vivid scarlet blossom. The daguerrotypist had found these beans in a garret, over one of the seven gables. . . . By way of testing whether there were still a living germ in such ancient seeds, Holgrave had planted some of them; and the result of his experiment was a splendid row of bean vines, clambering . . . in a spiral profusion of red blossoms. . . . Ever since the unfolding of the first bud, a multitude of hummingbirds had been attracted thither . . . at times, it seemed as if for every one of the hundred blossoms there was one of these tiniest fowls of the air . . . hovering and vibrating about the bean poles."

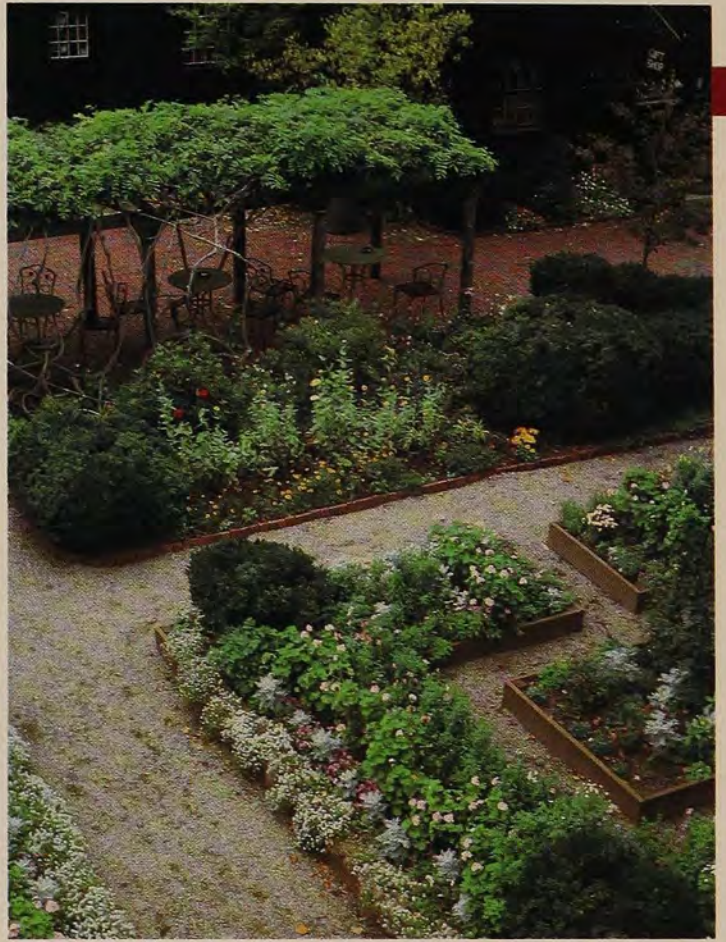
There are many other features that fascinate Gables garden visitors—the huge horse chestnut; the espaliered yews; the pansies, which seem to bloom eternally in the cool breezes that blow off the ocean; the splendid American lindens (*Tilia americana*), the constant bloom of geraniums, snapdragons and sweet alyssum which come up like weeds; and the chrysanthemums, which continue flowering well after Thanksgiving.

What impresses visitors most, though, is the view of the garden as they emerge from the darkened room where an introductory slide presentation is given. Before them is the perpetually restless sea, the House of the Seven Gables with the scarlet runner beans climbing their trellises, the neat flower beds, the gulls screaming overhead, the wisteria arbor under which you may lunch, and the two eye-catching, eighteenth-century spiral trellises covered with roses. The effect is mesmerizing.



TOP LEFT: Chrysanthemums add color to the fall garden at the Gables. TOP RIGHT: In September, the raised beds overflow with late-season color. BOTTOM LEFT: Hawthorne's birthplace, the red building beyond the garden, was moved to its present location in 1958. BOTTOM RIGHT: The ocean provides a dramatic backdrop for the Gables garden. ABOVE: Scarlet runner beans, featured in the garden, are described in Hawthorne's classic.







Visitors have Daniel Foley, along with two sisters Kathy Wilson and Robin Kanter, to thank for the garden's current healthy state. Foley is also responsible for the flower arrangements which are found throughout the House of the Seven Gables, specifically in the kitchen, front hall, parlor, dining room, Phoebe's room and Clifford's room. In the spring, the arrangements may feature tulips, in the summer, delphiniums and shasta daisies. Whatever the season, all the flowers are picked in the garden, but unobtrusively, so they will not be missed. Foley also features woody plants in some of his displays: autumn brings viburnums and bayberry, and this past spring there were opulent displays of flowering dogwood and hawthorn, all cut on the premises.

Foley also favors wild plants for his arrangements: "People who come here from the Midwest are fascinated by Joe-Pye weed, boneset, purple loosestrife, Queen Anne's lace and others, which they do not seem to know. . . . they want to know how and where . . . the flowers are arranged. I tell them they are first cut and hardened in water at least overnight. Then they are arranged in water with sugar added to prolong their longevity, in Oasis, with charcoal added to keep the water sweet."

Visitors late in the season might catch a glimpse of Foley working in the garden in a heavy sweater and turtleneck, with an ever-ready smile and answers to questions about the Gables garden, his arrangements or gardening in general. If he has the time, he will tell you a story or two before going back to his garden beds, which he is already preparing for the enjoyment of next season's visitors.

The garden at Hawthorne's House of the Seven Gables is indeed a wonderful surprise. Over 170,000 visitors from all over the world come to view it annually as part of a general tour through the restored Gables "complex" of seventeenth- and eighteenth-century Salem homes, including the house in which Hawthorne was born. See "Sources" on page 34 of this issue for more information on the garden.

