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DECEMBER 1982



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The lovely gardens at Barnsley House are the handiwork of the owner Rosemary Verey, who is also the author of the popular book, *The Englishwoman's Garden*. Her garden is featured on page 27. Photograph by Guy Burgess.

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**ON THE COVER:** The Thanksgiving cactus, *Schlumbergera truncata*, is a favorite indoor plant this time of year because of its abundant winter blooms. Photograph by Bruce Steakley.

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# PRESIDENT'S PAGE



Thomas W. Richards

Gardens are not static but change with the seasons and years, and so it is with horticultural societies and their personnel. After six years as Executive Vice President of your Society, it is time for me to make a change and for the Society to enter a new "season" of activity.

When I joined the Society in 1976, my challenge was to establish a firm base for the Society's growth and programs into the 1980's. This has been done. The Society is now an efficient organization with a dedicated and competent staff; its occupancy of the River Farm headquarters is assured; the magazine and newsletter are recognized as superior; and programs such as the book service and seed program have wide membership acceptance. In addition, alternate sources of income—most notably the establishment of a royalty income—have been developed to provide significant supplemental support of our activities over the next several years, although these revenues by no means relieve us of our need for the sustained support of all our members.

My years as your executive have been fulfilling, challenging, satisfying and enjoyable, not least because of the opportunity I've had to meet so many of you and share horticultural experiences. I can think of no better place to make friendships than while viewing a garden!

Next year I may no longer be involved in the Society's day to day activities, but

I can assure you I will be actively enjoying the benefits of my membership. I look forward to attending the Charleston, South Carolina Spring Symposium and participating in the Society's trips to Bermuda and the Mediterranean in the late spring. I do hope that I will see many of you at these activities.

*Thomas W. Richards*

A little over a year ago I worked with other Directors of the Society to establish a long-range plan for AHS that would serve as a guide for implementation of various programs for the balance of the 80's. The goals that were developed have in common our recognition that the most important contribution the Society can make to American horticulture is to expand and strengthen its educational outreach. The Directors also are perfectly aware that for our educational commitment to be effective it must be available to our membership and others in a manner that ensures participation by large numbers of people.

For this reason our first priority is to cooperate with and encourage in every way existing plant societies, garden clubs, professional horticulturists and the myriads of people for whom gardening is important. We are very eager to enlist the help of our membership and friends in this outreach program. We need volunteers of every ability to help organize local events, to help the society recognize horticultural excellence wherever it exists and to introduce us to the leaders of other plant societies and associations. It is our conviction that mutual support and recognition will be the most important teaching aid that we could possibly develop.

As Tom Richards has stated in the preceding paragraphs, we've accomplished many of the short-term goals we had during his tenure as our Executive Vice President, and for his help we are most grateful. Now a new era faces us and more than ever before we must rely upon the aid of members and friends.

*Edward N. Dane*

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# WHAT IS THE PURPOSE OF A GARDEN?

**N**ow here is a question that has almost as many answers as there are gardeners. For some, it is the thrill of the hunt, their gardens well tended receptacles of a penchant for collecting. For others, it is as a place of solitude and quiet reveries, where the spirit becomes refreshed. Or barefoot, hot soil of the herb garden between their toes, it is a place of sensory delights.

A garden is also a teacher and a classroom where we attempt to learn or are taught patience (sometimes quite unwillingly), and failing that, a bit of mild tolerance. And as Gertrude Jekyll put it, “. . . I hold the firm belief that the purpose of a garden is to give happiness and repose of mind, firstly and above all other considerations.”

The garden is also a place where our sense of wonder is stirred. Here we become attuned to the flux of the seasons. In the translucent petals of anemones, the golden richness of summer or simply the sun's passage across an autumn sky, the timing and magic of Nature's achievements are better appreciated.

The degree of happiness or satisfaction a gardener derives from his or her creation has next to nothing to do with size or pre-set rules on style or taste. Much like these ephemeral and highly personal concepts, our gardens are constantly changing. Try as we might to maintain a status quo, trees die, colors that were once pleasing suddenly jar and our own ideas and needs evolve. Nevertheless, as we experiment with different plants for extended seasons of bloom and incorporate ideas from gardens we visit, our needs and those of our garden merge and occasionally distill into concepts we can successfully implement.

Although our gardens may be a lovely reflection of the changing seasons and our growth as horticulturists may be satisfying, there is still more to gardens and gardening than keeping our phlox free of mildew or finally raising delphinium to prize-winning heights.

Perhaps we discover that “something more” in a moment as we appreciate a view; perhaps it happens over the years as we visit gardens and continue to read and pursue our own garden endeavors. But however it arrives, that intangible something that at last elevates the garden to an art form suggests itself.

For me, a garden expresses itself as a form of art if it imparts a sense of wholeness. If it gives the viewer a satisfying feeling of completeness, it succeeds. I have experienced garden as art any number of times, but one particular garden brings to mind this quality more than others—Bampton Manor in Oxfordshire, England, the creation of the late Countess Munster. This garden “completes” itself through a sensitive balance of design elements and subtle yet dynamic flow of movement. At Bampton the flow of the garden is simply an extension of the house and the sphere of the family's life. The layout encourages a pattern of activity.



