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Left: The new growth of 'Forest Flame', a pieris cultivar, provides a spectacular display of red in the landscape. Update your information about pieris in the article that begins on page 14. Photograph by Pamela Harper.

On the Cover: The *Echinocereus pentalophus*, a low-growing cactus with sprawling stems that have five warty ribs and short, soft spines, is admired for its striking flowers of red-purple that appear in April. See it at the Desert Botanical Garden in Phoenix, in their collection of 2,500 plants from the world's deserts and arid lands. To read more about this garden, turn to page 10. Photograph by Joanne Pavia.

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Replacement issues of AMERICAN HORTICULTURIST are available at a cost of \$2.50 per copy. The opinions expressed in the articles that appear in AMERICAN HORTICULTURIST are those of the authors and are not necessarily those of the Society. Botanical nomenclature in AMERICAN HORTICULTURIST is based on HORTUS THIRD. Manuscripts, art work, and photographs sent for possible publication will be returned if they are accompanied by a self-addressed, stamped envelope. We cannot guarantee the safe return of unsolicited material.

AMERICAN HORTICULTURIST, ISSN 0096-4417, is the official publication of the American Horticultural Society, 7931 East Boulevard Drive, Alexandria, Virginia 22308, (703) 768-5700, and is issued six times a year as a magazine and six times a year as a news edition. The American Horticultural Society is a nonprofit organization dedicated to excellence in horticulture. Membership in the Society includes a subscription to AMERICAN HORTICULTURIST. National membership dues are \$30; two years are \$55. Foreign dues are \$40. \$12 of dues are designated for AMERICAN HORTICULTURIST. Copyright © 1988 by the American Horticultural Society. Second-class postage paid at Alexandria, Virginia, and at additional mailing offices. Postmaster: Please send Form 3579 to AMERICAN HORTICULTURIST, P.O. Box 0105, Mount Vernon, VA 22121.

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Welcome Our New Executive Director



The most glorious Seasons Greetings for 1988! The gift to all of us is Frank L. Robinson who has agreed to lead the American Horticultural Society as our new Executive Director.

Frank is not new to the American Horticultural Society. He has been a member since 1977, enjoying many Annual Meetings and exerting a positive influence by expressing timely concerns and ideas to the Board and staff.

His background includes degrees from Earlham College, Richmond, Indiana, in psychology and Japanese studies, and in horticulture from Haywood Technical Institute, Clyde, North Carolina, where he first served as groundsman and landscape designer. His next five years were as grounds foreman at Rochester Institute of Technology, Rochester, New York, where he modernized the maintenance programs for their 1,300-acre campus. He initiated display gardens of bulbs, annuals, and perennials, in addition to his responsibilities for the athletic fields, woodlands, and the Japanese garden. He also developed extensive wildflower collections, interpretive signage, and brochures for their nature trail system.

Frank's most recent management experience has been at Albemarle Farms, Charlottesville, Virginia, the estate of Mr. and Mrs. John W. Kluge. Some of his responsibilities on Albemarle Farms' 1,500 acres included formal gardens, greenhouses, a conservatory, vegetable gardens, an orchard and vineyard, a golf course, and wildflower meadow plantings.

The Board of Directors and staff at River Farm welcome Frank Robinson and look forward to his innovative leadership and enthusiasm.

May 1989 be an exuberant year for gardeners! And may we all work more diligently together as stewards of our precious land.

Carolyn Marsh Lindsay



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Photos by Kathryn Mathewson

Softening the Bauhaus Style

Tom Wolfe, social commentator and best-selling author who wrote *From Bauhaus to Our House*, claims that since World War II Americans have allowed their artistic tastes to be controlled by a few designers. He calls this group, which includes about 3,000 members centered in New York City, “the design compound.” It is a close-knit group, he says, that rarely communicates outside its own boundaries and that gives awards and recognition only to the chosen few who are insiders.

Americans embraced the Bauhaus, or International Style, after World War II as a major style for our architecture, interiors, furniture, and gardens. The style began in Germany as a socialistic movement whose purpose was to create for the middle class to the exclusion of the aristocracy. Such aristocratic ornamentation as roofs, front doors, crafted details, and plants were removed from architectural design and replaced with mass-produced, industrialized materials. Individual differences and comfort were not important to this style. Americans embraced it so thoroughly, however, that it became the style for American corporate buildings as well as private residences at all levels of income. It has dominated design for over thirty years, and we are only beginning to come out of it.

The relationship between this design group and gardens is subtle but important to understand if we are to progress towards gardens that meet our culture’s social and emotional needs as well as regional, climatic, and environmental differences. The compound’s influence is especially evident in the starkness of our urban spaces and public sculpture. No American city is immune.

The thinking that has allowed our society’s quiet acceptance of this style has

produced a similar influence in the landscape and garden industry. A subordinate group has subtly controlled the schools and thus the industry, which includes the major landscape architecture and construction firms and the major suppliers. Home owners, designers, gardeners, contractors, nurserymen, salesmen—everyone interested and involved in gardening and landscaping is affected. We need to uncover the intricate web that has been woven by the International Style. It has made it difficult to build beautiful gardens, especially in public spaces. I hope the ideas that follow will help those of us deeply committed to the garden and its importance in our society to redirect the individuals and institutions that have a large influence on our gardens and landscapes.

The problems that remain after this long



Concrete walks and patios placed next to buildings left no room for foundation plants to soften the edges.

RIGHT: Stark lines, before the transformation. LEFT: Lush greenery hides the hard edges, and stepping stones invite one to walk through the border plantings.

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THE DESIGN PAGE

period of design are complex and will take years to correct. For example:

- Craftsmen have not been able to find work because the International Style has encouraged "clean lines" and industrialized materials rather than hand labor. Therefore, craftsmen have had to find other means of employment; rarely have they passed on their skills to the next generation. It is difficult today to find garden craftsmen who can build rock walls and waterfalls, or lay flagstone and brick.

- Horticulturists and gardeners have been treated similarly. The International Style considered plants an unnecessary aristocratic tradition. Only a few species were used, usually in straight-lines, with low maintenance the dominant focus. Horticulturists have been considered the least important teachers in the landscape architecture schools. Classes about plants are isolated from the design classes; therefore, we find few people who combine a knowledge and artistic sense of plants with the ability to design spaces for them.

- Drawing and history have been de-emphasized in the design schools for nearly two generations. This has resulted in buildings and gardens with few unusual or interesting details, a lack of understanding of proportion and scale, and a narrow historical perspective. Students are en-

couraged to emulate the living professionals rather than to look to the past for models of excellence.

- There is not enough collaboration, understanding, and respect for the various skills needed to create a garden or a landscape that will last for generations. The engineer, architect, landscape architect, landscape designer, general contractor, landscape contractor, craftsman, horticulturist, gardener, nurseryman, and supplier are isolated from each other because



ABOVE: The linear pruning of *Pittosporum tenuifolium* gave a feeling of coldness to the entrance of the church. TOP: A variety of perennials and shrubs add a welcoming look to the same area.

they each exist in a professional hierarchy. Building a garden is like making a movie; the talents of many people are needed. Each needs to be treated equally and given fair recognition.

- There is too much emphasis on designing for fashion and on impressing one's own professional peers. Designs are often built for awards rather than for the beauty, needs, and comfort of the users. Gardeners, consultants, artists, and engineers rarely are rewarded or even recognized for their contributions. This is one of the reasons their contribution has been minimal in our landscapes and gardens.

- The designing and building phases of creating a garden are not understood by the groups that control each portion of the landscape industry. The design group is the only one that crosses over the professional hierarchical lines and brings various skills together. Somehow our society has forgotten that the best gardens in the world were built when the designer was intimately involved with the construction, and when the garden was built over many years.

- The schools do not cross hierarchical boundaries to offer multi-disciplinary courses and degrees. There are too few schools for gardeners, landscape contractors, designers, and builders.

In the early 1980s one of the leaders of the design compound, architect Philip Johnson, designed a major building that helped to break the hold the International Style has had on this country. The AT&T building in New York City was designed with a six-story arch over the front door. Following the construction of this building, we have begun to see new architecture in every major city with such classical elements as columns, arches, roofs, moldings, and detailed front doors. The AT&T building announced the beginning of the end of the International Style. But because this is a time of transition for artistic styles and since no style has yet led the way, it is an important historical period for all our arts including the art of garden design. Now is the time for designers to demonstrate the courage of their own convictions by creating new regional and individual designs and not accepting what the compound dictates.

My small company in San Francisco has tried to do just that. An early project was working with the First Church of Christ Scientist, one of the oldest churches in our city. It has a Mediterranean style of architecture with gardens that have never

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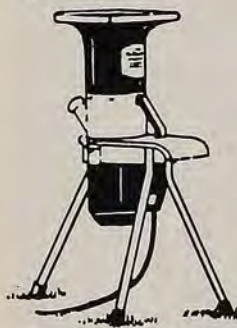
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THE DESIGN PAGE

reflected the style of the building. For example, a *Pittosporum tenuifolium* hedge, pruned to three feet, was planted on both sides of the front entry and had remained there for over seventy years until an automobile accident removed half of it. The church's board of trustees recognized that the hedge brought the entry a feeling of coldness, which contributed to the perception of an unfriendly and uncaring church.

My company suggested that the hedge might be replaced by a variety of perennials and shrubs including euphorbia (*Euphorbia characias* var. *wulfenii*), dracaena palm (*Dracaena indivisa*), Italian cypress (*Cupressus sempervirens*), various *Phormium* cultivars, princess flower (*Tibouchina urvilleana*), sweet olive (*Osmanthus fragrans*), *Bougainvillea* 'Rosenka' as a groundcover, westringia (*Westringia rosmariniformis*), *Artemisia* 'Powis Castle', *Sedum* 'Autumn Joy', torch lily (*Kniphofia uvaria*), *Chrysanthemum* 'Silver Lace', Iceland poppies (*Papaver nudicaule*), and artichokes for texture. This change was instituted, but when the plants began to grow, the garden was difficult for many members to accept because it was a new visual experience for them. Flowers in the city's public spaces had meant annuals that were completely removed two or three times a year, retaining the same design; this, however, was the city's first perennial bed located on a busy corner where thousands of people could view it daily. It took several years for the church members to appreciate the perennials with their daily changes and the bold forms and colors that complement the Mediterranean architectural style.

It is far easier to work on residential gardens to bring about these visual changes, because one is working with the attitudes of only one or two people. But even two differing thoughts can bring challenges; the masculine versus the feminine or the engineer versus the artist must be addressed in design forms and plant choices. Individual differences such as these were never addressed in the International Style.

A number of years ago we remodeled a 1960s garden designed by a landscape architect in the International Style. It was a stark garden with few varieties of plants; it had plastic under gravel so no weeds or groundcover could grow, and angular and linear shapes. The husband was a Nobel Prize winner in biochemistry and the wife was an artist who had been living for over

twenty years with a garden style that was the opposite of her natural inclinations. When they were having their first garden built there was no alternative to the International Style.

Our design created two gardens: one kept the linear lines of the old garden but gave it bolder accent plants, and the other side of the area became a romantic woodland garden focused on a brick patio with stones and rocks mixed in unusual patterns. When this couple has parties it is interesting to observe that the scientists gravitate toward the garden's linear side and the artists drift to the garden's woodland side. Our public spaces should also have a variety of styles to meet peoples' various emotional needs.

The masculine versus the feminine or the engineer versus the artist must be addressed in design forms and plant choices.

The International Style placed concrete walks and patios next to buildings and left no room for foundation plants to soften the linear roof lines and the edges of the buildings. When we first tried to change this, architects and contractors were especially opposed to the idea. They said that the concrete protected the building from termite damage. However, we kept trying to find a client who would listen to our rationale—straight lines make small spaces appear smaller and curved lines make them appear larger. Also, there are many old, historically important buildings that have survived hundreds of years with foundation planting.

When we did find a client who would allow us to remove a concrete walk next to the house, we found severe termite damage in the foundation. The fact is that water seeps through concrete, and there is no way that concrete can waterproof and protect a building. In fact, the concrete had hidden from the owner a problem that he might not have discovered until after it had caused severe damage to his home. We used aluminum flashing to protect the wood siding and foundation from termite and rot damage; then we were able to put in a curved path of stepping stones and showy foundation plants to make the narrow space

appear wider and to utilize the space for walking.

The plants along the path are long-leaf yellowwood pine (*Podocarpus henkelii*), box leaf azara (*Azara microphylla*), Japanese maple (*Acer palmatum*), evergreen pear (*Pyrus kawakamii*), sweet olive (*Osmanthus fragrans*), camellia (*Camellia sasanqua*), heavenly bamboo (*Nandina domestica*), flowering maple (*Abutilon hybridum*), leatherleaf fern (*Aspidium bulbiferum*), mother fern (*Asplenium bulbiferum*), cineraria (*Senecio × hybridus*), alpine geranium (*Erodium chamaedryoides*), baby tears (*Soleirolia soleirolii*), Irish moss (*Sagina subulata*), violets (*Viola odorata* 'Rosina'), wild ginger (*Asarum caudatum*), forget-me-not (*Myosotis* spp.), strawberry geranium (*Saxifraga stolonifera*), and foam flower (*Tiarella cordifolia*). Now it is a pleasure to walk along this path.

Garden and plant lovers for the most part have been isolated from those who subscribe to the International Style, even though the International Style has strongly affected our environment. In one instance, a man poured concrete on his entire garden floor, ending with many thicknesses and textures. When he sold his property, the new owners, thinking that everything was literally "in concrete," resolved the problem by placing a wood deck over it and using planters on the deck. There were no trees, only flowers. Consequently, the space remained unbearably hot, and the token flowers didn't really create a pleasant environment. Until the owners consulted with us, it had never occurred to them that they could remove the concrete. This was done, and a woodland space with a spa and trellis at its edge replaced it.

Six months after this garden had been planted and as it was beginning its first spring, the owner was so inspired that she wrote a poem about her new garden and the miracle of its birth. The International Style has not inspired this kind of expression, because its hard lines have left out nature, a fundamental source of inspiration for poetry, music, and art. There appear to be positive changes on the horizon, but we all need to help wherever the blemishes remain. It will take years to recover from this forty-year famine. May we have more beautiful gardens, and with them more poetry and music at all levels of our society.

—Kathryn Mathewson

Kathryn Mathewson has her own landscape design company in San Francisco, California.