George Taloumis, former editor of *Horticulture*, is a free-lance garden writer and photographer. He is a member of Garden Writers Association of America and serves as the New England regional editor of *Flower and Garden*.



TOP LEFT: Planned for all-season color, the Gables garden display begins with tulips in early May. TOP RIGHT: The garden is still colorful in October. BELOW LEFT: Snapdragons, sweet alyssum, geraniums and dusty-miller provide mid-summer color. ABOVE: 'Rubrum' lilies grace the garden in August.





Pamela Harper



# The Sour Gum

BY STEVE BENDER

**T**here is something that makes certain plants appeal to certain people, something that makes a particular plant—be it specimen or entire species—more endearing to one person than to another. I suppose that “something” is a characteristic or quality of the plant that happens to fulfill an individual’s particular psychological or aesthetic needs. Whatever “it” is, over the years the plant becomes more than an object of quiet admiration; it becomes a sort of friend. Just sniffing its fragrance, sitting under its leafy boughs or even glimpsing it on a distant hillside helps relieve the tensions of everyday life.

The plant of my heart is the sour gum. One of the finest hardwood shade trees of the eastern United States, its glossy-green summer foliage, abundant blue fruit and unforgettable autumn color are just some of the qualities that endear it to me. Even its botanical name, *Nyssa sylvatica*, is beautiful. In classical mythology *Nyssa* was a water nymph; *sylvatica* means “of the forest.” Somehow, this tree can support me in times of crisis. Fortunately, speech isn’t one of its many attributes; undoubtedly, sour gums occasionally have troubles of their own to relate—leaf spots, scale, an upturn in the lumber industry—and I just don’t have the time to return the favor. We humans are a selfish lot.

The sour gum claims several other names: black gum, tupelo and pepperidge. Why *gum* is there no one seems certain, since the tree is not now, nor apparently ever was, a source for that sticky commodity. Pepperidge is similarly without foundation. I can’t imagine naming a tree after a brand of shortbread cookies. The name tupelo, however, is an accurate description since it is derived from the Creek Indian words *eto*, meaning tree, and *opeluvv*, meaning swamp. Sour gum is commonly found in moist, lowland soils.

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Sour gum is known for its glorious fall foliage.

Sour gum belongs to the family Nyssaceae, which in modern times is limited in distribution to the temperate areas of eastern Asia and the eastern United States. Its prehistoric sweep was considerably more extensive, as demonstrated by the fossilized fruits discovered in England, continental Europe, Siberia, Japan and the western United States.

In the United States, *Nyssa* is represented by water tupelo (*N. aquatica*), ogeche tupelo (*N. ogeche*) and sour gum. In addition, botanists recognize a separate variety of sour gum, *N. sylvatica* var. *biflora*, commonly called swamp black gum.

*Nyssa sylvatica* is one of the dominant forest trees along the Atlantic Coast and is found in close association with oaks, beech, red maple (*Acer rubrum*) and black cherry (*Prunus serotina*). Despite its predilection for moist soils, it is intolerant of flooding. Under anaerobic conditions the root system quickly deteriorates, and toxic levels of manganese and iron build up in the soil solution. For this reason, it actually performs best in Appalachian uplands, on rolling hillsides and in open fields.

The sour gum’s growth habit varies as much as its habitat. In college, horticulture students are instructed to identify sour gum by its distinctly horizontal branching and pyramidal shape. Yet many sour gums possess pendulous branches while others are excessively twiggy. A sour gum’s canopy may be rounded, oval or flat-topped. Such disparity is undoubtedly linked to seedling variation as well as environmental factors.

Two of the surest ways to identify a sour gum in the woods are by its stems and by its bark. Find a leaf scar on one of its slender, gray stems and look for a triad of vascular bundle scars—an unmistakable sign. The bark is also unique. On mature trees it breaks into thick, irregular blocks reminiscent of alligator hide.

One could be oblivious to leaf scars, not



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**SOUR GUM CONT'D**

care a twaddle about bark and still be able to spot a sour gum in a September woods. The sour gum is one of the first trees to turn color in the fall. Its leaves of flame, scarlet and burgundy are without parallel. In early autumn, when the oaks, beeches and hickories remain cloaked in somber tones, eyes are drawn to a shining sour gum, as if to a scarlet needle in a verdant haystack.

The sour gum owes its glorious color to the pigment anthocyanin, which is water soluble and usually found in the cell sap. The reactions of various sugars with compounds known as anthocyanidins produce anthocyanin. It is usually red in an acid solution but may become purplish if the pH is in the neutral or alkaline range. In combination with other pigments—orange-yellow carotene and yellow xanthophyll—it turns orange.

For most of the growing season the sour gum's anthocyanin is hidden behind its leaves' abundant supply of bright green chlorophyll, which transforms energy from the sun into carbohydrates. But the leaves cease producing chlorophyll as the days shorten in autumn and the temperatures decline. As it drains away, the red stain of anthocyanin is revealed.

For many trees the intensity of their fall coloration is largely determined by environmental factors. Because sunlight is turned into carbohydrates, which in turn give rise to anthocyanins, brilliant autumns usually follow sunny summers. Rainfall must be sufficient, but not excessive; too much rain may spur abnormal growth late into autumn, so that tender, new leaves are killed by frost before they can turn. Temperatures must also be right. When the mercury dips to the low forties at night, carbohydrates are trapped in the leaves by quick-forming cork cells at the bases of stems. The temperature drop soon unleashes fall splendor.