I like to imagine what frequent garden strolls would be like in my own dream garden: I walk out the doorway crowned with sweetly scented rambling roses, am lured by a glimpse of azure blue to pass by the pond, walk by the flower borders to the sketchy shade of an ancient apple tree. Seated beneath the tree, pale petals drifting in the breeze, the sun hot on my face, I contemplate the passage of time. In the herb garden I pick basil and santolina to thrill the noses of curious children. In summer I breathe the evening fragrance of sweet-rocket. My friends and family gather here too, and as we walk and talk we watch the seasons unfurl. In this garden I build memories. Through these intimate, often homely rituals my life is made richer.

The experience of the garden creator and casual participant will, of course, be different. But there are essential similarities. It is a gift to be able to transform a landscape in this way. No less valuable is the gift of appreciation. Both revolve around the development of a discerning and critical eye. Those educated in the appreciation of garden as art or those blessed with an intuitive yet articulate appreciation can walk into a garden and know what is lovely, what works and why—as well as what doesn't work and why.

By understanding design elements, progressively subtler nuances of expertise emerge. It almost seems unnecessary to say that this process has the potential to add greatly to our appreciation of garden touring as well as being translatable into our own gardening efforts.

It is with these thoughts in mind that this column will become a regular feature in *American Horticulturist*. Having first con-



LEFT: In this simple garden, a brick path links terrace and studio, an easy landscape transition that melds beauty and function. From the terrace the path begins as a gentle curve inviting exploration, then continues to lure and satisfy with an assortment of colors, textures and fragrances in this cutting and display area. As we continue down the path, the studio assumes an added design function as the focal point of this vista. What could have been nothing but a simple, utilitarian walkway becomes instead a place to delight the senses. ABOVE: Viewed from the tower, it is easy to visualize the “garden rooms” of Sissinghurst. Walls, archways or breaks in a hedge ready us for a change of scene. The strict and often linear formality of Sir Harold Nicholson’s layout provides a strong framework for a complex yet superb assortment of garden effects and plants that are Vita Sackville-West’s achievement in this remarkable garden.

sidered the purpose of a garden, we will examine in upcoming months such specific design topics as scale, texture, form, color, vistas, perspective, water and shade and how these elements of design contribute to a successful garden.

I will welcome your thoughts and look forward eagerly to

exploring and sharing with you the garden as art. ❁

—Margaret Hensel

Margaret Hensel is a landscape designer and garden writer living in Massachusetts. With this issue her “Design Page” becomes a regular feature of *American Horticulturist*.

# TEN PLANTS I HAVE TO GROW

This is a very personal selection of plants I regard as indispensable to any garden I would own. My taste in plants is catholic, although the principal occupation of my life has been among the alpine plants of the world. I find all hardy plants quite irresistible, which has produced in my private garden a medley of different plants but little or no attempt at design. The result has drawn the rather acid comment from my wife that I am a fine plantsman but a rotten gardener.

When I first saw *Fremontodendron* 'California Glory' growing on the wall of the laboratory at Wisley Garden I knew immediately it was a shrub I must possess. With the generosity common to gardeners, I was given a young plant that now flourishes on the southwest wall of my house and has, in three years, stretched from its initial foot in height to reach the eaves. As I write these notes, in late June, 'California Glory' is a sheet of huge and gorgeous golden flowers from bottom to top. Truly a magnificent plant, and much harder than I had dared hope. It has endured at least one severe winter unscathed.

Apparently this plant occurred spontaneously at the Rancho Santa Ana Botanic Garden in California, where *F. californicum* grew in company with *F. mexicanum*. Although vegetative propagation is described as difficult, I have been fortunate to have considerable success with tip-cuttings taken during June and July and rooted in a mist unit.

An entrancing shrublet I treasure greatly is *Leptospermum scoparium* 'Nichollsii Nanum', whose label, if fully written, would almost overtop a mature specimen. This pygmy form of the fine Australian species seems to have been first raised some 30 or more years ago in the famous garden of the late A. K. Bulley by his equally famous head gardener, Mr. Hope. Although not sufficiently hardy to be trusted in the open in cold areas, the plant is splendid for the alpine house. The rounded, mounded bushes of entangled fine stems and tiny, very dark-green leaves are at this moment concealed beneath countless almost stemless, rounded flowers of deep crimson. An amiable little plant, it roots readily from soft-tip cuttings and is so eager to blossom



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1. *Daphne petraea* 'Grandiflora'.
2. *Leptospermum scoparium* 'Nichollsii Nanum'.
3. *Xerophyllum tenax*.
4. *Rhodohypoxis baurii*.
5. *Saxifraga longifolia* 'Tumbling Waters'.
6. *Alchemilla mollis*.

that it will burst into flower even while still in the cutting frame.

Without the superb inflorescences of *Saxifraga longifolia* 'Tumbling Waters' I would have difficulty enjoying my garden. Probably a hybrid between *S. longifolia* and *S. callosa*, it was discovered by the late Captain Symons Jeune. Unfortunately, as it is monocarpic, the actual rosette that flowers dies, but there is seldom a lack of unflowered side rosettes that can be detached and rooted. It is fertile, but does not, of course, reproduce true from seed even though some handsome plants may be expected among the seedlings. It can be grown in large pots or pans, or planted in the crevices of rocks or in a wall. There it will make a symmetrical rosette of silver-gray, strap-shaped leaves a foot or more in diameter. Eventually a flower spike two feet or more in length and a foot wide at the base will form, carrying hundreds upon hundreds of immaculate white flowers.