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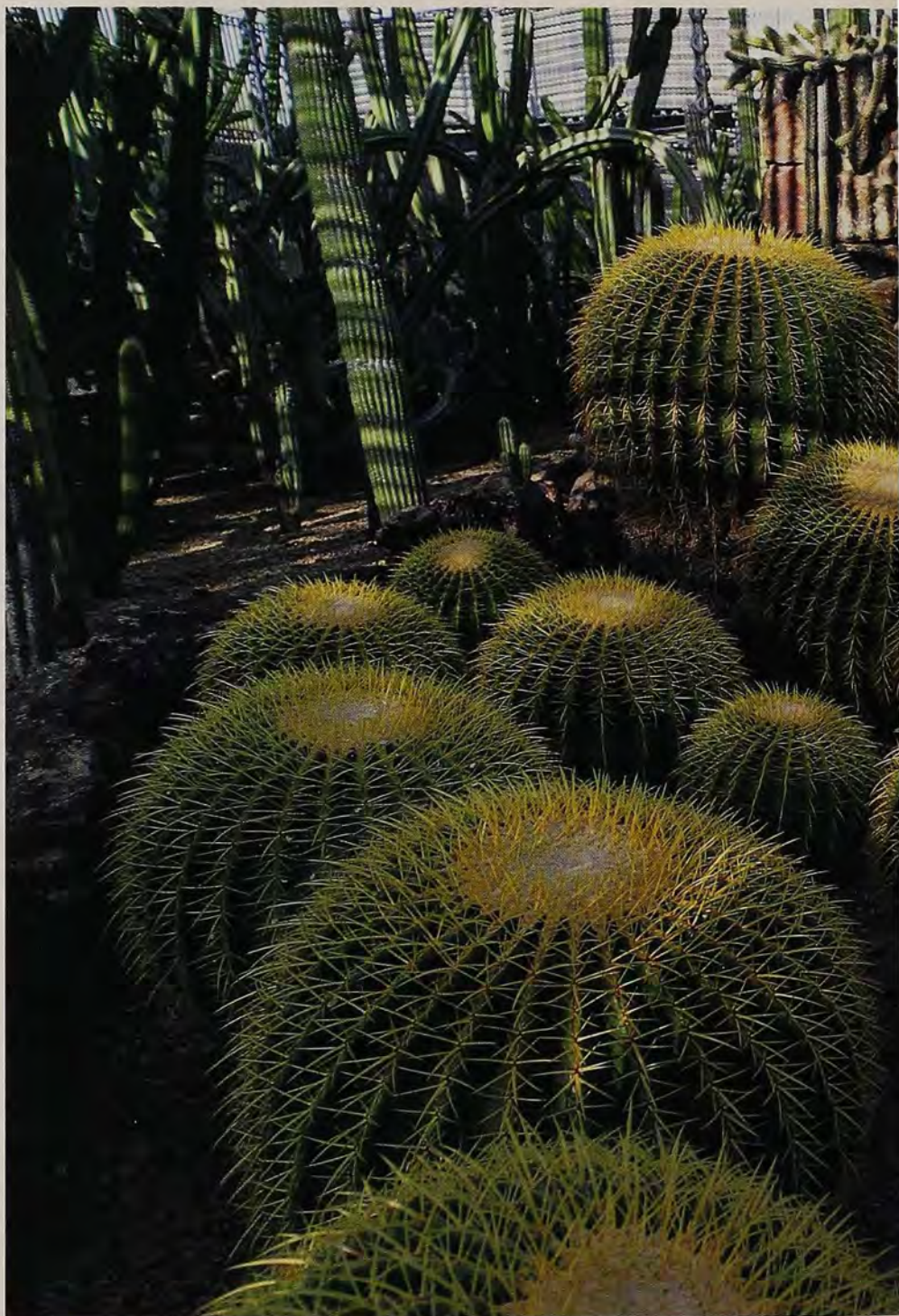
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Arizona's Showcase for Desert Plants

Several miles away from the towering skyscrapers and busy airport runways of central Phoenix is a quiet enclave of tall and stately saguaros, spiked agaves, and prickly, barrel-shaped cacti. This is the Desert Botanical Garden, home to over 10,000 plants representing more than 2,500 different species from all over the world. Founded in 1937 by the Arizona Cactus and Native Flora Society, the garden is the only botanical garden dedicated from its beginning to the study of plant life of the deserts and other arid lands of the world.

The garden is located on 140 acres of low Sonoran Desert where the Superstition Mountains, the Four Peaks, and Camelback Mountain can be seen in the distance. Its mission is to preserve as many desert species as possible from all over the world, for as the earth's population increases and development spreads, more and more desert plants are threatened with extinction.

The most common and best-known cacti found in the garden include the many-spined golden barrel cactus (*Echinocactus grusonii*) from central Mexico, shaped like a large pincushion; the long, slender-armed octopus cactus (*Rathbunia alamosensis*); and the prickly pear (*Opuntia phaeacantha*). Pleated like a skirt, the native fish-hook barrel cacti (*Ferocactus* spp.) expand to absorb water from rainstorms. Some of the largest are organ pipe cactus (*Stenocereus thurberi*), totem pole cactus (*Lophocereus schottii* 'Monstrosus'), cardon (*Pachycereus pringlei*), and the Boojum tree (*Idria columnaris*). The totem pole cactus wards off hungry animals by producing bad-tasting alkaloids in its tissues; northwestern Mexican cardon grows from fifty to sixty-five feet high with a total weight of more than ten tons. One of the most unusual sights is the Boojum tree from Baja, California, and Sonora, Mexico; growing to a height of seventy feet, it resembles a large, upside-down carrot. (Its common name comes from the Lewis Carroll poem "The Hunting of the Snark.")





Photos by Dick George



ABOVE: The 140-acre Desert Botanical Garden is dedicated to the study of arid-region plant life. LEFT: Of the garden's 2,500 species, one of the best known is the golden barrel cactus (*Echinocactus grusonii*).

Many of the cacti and succulents in the garden are not native to the southwest Sonoran Desert. These species must be protected from the harsh direct sun and winter frost of Arizona, so the cactus and succulent houses provide shade and the cooler temperatures normally found south of the equator or in higher elevations. The Succulent Lath House contains plants from the highlands of Mexico, the deserts of North and South Africa, the Canary Islands, and Madagascar. Several species of *Lithops*, called stone faces or living stones, look like worn desert pebbles. They survive two-year droughts by withdrawing under the soil and sands. The Succulent Lath House also contains *Pereskia*, con-

sidered to be the most primitive of cacti. This genus has true leaves that drop during northern winters—a unique feature in Cactaceae.

Some cacti can survive only under a larger “nurse” plant, which provides shade. In the garden, a lath shade protects the *Mammillarias* spp., small pincushion cacti from the southwestern United States and Mexico. Resembling clumps of cottonballs, the cacti bear crowns of white, yellow, or pink flowers followed by red fruits shaped like small red peppers. Another species, *Mammillaria heyderi*, looks like interwoven clusters of stars. Its neighbor, *Mammillaria compressa*, shoots out long whisker-like stems from its center.

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GARDENS TO VISIT

The Arizona Native Plant Trail is a showcase of desert plants that were used by American Indians. The Indians relied on the plants for their domestic, ceremonial, and aesthetic needs; for example, mesquite was used for pottery paint, basket dye, hair conditioner, adhesive, and medicinal purposes. Sonoran Desert tribes, the Pima and the Papago, enjoyed the fruit of the saguaro and organ pipe cactus, and the harvest of the fruit in late June and July marked the beginning of their New Year. The Indians also raised species of corn and gourds in the desert that are unlike today's cultivars.

Recently the garden has added plants from the arid central and western portions of Australia. Among them are species of *Acacia*, *Cassia*, and *Eucalyptus*. In order to establish them initially, the garden needed to supply the eucalyptus trees with additional iron, fertilizer, and water.

The John H. Rhuart Demonstration Garden provides ideas and techniques for the home gardener, such as how to raise crops in a desert environment. Spearmint, chives, rosemary, peppermint, parsley, beans, carrots, onion, lettuce, and peas are being raised under the hot desert sun. These are some of the most drought-tolerant plants and vegetables. Certain cultivars adapted readily; however, others needed quite a bit of supplemental watering. In the desert environment, some cultivars and species need to be planted at specific times of the year in order to avoid the intense heat.

From late March until early May, most of the flowering cacti and trees are in bloom. Since the garden has cacti from all over the world, bloom times vary so visitors will always see something in flower. However, a cactus flower lasts only one day.

Lavender flowers appear in May on the ironwood tree (*Olneya tesota*), whose heavy wood is used for carvings. Velvet mesquite (*Prosopis juliflora* var. *velutina*) produces long clusters of honey-filled flowers. Yellow brittlebush (*Encelia farinosa*) blossoms from November to May. Showy blooms such as those of *Aloe zanzibanca* from East Africa; *Ruellia peninsularia*, a sweet-smelling purple-flowering bush; and *Bulbine frutescens* from Cape Province, South Africa, resembling a purple orchid, delight spring visitors.

Some cacti have adapted to bloom only at night, which reduces competition from day-time pollinators. Most blooms are pale in order to be seen in the dark; organ pipe cactus (*Stenocereus thurberi*) exhibits pur-

ple-fading-to-pink flowers with white centers, and the snake-like creeping devil or caterpillar cactus (*Stenocereus eruca*) displays pink flowers with white centers. In early June, Arizona queen of the night (*Peniocereus greggii*) makes up for its year-long unattractiveness and produces large, white, trumpet-shaped flowers. After dark, moths pollinate yuccas, and bats, attracted by the smell, pollinate saguaros.

During the daytime several species of *Aloe* draw hundreds of bees and hummingbirds. The red, orange, yellow, and white-flowered aloes are native to South Africa, Madagascar, Arabia, Ethiopia, and Somalia.

The Desert Botanical Garden is a ten-minute drive from central Phoenix and is located at Papago Park between McDowell Road and Van Buren Street at the end of 64th Street. It is open every day of the year from 9 a.m. to sunset; during the months of July and August it is open from 7 a.m. to sunset. Admission is charged, but children under five are free. For information write Desert Botanical Garden, 1201 N. Galvin Parkway, Phoenix, Arizona 85008, or call (602) 941-1225.

The garden offers an active special events program—walking tours, workshops and classes, field trips, and children's activities. Webster Auditorium, built in 1939, houses classes, lectures, and meetings, and is also a showcase for exhibits of life in the desert and plant adaptations and uses. The Richter Library is home to 4,200 botanical books, periodicals, and prints on floristics, ecology, and horticulture in arid lands. The Earle Herbarium contains 25,000 botanical specimens.

As only twenty-five acres of the garden are heavily cultivated, there is plenty of room to grow. The master plan for the remaining 115 acres calls for an education center, a visitor's center, additional parking, and a convention center for meetings. A large portion will be left untouched, however, and kept as a preserve for the jays, jackrabbits, squirrels, and desert tortoises who share the garden acreage with outstanding desert plants from around the world.

—Debra Toth

Debra Toth is a writer and gardener who lives in East Farmingdale, New York.

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For Year-round Color, Choose PIERIS

BY GEORGE PHAIR

Emily Brown's article on *Pieris* in the spring 1973 issue of *American Horticulturist* afflicted me with the *Pieris* "bug," and I remain under its influence to this day. It seems safe to say that of all broadleaf evergreens, only the genus *Rhododendron* equals *Pieris* in diversity of growth habit, size and shape of leaf, and flowering characteristics. The crowning glory of the genus, however, is the wide color range and brilliance shown by the new growth of its Asiatic species. In that respect, the genus is in a class by itself.

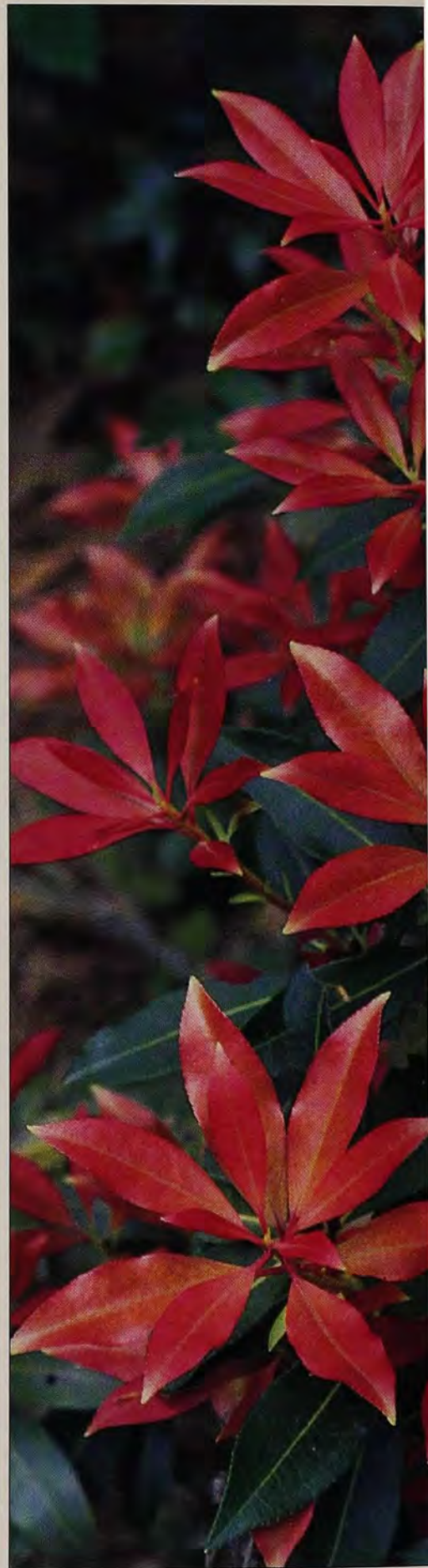
Members of the genus *Pieris* are among the earliest of shrubs to flower. The buds open to form lily of the valley-like blossoms in shades of white, cream, pink, or red, depending upon the cultivar, throughout the late winter and early spring. In mid-spring, the colorful new growth puts in its appearance in shades of red, copper, or bright green and the display lingers, though fading in intensity, until early to mid-summer. In late summer new buds ranging in color from bright green to deep maroon, depending upon the cultivar, festoon the shrubs in lacy panicles, and these continue to provide color in fall and winter. The genus *Pieris* gives pleasure the year around.

Botanist Walter Judd, author of "Tax-

onomic Revision of *Pieris*" in the April 1982 issue of the *Journal of the Arnold Arboretum*, was able to subdivide this widely diverse genus into seven distinct species by statistically analyzing intergradational characteristics. Those seven species are *Pieris japonica*, *P. formosa*, *P. floribunda*, *P. phillyreifolia*, *P. cubensis*, *P. swinhoei*, and *P. nana* (formerly *Arcterica nana*). All are native in warm temperate to subtropical climes except *P. nana*, which is endemic to Kamchatka and northern Japan. *P. japonica*, *P. formosa*, *P. swinhoei*, and *P. nana* are Asiatic species. *P. floribunda* and *P. phillyreifolia* are native to the southwestern United States. *P. cubensis* is native to Cuba. All are under cultivation with the exception of *P. swinhoei* and *P. cubensis* and are available from nurseries specializing in the broadleaf evergreens.