Be this as it may, variations in the sour gum's color are probably due more to genetics than to the environment. One tree I know of, growing fully in the open, always turns golden-orange. Other trees situated in semi-shade inevitably glow bright red.

It is this consistency of autumn elegance that binds me to the sour gum. Rain or shine, through thick and thin, the sour gum always comes through. Because of this, unfortunately, many of us take it for granted. In Maryland, for example, we judge a great autumn not by its gums but by its oaks

(the fall of 1981 was truly magnificent). This is because the oaks are the last great trees to turn and, depending on the weather, may be either ruddy or muddy. When they are ruddy, the combination of gums and oaks is like lobster and a good Chardonnay. Together they are sensational, but it is prudent to remember that the first is nice alone too.

From my doting description of the sour gum's fall foliage it may seem that it is a tree for only one season. Fie upon this notion! The sour gum is a sporting companion the year 'round. In spring and summer its glossy, dark green leaves glint in the sun. In barren winter its furrowed bark lends interest.

Sour gums have the reputation for being genetically short-lived trees. To me, that's like saying that soldiers are genetically short-lived people. If sour gums are short-lived, it is probably because many grow in swampy lowlands and are subjected to periodic flooding. Waterlogged soils expedite root decay and heart rot, but on well-drained upland soils, I suspect the situation is somewhat different. In the central Maryland woods near where I grew up, for example, there is an enormous sour gum towering over the rest of the forest. Higher than the oaks, taller than the tulip poplars, its first fifty feet are devoid of branches. In autumn its awesome canopy, a head above the other trees' shoulders, beams beet-red. Because sour gums grow slowly, this tree must be very old. Noting its kingly aspect, I named the tree Arthur.

Arthur, I grant you, is an exception. He must be every inch of 100 feet tall. According to authorities, the majority of sour gums stretch to reach 60 feet. But might not a small part of his stature be attributed to the fact that he is growing on a well-drained hillside rather than in a lowland bog?

The inconspicuous flowers of the sour gum are polygamo-dioecious, meaning that male and female flowers are borne on separate trees, but perfect flowers appear on each tree as well. Seeds are carried in blue-black, oblong drupes that ripen in the fall. Birds relish these fruits and therefore are responsible for spreading the tree hither and yon.

Not all creatures like them, however. I remember singing the praises of the sour gum to one apparently sane individual when he stopped me right in the middle of my oration and said, "Oh, you don't have to tell me about a gum tree! Drops those lousy



# CURE FOR THE COMMON COLD.

blue berries all over the yard, don't it? Oughta chop all those stinkin' trees down if you ask me." I didn't ask, but what I should have asked was how he compared the mess of withered, little gum fruits to that of an oak's acorns, a mimosa's seed pods or the seed balls of a sycamore. Ah well, there's no use reasoning with some people.

Sour gums are uncommon in the nursery trade primarily because they develop long taproots, making them difficult to transplant. However, they can be grown in containers if they are root pruned annually to prevent the taproots from ringing the containers. Sour gums are propagated by seed, which generally is stratified in cold, moist sand for 60 to 90 days before sowing to overcome dormancy. Research has demonstrated that young seedlings grow better when transferred directly into three-gallon containers than when started in smaller-sized containers.

It is a rare individual who successfully transplants a sour gum from the wild. I am among the chosen few. The trick is knowing which trees to dig. If your equipment consists of little more than a common spade and a piece of burlap, concentrate on smaller trees, primarily those four feet or less in height. Forget trees that are growing on rocky and shallow soils. The roots are liable to be sparse and stringy, and what's left of them after you get through hacking away will not be enough to support the plant. The trees to look for are those growing in loose, deep soils. They are much more likely to have a network of feeder roots close to the trunk. The more feeder roots you take along with the tree, the more likely it is to survive.

In the home landscape the sour gum is a welcome addition. Utterly superb in naturalized areas, it is also a fine lawn tree. It is not recommended as a street tree, however, as it is intolerant of pollution and road salts. It performs best in an acid, moist, well-drained soil with full sun or part shade.

So if the pressures of everyday life are getting to you, go talk to a sour gum tree. It's a lot cheaper than talking to a psychiatrist. Plus, no appointment is necessary, and the tree will never mention your sex life.

Sour gums are a generous lot. ☺

Steve Bender is the new Assistant Garden Editor for *Southern Living* magazine and is a frequent contributor to *American Horticulturist*.



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### ALICE EASTWOOD

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### A GARDEN SMALL

The following organizations all have publications and extensive seed exchanges of great diversity.

Alpine Garden Society, Lye End Link, St. John's Woking GU21 1SW, Surrey, England. Membership is about \$15.00 per year.

American Horticultural Society, PO Box 0105, Mt. Vernon, VA 22121. Membership is \$20.00 per year.

American Rock Garden Society, Donald M. Peach, Secretary, Rte. 1, Box 282, Mena, Arkansas 71953. Membership is \$9.00 per year.

Hardy Plant Society, Hon. Sec. Miss Barbara White, 10 St. Barnabas Road, Emmer Green, Cabersham, Reading RG4 8RA, England. Membership is \$8.00 per year.

Japanese Rock Garden Society, Noriyoshi Masuda, 943-123 Nibuno, Himeji, Japan. Membership \$15.00 per year and you must use an International Postal Money Order.

Royal Horticultural Society, Vincent Square, London SW1P 2PE, England. Membership \$20.00 per year.

Scottish Rock Garden Society, Mrs. E. R. Law, Kippielaw Farm, by Haddington, East Lothian EH41 4PY, Scotland. Membership \$12.00 per year.