With the colorful little varieties of *Rhodohypoxis baurii* I have a curious sort of love/hate relationship, which makes me still dubious about including them among this chosen ten. Frankly, I do not like them very much, but I have so deep an appreciation of their qualities that I could not really do without them. Their advantages are that they flower without cessation from spring until late autumn and are extremely gay and colorful. I am not quite sure why I can find no deep affection for them, but it may be because the flowers have no definite shape and consist of a "bundle of petals." It may also be a case of "I do not like you Dr. Fell, the reason why I cannot tell." As natives of the Drakensburg Mountains of Basutoland in South Africa, varieties of *R. baurii* are surprisingly hardy and grow from tiny bulblets, producing small clusters of narrow leaves and an endless succession of short-stemmed flowers, which may be deep red, apple-blossom pink or white or any intermediate shade.

I would count life the poorer if I did not have a few samples of *Weldenia candida* to gloat over, although it cannot be thought of as a plant for every garden. Found in the craters of extinct volcanoes in Mexico and Guatemala, the plant is not fully hardy in England, although a few brave souls do attempt it in a warm border at the foot of a south wall with some success. I grow it in very large, deep pots in the alpine house. It makes enormous fleshy roots that demand ample space and rich and well drained soil. Dormant in the winter, it emits tufts

of thick, broad, pointed, dark-green leaves forming loose rosettes from the center of which arise cup-shaped flowers of dazzling white—it is, indeed, the whitest blossom I know. The short stem is really a long corolla tube at the base of which, at ground level or even just below the surface, are the parts of the flower where seed will be produced. It flowers intermittently from early June until late summer and then dies down to rest, during which time it should be kept well on the dry side.

Even though I have never been able to grow it with full success I must include on my list the handsome bear grass, *Xerophyllum tenax*, of your own western mountains, where I have seen it making bold and handsome clumps of narrow leaves, topped by tall stems ending in great heads of white flowers. I collected seed, but it did not germinate, and every year some kind friend sends me another supply. Three years ago I did achieve a good germination and now have young plants establishing, with flowers this year for the first time. It is very definitely one of my favorite plants.

Often spoken of as the most beautiful of all small alpine shrubs, *Daphne petraea* 'Grandiflora' could not be omitted from my list. Native to cracks and crannies in the Dolomites, it is very slow growing and will take many years to reach the desirable size of a rounded nine-inch-high bush. The clusters of deep-pink tubular flowers have an intense fragrance and are of an entrancing waxy texture. All that is needed for success is patience. This plant's maturity can be hastened by grafting it onto another species of *Daphne*, preferably an evergreen one. It is hardy in a rock crevice but is usually given alpine house treatment.

The near hardy terrestrial orchids contained in the genus *Pleione* have become very popular in Britain. They are ideal cold greenhouse plants, and some of them are hardy enough to be grown on peat gardens in the open air. One of the rarest, and by many thought to be the most beautiful, is the yellow-flowered *P. forrestii*. The story of its history in cultivation is interesting. About 1929 the collector George Forrest discovered it in Nepal and sent home a dozen or two pseudobulbs. Unfortunately these were placed in an orchid house among tropical species and given quite the wrong environment so that nearly all of them perished. When but a few remained one was given to an amateur and the remainder gradually perished. Some 30 years

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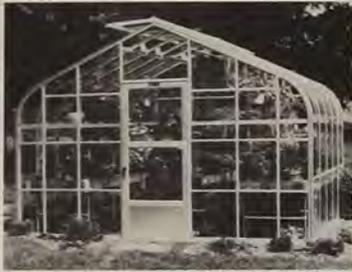
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## PLANTS FOR THE LANDSCAPE CONT'D

I would count life the poorer if I did not have a few samples of *Weldenia candida* to gloat over, although it cannot be thought of as a plant for every garden.



*Pleione*



*Fremontodendron* 'California Glory'



*Corydalis cashmeriana*



*Weldenia candida*

later I received a letter from the possessor of the one remaining pseudobulb, asking if I would be interested in buying 500 *P. forrestii*! That clever man had discovered the right treatment and had quietly worked over the years raising stock. Naturally I accepted his offer and that was how this splendid plant was first widely distributed. It remains a rarity, but I was told recently by a member of an expedition to Nepal that he had seen a rocky mountain slope yellow with the flowers of thousands of *P. forrestii*. This gives hope of a new introduction. Meanwhile I relish my own few plants and certainly count it my favorite *Pleione*.

In the high alpine meadows of Kashmir grows dainty *Corydalis cashmeriana*, whose short, branching stems bear flowers of an incredible glacier-blue, pure and undiluted by the hint of the purple existing in so many blue flowers. In nature it is said there are forms with yellow or almost white flowers, but I want none of these as long as I have this exquisite type, which grows better in the cool north of Britain than in the south, but nevertheless survives with reasonable contentment on my north-facing Sussex hillside.