The horticultural trade offers several hybrids of *P. floribunda*, *P. japonica*, and *P. formosa*. Cultivars include 'Forest Flame' (*P. formosa* var. *forrestii* 'Wakehurst' × *P. japonica*) and 'Brouwer's Beauty' (*P. japonica* × *P. floribunda*), which are among

'Forest Flame' has brilliant red new growth and creamy white panicles that resemble lily-of-the-valley flowers.





Pamela Harper



Pamela Harper

TOP: An American native, *Pieris floribunda* is an excellent evergreen shrub with erect panicles of white flowers.

OPPOSITE, TOP: *Pieris japonica* 'Valley Valentine' creates a striking effect by contrasting deep red and white flowers against the dark green foliage.

OPPOSITE, BELOW: 'Dorothy Wycoff' has maroon buds, peduncles, and panicles which form in the fall and provide color throughout the winter. Shown here are the abundant panicles of pink flowers that bloom in the spring.

the more spectacular cultivars in the genus. Horticultural selection in the species *formosa*, mainly by the British, has been aimed at extending the color range of the striking new growth. Horticultural selection in the species *japonica*, mainly by American growers, has been directed primarily at extending the color range of the flowers and to a lesser extent the color range of the new growth, which tends to be more subdued than in *P. formosa*.

Pieris japonica is a very variable plant and though its variants are an asset to garden design, they shouldn't be considered different species. Judd considers *P. taiwanensis* and *P. koidzumiana* to be the same as *P. japonica* because there is no discrete gap in the morphological pattern of variation. Another variant of *P. japonica* is *yakusimana* (not mentioned by Judd in his 1982 article "Taxonomic Revision of *Pieris*"), valued for its small, low growing form, white flowers, and red flower buds.

Pieris floribunda is an erect shrub of intermediate stature bearing erect panicles of white flowers. With dark green leaves that are less lustrous than in the *P. japonica* cultivars, and lacking distinctive coloration

of the new growth or of the panicles in winter, its garden value lies mainly in its flowers. Although an American native, it is more temperamental than *P. japonica* and its cultivars. Unless the soil drainage is particularly good, it may become spindly with age.

The only prostrate pieris is *P. nana* (formerly *Arcterica nana*), which bears small leaves and small white flowers. It is a natural for the shady rockery. (Do not confuse *P. nana* with the small-leaved but erect dwarf, *P. japonica* 'Nana' sold by nurseries specializing in rock garden plants).

P. phillyreifolia, a strong-growing woody vine in the deep South, must be treated as a dwarf die-back shrub in the mid-Atlantic states. Sending up new shoots from horizontal rhizomes in an unpredictable pattern each spring, it needs more space in southern climates than its small size in the North would seem to warrant. Rarely reaching flowering size before winter die-back, it is an interesting curiosity.

Flowering Characteristics

In the genus *Pieris* the flowers are borne on racemes that branch from a central stem, or peduncle, to form individual panicles.

The panicles are erect in our native *P. floribunda* and erect to horizontal in 'Purity' and in 'Brouwer's Beauty'. Most other members of the genus carry pendant panicles in which the drooping racemes may either diverge outwardly or fall in sub-parallel chains. The flowers of *P. formosa* and its cultivars tend to be broader and up to one and a half times as long as in *P. japonica* and its cultivars. Depending upon the cultivar, the color of the flowers of *P. japonica* range from pure white through cream and pink to red.

A particularly effective white form is the tall-growing cultivar *P. japonica* 'White Cascade', in which a panoply of flowers arranged in chains literally cascades down all sides of the shrub. In the cultivar 'Crystal', the pure white blossoms stand out against the very dark green foliage—the darkest of all pieris. The low-to-intermediate-height of *P. japonica* 'Purity' is notable for the profusion of its white flowers displayed on erect to semi-erect panicles. In 'Grayswood', a spreading shrub of intermediate height, the white flowers hang in long graceful chains. 'Compacta' is another heavily flowering white form. Do not be misled by its name, however; it can grow as tall as *P. japonica*, with the difference that it will be as wide as it is tall. The white-flowering cultivar 'Bonsai', Alpenglow strain, is a scaled-down version of the species but grows half as tall. *P. japonica* 'Crispa', an erect form of intermediate height, also white flowering, possesses the year-round virtue of having crinkled, glossy, bright green leaves that reflect a variable play of light. *P. japonica* 'Iseli Cream', as its name implies, has off-white flowers.

Among the popular pink-flowered *P. japonica* cultivars are the deep pink 'Fleming', the medium pink 'Dorothy Wycoff' and 'Coleman', and the light pink 'Valley Rose'. The flowers of 'Dorothy Wycoff' open pink, but soon fade to white in the Washington-Baltimore region. According to Dr. Donald Egolf of the U.S. National Arboretum, the pink color is stable in the Philadelphia region less than 100 miles to the north. 'Fleming' and 'Dorothy Wycoff' are tall-growing and relatively erect. 'Coleman' and 'Valley Rose' are of intermediate height and relatively more spreading; 'Valley Rose' is particularly floriferous.

Two recent introductions are *P. japonica* cultivars bearing red flowers. The flowers of 'Valley Valentine', an intermediate to tall shrub, are deep red; those of 'Sho-

gun' (also known as 'Shojo') are said to be "nearly a brick red."

Perhaps the most striking of all the flowering pieris is the hybrid 'Brouwer's Beauty'



Joanne Pavia



Pamela Harper

(*P. japonica* × *P. floribunda*), a natural cross obtained by Brouwer's Nursery in Connecticut, and 'Jermyns' a cultivar of the tender species *P. formosa*, selected by Hillier's Nursery in England. In these cultivars not only the peduncles and pedicels of the panicles but also the sepals are a deep red, thereby providing a particularly marked contrast with the brilliant white of the flowers. The color contrast is further enhanced in 'Jermyns' by the new growth, which shares the deep red color of the peduncles, pedicels, and sepals of the panicles. 'Jermyns' is generally considered to

lack hardiness throughout most of the United States but could be worth trying in protected microclimates in the warmer regions. 'Brouwer's Beauty' appears to be quite hardy, but like its male parent *P. floribunda* it seems to be more sensitive to drainage than its seed parent, *P. japonica*. It highlights its flowers by holding its semi-erect to erect panicles above the foliage. 'Brouwer's Beauty' is the only *Pieris* cultivar that has been patented. Other *P. japonica* × *P. floribunda* crosses are becoming available to the wholesale market, but just how well they compare with 'Brouwer's Beauty' is not known.

Color of the Panicles in Winter

Buds form in mid-July to mid-September and add color and textural interest to the winter landscape. The color of the buds, peduncles, and pedicels that make up the panicles is deepest—actually dark maroon—in two pink-flowered cultivars, 'Dorothy Wycoff' and 'Coleman'. Increasing the color effect in 'Dorothy Wycoff', and to a lesser extent in 'Coleman', are splashes of maroon that develop in the winter on the older foliage on the sunnier sides of the plant. In most other pink-flowered types, such as 'Fleming', 'Daisen', 'Christmas Cheer', and 'Valley Rose', the winter bud color is mainly light green and the supporting peduncles and pedicels are medium pink.

In most white-flowered cultivars the winter buds are light green and are supported on light pink to light green peduncles and pedicels. Two exceptions are 'Grayswood' and 'Brouwer's Beauty'. In 'Grayswood', the light green color of the winter buds contrasts with the deep pink of the peduncles and pedicels of the panicles, and the pink coloration extends to the non-woody, leaf-bearing branches, making the plant almost as noteworthy in the winter as when in full bloom. In 'Brouwer's Beauty', the light green buds are supported on peduncles and pedicels of a pleasing shade of red.

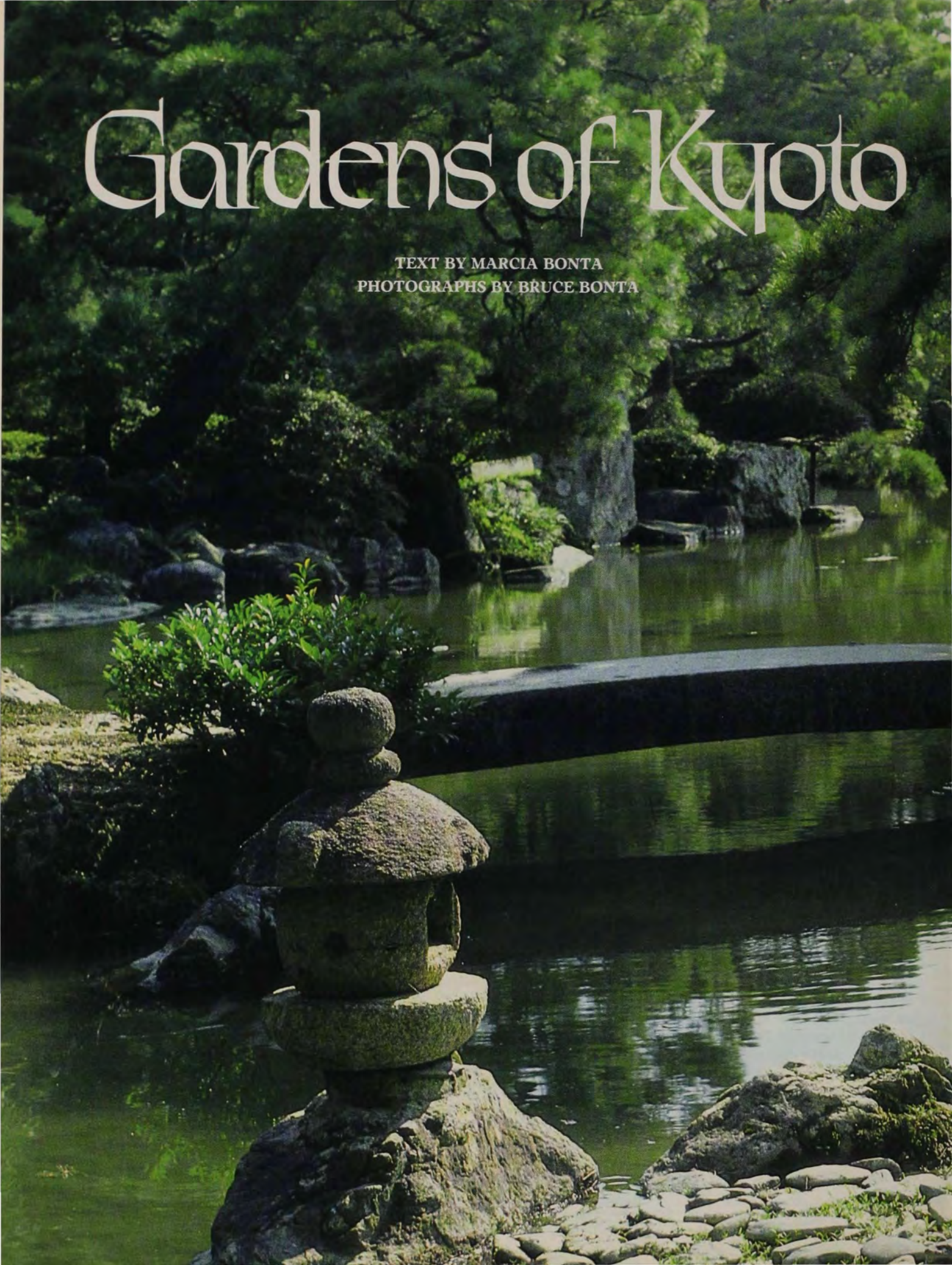
Color of the New Growth

The new growth color in *P. japonica* and in *P. formosa* is an attractive medium copper to light copper. That color is retained in most *japonica* cultivars, but in some it shades towards red, dark copper, or light green. The truest reds in *japonica* are found in the cultivars 'Scarlet O'Hara', 'Mountain Fire', 'Red Mill', and 'Bert Chandler'. The red of 'Scarlet O'Hara' is a medium

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Gardens of Kyoto

TEXT BY MARCIA BONTA
PHOTOGRAPHS BY BRUCE BONTA





Byodo-in, Daisen-in, and Katsura reflect Japan's cultural history.

Kyoto, renowned for its gardens and temples, shimmered in the heat and humidity of mid-August, and the air reverberated to the shrill calls of countless cicadas. As my husband Bruce and I, accompanied by our son David, explored a succession of gardens, we were alternately subjected to relentless sunlight or cheered by the cooling presence of water, rocks, and trees—the three central components of Japanese garden design.

David, who had spent a year in the Kyoto area, had chosen to show us three of his favorite temple and palace complexes. Because of their religious and architectural importance, such buildings are always set in outstanding gardens whose designs reflect the Buddhist beliefs that were prevalent when the gardens were constructed.

That is how, when visiting David's favorite Buddhist temple in the grand Phoenix Hall of the Byodo-in, we also saw one of the few remaining gardens of the ancient Heian period. Built originally in the eleventh century as a villa for prime minister Fujiwara no Michinaga in the city of Uji near present day Kyoto, his son Fujiwara no Yorimichi, the chief advisor to the emperor, remodeled and converted it into a

Buddhist temple in 1052.

At that time, the Jodo or Pure Land Sect of Buddhism was being preached by its founder, Honen. He taught that the souls of believers who asked for compassion from Amida Buddha would live forever in the Pure Land at the western end of the Buddhist universe—a place of beautiful pavilions overlooking ponds filled with lotus blossoms, where the blessed souls walked over bridges into paradise. Heian gardens were an attempt to imitate this Buddhist paradise and the large lotus pond at the Byodo-in still exists, reflecting in its waters a statue of Amida Buddha sitting in the Phoenix Hall surrounded by fifty-two attendants (called "Boddhisatva on clouds"), dancing and playing musical instruments.

The Heian period was one of traditional garden design in which the Japanese used the best natural features of a site and made the distant scenery a part of the garden's composition. Located on the Uji River, the Byodo-in also faces a steep mountain vista. Visitors can sit on the steps of the Phoenix Hall and view the distant scene before following the path around the water, stopping along the way to feed the foot-long, brightly-colored carp, and finally resting on benches that are situated for viewing the Amida Buddha from a single perspec-

tive, as if the statue were a painting rather than sculpture.

A path also leads up a hillside to the open belfry, rebuilt after a fire in 1336 during a war between two powerful families. That war destroyed most of the garden and buildings, leaving only the Phoenix Hall and the Kannon Hall, dedicated to Kannon, the Goddess of Mercy.

The Muromachi period, shortly before the fifteenth century, was a period of extreme instability when the feuding nobility was being replaced by the rising military class, or samurai. Zen Buddhism, which stressed simplicity, individual discipline, and silent meditation appealed to the warrior ethic. Zen temple gardens began to rely more on a scaled-down representation of a vista rather than the real thing. Stones, pebbles, and sand became symbolic of the actual waterfalls, streams, lakes, islands, and mountain views that had been in the Heian gardens.