Gardeners who would like a list of the over 600 plants growing in Bud Meyer's amazing garden may send a self-addressed, business size envelope with 40¢ postage to Assistants to the Editor, American Horticultural Society, PO Box 0105, Mt. Vernon, VA 22121.



## JASMINES

The true jasmines and some of the so-called jasmines such as *Trachelospermum* and *Gelsemium* are available from the following nurseries and seed companies.

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Country Hills Greenhouse, Route 2,  
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Logee's Greenhouses, 55 North Street,  
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Louisiana Nursery, Route 7, Box 43,  
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The Wayside Gardens Company,  
Hodges, SC 29695, Catalogue \$1.00.

Mrs. R. C. Welsh, Route 3, Box 1700,  
Madison, FL 32340, Catalogue free.

White Flower Farm, Litchfield, CT  
06759, Catalogue \$5.00.

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J. L. Hudson, Seedsman, PO Box 1058,  
Redwood City, CA 94064, Catalogue  
\$1.00.

Steve Pirus, Collector of Rare & Exotic  
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92683, Catalogue free.

## SOUR GUM

*Nyssa sylvatica* is available from the following sources.

Forest Farm, 990 Tetherow Road, Wil-  
liams, OR 97544, Catalogue \$1.00.

Gossler Farms Nursery, 1200 Weaver Road,  
Springfield, OR 97477, Catalogue \$1.00.

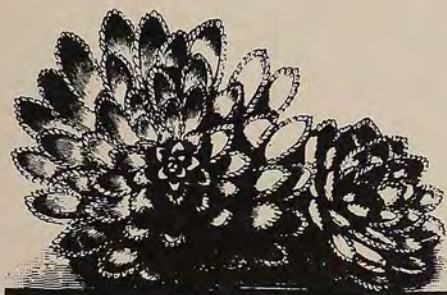
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Road, Eugene, OR 97401, Orders (800)  
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lousas, LA 70570, Catalogue \$1.00.

Mellinger's, 2310 West South Range, North  
Lima, OH 44452, Catalogue free.

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nue, Aiken, SC 29801, Catalogue \$2.00.



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# BOOK REVIEWS

## CLIMBING PLANTS.

Kenneth A. Beckett. Timber Press. Portland, Oregon. 1983. 178 pages; hardcover, \$17.95. AHS discount price \$16.50 including postage and handling.

At last—an English garden book actually written for international readers! The majority of this book is devoted to describing and giving cultural information for a wide variety of climbing plants, all of which are rated for hardiness according to the U.S.D.A. Zone designation. Although many of the species included in this book are commonly grown in the U.S., many others that are equally adaptable are rarely seen here. If you like to grow vines, this book may introduce you to some new ones you would like to try.

## TWO FIELD GUIDES

### FIELD GUIDE TO ORCHIDS OF NORTH AMERICA.

John G. Williams and Andrew E. Williams. Universe Books. New York, New York. 1983. 143 pages; softcover, \$10.95. AHS discount price \$10.00 including postage and handling.

### THE FIELD AND GARDEN GUIDE TO HERBS.

M. M. Kondor and C. B. Wilson. Stackpole Books. Harrisburg, Pennsylvania. 1983. 319 pages; hardcover, \$19.95. AHS discount price \$16.60 including postage and handling.

*Field Guide to Orchids* identifies, describes and illustrates (in color) all 177 species of orchids found north of the Mexican border. A simple key aids the identification of genera while colored drawings are provided for species identification. In addition, keys to species are provided for five of the larger genera. This is an excellent little book for anyone interested in our native species of orchids.

*The Field and Garden Guide to Herbs* is nothing of the sort. While it does discuss 200 species of herbs occurring in the wild throughout North America, it does not include any information on the native habitats, nor does it provide any means of identification. All species are illustrated with either a photograph or a line drawing; however, such illustrations are totally use-

less for identification purposes. The herbal uses are discussed briefly, and some notes on culture will be of value if you want to grow any of these plants in your garden.

### HILLIER'S MANUAL OF TREES AND SHRUBS.

Van Nostrand Reinhold Company. New York, New York. 1981. (5th edition). 576 pages; hardcover, \$20.50. AHS discount price \$18.35 including postage and handling.

This basic reference work on woody plants is finally available from a U.S. publisher. Extensive descriptions of species and cultivars include comments on their use and value in the garden. Slight judgment is required as hardiness information pertains to the British Isles.

### FLOWERS FOR NORTHERN GARDENS.

Leon C. Snyder. University of Minnesota Press. Minneapolis, Minnesota. 1983. 387 pages; hardcover, \$25.00. AHS discount price \$23.75 including postage and handling.