I end with a commoner, *Alchemilla mollis*. It can become a nuisance, for it seeds itself abundantly, but I could not do without its wide, scalloped, hairy leaves, which trap drops of rain or dew to shine like jewels in sunlight, and its showers of tiny, chartreuse-green flowers. It mingles magnificently with that other rambling plant, *Campanula poscharskyana*, whose long sprays of purple-blue flowers marvellously complement those of *Alchemilla*. This is a happy combination to clothe any bank of poor soil, or to drape and conceal an ugly wall.

Having with immense difficulty separated the above 10 plants from the many clamouring for inclusion, I can sympathize with a famous British nurseryman who once included in his catalogue a list of the 110 best alpines. ☉

—Will Ingwersen

Will Ingwersen has devoted his life to collecting and growing alpines. He is Vice President of the Royal Horticultural Society, President of the Alpine Garden Society and holds the Royal Horticultural Society Victoria Medal of Honour.

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# THE OLIVE FAMILY



*Jasminum officinale*

Illustration by Kathleen Crawford

In *Plant Hunting* (1927), prominent American plant collector E. H. Wilson wrote: "Those who are fond of gardens may add much to their knowledge of geography in both interesting and profitable ways by inquiring into the origin of flowers they tend so lovingly."

The olive family, Oleaceae, is an engaging group of plants to examine from such a perspective. The family is widespread in

temperate and tropical regions of the world. Although there are only 29 genera and 600 species in it, a study of these plants can lead you around the world. Begin in your own garden with lilac, forsythia, ligustrum or white ash, and in your kitchen with the most commercially valuable member of all, the olive, *Olea europaea*.

Among Oleaceae, leaves are prevalingly opposite, mostly without marginal teeth,

and in some instances are evergreen. Flowers are handsome and showy in some genera such as the lilac, or inconspicuous and small in others; in some, fragrance is a special attraction. The fruit is a drupe in the olive, a winged nutlet in the ash and a berry or capsule in some others. Flowers are tubular and four-lobed or of four separate petals. They are borne in clusters.

The olive, both wild and cultivated, is common in the Mediterranean region, from whence it has been introduced to other warm climates. This usually small-sized tree has been in cultivation for 4,000 years, chiefly for its fruit, which is remarkably rich in oil and also for the ornamental qualities of its fragrant flower clusters, gray-green foliage and gnarled and furrowed bark. It is a major fruit in the Mediterranean region, where Spain and Italy are the principal producing countries. Commercial production of olives and olive oil in the United States is limited chiefly to California.

The naturally blackish fruits are bitter and unpleasant if eaten raw. After processing, both green and ripe olives add piquant flavor to many dishes. The oil pressed from the olives is one of the most important food oils in the world and has numerous other economic uses. Beautiful wood of the olive tree is made into small articles and seeds are carved for rosaries.

*Ligustrum* is a temperate zone genus, but some species are only marginally hardy, a fact that was especially surprising this last year to many who had relied on it as a durable evergreen specimen plant or as a hedge. The name is based on a Latin word meaning "to tie," a reference to a use made of its flexible stems.

*Ligustrum* is probably the most common of nursery-grown plants because it is easily propagated and grows rapidly to saleable size at little expense. A near perfect hedge in most parts of the United States, it blooms from May through June, depending upon the species, producing clusters of small white flowers followed by black berries.

The common privet, *Ligustrum vulgare*, is of European and North African origin. It is semi-evergreen with leaves less glossy than other species. Its growth may reach

15 feet, thus requiring shearing to restrain its vigor in some situations. Horticultural forms of this species, of which there are many, are to be preferred to plain *L. vulgare*.

California privet, *L. ovalifolium*, actually from Japan, is one of the most commonly grown privets. Though vigorous it is definitely not as hardy as *L. amurense*, Amur River privet, or border privet, *L. obtusifolium*, of which the graceful Regal privet (*L. obtusifolium* var. *regelianum*) is a variety. Both of those species are hardy to USDA Zone 4.

From China, Japan or Korea comes *L. lucidum*, glossy privet, which is much used in our southern states. The variegated form, leaves bordered in white, is more tender than the species. About sixteen cultivars are offered by nurserymen. Some lists include Japanese privet, *L. japonicum*, along with glossy privet. Both species are sometimes commonly referred to as wax-leaved privet.

*Forsythia*, the golden-bells of China, which ushers in our spring season, was brought from the Orient to Europe in 1844 by Robert Fortune (1812-1880), the renowned British explorer and plant collector. Its name honors William Forsyth, gardener to King George II of England.

Filling the curves of a serpentine wall, trailing down a garden embankment or massed in a great expanse of shrub border, the slim-stemmed, bare branches of forsythia are hidden in late winter or very early spring by thousands of bell-shaped, four-petaled, golden flowers. Innumerable cultivars provide variations in shades of yellow and in floriferousness and habit of growth. The always arching and spreading branches add grace to the landscape, an attribute too often sacrificed by shearing to create stylized forms.

As a group, forsythias are hardy in the northern United States, although flower buds are sometimes killed in severe winters. *F. ovata*, from Korea, is hardiest; however, it produces fewer flowers than some other species and choice cultivars. *F. suspensa*, with drooping and prostrate stems, and *F. viridissima*, the least hardy, are both from China. Older in gardens and better known is *F. suspensa*. *F. x intermedia* is a hybrid of these two, better than either of its parents, with larger and richer colored flowers. *F. x intermedia* 'Spectabilis' is considered by some the best available forsythia for those who have only room for one. This cultivar originated in Ger-

many in 1906 and was introduced to the United States in 1908 by the Arnold Arboretum.