The culmination of the so-called *Kare-sansui* or dry landscape style of Zen gardening was reached in 1509 when Kogaku Sotan, the abbot of the Daitoku-ji temple complex, built a rock garden around the Daisen-in sub-temple that he had chosen for his retirement. Today the Daitoku-ji consists of the administrative headquarters for the Daitoku-ji branch of the Rinzaï school of Zen and twenty-three sub-temples, only a few of which are open to the public. Even so, the large park with its temples and gardens located in the northwestern section of Kyoto is merely a remnant of what existed in the early sixteenth century.

Daisen-in is historically and artistically the most important of the remaining sub-temples—a mecca for Japanese as well as Western tourists. Before we entered the temple garden we removed our shoes and walked in slippered feet along the scrupulously clean wooden corridor that divides the abbot's reception and study building from the gardens which surround it. There are, in reality, three gardens. The first and most famous one is the 100-meter dry landscape garden—an angled space running along two sides of the building and open to the study area, which contains Chinese-style landscape paintings by the Japanese artist Soami.

Many people believe that the garden is



PRECEDING PAGES: One of the sixteen bridges that span the Katsura Imperial Villa lake.
ABOVE: Byodo-in has one of the few remaining gardens of the Heian period.
OPPOSITE: The water motif is symbolized by stones at historically important Daisen-in.

a replica of these paintings with mountain motifs, and that Soami helped Sotan build the garden. Others think it was Sotan's own creation: his Zen name "Kogaku," which he received at the age of twenty-three when he became a Zen master, means "Ancient Mountain." At the same time he was given a Chinese poem about mountains that he may have been trying to recreate in his garden.

Whatever the inspiration, the garden, despite a continual parade of people passing by, has a tranquilizing effect

on anyone who takes the time to discover it. The upper right corner is the focal point—an arrangement of large, upright rocks that represent high mountain peaks. Rising above them are clipped, rounded camellia bushes. Those bushes symbolize Mt. Horai, or the Treasure Mountain, from which tumbles a "waterfall"—an arrestingly beautiful striated rock. At the base of the waterfall, a stream of small stones flows through valleys and down into a river of gravel. That "river" forks at the corner, and its left branch is spanned by a narrow bridge that is open at the base to display a long flat stone, called the dam. The dam separates the mountain scene from the calmer river scene below the bridge. The roofed bridge includes a single wall of half-timber and an arched window, with a bench facing the mountain scene. The open window, viewed from the lower end of the river scene, also provides a more distant view of the "mountains."

Three islets of stones lie in the water to the left of the mountains, two of them planted with a small evergreen tree. The islets with the trees are called Turtle Islet and Baby Turtle Islet. Turtles are one of two central motifs in the garden and are an important symbol to the Japanese because turtles, which seek the bottom of the ocean, represent the depths to which the human spirit can sink. The other islet, to the right of the waterfall, is called Crane Islet, the cranes symbolizing the heights to which the human spirit can soar.

In Sotan's garden the crane and turtle are bound in friendship by the central position of Treasure Mountain. Such unity represents Heaven and Earth, or joy and disappointment—crucial elements in the human experience. The flowing water is a metaphor for a human life: beginning with the birth of the waterfall in the mountains, it gushes in the vigor of youth, then swirls more slowly in dismay at the tragedies of

Continued on page 32



We asked *Pamela Harper*



Patrick D. Harper

how her dream garden would grow...

Gardening is a practical pursuit, mirroring life in its challenges, successes, and disappointments, embodying creative acts and, alas, destructive ones. One wistfully unattainable gardener's dream is of a garden where death need not be dealt to slugs, moles, voles, rabbits—compile your own list. That ideal situation must wait for the Garden of Eden; meantime, I put down slug bait, keep cats, sorrow over dead birds, and apologize as I pull up weeds.

If I could live where I pleased, with only garden-making to consider, where would it be? England? Idyllic it may seem to visiting gardeners and a beckoning haven to

me when I'm removing ticks, fumigating for fleas, and dabbing Caladryl on poison ivy welts. But I remember long, damp, gray-skied winters, followed by summers that were often not much different. New England? While Virginia's ten-month growing season sometimes seems a mite too long, six months is too short. San Francisco has considerable appeal, but what about summer drought? The Pacific Northwest? Slugs, snails, and Seattle make an inseparable threesome. I've lived long enough to learn that in gardens, as in life, no one gets the whole cake. Besides, might not lack of challenge lessen the satisfaction? One cannot appreciate being warm if one has never felt cold, and garden successes gain savor

from earlier disappointments.

How big would my dream garden be? Any garden big enough to hold all the plants and features I want would be far too big for me to manage. An acre would be the best compromise, assuming no serious diminution of health and strength, but it would have to be surrounded by a privacy barrier of woods, fields, or water—safe from development. My acre would be of uneven shape, have sufficient slope to provide different levels, and the soil would be the proverbial rich, deep, slightly acid loam. An old gardener's prayer calls for a shower of rain every night and a shower of manure on Sundays. Failing that, I'd like to garden where rainfall is adequate and reasonably well distributed through the year, and where manure can be had, if not for the asking, at least at an affordable price. I am at heart a muck-and-mystery gardener, turning to chemicals reluctantly.

House and garden should enhance each other, and I do envy those with picturesque settings for their plants: old stone walls, patchwork-paved paths, thatched roofs, and roses 'round the door. Old stone walls harbor mice and chipmunks, craftsmen able to rethatch roofs are few and expensive, and I comfort myself remembering a song about England's stately homes: "The fact that it's mortgaged to the hilt, and frequently needs to be rebuilt, is apt to take the gilt off the gingerbread." So I've planted ivy (*Hedera helix* 'Deltoida') to conceal our ugly red brick walls, and dream of the day when it is dense enough to support white-flowered clematis. As for the roses 'round the door, dream roses don't scratch you or get blackspot, and I do have a few that nearly match the dream. 'The Fairy' and the new 'Bonica' stay healthy though scratchy; 'Lady Banks' (*Rosa banksiae* 'Lutea') with little yellow pompoms and the hardier 'Veilchenblau' with violet-blue ones are both healthy and almost thornless. These grow through tall pines, and with a little help in getting started up the trunks, they take care of themselves.

About lawns I am ambivalent. Nothing sets off flowers like well-tended greensward, but I view lawn care in the same light as housework, which has been well described as "pedaling hard to stay in the same place." My dream garden would have a lawn, but the dream assumes living where a manicured lawn is achievable (which rules out all of the eastern United States) and that someone else would take care of it.

The structure of my own garden will, I fear, always fall short of the dream, but the Versailles school of design—engineering, really—is to me more a nightmare than a dream: so bleak, so unromantic. For me

a garden isn't a garden without plants in abundance. I daydream about plants, not about their setting, imagining ways in which they might be combined and enhanced. Yes, so long as I can have the plants I love in it, my dream garden will always be the one I happen to have at the moment.

"There are other things in life than plants," said a friend's husband, chidingly. "Oh, are there?" she replied, in mock surprise. Alas, there are: laundry, shopping, cleaning, cooking, and for most of us, the need to earn a living. Matching the dream to reality makes me increasingly selective

trast, *Xanthoceras sorbifolium* grows very slowly, but from its beginning as a foot-high sucker from a friend's small tree it has bloomed each year, tipping every branch with a billowy bunch of starry white flowers with copper-colored centers—an overall effect of off-white that blends with all other colors. For the rest of the growing season it earns its place with daintily divided leaves. It used not to be obtainable from nurseries, but now there is at least one mail order source (see Sources, page 33).

Surely the dogwood (*Cornus florida*)



Pamela Harper

ABOVE: *Miscanthus sinensis* 'Variegatus'

in my choice of plants. What I seek is maximum reward for minimum maintenance. For example, Japanese azaleas can be perfect plants for the Southeast, but no longer am I beguiled by catalog pictures of ever larger and lusher flowers. "Is it susceptible to petal blight?" is what I want to know. Late bloomers and those with double flowers are the ones to avoid. Among the mid-season kinds, strap-petaled 'Koromo Shikibu' is the stuff of which dreams are made when tempered with practicality.

Of the hundreds of plants in my garden now, small trees best earn their space. *Acer palmatum* 'Sangokaku' is a pleasure to look at every day of the year, whether displaying the bright red bark of winter, the restful green of summer, or the banana-yellow leaves of fall. The leaves fall all at once and quickly shrivel, making little mess. It grows fast and needs annual pruning, but this takes only a couple of hours. In con-

must be the world's most beautiful small tree. It has everything: form, flower, ornamental fruit, and autumn color. *Cornus kousa* is a close second. Neither demands a lot of attention, but they do account for some of my hose-dragging, showing signs of stress sooner than any of my other trees if several summer weeks go by without rain. Crape myrtles are the opposite, self-sufficient except for a bit of winter pruning to remove suckers and unwanted twiggy growth. *Lagerstroemia fauriei* would be my first choice; the flowers are white and privetlike, not showy like *L. indica*, but the bark of the smooth and shapely trunks is a glowing cinnamon.

There'll be no tree additions in the genus *Prunus*, I've lost so many from borers. But one cherry tree that I would replace if necessary is 'Hally Jolivette', with twiggy branches to the base, a pale pink cloud of blossoms in spring and often bearing a

“I daydream about plants . . . imagining ways in which they might be combined and enhanced.”

second smattering of bloom in fall, each semi-double blossom resembling a ballet-dancer’s skirt.

Shrubs rival small trees in giving so much more than they get. Three genera head my list: the viburnums, the spiraeas, and the barberries. My first choice among viburnums is the double-file, *Viburnum plicatum* var. *tomentosum*, in all its sizes from the comparatively small ‘Watanabe’ and ‘Fujisanense’ (there are variations of this spelling) to the dogwood-sized species itself. I’ve added ‘Pink Beauty’ that was planted as a six-inch, rooted cutting, but, oh, what dreams I have for it! Combined with a rose of darker pink perhaps? Or set in front of a purple-leaved cultivar of *Cotinus coggygria*?

Barberries are prickly but only to discomfort level and not the serious hazard imposed by the hardy orange *Poncirus trifoliata*, which almost poked out one of my eyes. The risk can be lessened by removing the lower branches, but were I starting afresh I would not plant it. One article recommended this as a burglar-proofing device in foundation plantings, but it doesn’t distinguish between friend or foe and it isn’t a burglar who cleans the windows.

But back to the barberries. The little ‘Crimson Pygmy’ (*Berberis thunbergii* ‘Atropurpurea Nana’) is my number one, but my dreams aren’t static and there’s a new version I’m anxious to try called ‘Bagatelle’, said to be more compact. Tough old *B.t.* ‘Atropurpurea’ itself is one I would always want; it is the best thing I know for color scheming, a harmonious companion for any other color. It is common, and inexpensive, and when you grow it you soon discover why: there’s a bit of work to be done weeding out hundreds of seedlings, but they do stay close to the parent plant. *Berberis* × *gladwynensis* is my most promising newcomer. A portion of its glossy evergreen leaves turn bright red in winter, so I’ve put a group of five in front of a ‘Sangokaku’ maple to echo the red of the maple’s winter stems.

Getting *Spiraea douglasii* out of my former garden in England is one of my bad dreams: this rampant colonizer is best left to adorn the wild. Most spiraeas are sterling plants of moderate size, falling into two main groups. Among those in the first group that wreath themselves with white flowers in early spring (good old *Spiraea* × *vanhouttei* is the commonest), I’m fondest of the small *S. trilobata*. Together with *Weigela florida* ‘Variegata’ it makes a dreamy confection of pink and white. The other group includes those listed as *Spiraea japonica* and *S. × bumalda*, with flattened heads of small flowers, usually bright pink. *S. × bumalda* ‘Gold Flame’, my first choice, is a challenge. I could show you any number of inspired combinations in spring, when the golden leaves burnished with copper are dramatic with orange, red, or yellow flowers. Then, for a few weeks it appalls everyone by combining yellow leaves and bright pink flowers. It needs an intermediary before it can be blended into softer combinations of pink, white, blue, and lavender, and I think I’ve found one in *Iris sibirica* ‘Helen Astor’, with white and yellow centers to its violet petals. (‘Gold Flame’s leaves turn greener in summer and don’t then do battle with pink flowers.)



Ann Reilly: PHOTONATS

ABOVE: *Rosa* ‘The Fairy’. RIGHT: *Chamaecyparis pisifera* and *Lonicera sempervirens* ‘Superba’.



“If I know in my heart that my garden will never match the dream, no matter; gardens aren’t for having, gardens are for doing.”

If this spirea does not appeal, there’s *S. japonica* var. *fortunei* (*S. dolchica* in the nurseries) with prettily incised leaves, the more compact *S. × bumalda* ‘Anthony Waterer’, or the small hummocks of *S. japonica* ‘Alpina’, ‘Little Princess’, and such new, yellow-leaved kinds as ‘Golden Princess’—just as delightful, but posing the same problems as ‘Gold Flame’. Then there’s *S. japonica* ‘Shirobana’, which in catalog pictures has flowers of white, pink, and red on the same bush. Of the five I put in, one has white flowers, one deep pink, the others a mixture of light and deep pink, but none has all three colors. All the spiraeas in this group can be cut back as far as you please in spring, so they never need outgrow their space.

Two conifers are the stuff of which labor-saving dreams are made. The first I ever bought was the golden *Chamaecyparis obtusa* ‘Crippsii’, and I planted it in our English garden in 1957. It grows there still, having survived neglectful tenants and three subsequent owners. It is now fifteen feet high and, so far as I know, has received no care and has never given the slightest

trouble. Its golden counterpart in my present garden, *Chamaecyparis pisifera* ‘Aurea’, the gold-thread cypress, can make the same claim to trouble-free beauty. Against this yellow backdrop I envisioned the bright red winter stems of *Cornus alba* ‘Sibirica’, hard-pruned each year to keep it low. I dreamed that dream in summer, when the sun was high in the sky. It didn’t work out because a high hedge to the west cast winter shade too widely (red winter stems must be front-lit to be effective). But now I have another dream inspired by a combination seen in an Oregon garden where bronze-leaved, yellow-flowered *Crococsmia* ‘Sol-fatare’ formed a large drift at the base of a yellow cypress. It was faced down with golden feverfew (*Chrysanthemum parthenium* ‘Aureum’), but I think I’ll substitute the longer-lived golden oregano, *Origanum vulgare* ‘Aureum’—I’ve got a large patch of it needing a home. And perhaps I’ll add a few of the good old double orange daylily, ‘Kwanso’. Dreams, dreams . . .