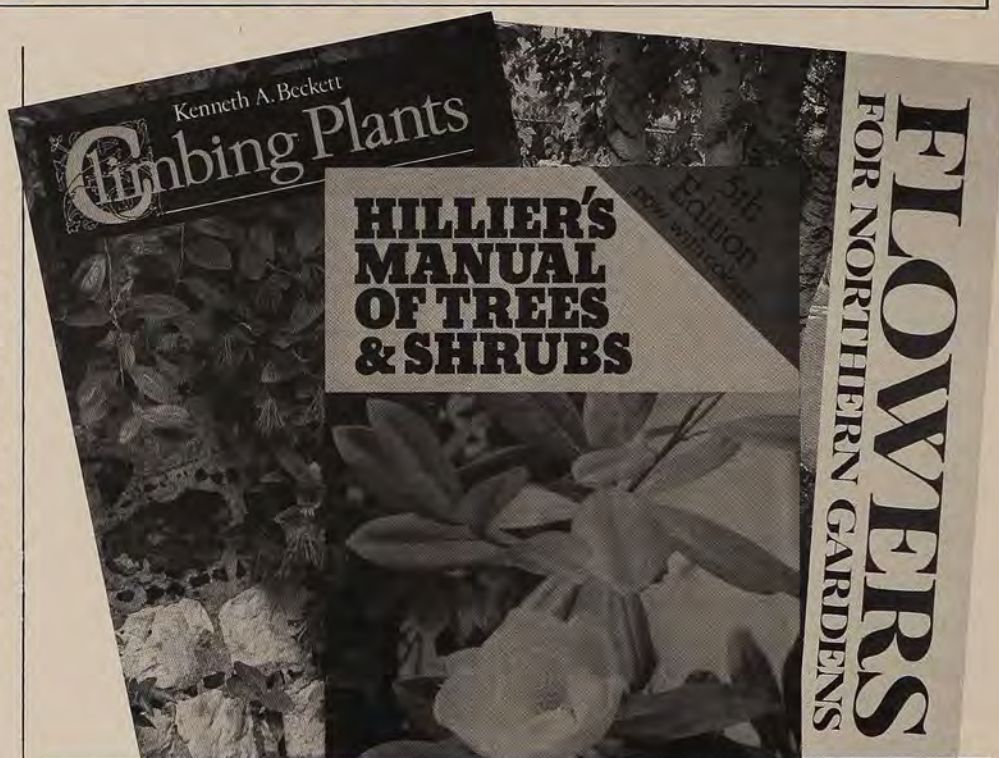
Written by a professor of horticulture at the University of Minnesota, this book is a first-hand accounting of those plants that will grow successfully where winter tem-

peratures may drop to -50°F and summers can be counted on for temperatures over 100°F. The author selected plants that would grow successfully in U.S.D.A. Zones 1 to 4, but readers in the harsher portions of Zone 5 will also find this a useful book. Each plant is briefly described, and cultural information is provided. Where applicable, some of the more readily available cultivars are also listed. Colored photographs (277 of plants and 11 more of gardens) illustrate many of the recommended species.

### WATERLILIES.

Philip Swindells. Timber Press. Portland, Oregon. 1983. 159 pages; hardcover, \$17.95. AHS discount price \$16.50 including postage and handling.

This is a book about waterlilies and their relatives. A few brief chapters give essential cultural information, including a short chapter on pool construction. However, the major portion of the book describes and comments on the many species and cultivars of this group of plants. An excellent chapter on hybridization deals mostly with the work of George Pring, who developed many new hybrids at the Missouri Botanic Garden in the early part of this century.





## PESTICIDES

### ARE PESTICIDES REALLY NECESSARY?

Keith C. Barrons. Regnery Gateway, Inc. Chicago, Illinois. 1981. 245 pages; softcover, \$6.95. AHS discount price \$6.70 including postage and handling.

### THE NEW PESTICIDE USER'S GUIDE

Bert L. Bohmont. Reston Publishing Company. Reston, Virginia. 1983. 452 pages; hardcover, \$19.95. AHS discount price \$18.00 including postage and handling.

*Are Pesticides Really Necessary?* is an attempt to provide the reader with a rational evaluation of both the value of chemical pesticides and the dangers involved in their widespread use. The author also discusses natural pest control methods and their effectiveness under certain circumstances. This is a calm, well-organized presentation which clearly shows the choices we must make in order to achieve a necessary balance in the use of various pest control systems.

*The New Pesticide User's Guide* is an agricultural students' textbook that deals with the practicalities of using pesticides. It is also a how-to book and is highly recommended for any serious gardener who wants to know exactly what is being done—and how it can be done safely—in the area of pesticide use.

### THE ORTHO PROBLEM SOLVER.

Michael D. Smith, Editor. Ortho Information Services. San Francisco, California. 1982. 1,022 pages; hardcover, \$149.95. AHS discount price \$135.00 including postage and handling.

If your grass doesn't grow or your spruce tree is dropping its needles, this is the book for you. A major publication aimed at the problems of the home gardener, *The Ortho Problem Solver* is divided into several sections including lawns; annuals, perennials and bulbs; trees, shrubs and vines; vegetables, berries and grapes. Each section begins with a discussion of the general problems that the home owner may encounter within the group and then discusses the specific problems of individual genera. An excellent color photograph and an analysis of what may have caused the problem are followed by recommendations for solutions. Other sections of the



*Problem Solver* cover household pests, weeds, plant diseases, soil, and cultural and climate problems. An excellent 190-page index provides many alternative ways to find solutions to any problem.

While this book is available for reference at most Ortho product dealers, the advanced gardener will find a home copy of immense personal value. This is a reference book that you will use for years to come.

### LANDSCAPE PLANTS IN DESIGN—A PHOTOGRAPHIC GUIDE.

Edward C. Martin, Jr. AVI Publishing Company. Westport, Connecticut. 1983. 496 pages; hardcover, \$61.50. AHS discount price \$53.55 including postage and handling.

Originally intended as a textbook for landscape architects, this photographic survey of plants will be of immense value to anyone planning a garden, whether large or small. Plants are grouped as trees, shrubs or vines according to their usual use in the landscape, and a two-page spread on each plant shows details of flowers, fruit and bark and also provides numerous examples of actual plantings.

Photographs of the bare branches in winter and the plant in full leaf during the growing season add to the usefulness of the illustrations. Information is also provided on form, texture, color, size, growth and spacing, and there are brief cultural notes. Finally, where applicable, closely related species and cultivars are described. This book is highly recommended to both amateur and professional landscapers. ♦

—Gilbert S. Daniels

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

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come in the summer. It is unique for its fuzzy foliage and yellow hairs on the blossom calyxes.