If in the early spring, at about the same time forsythia is gilding the landscape, you may have seen a compact, three-foot shrub with arching branches loaded with white blossoms that looks like forsythia, it is not

### The most commercially valuable member of Oleaceae is the olive, which has been in cultivation for 4,000 years.

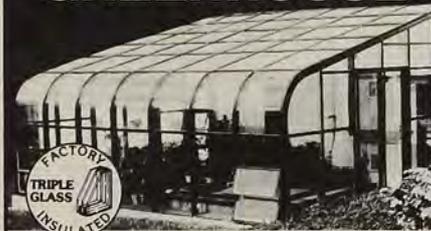
a freak or mutant. This welcome addition to the early spring scene is *Abeliophyllum distichum*, Korean abelia-leaf. After Korea's annexation by Japan in 1910 the government undertook a survey of the natural resources. This excellent, hardy deciduous shrub, found in central Korea in 1919, is one product of that effort. It was introduced to the United States in 1924 by the Arnold Arboretum and to England in 1932. Deep-purple flower buds form in the autumn and open in February or soon thereafter, transforming the shrub into a mass of white blossoms before the leaves emerge. Its small size recommends it for the small garden, and its hardiness is a definite asset in any setting.

*Syringa* species are deciduous bushes with heavy panicles of four-petaled, tubular flowers in spring and early summer. Most are very fragrant. These are the lilacs, about 30 species of plants indigenous to eastern Asia, the Himalayas and southeastern Europe.

*Syringa vulgaris*, common lilac, is Persian, having been sent from Constantinople to Vienna about 1560. It soon reached western Europe and both purple and white flowering kinds were growing in London by 1597.

Lilacs have changed greatly since *S. vulgaris* was brought to this country by early settlers. Many oriental species have been introduced and common lilac is largely passed over in favor of its cultivars, other species and hybrids. The modern gardener has great leeway in selection of lilacs for period of bloom, color of flower or size of plant. Lilac enthusiasts sometimes emphasize the desirable attributes of French hybrid lilacs. French growers became involved very early in producing hybrids, but actually lilac breeders in Canada, Germany and the United States, as well as in

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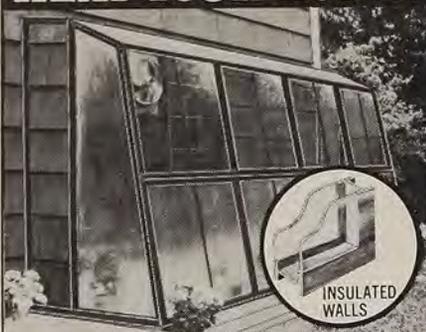
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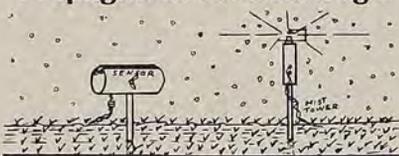
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## STRANGE RELATIVES CONT'D

France, have, over the years, added immeasurably to the potential of this genus. For more information on this popular group of plants see Judith Hillstrom's article on lilacs in the April, 1982 issue of *American Horticulturist*.

Tea olive and devil-weed are common names of the genus *Osmanthus*. Most of the 30-40 species in this genus are Asiatic or Polynesian; devilwood, *O. americanus*, is a native of the southeastern United States.

Flowers in this genus are often very fragrant but not necessarily showy. Fruit is a fleshy drupe. All the tea olives are popular shrubs in warm sections of the United States and some are greenhouse grown in the North.

Most common in cultivation is *O. fragrans*. This evergreen shrub or small tree is native to China, Japan and the Himalayas. During the latter part of the 18th century, many ships sailed regularly from Great Britain to Canton in China and carried back many plants to England. *O. fragrans*, the sweet or fragrant olive, was among them. The Chinese add the flowers of this plant to tea to perfume it. Clusters of these very fragrant white to yellowish flowers, male and female on separate bushes, are followed by a blue powdery drupe on the female bushes, where male bushes are also present. Sweet olive is generally hardy from USDA Zone 8 southward and in such mild climates it will grow three to five feet tall. Elsewhere it is a favorite indoor or greenhouse subject with sweetly fragrant flowers all year.

From Japan we have received *O. heterophyllus* (*O. illicifolius*), commonly called holly olive or Chinese holly. As its common name implies, its lustrous, dark, spiny evergreen leaves have caused this species to be confused by some with holly. One way of differentiating holly osmanthus from holly (*Ilex*) is to remember that *Osmanthus* has opposite leaves (both words beginning with "o"); holly leaves are arranged alternately on the stem. Holly osmanthus produces small, fragrant white flowers in July that are followed by blue-black berries. In structure it is a dense, rotund, vigorous shrub, handsome as a specimen plant or used as a hedge; it is hardy to USDA Zone 7. Several horticultural forms afford a choice of variegated, golden or purplish foliage.