And so we come to perennials, at present everybody’s dream it seems, but I fear some of those extensive borders will bring dis-

illusion to gardeners in hot summer regions. Maintaining perennials is seldom hard labor, but the little-and-often attention they need must be done when *they* demand it, not when the spirit moves. Does anyone dream of watering, feeding, dead-heading, spraying, and weeding in a temperature of 100° F? Seek, then, the self-sufficient. High on everyone’s list are *Sedum* ‘Autumn Joy’ and rudbeckias of the ‘Goldsturm’ group, and I agree, except that I find ‘Goldsturm’ invasive and prefer ‘Newmannii’ (*Rudbeckia fulgida* var. *speciosa*). The compact form of *Amsonia* called *montana* asks nothing of me save keeping its surroundings free of weeds, and it never looks unkempt. *Artemisia* ‘Powis Castle’ needs hard cutting back in very early spring and then looks naked for awhile, soon to become a cloud of gray that tolerates summer highs of 100° F and winter lows of 15° F without defoliation. *Baptisia perfoliata* intrigues visitors with its little yellow pea-flowers and subsequent round pods quaintly centered on the round, glaucous leaves threaded on arching stems. It resembles eucalyptus, and that’s what some country folk call it. It appears in spring,



Pamela Harper

“One-upmanship plays a part in the dreams of most gardeners. If I’m guilty of delight in growing a few things not commonly seen, I plead that, once proven, they are shared.”

disappears in fall, and gets nothing in between except admiration. *Boltonia* ‘Snowbank’ looks like a white-flowered aster but doesn’t get mildew as much as the asters. The early flowering Shasta daisy ‘May Queen’ increased its marks from five to ten out of ten when I got the real thing instead of the seedlings of the wild ox-eye sold by so many nurseries under this name. “Mums” made up my wedding bouquet, so there’s nostalgia in their distinctive scent. They do so much better in Virginia’s long, warm autumns than in England’s drizzly ones, and each year I add more, choosing late-flowering kinds. Northerners would choose the early ones.

One-upmanship plays a part in the dreams of most gardeners. If I’m guilty of delight in growing a few things not commonly seen, I plead that, once proven, they are shared. A promising newcomer of the moment is a pink-flowered form of *Coreopsis rosea* (name notwithstanding, some forms have white flowers) that much resembles *Coreopsis* ‘Moonbeam’ except in color. Of course my dream includes ‘Moonbeam’ and the bright yellow forms of *C. verticillata* as well. *Coreopsis rosea* needs a bit more time-testing, but *Gaura lindheimeri* is a proven success, flowering all summer, and no bother at all. If plants have their own dreams, then this one dreams of sandy soil, full sun, and a hot climate,

without which it will probably sprawl, and in that case I’ll cut it back by half in spring to keep it more compact. *Lespedeza thunbergii* ‘Albiflora’ was an instant success under the same conditions but needs cutting back twice—to the ground just before new growth commences, reduced again by half when it gets two feet high. The list grows long, so I’ll wind it up with two easy-care perennials for shade: the Lenten rose, *Helleborus orientalis*, and the variegated Solomon’s seal, *Polygonatum odoratum* var. *thunbergii* ‘Variegatum’.

Grasses and ferns keep company with the perennials, adding an ethereal touch. In the shade there are the Japanese painted fern (*Athyrium niponicum* ‘Pictum’) underplanted with snowdrops, the Japanese sword fern (*Dryopteris erythrosora*), and a hybrid of the two which was the gift of a friend. In the sun there are *Pennisetum alopecuroides* and *Miscanthus sinensis* ‘Variegatus’, both attractive for most of the year. Japanese blood grass (*Imperata cylindrica* ‘Red Baron’) is a close runner-up, stunning for half the year. If only blue lyme grass (*Elymus arenarius*) weren’t so invasive it would be high on my list. I had great hopes for gray grass (*Agropyron pubiformis*), but it browned off this summer as does Hel-

ictotrichon sempervirens. Dreams and disappointments—that's gardening—with just enough success to inspire fresh dreams.

Annuals had never been my thing (I'd regarded them in much the same light as raising a baby through the diaper stage then chucking it out and starting again). Matching dreams to reality, I've changed my mind; annuals are indispensable for keeping color going throughout summer. They are needed for plugging temporary gaps, for which I know nothing better than the *Portulaca oleracea* hybrids. The flowers, an inch or more across, come in white, pale pink, a yellow verging on apricot, and sunset shades both subtle and shockingly brilliant. You need only buy one of a kind, then you break off a stem, poke it into the ground, water it once, and off it goes, within a month making a dense mat smothered with flowers. And all from a root needing no more space than a knitting needle, and therefore ideal for overplanting bulbs without disturbing them. There is one shortcoming: the flowers close by early afternoon, staying open longest on overcast days. *Evolvulus glomeratus* 'Blue Daze' is another annual I dote on; it's actually a little shrub, but it cannot stand the slightest frost. The inch-wide flowers are of that bright, clear blue that inspired a poet to write: "blue, blue as if the sky let fall, a piece of its cerulean wall," or something like that. They are abundantly borne on low, wide-spreading mats of small, neat, grayish leaves.

This is not my year for waxing enthusiastic about bulbs, because voles chose my garden for this year's summer symposium. In the future, those most vulnerable will be planted in sunken tubs or crates. What will survive remains to be seen, but two bulbs do seem distasteful to rodents: *Cyclamen hederifolium* and the starflower, *Ipheion uniflorum*.

Not all my dream plants are easy-care. When I came back from a two-week trip this past summer and drove down the driveway, a tree wisteria (*W. sinensis* 'Alba') announced "Look what I did while you were away" as it waved ten-foot tentacles in welcome. All through the hot and humid summer I must spend an hour each week keeping these cut off. Sometimes I wonder if it is worth it, but in spring when it becomes a fragrant white fountain, its willful ways are forgiven. Besides, it makes the perfect cover for early daffodils, so welcome in flower, so tawdry in decay, but by then the wisteria has leafed out to conceal the withering leaves beneath.

If there's to be time for dreaming, such high-maintenance plants must be counterbalanced by others less demanding. Among

vines in this category I value most a form of trumpet honeysuckle, *Lonicera sempervirens* 'Superba'. It is on the front fence near the mailbox, and I nip off the odd, wayward shoot when I go to pick up the mail. A more thorough annual pruning takes an hour or two, done at my convenience sometime during the winter. My reward is a sheet of scarlet bloom in early summer as backdrop for a hot-color border and a smattering of flowers and red fruits through the rest of the year.

"It is better to travel hopefully than to arrive." Wise words. If I know in my heart that my garden will never match the dream, no matter; gardens aren't for *having*, gardens are for *doing*. If I do get to the Garden of Eden, I will never be content just to sit and twang my harp—there'll be new plants to try, new methods to explore, new colors to mix and match. At least, that is my dream.

Pamela Harper, owner of the Harper Horticultural Slide Library, writes and lectures on horticultural topics.

“Dreams and disappointments — that's gardening — with just enough success to inspire fresh dreams.”



LEFT: *Coreopsis rosea*. ABOVE: *Portulaca oleracea* 'Hot Pink'.

Ann Reilly: PHOTONATS

SALVIAS

BY ELISABETH SHELDON



Joanne Pavia

ABOVE: *Salvia viridis* has larger, more showy blossoms compared to other salvias. Prominent green veins appear through the petals, enhancing their boldness and color.

RIGHT: Standing erect on eighteen-inch stems, *Salvia farinacea* 'Victoria' creates a stunning border of intense purple-blue flowers. Victoria has the added bonus of drying to a pale Wedgwood blue, perfect for dried floral arrangements.

Most people picture salvia as the ubiquitous annual from Brazil, *Salvia splendens*, whose shaggy spikes of flaming red, whether lining front walks or marching in circles and squares in parks and suburban gardens, afflicted our eyes much of the summer in all parts of the country. They have been the delight of suburbanites, and plant breeders have produced them tall and short, fat and thin. Now they are available in various colors—white, pink, rose, lilac, and purple—yet the most popular ones still come from the garden centers and supermarkets in flats labeled 'Red Blazer' or 'Early Bonfire'.

But salvia, which means sage, comprises a whole world of plants that wouldn't remind the average observer, even faintly, of members of the red tide that has been loosed on us by *Salvia splendens*. There are such charming plants amongst them that in discussing them the real salvia fan scarcely knows where to begin. Or where to stop.

Salvias are of the Labiatae or Mint family. Many but not all species of Labiatae are aromatic; savory, marjoram, thyme, balm, and the mints are cultivated herbs from this family. The 750 species of the genus *Salvia* include annuals, biennials, perennials, shrubs, and subshrubs, of which some of the leaves are used for flavoring. They come from all over the temperate and tropical regions of the earth and many are native to the Americas. Like other members of their family they have dragon's head blossoms, lipped and hooded; their leaves are opposite; their flowers are in whorls; and their stems are usually square.

All salvias want full sun, or as close to it as possible, and all but one of those

I will mention insist on good drainage. Since many of them have hairy stems and leaves that conserve moisture, they do not suffer badly during droughts, and since most of them come from stony, comparatively barren sites, they do not require rich food.

As to hardy salvias, there are actually very few of them that can be depended on to live through a northern winter. Foremost amongst these is a plant of great garden value whose origin is in such a state of confusion that I have no intention of trying to sort it out. It is a hybrid that is usually sold as *Salvia* × *superba* or *S. nemorosa* (although it may be *S. virgata* var. *nemorosa*), a very fine individual that grows from two to three feet tall and carries its red-violet spikes for many weeks starting in June. These spikes, emerging from a low, woody tuft of pungent, crenulate, leathery leaves, are close-set with wine-red bracts and purple-violet corollas. One problem is that as the flower spikes finish their performance they remain a nice, wine-dregs color that still contributes positively to the garden, making it difficult to force oneself to remove them.

If, however, one courageously cuts off each spike separately at its base, fresh flowers will continue to spring up way into fall. There are several cultivars of this plant for sale, all of them shorter than the original except for 'Blue Queen', which when raised from seed seems to me to be identical to *S.* × *superba* itself. 'East Friesland' ('Ostfriesland') is around sixteen inches, nicely compact, and 'May Night' ('Mainacht') is said by one grower to be twelve to fourteen inches and by another eighteen inches. I have not yet obtained it but would like to as it is described enthusiastically by one and all. Both *Salvia* × *superba* and



the cultivar 'Blue Queen' can be grown easily from seed. The other two are available from nurseries, or you might persuade friends to divide their specimens this spring. Their gardens will be the better for it for *S. × superba*, like so many plants, holds its flower stems up straighter if it is divided fairly regularly.

Aside from the culinary sage, *Salvia officinalis*, there seems to be only one other truly hardy salvia readily available, *S. azurea* var. *grandiflora*, also sold as *S. pitcheri*, an American native found from South Carolina to Texas. In *Taylor's Guide to Perennials* it is said to be suitable for USDA Zone 6,

If you have ever seen the celestial blue blossoms of this salvia you won't wonder why someone would make such an effort to control it.

There is another sage that's reputedly hardy—*Salvia jurisicii* from Yugoslavia. Twelve to eighteen inches tall, depending on what book you are using for reference, and spreading itself wide, its stems carry spikes of upside-down, violet-blue flowers. I don't know why they are upside-down, but they're not the only plant with this habit, as there is even a word for it—resupinate.

Salvia haematodes, (which *Hortus Third* lists as *S. pratensis*, the European meadow clary), is such a fine plant that it is a pity it must be treated as a biennial,



Tovah Martin



Tovah Martin



Pamela Harper

TOP, LEFT: A native of California, *Salvia clevelandii* can be used as a substitute for culinary sage.
 TOP, MIDDLE: Perfect for damp soils, *Salvia uliginosa* has clear blue flowers that last for many weeks.
 TOP, RIGHT: *Salvia haematodes* (syn. *S. pratensis*) creates an airy effect in lavender with its tall, leafless spikes of flowers.
 OPPOSITE: A cultivar of the culinary sage, *Salvia officinalis* 'Purpurescens' can be used as a purple accent in the garden as well as a pungent herb in the kitchen.

but needs protection in winter. Here on the colder edge of Zone 5, it overwinters easily, so I am inclined to think that Taylor is overprudent in this case. This salvia is one I wouldn't be without, although I am far from having solved the problem of keeping it erect—or even of helping it to flop gracefully. The books say to cut it back by half when it's about fifteen inches high, but since it already blooms so late that it is always hit by frost in the midst of its splendor, should one really delay it further by cutting it back? So far, I haven't dared try. I have attempted to stake it and last year grew it through metal hoops, but I can't say it looked at its ease either way. Its long, slender stems just refuse to cooperate, and its small, slim, pointed leaves don't even begin to conceal any part of one's pathetic prosthetic devices. Next year (how often we gardeners say "next year") I'm going to use the hoops again and plant bushy things around the base of the plants.

at least in cold climates. It's one of those salvias that send two-to-three-foot, almost leafless, branched candelabra flower stems up from a basal rosette of large, coarse, wrinkled, hairy leaves. The flowers are of a cloudy pale lavender, highly aromatic and loved by bees. I sometimes like to put these in front of a mass of *Delphinium* 'Bellamosum'. Of course, when the show is over and the salvias and delphiniums must be cut back, you have a problem area, at least until the delphiniums send up new spikes. Special cultivars of *S. haematodes* are in circulation—'Indigo' and 'Midsummer', dark and pale indigo, respectively. I wonder if they come true from seed. I'd hate to buy a plant only to have it disappear during the winter, leaving no young that resembled it.

The frankly biennial *Salvia sclarea*, or clary sage, is very similar to *S. haematodes*; in fact, the only way to tell the seedlings apart is that the clary leaf is somewhat

shorter and rounder. It attains the same height as *S. haematodes* and has the same growth habits but its flowers are less attractive, being whitish and lilac except for *S. sclarea* var. *turkestaniana*, which is a very handsome variety with white and pink flowers. Clary sage is a most useful herb and has long been the source of an aromatic oil that is used medicinally and for flavoring wines and perfume.

The basal rosette of *Salvia argentea* is almost startling as to size and texture. The thick, irregularly-lobed, furry, silver leaves are about a foot long. You should plant it near the front of the border so that these leaves can be seen and appreciated. Many American gardeners cut off the tall, branching stems with their white flowers (grey-white calyx and white hood), but most British gardeners consider the plant statuesque and let the flowers remain. *S. argentea* is one of those exasperating plants that we are told is a perennial but should be treated like a biennial.

Even though it comes from Spain, the Balkans, and Asia Minor, *Salvia officinalis*, our culinary sage, is hardy. It will grow over two feet high and needs trimming back only in spring to remain tidy. The dwarf form, 'Compacta', is also hardy and makes a fine grey border plant. There are other beautiful cultivars—whether hybrids or not I do not know—but the sad fact is none of them is hardy here. *S. officinalis* 'Purpurascens' is deep purple overlaid with grey, 'Icterina' is yellow and grey, but the best to my mind is 'Tricolor', a heady combination of red, pink, cream, grey, and purple. I find it so gorgeous I am willing to pot it and overwinter it in the cold frame or the glassed-in back porch.