*J. nudiflorum*, winter jasmine, is the hardiest of the jasmines, blooming in winter or spring as far north as U.S.D.A. Zone 6. It is a deciduous shrub with scentless yellow flowers borne along the previous year's branches, forsythia-style.

*J. floridum* is a summer-blooming jasmine whose golden-yellow flowers are massed in terminal clusters. Both it and *J. humile* are frost tolerant and hardy to U.S.D.A. Zone 7. *J. mesnyi* is also frost tolerant but is a bit more tender. It is listed as hardy to U.S.D.A. Zone 8.

Jasmine is used as a common name for a host of unrelated plants that are loosely strung together by the common attributes of sweet scent and starry, tubular flowers. Some of these, like the Caroline jasmine (*Gelsemium sempervirens*), are favorite vines in the milder climate zones.

The Confederate or star jasmine, *Trachelospermum jasminoides*, a darling of the South, is a remarkably handsome vining shrub. Its glossy, leathery, opposite leaves look like those of *Vinca minor*. Early in the year when it is in bloom, it is a cloud of tiny pinwheels, each a marvel of detail. Baking in the sun brings out their vanilla fragrance. It is an accommodating tub plant in the North, easy to train as a small shrub.

If botanists classified plants according to the odor of their flowers (which, fortunately, they do not), the night jasmine, *Cestrum nocturnum*, might have fallen into the milkweed family. Actually, it is in the Solanaceae or nightshade family. Its scent—like that of *Hoya* and milkweed blossoms—is very sweet and penetrating. From dusk to dawn a wave of fragrance issues from minute, greenish, long-necked blooms pinned around arching wands of large, plain leaves. The family tie to *Nicotiana*, flowering tobacco, suggests itself, on second sniff.

We could stretch our verbal visits to include several other casual members of the jasmine community: crape jasmine, *Tabernaemontana divaricata* (formerly *Ervatamia coronaria*), with its waxy creped blossoms resembling miniature gardenias; Chilean jasmine, *Mandevilla laxa* (formerly *M. suaveolens*), with its cascades of silver-white, periwinkle-shaped blooms; Madagascar jasmine, *Stephanotis floribunda*, producer of those classic, waxy star clusters found in bridal bouquets; orange jasmine, *Murraya paniculata* (formerly *M.*



*Jasminum volubile* (formerly *J. gracile*), angelwing or royal jasmine, is a popular pot plant.

*exotica*), with its handsome, lustrous leaves and beautifully fragrant white flowers; or even the cape jasmine, a common name for *Gardenia*. To do so would be to cope with an interminable list and to stray among "jasmines" with more demanding cultural requirements.

A green thumb is not required to grow jasmines. Their tolerance of neglect lies on a scale midway between a snake plant and a gardenia. The basic threats to the life of these durable plants are freezing, drying out and soggy soil. Low temperatures are most felt by plants growing in containers, so bring your jasmines indoors ahead of the first autumn frost in your locality. Winter quarters need not be a greenhouse. A sunny porch or plant room will do. Jasmines also will winter happily in a south or west window of the house away from stoves, radiators or heat registers. Jasmines can never be fully housebroken. Although they resent constant "room temperature," they will survive it. However, you may have to snip off soft, forced growth, and the older leaves may succumb to mites. Syringing the leaves with water and keeping a crack of fresh air on mild, sunny days will help bridge the cultural gap between the fall sheltering and spring re-entry to the great outdoors, where—like humans

at that time of year—they itch to be.

These plants prefer a loamy, well-drained soil with a neutral pH. For growing them in pots, mix two parts loam, two parts peat moss, one part compost, humus or composted cow manure and enough sand, perlite or vermiculite to insure adequate drainage. Then add bonemeal at the rate of a five-inch potful to a bushel of soil.

If a plant seems clearly too large for its container and it has been two years or more since it was potted, the plant will benefit from a move to a container about three inches wider than its present one. Springtime moves are best. Water heavily after repotting. During the plant's active seasons, normally spring and summer, water until there is a slight drip from the bottom of the pot each time the top of the soil begins to dry. Apply less water when the plant is resting. Do not fertilize a plant that is not growing actively, or one that has recently been repotted. Wait two months after repotting or until the roots begin to crowd the container. Then feed at two-week intervals with a liquid food such as fish emulsion, using half the recommended amount of concentrate in the water. Jasmines are not heavy feeders. Stop feeding any jasmine that is not busy making new leaves or flower buds.



To keep your jasmine as a manageable container plant rather than a climber, cut it back at least halfway in late winter or earliest spring, as you would prune roses. Remove weak stems and any that appear to be excessive or in the wrong place, cutting all the way back to older wood. This is the time to shape the plant to suit your style. If you have an eye for bonsai, you may train it in that manner. Never cut any stems during active growth because you will delay or forfeit flowers. Ease up on the shears with non-climbers like *J. volubile*. For the winter and spring bloomers such as *J. mesnyi*, postpone the trimming until after the show. Springtime cuttings of one-year-old stems, taken before new growth begins, stand a good chance of rooting, provided they are kept moist and shaded. Expect a one-out-of-three take.