Two desirable garden shrubs occur in the genus *Chionanthus*, both hardy from about USDA Zone 5 or 6 southward. Old-man's-beard, or Virginia snowflower, is *C.*

*virginicus*, better known perhaps as fringe tree, a favorite spring flowering native of the eastern United States. It leafs out later in the spring than many trees and then in June bears seven-inch-long loose pendant panicles of delicate, fringe-like white blossoms. Usually male and female flowers grow on separate plants, the latter producing picturesque clusters of grape-like purple fruits attractive to birds. Grown either as a shrub or small tree, its outstanding yellow fall foliage color, in addition to the flowers, recommends it to gardeners. Dried roots of old-man's beard have been put to medicinal use in decoctions for various infirmities. This American native is taller than its Chinese relative, *C. retusus*, which grows to be only 10 to 18 feet tall. Flowers and leaves, too, are smaller on the Chinese fringe tree, which was introduced to the United States about 100 years ago. The two species are otherwise distinguishable by the fact that on *C. retusus* the flowers appear on current year's growth, whereas *C. virginicus* flowers on growth of the previous season.

*Jasminum* species, of which there are about 300, are tropical plants valued for their fragrant flowers. In their native habitat they range from Iran to China.

*J. multiflorum*, star jasmine, is an evergreen vine, bearing clusters of white flowers that vary in size and fragrance among the several known forms.

*J. officinale* reached Great Britain about 1548, being introduced, like the lilacs, along the trade routes. This rambling plant from Persia and China, the familiar white jasmine, commonly called poet's jasmine, with fragrant flowers in summer, is widely grown in southern states as a covering for trellises or arbors and is common in frost-free gardens.

*J. grandiflorum*, from India, is known as Spanish jasmine. More erect than most jasmines, its white to pinkish, fragrant flowers are nearly 1 3/4 inches wide. It is an excellent greenhouse plant.

*J. humile*, an Asian species, bears fragrant yellow blossoms in two- to six-flowered clusters. It, too, is a good greenhouse subject and can be trained as a vine on a wall.

*J. sambac* is the national flower of the Philippines. It is a fragrant-flowered, more or less climbing evergreen shrub from India and is known as Arabian jasmine. The double flowers resembling small roses are popular for leis in Hawaii, where the plant is known as *pikake*. The Chinese use this

flower for flavoring tea as well as for ornament and scent.

A pink-flowered jasmine is *J. beesianum*, a climbing shrub from China. The small flowers, singly or three to a cluster, are fragrant. Native to West Africa, with fragrant flowers opening at night, is *J. dichotomum*, the Goldcoast jasmine.

Another evergreen jasmine that is not climbing is the frost-tolerant *J. mesnyi*, primrose jasmine. It blooms in spring or summer with large yellow flowers and is the least hardy of jasmines grown in the United States. (USDA Zone 8).

In mild sections of this country winter jasmine, *J. nudiflorum*, blooms nearly all winter; it is hardy from USDA Zone 6 southward and grows in a graceful mounding form, each wandlike strand wreathed in vibrant yellow flowers. Delicate green leaves unfold after the flowers, matching the characteristic green stems. It is not a true climber, but will hoist itself up and through the branches of other shrubs. It is equally happy growing flat and is ideally suited for growing along the top of a wall or bank, its arching branches gently cascading down the slope. Every branch that touches the ground roots at point of contact. It is another olive family member included among the plants collected in China by Robert Fortune.

In the genus *Fraxinus* we encounter the timber trees of the olive family. These rapid growing shade trees are less important as ornamentals than for timber. They are handsome trees with large compound leaves made up of five to nine leaflets. The flowers are small, greenish or white, without petals in all except one species. The fruit is a small winged nutlet, and profuse clusters are a conspicuous ornament of the tree, also making it self-seeding.

*Fraxinus americana*, white ash, is a 100- to 130-foot native tree of eastern North America and is hardy from USDA Zone 4 southward. Among about 70 ash species, the white ash is most used. Its wood, which is light weight, hard and beautifully grained, is used for oars, baseball bats, toys, farm implements, and for manufacture of furniture, both large pieces and delicate work or veneers.

*F. excelsior*, European ash, is widely distributed in the northern hemisphere. Like the white ash, it is a large tree (the name excelsior means higher) and attains a height of 130 feet. It does not have the brilliant yellow to purple autumn coloring of *F. americana*.

*F. ornus* is the only showy species of *Fraxinus*. Large, dense clusters of fragrant white flowers open just after the leaves unfold. It is the most common ash in cultivation; it is hardy to USDA Zone 6 and not over 50 feet tall. Known also as manna ash, a peculiarity of this species is that the descending sap, when tapped by an incision in the bark, forms a white or yellowish mass of sweet, slightly acid syrup known as "manna."

**The always arching and spreading branches of forsythia add grace to the landscape, an attribute too often sacrificed by shearing to create stylized forms.**

Another small ornamentally attractive ash is *F. mariesii* from China. Smaller and daintier than *F. ornus*, it could substitute for that species in warmer parts of the country.

*F. latifolia* (*F. oregona*) is used as a street tree in the Pacific Northwest where it is native. *F. uhdei*, Shamel ash, is an evergreen native of Mexico, hardy in Zone 9 and useful as a street or ornamental tree in California. Called Hawaiian ash in Hawaii, it is proving successful in reforestation there.

*F. velutina*, velvet ash, from southwestern United States and adjacent Mexico, is used locally as a shade tree. Young twigs and leaves of velvet ash are covered with gray down that is not evident on *F. velutina* var. *glabra*, the Modesto ash, a tree popular in the Southwest and suited to arid regions.