Lots of herb gardeners grow pineapple sage, *S. elegans* (syn. *S. rutilans*), although it can't be wintered over out-of-doors north of Zones 9-10. The light green, ovate-pointed, deliciously fragrant leaves are very good in fruit drinks and salads during the summer and it makes an attractive three-to-four-foot branching plant. The maddening thing about it is that its slender, velvety, scarlet flowers don't emerge until just before the first frost when, of course, the whole structure collapses like lettuce under boiling water. Pineapple sage cuttings root readily, however, even in water, especially if you take them in spring or summer.

Salvia clevelandii, from California, is admired by many and is even used as a substitute for *S. officinalis* in cooking. It is admittedly a stunning grey plant, but I personally find its odor most offensive. But

there are two salvias from Mexico that I adore—*S. involucrata* and *S. leucantha*. From small rooted cuttings they form, in one summer, healthy small shrubs. *S. leucantha* has pointed, linear leaves, woolly white on the underside with woolly racemes of white flowers encased in violet-purple calyxes. It is pungent, but pleasantly so. *S. involucrata* has vivid green, toothed, velvety leaves on dark red stems and in inflorescence produces pink knobs which are the bracts surrounding buds that burst forth into large cerise-crimson flowers. I planted one last summer to grow up through a 'New Dawn' rose, which is a most restrained pearly-pink. The explosions of uninhibited Mexican color in its midst were just what that rose needed. The branches

blue flowers. This salvia likes damp soil.

Most years I grow the blazing blue *S. patens*, whose single, two-inch, claw-shaped flowers are a garden treasure. This has been described as a "compact plant," but in my garden it grows two and a half feet long and makes use of its neighbors for support. I have found, though, that if I cut back the long trailing stems after they've finished blooming, the plant bushes out near the ground, sending up shorter and more numerous blossoming stems. This salvia must be lifted before a frost, if you want to hang on to it, and its tuberous roots plunged into a box or bucket of sand and peat. By doing this it can wait for spring in a cool basement if kept slightly moist. Do not plant *S. patens* out until



Joanne Pavia

of *S. involucrata* go to such extravagant lengths that they are inclined to break off next to the main stem, so the support of the rose is helpful. Cuttings can be taken of both these salvias before the weather turns cold and rooted indoors for garden planting in the spring. I don't know whether or not *S. leucantha* will root in water, but *S. involucrata* will.

There is a South American native, *Salvia uliginosa*, that I suppose would flourish year-round in our southern states but in my area must be grown as an annual. It reaches five feet or more and needs support in the form of a fence or shrubs over which it can fling its long sprays of true

you're very sure the frosts have finished or it will not bloom. And if you have thought you were safe and have planted it and frost is predicted, rush out before nightfall and cover it with heavy pots or baskets. (I bring my buckets up to the back porch around the middle of April so that the new shoots that have emerged can have light.)

Another way to have *S. patens* every year is to gather the seeds and plant them in flats indoors every spring. If you get them started early in March your plants will be big enough to set out after cold weather and will bloom for you from mid-summer on into late fall. You must be attentive about gathering the seed in time,

as it disperses itself almost before it is dry. Pinch the little open-mouthed calyces that are left along the stem after the flowers have dropped and quickly pull off the ones that still have seed in them, even if they are still a bit green. You can let them dry in a paper bag before storing them.

The annual mealy-cup sage, *Salvia farinacea*, is seen in gardens now more often than formerly. The old 'Blue Bedder', which is really lavender not blue, grows to a bushy thirty inches and holds its many spikes erect. The newer 'Victoria' is a more intense purple or violet-blue and remains at about eighteen inches. They are both good border plants, harmonizing well with most perennials, and they have the extra virtue of drying to a Wedgwood blue. In winter bouquets, sprays of this salvia are usually taken for lavender.

Another annual, *S. viridis*, until recently *S. horminum*, is a good one to try. It produces racemes of colored bracts that are most interesting, usually in plum-grey colors, but now the catalogs show pictures of these "flowers" in shades of brilliant pink and purple as well as white. They are said to dry well, but I can't testify to that.

People write about *Salvia glutinosa* or Jupiter's beard, describing this hardy three-foot perennial from Europe and Asia as being robust and bushy with a dense and spreading growth and carrying short spikes of pale yellow, lipped flowers. Some gardeners recommend it as useful for rough places, and it is said to have handsome foliage. I wonder why one doesn't see it very often.

The next one I want to try is *S. coccinea*. I saw it at the Wave Hill Center for Environmental Studies in New York in the extensive salvia collection in their herb garden. Since it is bright red, you might wonder why I want it after fulminating against *S. splendens*. But this one is much more subtle, spacing out its small, velvety, scarlet blooms on slender, black, three-foot stems. It also has "aromatic, downy, heart-shaped leaves." There are cultivars of this—"Bicolor" is one in white and pink—but I want the red species. Because it is from a warmer climate, I'll have to grow it as an annual. Maybe—just maybe—it will seed itself around and I can gather the seeds and keep it going in my garden year after year.

Elisabeth Sheldon is working on a book for publication in 1989 which will include this article and others she has written for *American Horticulturist*.

Continued from page 21

life, is stopped abruptly by the dam below the bridge, which symbolizes doubt, and finally flows over the dam into a wider river of calm understanding, where the Treasure Boat of life's experiences resides.

The motif of water continues in the other, less intricate gardens of Daisen-in: the calm central sea with its raked sand, large beautifully proportioned rocks, and the often-imitated Great Sea where the river ends its flow. A wide expanse of white sand carefully raked in long lines paralleling the building contains two, three-foot high, conical heaps of sand in the center with a border of two clipped hedges, one slightly higher than the other, and a line of trees behind. According to one interpretation, this garden symbolizes the life of meditation; the sand heaps are greed and avarice overcome by the ocean of eternity.

To our Western eyes, the Daisen-in garden was unlike any other garden we had ever seen—a garden whose beauty was wholly dependent on the placement of unusual stones. Yet the memory of the stones of Daisen-in will remain long after traditional Western gardens resplendent with flowers and shrubs and wide expanses of lawn have faded from our minds.

The last garden we saw, at the Katsura Imperial Villa built in the Edo period, was also heavily influenced by Zen, but in this case it was the tea ceremony, first practiced and developed by Zen monks, that gave rise to the beautifully landscaped tea gardens. Constructed in the early seventeenth century by Prince Toshito and his son Toshitada, it also embodies the three components of a Japanese garden—trees, stones, and water. Like Heian gardens, it includes the distant landscape in its design, as well as a large lake, winding paths, small hills, and bridges over the water.

Prince Toshito, the younger brother of the emperor Goyozei, was a cultured man interested in literature, art, architecture, gardening, the tea ceremony, and flower arranging and who believed that garden planning was a proper pastime for a gentleman. Although he did most of the planning himself, with some suggestions from others, the garden was actually constructed by hundreds of workmen who dug the two-acre lake and built an island of the surplus soil that is thirty feet high, 200 feet long, and ninety feet wide. The lake, which is spanned by no fewer than six-

teen bridges of differing design, is considered one of the most beautiful in all of Japan. Small, wooded patches were established on the slopes around the lake, and each patch features a different plant. One slope is dominated by cycads (*Cycas revoluta*), another is covered with small-leaved maples. Still others are planted with winter bamboo, cryptomeria, and pine trees.

Stones are important at Katsura. They are arranged in intricate designs to create attractive garden paths. The pavement is particularly known for its precisely cut stones, which are combined with natural stones to create harmonious patterns. Our guide showed us several different garden paths, some no more than well-placed stepping stones, but all pleasing to the eye.

A few small, thatched-roofed pavilions used for the tea ceremony, for study, or for contemplation are carefully situated for optimal lake-viewing. Three of these pavilions were built by Toshito, who died when his son was only ten years old. Toshitada continued his father's work thirteen years later, encouraged by one of his father's wives who told him of Toshito's unfinished plans. Toshitada added lookouts for distant vistas, a fourth tea house, and a small shrine that contains the family's mortuary tablets. But Toshitada's greatest innovation—those diverse, stone paths winding around the gardens and past the buildings—led to a whole new concept of Japanese gardening, the stroll garden.

Tourists are allowed to see Katsura only through advance reservations. David had arranged for us to take an English-language tour that covers all the high points of the garden, including the twenty-three original stone lanterns, each in a different design, and the light stone water basins, also each different. The basins were used for the ritual washing of hands before entering the tea ceremony rooms.

Katsura is an imperial villa, so it has been well cared for and looks exactly as it did over three centuries ago when it was built at the beginning of the Edo period. Because it so perfectly embodies all the elements of a Japanese garden, it was a fitting climax to our brief course in Japanese religion, art, architecture, and gardening—all so interrelated in Japanese culture and history.

Marcia Bonta is a frequent contributor to *American Horticulturist*.

Sources

Softening the Bauhaus Style

These nurseries offer many of the plants used by Mathewson in her garden designs. Canyon Creek Nursery, 3527 Dry Creek Rd., Oroville, CA 95965, \$1.00 for catalog.

Gossler Farm Nursery, 1200 Weaver Rd., Springfield, OR 97477, \$1.00 for catalog.

Russell Graham, 4030 Eagle Crest Rd., N.W., Salem, OR 97304, catalog is \$2.00, refundable upon first order.

Sonoma Horticultural Nursery, 3970 Azalea Ave., Sebastopol, CA 95472, catalog is \$1.50.

A good source for phormiums is Callender Nursery located at 1371 Marian Ave., Chico, CA 95928; (916) 342-4355.

Western Hills Rare Plant Nursery is a large, well-known nursery in California; however, it does not ship plants. Visit them at 16250 Coleman Valley Rd., Occidental, CA 95465; (707) 874-3731.

Arizona's Showcase for Desert Plants

These nurseries specialize in cacti and succulents.

Cactus Gem Nursery, 10092 Mann Dr., Cupertino, CA 95014, publishes a newsletter with price list for \$3.00 a year.

Grigsby Cactus Gardens, 2354 Bella Vista Dr., Vista, CA 92084, catalog is \$2.00 and is delivered with a \$2.00 credit toward first order.

Highland Succulents, Eureka Star Route, Box 133AH, Gallipolis, OH 45631, catalog is \$2.00.

For Year-round Color, Choose Pieris

Cultivars and varieties of *Pieris* are available from these nurseries.

Carroll Gardens, 444 East Main St., Westminster, MD 21157, \$2.00 for catalog. Cummins Garden, 22 Robertsville Rd., Marlboro, NJ 07746, catalog is \$1.00, credited towards first order.

Foxborough Nursery, 3611 Miller Rd., Street, MD 21154, catalog is \$1.00.

Pamela Harper's Dream Garden

Many of the plants described in Pamela Harper's garden are available from the companies listed below.

Busse Gardens, Rt. 2, Box 13, 635 East 7th St., Cokato, MN 55321, send \$2.00 for catalog.

Carroll Gardens, 444 East Main St., Westminster, MD 21157, send \$2.00 for their catalog.

Forestfarm, 990 Tetherow Rd., Williams, OR 97544, catalog is \$2.00.

Wayside Gardens, One Garden Lane, Hodges, SC 29695, catalog is free.

Salvias

The following companies sell salvia plants.

Canyon Creek Nursery, 3527 Dry Creek Rd., Oroville, CA 95965, catalog \$1.00.

Carroll Gardens, 444 East Main St., Westminster, MD 21157, catalog \$2.00.

Crownsville Nursery, P.O. Box 797, Crownsville, MD 21032, catalog \$2.00, refundable upon first order.

Lamb Nurseries, E. 101 Sharp Ave., Spokane, WA 99202, catalog free.

Logee's Greenhouses, 55 North St., Danielson, CT 06239, catalog \$3.00.

Montrose Nursery, P.O. Box 957, Hillsborough, NC 27278, catalog \$1.50.

Sunnybrook Farms, P.O. Box 6, 9448 Mayfield Rd., Chesterland, OH 44026, catalog \$1.00.

Andre Viette Farm & Nursery, Route 1, Box 16, Fishersville, VA 22939, catalog \$2.00.

White Flower Farm, Route 63, Litchfield, CT 06759-0050.

The following companies offer salvia seed. Thompson & Morgan, P.O. Box 1308, Jackson, NJ 08527, catalog free.

J.L. Hudson, Seedsman, P.O. Box 1058, Redwood City, CA, 94064 catalog \$1.00.

The Christmas Cactus

The following nurseries have many cultivars of *Schlumbergera* for sale.

Rainbow Gardens, Dept. AH128, 1444 E. Taylor St., Vista, CA 92084, catalog \$2.00.

Greenlife Gardens, 101 County Line Rd., Griffin, GA 30223, catalog \$2.00.

Correction: On page 30 in the October issue, the photo caption should have said that *Acer tataricum* has samaras that appear from late spring to mid-summer.

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Book Reviews

My Weeds

Sara B. Stein. Illustrations by Ippy Patterson.
Harper & Row, New York. 1988. 229 pages, \$19.95.
AHS member price, \$15.95.

Through the never-ending act of weeding, Sara Stein explores her garden and the plant world in depth. Her tremendous curiosity sends her on botanical adventures where she discovers facts about propagation, anatomy, photosynthesis, and germination as well as evolution and succession. She has grown more "intimate by far with the corded twining of honeysuckle . . . than with clematis that has grown for years beside the kitchen door" and she now has a tremendous respect for weeds as plants in their own right.

Each chapter starts off with one of Stein's personal observations or experiences. Describing wild garlic in the early spring, she notices the aerial bulbs that can reproduce and disseminate 300 more garlic plants per head. She describes them as "slippery little devils that played hide and seek with my fingers" and writes about vegetative propagation and how 300 new clones will establish themselves. As she weeds the garlic plants out of her garden, she continues her discussion on genetic information and how each plant cell contains the necessary coding to produce a new plant. At the end of the chapter she ties this information with plant propagation and survival, thus enabling the reader to understand how and why a plant reproduces itself as it does.

As a result of her frustrations and joys with different weeding tools, she devotes an entire chapter to the different kinds that are on the market today and in her simple but direct manner describes their advantages as well as their disadvantages. Stein acknowledges that "the real work is weeding" and she gives very informative and practical information on how to use the tools, which are best for the job, and where to obtain good tools.

Another chapter begins with her black plastic approach to killing weeds before planting roses. This triggers her curiosity as to why the plastic is effective. How does it kill weeds? How does photosynthesis work? Why do plants need light and carbon dioxide? She effectively ties in the



technical facts on photosynthesis as she looks at a dandelion leaf and puts it into a perspective that the common gardener can understand. In the same manner, her father's compost heap is the catalyst for a discussion on soil, water, nutrients, and microorganisms. All this leads to fascinating revelations about plants, their means for living, surviving, and reproducing. Gardeners who read this book will develop the same respect and appreciation of a plant's complex mechanisms as the author has.