The tender jasmines, such as *J. sambac* and *J. polyanthum*, are winter-hardy only in U.S.D.A. Zone 10 and protected areas of U.S.D.A. Zone 9, where they can be grown against a wall or trellis or used as a ground cover. To sunbelt gardeners, however, "outdoor jasmine" usually means star jasmine (*Trachelospermum jasminoides*), night jasmine (*Cestrum nocturnum*) or Carolina jasmine (*Gelsemium sempervirens*), all of which are tolerant of frost. These are easily grown without special requirements. They will probably require an occasional pruning to keep them within bounds. The tops of *Cestrum* may be nipped by the cold, but they are root-hardy in the South and will come back in the spring. Jasmines growing in the ground thrive in ordinary garden soil, moderate moisture and ample sunshine.

From spring to fall, potted jasmines should be *outside*, in the sun, perhaps shaded from the intense afternoon sunlight of midsummer. Those in clay pots may be sunk to the rim in a flower border, where the summer bloomers will add their fragrant stars. Place them where they may be smelled as well as seen. To me, a tub of jasmine is as much in place on a patio in North Dakota as on a terrace of an Italian villa.

A jasmine, even in floral climax, may not stop traffic, but for those who manage to get off life's speedways this genial plant gives a quiet call to pause and dream. ☼

Anthony De Blasi is a free-lance writer and photographer living in West Newfield, Maine. Other articles he has written for *American Horticulturist* include "Camellias in Containers" and "Japanese Tree Peonies."