As we enjoy the bounteous diversity of plant life by which we are surrounded, another reward of gardening is acquaintance with a plant's native country, its travels to our own, and the risk and adventure in the lives of plant hunters. We are endlessly indebted to the perseverance and infallible judgment of plant collectors. Robert Fortune, the Scotsman and collector in China for the Royal Horticultural Society, and E. H. Wilson of the Arnold Arboretum, are responsible for the introduction of many ornamentals, especially to temperate gardens. Representatives of the olive family are numerous among them. ☉

—Jane Steffey

Jane Steffey is the Society's horticultural advisor.

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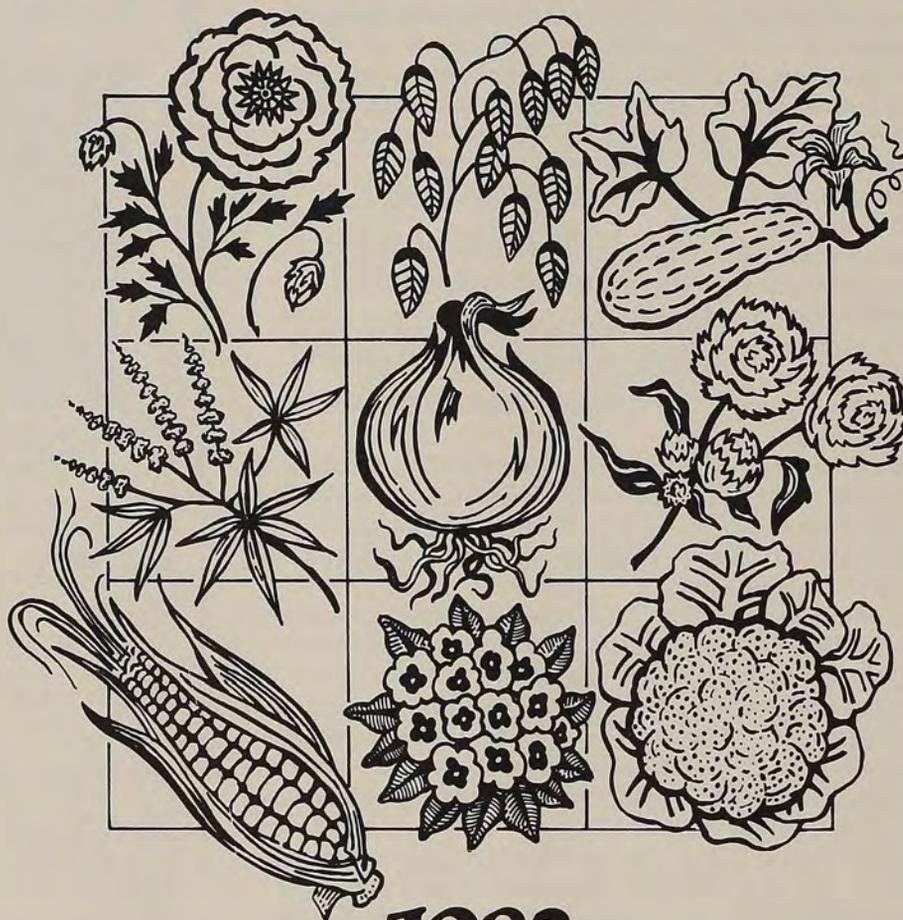
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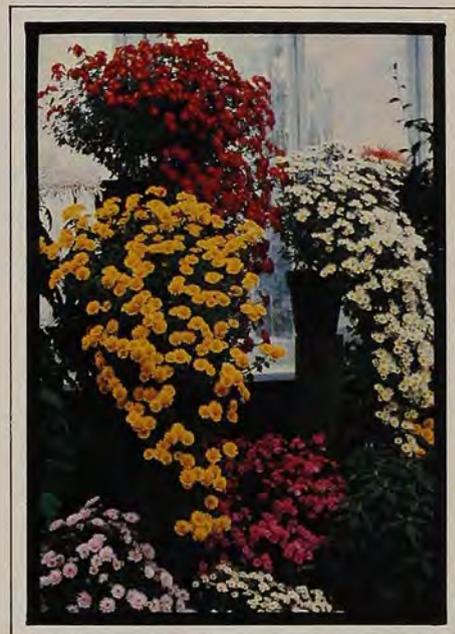
# JAPAN



**T**he Orient has been a major contributor to the diversity of ornamentals in American gardens for years. This region has provided many of the trees that grace our cities, such as the flowering cherries of our nation's capital, and the plantings of azaleas and camellias that attract masses of tourists to our arboreta. In the next few pages discover just how important is our horticultural debt to Japan.

# AN IMPORTANT PLANT HERITAGE

BY DR. JOHN L. CREECH



PRECEDING PAGE: America's love of Japanese plants and landscape design is reflected in this tribute at Huntington Botanical Gardens in California. ABOVE: Even nurseries, such as this one in Kyushu, have traditionally taken pains to display their special collections with an eye toward design and aesthetics as well as sales. Unhappily, the old-style, family-run nurseries that once offered a great diversity of stock within their specialty are fast becoming extinct. RIGHT: The Japanese' love of chrysanthemums has successfully immigrated to this country, as this display of Kiku mums at the New York Botanical Garden attests. FAR RIGHT: The serenity of Japanese gardens is due, in part, to the way in which the landscape is controlled. Trees and shrubs are frequently pruned rather than left to grow naturally.