Stein explores the theories of succession when she looks around her town and sees the wild growth of plant material on the forgotten farms and meadows. She delved

into the local history and old photographs and discovered that there were clean meadows years ago, but as people moved away, the weeds took over and trees started to grow. The transition of farm to forest illustrates the theory of succession and makes her realize that her own personal garden is a temporary phase in this cycle, which she keeps in check by weeding.

My Weeds is illustrated by Ippy Patterson with line drawings of weeds as well as garden tools. Stein has included a weed list (in both botanical and common name order) as well as a subject index. It is important to note that this is not a book for procedures on how to eliminate weeds, in fact specific cultural control is barely

touched upon. This book will give the reader an in-depth understanding and respect for weeds as plants in an enjoyable and informative way.

—Peggy Lytton

Peggy Lytton is assistant editor for horticulture for *American Horticulturist*.

Cacti for the Connoisseur: A Guide for Growers and Collectors

John Pilbeam. Timber Press, Portland, Oregon. 1987. 167 pages, \$44.95. AHS member price, \$38.20.

This is another excellent plant book from Timber Press, which has published so many excellent horticultural books.

The author's credentials include being a qualified judge for the British Cactus and Succulent Society and an elected member of the prestigious International Organization for Succulent Plant Study. Although Pilbeam's principal objective in writing the book is to provide information for the enthusiast who wants to know the choicest cacti to grow, it also provides excellent information on cactus culture and classification that will be of value to anyone with an interest in growing cacti.

Pilbeam begins his book with a short but well presented section on general culture which, however, could have been better had it included some information on light requirements. The author cautions that once the initiate graduates to the more choice cacti he will find that general culture information will have to be more finely tuned. This is good advice. These choice cacti are what the author refers to as "Aristocacti." The Aristocacti are those that come from the harsher environments and usually present more difficult cultural problems. They won't tolerate standard care that the more common cacti can endure.

There is a brief section on classification and another on distribution and morphology before the author launches into the main purpose of the book, a commentary on the genera. And an excellent commentary it is. Beginning alphabetically with *Acanthocalycium* and concluding with *Zygocactus* (now called *Schlumbergera*),

Pilbeam describes each of the genera briefly but extremely well, and includes cultural notes where appropriate. The named species are listed for each of the genera. Of paramount value to the collector is the list of species recommended for collection and the connoisseur's choice (Aristocacti) for each genus. As Pilbeam observes, it is those most difficult to grow—the Aristocacti—that most often take home the prizes at the cactus shows.

With 160 color photographs of these handsome plants and many more pictures in black and white, *Cacti for the Connoisseur* will not only be thoroughly satisfying to the advanced cactus collector, but it will be a valuable source of information and inspiration for those just becoming acquainted with the cacti.

—Anthony J. Halterlein

Anthony J. Halterlein is curator of River Farm, the headquarters of the American Horticultural Society.

Book Order Form

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Pronunciation Guide

- Abutilon hybridum*
ah-BEW-tih-lon HY-brid-um
- Acacia* ah-KAY-see-ah
- Acer palmatum* AY-ser pal-MAY-tum
- Agropyron pubiformus*
ag-ro-PI-ron pu-be-FORM-us
- Aloe zanzibanza*
AL-oh zan-see-BANK-a
- Amsonia* am-SO-nee-ah
- Arctericia nana*
ark-TEAR-rick-ka NA-nah
- Artemisia* ar-tay-MIS-ee-a
- Asarum caudatum*
ass-AIR-um caw-DAY-tum
- Aspidium capense*
az-PIH-dee-um kah-PENZ
- Asplenium bulbiferum*
a-SPLAY-nee-um bul-BI-fe-rum
- Athyrium goeringianum*
ah-THIGH-ree-um gair-rinj-ee-AY-num
- Azara microphylla*
a-ZAH-ra my-crow-FILL-ah
- Baptisia perfoliata*
bap-TIS-ee-a per-fol-ee-AY-tah
- B. x gladywensis*
BER-ber-is glad-win-EN-sis
- Berberis thunbergii*
BER-ber-is thun-BERGE-ee-eye
- Boltonia* bowl-TONE-ee-ah
- Bougainvillea* boo-gan-VIL-lee-a
- Bulbine prutescens*
bul-BEE-nay proo-TESS-sens
- Camellia sasanqua*
kah-MEAL-yah sah-SANK-quah
- Cassia* KASS-ee-ah
- Chamaecyparis obtusa*
kam-ee-SIP-er-us ob-TOO-sah
- C. pisifera* C. pih-SIFF-er-ah
- Chrysanthemum parthenium*
kris-AN-thah-mum par-THEN-ee-um
- Coreopsis rosea*
core-ee-OP-sis ROSE-ee-ah
- C. verticillata* C. ver-tiss-ill-AY-tah
- Cornus alba* KOR-nus AL-bah
- C. florida* C. FLOOR-ih-da
- C. kousa* C. KOO-sah
- Cotinus coggygia*
koe-TY-nus ko-JY-gree-ah
- Crocoshmia* kro-KOS-mee-ah
- Cryptomeria* krip-toe-MEER-ee-ah
- Cupressus sempervirens*
kew-PRESS-us sem-per-VIE-renz
- Cycas revoluta*
SY-kus rev-oh-LUTE-ah
- Cyclamen hederifolium*
SYKE-lah-men head-er-i-FOE-lee-um
- Dracaena indivisa*
drah-SEE-nah in-di-VIE-zah
- Dryopteris erythrosora*
dry-OP-ter-tiss e-rith-ro-SO-ra
- Echinocactus grusonii*
ee-kine-oh-KAK-tus gru-SON-ee-eye
- Elymus arenarius*
E-li-mus a-ray-NAH-ree-us
- Encelia farinosa*
en-CEL-ee-ah far-in-OH-sah
- Erodium chamaedryoides*
air-ROW-dee-um kam-ee-DRY-awds
- Eucalyptus* you-ka-LIP-tuss
- Euphorbia characias*
yew-FOR-bee-ah ka-RA-kee-ahs
- Evolvulus glomeratus*
ee-VOLV-yew-lus gloe-mer-RAT-us
- Ferocactus* fe-ro-KAK-tus
- Gaura lindheimeri*
GAU-rah lind-HEIM-er-eye
- Hedera helix*
HEAD-er-ah HE-licks
- Helictotrichon sempervirens*
he-lik-to-TRI-kon sem-per-VIE-renz
- Helleborus orientalis*
hell-eh-BORE-us or-ee-en-TAY-liss
- Idria columnaris*
ID-ree-a ko-LUM-nair-us
- Imperata cylindrica*
em-pur-A-tah si-LIN-dri-ka
- Ipheion uniflorum*
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- Kniphofia uvaria*
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lah-ger-STRURM-ee-a FAW-ree-eye
- L. indica* L. IN-di-ka
- Lespedeza thunbergii*
les-pe-DEE-za thun-BERGE-ee-eye
- Lithops* LITH-ops
- Lonicera sempervirens*
low-NISS-er-ah sem-per-VIE-renz
- Lophocereus schottii*
lo-fo-SEAR-ee-us SHO-tee-eye
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mam-ill-AIR-ee-ah kom-PRES-a
- M. heyderi* M. HAY-da-ree
- Miscanthus sinensis*
mis-CAN-thuss sin-EN-sis
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oh-PUN-tee-ah fee-ah-KAN-thah
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or-IG-ah-num vul-GAIR-ee
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oz-MAN-thuss FRAY-grenz

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pa-kee-SEAR-ee-us PRING-lay

Papaver nudicaule
PAH-pav-er new-di-CALL-ee

Peniocereus greggii
pen-ee-o-SEAR-ee-us GREG-ee-eye

Pennisetum alopecuroides
pen-iss-SEE-tum al-o-pe-cure-oh-EYE-deez

Pereskia pe-RES-kee-a

Phormium FORM-ee-um

Pieris cubensis
pee-AIR-iss (or PYE-er-iss) koo-BEN-sis

P. floribunda P. flor-i-BUN-da

P. formosa P. for-MOE-sa

P. japonica P. jah-PON-ih-kah

P. koidzumiana
P. koyd-ZOOM-ee-a-na

P. nana P. NA-nah

P. phillyreifolia P. phi-le-re-FOL-ee-a

P. swinhoei P. SWEEN-oh-ay

P. taiwanensis P. tie-wahn-EN-sis

P. yakusimana P. ya-koo-see-MAH-na

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pod-o-KAR-pus HEN-kel-ee-eye

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po-li-go-NAH-tum o-do-RAH-tum

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pon-SIGH-rus try-foe-lee-AY-tah

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por-tew-LACK-ah o-ler-A-see-ah

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pro-SO-pis soo-lee-FLOOR-ah

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Salvia argentea
SAL-vee-uh ar-JEN-tee-uh

S. azurea S. az-YEW-ree-uh

S. clevelandii
S. cleev-LAND-ee-eye

S. coccinea S. kok-SIN-ee-uh

S. elegans S. ELL-eg-anz

S. farinacea S. fa-rin-NAY-see-uh

S. glutinosa S. glew-tin-NOH-suh

S. haematodes S. hee-ma-TOH-deez

S. horminum S. hor-MYE-num

S. involucrata
S. in-vol-yew-KRAY-tuh

S. juriscii S. jur-iss-ISS-ee-eye

S. leucantha S. lew-KANTH-uh

S. nemorosa S. nem-or-ROH-suh

S. officinalis
S. off-iss-in-NAY-liss

S. patens S. PAY-tenz

S. pitcheri S. PIT-cher-eye

S. pratensis S. pray-TEN-siss

S. rutilans S. ROOT-il-anz

S. sclarea S. SCLA-ree-uh

S. splendens S. SPLEN-denz

S. × superba S. soo-PERB-uh

S. uliginosa
S. yew-lij-in-NOH-suh

S. virgata S. ver-JA-tah

S. viridis S. VIHR-id-iss

Saxifraga stolonifera
sacks-ih-FRAJ-ah stow-low-NIH-fer-ah

Schlumbergera bridgesii
schlum-BER-jer-ah bri-jez-ee-eye

S. × buckleyi S. BUK-lee-ee

S. gaertneri S. GAIRT-na-ree

S. russelliana S. russ-ell-ee-A-nah

S. truncata S. trun-KAY-ta

Sedum SEE-dum

Senecio × hybridus
sen-EE-see-oh × HY-brid-us

Soleirolia soleirolii
soe-lie-ROLL-ee-ah soe-lie-ROLL-ee-eye

Spiraea × bumalda
spy-REE-ah bew-MALL-da

S. douglasii S. dug-LAH-see-eye

S. japonica S. jah-PON-ih-kah

S. trilobata S. try-low-BAH-tah

S. × vanhouttei S. × van-HOOT-ee-eye

Stenocereus thurberi
sten-o-SEAR-ee-us THUR-ber-eye

S. erucu S. er-OO-ka

Tiarella cordifolia
tee-ah-RELL-ah core-dih-FOE-lee-ah

Tibouchina urvilleana
ti-boo-CHEE-na ur-vil-ee-AH-na

Viburnum plicatum
vie-BUR-num ply-KAY-tum

Viola odorata vie-OH-lah oh-door-AY-tah

Weigela florida wy-JELL-ah FLOOR-ih-da

Westringia rosmariniformis
west-TRING-gee-ah roz-mah-REEN-ee-form-is

Wisteria sinensis
wis-TEER-ee-ah sin-EN-sis

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The Christmas Cactus

The Christmas cactus stood alone in all its splendor before the parlor's lace-curtained window. A myriad of cerise blossoms cascaded down the pedestal; gnarled multi-trunks upheld a large, bushy crown, signifying longevity. Any plant so old must be touched by magic, or so I thought that winter of 1946. From great-grandmother's Christmas cactus came treasured cuttings, and today my plant rivals the one I saw forty years ago.

Now as then, the beauty of my plant's flower nearly defies description. Pointed buds dangle at pendulous branch-ends; upon opening, blossoms measure an inch wide and three inches long. These showy blooms have two tiers of reflexed petals with pale stamens extending well beyond.

Over a century ago these cactus flowers became popular, and it is not uncommon for a Christmas cactus nurtured in the nineteenth century to survive several generations. Great-grandmother probably never thought about the relatives of her cactus and how they found support and sustenance perched in debris-filled crotches of Brazilian trees. Glossy, crab-jointed, segmented stems fastened end to end made arching branches, so unlike desert cacti that their identity was doubted. Yet, tiny areoles set in notched segments proved its botanical ties to the cactus family, Cactaceae.

The Christmas cactus, *Schlumbergera* × *buckleyi*, was thought to be a species named *Schlumbergera bridgesii*. (An even earlier name for *Schlumbergera bridgesii* was *Zygocactus truncatus* and many older gardening books list the Christmas cactus under *Zygocactus*). In 1964 botanist W. L. Tjaden delved into the ancestry of the old-fashioned Christmas cactus and found it to be a hybrid instead of a species—a cross between *Schlumbergera russelliana* from Rio de Janeiro and *Schlumbergera truncata*. He discovered that the hybrid was created sometime in the 1840s by William Buckley and that is why it now is called *Schlumbergera* × *buckleyi*.

The many hybrids, backcrosses, and cultivars that exist now create confusion for botanists, but *Schlumbergera* × *buckleyi*



Courtesy of Rainbow Gardens

Over a century ago these cactus flowers became popular, and it is not uncommon for a Christmas cactus nurtured in the nineteenth century to survive several generations.

is believed to be the typical Christmas cactus; smooth, inch-long, flat stem segments, slightly notched, suggest its common name—crab cactus or lobster cactus. Another, similar plant is the Thanksgiving cactus or *Schlumbergera truncata*; it has two-inch segments, flat but saw-toothed. Although hybridizers caused confusion by their interbreeding of species, the blossom shape remains similar among the cultivars, whose colors range from red to purple, including an apricot color. (The Easter cactus, once *S. gaertneri*, is transferred to genus *Rhipsalidopsis gaertneri*. Differing

in blossom, “leaf” structure, and culture, it is not included here.)

These cacti are unfairly called temperamental house plants; often “old fashioned” is synonymous with difficult and out-of-date. This is not the plant's fault. If we meet its needs, the plant responds. Then every December thereafter we can take our Christmas cactus for granted.

Considering the Christmas cactus as a small-rooted plant, choose a pot allowing for little growing space around the plant's root ball. Transplant to the next size pot as roots grow. A pot of tight dimensions will help prevent root rot in soggy soil. Make sure the planting container has a drainage hole.

When planting Christmas cactus, remember tropical forests—the cactus roots intertwined through pockets of rich leaf mold. Fill the container with loose, rich, slightly acid potting soil: one part shredded compost, one part clean buckshot gravel, one part packaged potting soil. For acidity add two tablespoons of aluminum sulphate and one teaspoon of superphosphate per gallon of potting soil. This is a good epiphyte mix.