# 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".

*Acer rubrum* AY-ser REW-brum

*Alchemilla vulgaris*

al-che-MILL-ah vul-GAY-riss

*Aliciella* AL-iss-ee-ell-ah

*Alyssum saxatile*

ah-LISS-um sacks-ah-TILL-ee

*Aquilegia canadensis*

ak-qui-LEE-jee-ah can-ah-DEN-sis

*Athyrium goeringianum*

ah-THIGH-ree-um gair-rinj-ee-AY-num

*Aurinia saxatilis*

aw-RIN-ee-ah sacks-ah-TILL-iss

*Buxus microphylla* var. *japonica*

BUCK-sus my-kro-FILL-ah ja-PON-i-ka

*B. microphylla* var. *koreana*

b. my-kro-FILL-ah kore-ee-AY-na

*B. sempervirens* b. sem-per-VEER-enz

*Caragana arborescens* forma *lorbergii*

kar-a-jan-ah ar-bor-ESS-ens

lor-BERG-ee-eye

*Cestrum nocturnum*

SESS-trum nock-TURN-um

*Coreopsis verticillata*

kor-ee-OP-sis ver-tis-ill-AY-ta

*Dicentra spectabilis*

dy-SEN-tra speck-TAB-i-lis

*Douglasia vitaliana*

DUG-lus-ee-ah vy-tal-ee-AY-na

*Draba rigida* DRAB-ah RIDGE-i-da

*Eastwoodia* east-WOOD-ee-ah

*Ervatamia coronaria*

er-va-TAME-ee-ah cor-o-NAIR-ee-ah

*Galium mollugo* GAY-lee-um mol-LU-go

*Gardenia* gar-DEEN-ee-ah/gar-DEEN-ya

*Gelsemium sempervirens*

jel-SEM-ee-um sem-per-VEER-enz

*Geranium* jer-AY-nee-um

*Geum pentapetalum*

JEE-um pent-a-PET-al-um

*Gypsophila* jyp-SOF-i-la

*Haberlea rhodopensis*

ha-ber-LEE-ah rho-do-PEN-sis

*Hoya* HOY-ah

*Hydrangea anomala* subsp. *petiolaris*

hy-DRAN-gee-ah ah-NOM-ah-la

pet-ee-o-LAIR-iss

*Iris* EYE-ris

*Jasminum floridum*

jazz-MY-num FLOOR-i-dum

*J. gracile* j. gra-CIL-ee

*J. humile* j. hew-MIL-ee

*J. mesnyi* j. MES-nee-eye

*J. multiflorum* j. mul-ti-FLOR-um

*J. nudiflorum* j. new-di-FLOR-um

*J. officinale* j. o-fiss-i-NAL-ee

*J. polyanthum* j. po-lee-AN-thum

*J. pubescens* j. pew-BES-enz

*J. rex* j. rex

*J. sambac* j. SAM-back

*J. volubile* j. vo-LOOB-i-lee

*Lewisia cotyledon*

LOU-iss-ee-ah ka-ty-LEE-don

*Lilium speciosum*

LIL-ee-um spee-see-O-sum

*Mandevilla laxa*

man-de-VILL-ah LACKS-ah

*M. suaveolens* m. su-av-ee-O-lenz

*Murraya exotica* MURR-a-ya ex-OT-i-ka

*M. paniculata* m. pan-ick-yew-LAY-ta

*Nicotiana* ni-ko-ti-AY-na

*Nyssa aquatica* NISS-ah ah-QUAT-i-ka

*N. ogeche* n. o-JEE-kee

*N. sylvatica* var. *biflora*

n. sil-VAT-i-ka bi-FLOR-ah

*Opuntia* o-PUN-tee-ah

*Pachysandra procumbens*

pak-i-SAN-dra pro-KUM-benz

*P. terminalis* p. ter-min-AY-liss

*Phaseolus coccineus*

phase-ee-O-lus kok-SIN-ee-us

*Pieris* pee-AIR-iss

*Prunus serotina* PRUNE-us ser-o-TEE-na

*Ribes odoratum* RY-beez o-door-AY-tum

*Rosularia paniculata*

ross-you-LAR-ee-ah pan-ick-yew-LAY-ta

*Ruscus* RUSS-kuss

*Salix* SAY-licks

*Salvia haematodes*

SAL-vee-ah he-ma-TOE-deez

*S. pratensis* s. pray-TEN-sis

*Sarcococca hookerana*

sar-ko-KOKE-ah hook-er-AY-nah

*S. hookerana* var. *humilis*

s. hook-er-AY-nah HEW-mil-iss

*S. ruscifolia* s. russ-ci-FOL-ee-ah

*S. saligna* s. sal-LIG-na

*Sarracenia purpurea*

sare-ah-SEN-ee-ah poor-poor-E-ah

*Simmondsia californica*

sim-MOND-see-ah kal-i-FORN-i-ka

*S. chinensis* s. chi-NEN-sis

*Stephanotis floribunda*

stef-ah-NO-tiss flor-i-BUN-da

*Tabernaemontana divaricata*

tab-er-nee-mon-TAN-ah dy-vair-i-KAY-ta

*Tilia americana*

TILL-ee-ah a-mer-i-KAN-ah

*Trachelospermum jasminoides*

tray-kell-o-SPER-mum jazz-min-o-EYE-deez

*Viburnum carlesii*

vy-BUR-num KARLS-ee-eye

*Vinca minor* VIN-ka MY-nor

*Vitaliana primulaeflora*

vy-tal-ee-AY-na prim-you-lee-FLOR-ah

*Xerophyllum asphodeloides*

ze-ro-FILL-um as-fo-DEL-o-eye-deez

*Yucca glauca* YUCK-ah GLAW-ca



# WALLS

One of the most important decisions a gardener can make is to build a wall. Perhaps no single design feature lends as much immediate substance and sense of permanency to a garden. Though certainly more transitory than a well-built brick or stone wall, a fence serves similar functions by defining spaces and creating a sense of intimacy and "place."

Both types of structures can provide supports for climbing plants such as roses, or serve as backgrounds for herbaceous plants or shrubs. They can substantially increase growing area in cramped urban spaces. Properly placed, walls and fences also provide wind protection for plants and people. Improperly placed, they can create wind funnels.

South-facing walls offer plant protection, but in some cases they can create searing climatic extremes only favorable to a select group. Walls also will retain soil, keep animals in or out and may give the gardener a chance to grow the magnificent climbing hydrangea, *Hydrangea anomala* subsp. *petiolaris*.

For whatever reason a wall or fence is built, it needn't appear as a utilitarian afterthought imposed on the landscape. Whether used to mark the transition from one area to the next or simply to enclose a vegetable garden, walls and fences can help create a permanent garden framework.

Enclosures provide privacy from neighbors, shield unsightly views and allow the eye to pause as it travels between one area and the next, particularly valuable when there is a transition of mood or style. From formal to informal (or vice versa), walls and fences allow, even seem to encourage, entirely different design themes to be developed.

In a recent design project of mine, a barely defined and seldom used yard just outside the back door of an imposing country house will become, with the addition of plantings, a blue stone terrace and a low brick wall—a successful transition area to a wildflower meadow beyond.



The perimeter of the terrace is planted with sprawling mounds of lady's-mantle, (*Alchemilla vulgaris*), a succession of yellow and white-gold *Iris* that echo buttercups in the field, blue and white campanulas, the lavender-blue spikes of meadow clary (*Salvia pratensis*, formerly *S. haematodes*) and billowing mounds of baby's-breath (*Gypsophila*), reflecting the field's own white bedstraw (*Galium mollugo*). The terrace will become a wonderfully inviting place to congregate for iced tea on summer afternoons.

The 3½-foot brick wall dividing the terrace from the meadow beyond will further the sense of "space" where none had existed—a successful division that also serves to unify one area of the landscape with another. A space through the center of the wall leads along a path mown in tall meadow grass to a small orchard of gnarled apple trees, a focal point that draws glances and people, especially in spring and autumn. In winter, the branching of the apple trees and the broad line of the wall become a pleasing architectural framework for an otherwise bare garden.

Used to frame a view, a wall or fence can emphasize a particular landscape feature or, by partially obscuring sight lines, act as a kind of veil, increasing the elusiveness and desirability of the scene beyond. Peering through, over and around fences, enticed around corners and along walls in a lively search for an end (or a beginning), we are pleasantly, almost unwittingly, led through the landscape.

Whatever a fence or wall's purpose and placement, some thought should be given to fitting the structure in with the character, scale and period of surrounding architecture, existing (or proposed) plantings or nearby walls. If your house is Victorian, Federal, Colonial or any one of many other eras or styles, you might consider appropriate period fences in keeping with the scale of your house and grounds. In this union of style, also consider the effect or "mood" you wish to create.

A simple, yet successful illustration of style and appropriateness is a white picket fence around a tiny house in urban Cambridge, Massachusetts. In an equally diminutive yard set right against the sidewalk, violas, bleeding-heart (*Dicentra spectabilis*), various cranesbills—*Geranium* sp., among them 'Johnson's Blue'—daylilies and other cottage-type flowers spill over each other. With the resulting partial view through alternating fence pickets, passersby can see the flowers, and sunlight isn't blocked; yet, with the density of plant growth, the owners still have the sense of a very quiet and private space. A 12-foot woven sapling fence or cedar posts would have created complete privacy here, but the resulting feeling of confinement would have been extreme, never mind the lost view from the house through the garden to surrounding trees. In this instance, the obvious solution was also the most appropriate and pleasing for everyone concerned.

—Margaret Hensel

Margaret Hensel is a landscape designer and garden writer living in Massachusetts.





FAR LEFT: An inviting view beckons beyond the wall of the Japanese garden at Naumkeag in Stockbridge, Massachusetts. ABOVE: Rough-cut boulders form a unique wall at Biltmore House in Asheville, North Carolina. LEFT: A white picket fence enclosing a city garden.



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