Propagation of jungle cactus is easy. Where its leaf-like stem segments are joined, separate from the parent a short, branched section of the plant. Submerge the bottom half of the detached segment in sand; roots sprout within a week. When roots measure a half inch, plant into a three-inch pot of prepared mix. Place cuttings in shade until growth begins.

Christmas cactus should be grown indoors at 60° to 72° F. Water, keeping the plant's soil moderately moist. It needs bright but not direct sun throughout a northern winter; in summer it grows best in strong light. Direct sun, either indoors or out-of-doors, will burn tender succulent “leaves.”

At each branch tip, bud formation is signaled when autumn begins to cool and day length shortens. Starting late in August, reduce water to almost drought conditions. At this time it is crucial that

ABOVE: A years-old *Schlumbergera* × *buckleyi*. RIGHT: *S.* × *buckleyi* ready for Christmas giving.



More About Schlumbergera

Most people think of a hot, baking sun, dry air, and poor, sandy soil when they think of cacti. But the Christmas cactus prefers the very opposite—indirect sunlight, high, uniform moisture, and rich organic matter. Plants like these are known as epiphytes. Epiphytes grow on other plants (mostly trees) for mechanical support, but they are not parasitic and they do not harm the trees.

What makes the Christmas cactus a true cactus is the list of morphological characteristics that all cacti have. Like the typical desert cactus, the Christmas cactus has reduced leaves, stems with chlorophyll, inferior flowers, berries as fruits, and areoles (small, specialized areas on the stem from which spines and flowers are produced). Because of these, Christmas cactus is a true cactus, but unlike its desert cousin, its typical environment is the tropical rain forest.

These epiphytic growing conditions are applicable to both the Christmas cactus and the Thanksgiving cactus. But many nurseries do not perceive the distinction because both cacti have the same cultural requirements, can be bred to exhibit similar characteristics, and are winter bloomers (sensitive to light and temperature). Botanists, however, see four major differences. The Christmas cactus has scalloped stem margins, an angled ovary, purple anthers, and will bloom closer to Christmas under normal conditions. A Thanksgiving cactus has serrated stem margins, a cylindrical ovary, yellow anthers, and will bloom closer to Thanksgiving under normal conditions. There are so many hybrids and crosses in the genus now that nurseries have solved the problem by marketing both of these plants as “holiday” cacti.

Hybridizers have extended the range of flower color and size. Often a plant will look like a Thanksgiving cactus with its serrated stem margins but will be sold as a “Christmas” cactus because it has been manipulated by specific greenhouse conditions to bloom during Christmas, a commercially profitable time of the year.

Cultivars of the old-fashioned Christmas cactus, *Schlumbergera* × *buckleyi*, include ‘Apricot’, ‘Graeser’s Pink’, ‘Holiday Lites’, ‘Le Vesuv’, ‘Purple Delight’, and ‘Purple Pyramid’. ‘Le Vesuv’ has a reddish-purple color on the outer edges of the petals and an increasingly lighter lavender color towards the center of the blossom. ‘Holiday Lites’ has a tremendous number of purple-red blossoms that resemble small Christmas tree light bulbs. In a totally different color range, ‘Apricot’ sports a soft orange color with a touch of magenta. ‘Graeser’s Pink’ does not have pink flowers as the name indicates but crimson to red flowers, and both ‘Purple Delight’ and ‘Purple Pyramid’ have dark fuchsia blossoms.

—Peggy Lytton
Assistant Editor, *Horticulture*



Courtesy of Rainbow Gardens

Schlumbergera receive no more than twelve hours of light in each twenty-four hours over a six-week period, or buds do not form. In September and October it is important to grow *Schlumbergera* in cool temperatures, 45° to 65° F. This makes the buds appear. When they do, resume regular watering and move to warmer temperatures.

While buds are developing, fertilize weekly using a well-balanced water-soluble plant food. Continue feeding through its winter and spring growth cycle. Do not fertilize during the cactus’ rest period prior to budding.

Due to cross breeding, many sterile hybrids exist, having only a triploid set of chromosomes. Plants with a diploid or tetraploid set of chromosomes can be propagated by seed, but you would have to ask your nurseryman which cultivars are sterile and which aren’t before you try propagating this way.

Homes of yesteryear were perfect for growing the Christmas cactus. Heat from corner stoves left areas nearest windows cooler; lamplight did not brighten the room’s periphery. The aerial roots sprouting between stem segments, originally used for clinging to its native host, absorbed moisture created by cool air. There great-grandmother left her plant, protected year-round from atmospheric extremes.

With some maneuvering, our cactus performs equally well for us. My aged *Schlumbergera* spends each summer on the front porch. There on the floor in its large pot it soaks up late afternoon sun slanting through screens of a northwest exposure. Or, you may grow your plant in the garden, its clay pot sunk to the rim. Shield tender branches from burning midday sun. Then, when low autumn temperatures settle in, take the plant to a bright but cool upstairs room where darkness is uninterrupted by artificial light. Buds that developed outdoors will enlarge and bloom from late October through January, varying with the cultivars. One caution: bud drop may result if diminished light and high temperature occur in the living area where Christmas cactus is brought to be enjoyed for the holiday season. With these few, simple rules the Christmas *Schlumbergera* is a treasure year after year.

—Judith Hillstrom

Judith Hillstrom, Saint Paul, Minnesota, is a writer whose work also has appeared in *Minnesota Horticulturist* and *Better Homes and Gardens*.

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FOR YEAR-ROUND COLOR, CHOOSE PIERIS

Continued from page 17

red somewhat lacking in brilliance; that of 'Mountain Fire' is a striking, deep red; that of 'Red Mill', one of the hardiest of all pieris, is a dark red that ages to mahogany. The new growth in 'Bert Chandler' is colored a vivid but ephemeral medium red that soon goes through a kaleidoscope of changes, becoming salmon pink before passing through the color sequence of bright yellow, to cream, to yellow-green, and finally to a dull green.

The most brilliant red new growth in the genus is found in the somewhat tender *P. formosa* var. *forrestii*, and especially in its cultivar 'Wakehurst'. For optimum performance of these spectacular forms, careful consideration must be given to microclimate. For the less adventurous, a hybrid, 'Forest Flame' (*Pieris formosa* var. *forrestii* 'Wakehurst' × *P. japonica*), has new growth nearly as brilliant as its seed parent, is generally more hardy, and is available in this country. The definitely tender *P. formosa* 'Jermyns', in which the new growth is a remarkable deep wine red, is available only from British sources.

Pieris for Year-round Foliage

Several pieris stand out simply as foliage plants year-round. All are *P. japonica* cultivars. Among these are 'Daisen', earlier known as 'Wada', of intermediate height but as wide, or wider, than it is tall. Its exceptionally luxuriant foliage, made up of bright green leaves that are considerably broader than in the species, forms a high, shapely mound. It flowers lightly in pink. 'Christmas Cheer' is a less luxuriant, smaller version. 'Pygmaea' is an erect, dwarf to low-growing, generally non-flowering cultivar with narrow, almost awl-shaped leaves. Recently a West Coast nursery has offered a form that is said to bear abundant white flowers. The non-flowering 'Bisbee Dwarf' forms a neat cushion, wider than tall, which in the spring exhibits interesting intergradations of dark copper and green. 'Variegata' is low-growing and spreading, with green leaves bordered with pinkish cream fading to cream in the spring. It flowers very lightly in white. A related cultivar, 'White Rim', with wider cream borders on the leaves, has recently been released in England. Also yet to reach these shores is 'Little Heath', an erect but compact dwarf with small leaves bordered and speckled with cream. 'Little Heath Green' is an all-green reverted form reminiscent of 'Bisbee Dwarf', but more erect.



Originally from Australia, 'Bert Chandler' has new growth that changes from salmon pink to bright yellow, to cream, to yellow-green, and finally to green.

Culture—and a Word About Pests

Like many other members of the heath family, pieris is shade-loving; the less direct sunlight the better for the plant. In the warmer regions of the United States as little as a few hours of direct midsummer sunlight can be fatal to such moisture-dependent cultivars as 'Daisen' and 'Bert Chandler'. Other cultivars tend to be more sun-tolerant, but in sites exposed to sustained strong sunlight the foliage may lose its rich, glossy, green color and take on a duller, yellowish cast. In addition, sunlight encourages infestations of the andromeda lace bug, the principal insect enemy of pieris. A site sheltered on the south and west, but with an open view of the northern sky is ideal.

Pieris likes the high acidity and moisture content of humus-rich soils. Most pieris are resistant to the deadly *Phytophthora* fungi. As a result, generous quantities of Canadian peat can be used to build up moisture and acidity in the planting hole, a procedure that would certainly invite fungal attack when planting hybrid rhododendrons in the warmer regions of the country.

In siting the more tender cultivars such as 'Wakehurst', and to a lesser extent 'Forest Flame', consideration of microclimate is essential. That consists mainly of providing shade from the mid-day sun in

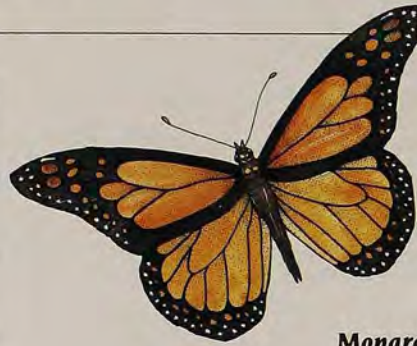
winter, protection from the drying westerly winter winds, and ample mulch. If winter shade can't be provided, however, this spectacular variety can be treated as a die-back shrub by pruning the dead growth back each spring and allowing the plant to rejuvenate itself with new shoots from the base.

Similarly, if any pieris becomes too large for the space allowed, it can be re-formed into a smaller, more shapely, shrub by cutting it back to within twelve to fifteen inches of the soil line and letting the new growth take over. Deadheading of spent flowers is advisable; the seed pods tend to prevent formation of new growth on the same branch.

A final word: *Pieris japonica* has been shown to contain toxin that is repellent to livestock, and, in my experience, to deer as well. For the pieris grower this comes as a welcome fringe benefit in view of the ever-increasing number of gardeners who have seen their prized rhododendrons, azaleas, and hostas nibbled by the lovable Bambis of this world. Bambi's taste for the exotic (read that expensive) in plants is second only to the plantsman's, but pieris, a shrub of so many desirable characteristics, can hold its own.

George Phair, a collector of pieris for fifteen years, has contributed articles to several horticultural journals.

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Monarch

Is there an article from one of this year's magazines you'd like to read again, but can't remember the date? Have you forgotten which issue had the planting instructions that you will need next spring?

American Horticulturist makes it easy for you to retrieve our gardening information by including an index in each December issue. So if the butterflies on this page stir your memory, why not look up the article in our June issue, page 18? Both text and illustrations were by Peter Loewer of Cochection Center, New York, a frequent contributor to *American Horticulturist*.

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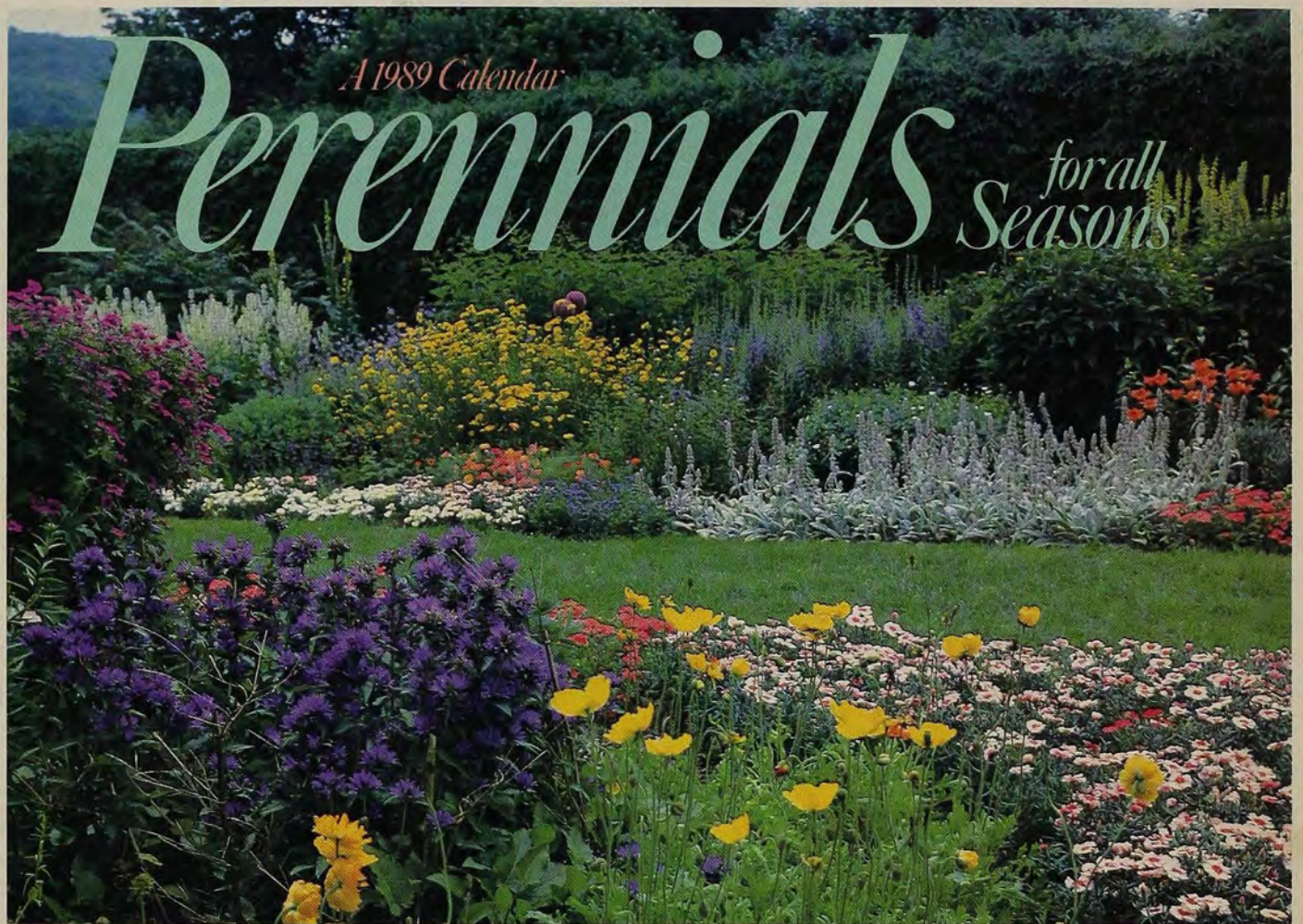
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