There is no question that China received plant collectors' greatest attention during the first quarter of the 20th century, and this interest would have continued were it not for the subsequent political turmoil there. But when one considers the plants in greatest profusion in our gardens and parks, Japan is actually the main contributor. That small island empire is a treasure house of wild and cultivated ornamental plants.

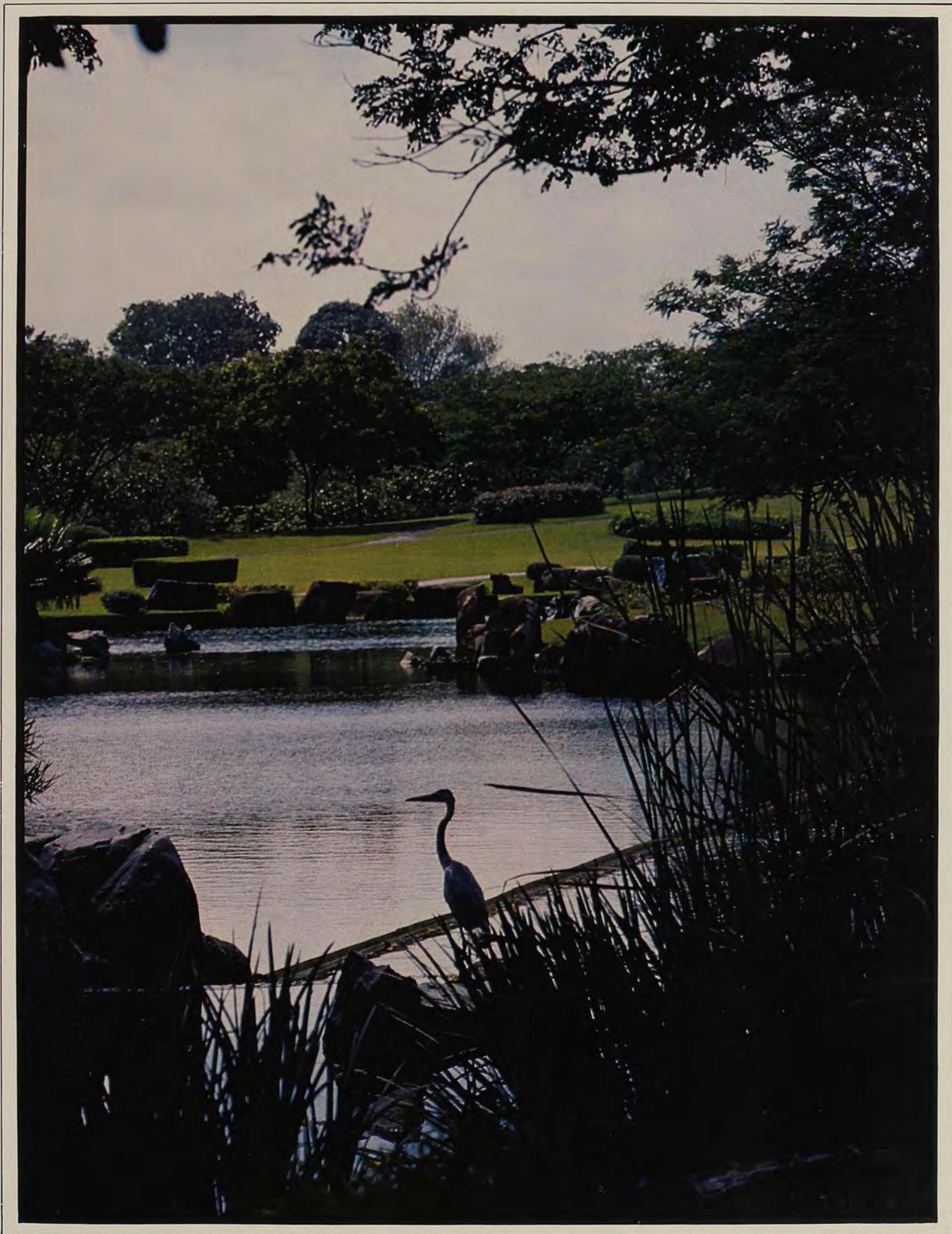
Any observant visitor's first impression of Japan is of its extraordinary wealth of vegetation and the extent to which native plants are cultivated as ornamentals. The number of known native species of trees and other higher plants exceeds 5,000, and these are distributed over some 950 genera. Over 10 percent of these species can be found in Japanese nursery catalogs. The number of cultivated forms of ornamentals is impossible to estimate, but they are legion. Yet this country is smaller than the state of California. Although we can find gardens in the eastern United States where as much as 70 percent of the plants used for landscaping are native to Japan, the range of species is exceedingly limited in

comparison to Japanese gardens of much smaller size.

It's no wonder that many horticulturists believe Japan is where we should direct ornamental plant studies for the future.

There had been a long period of Chinese influence in the style of gardening prior to 1636, when Japan closed herself off from the rest of the world following tremendous political and social upheaval. Then, during this period of isolation, called the "natural history period," the Japanese paid great attention to the study and cultivation of native ornamental plants. The natural wealth of plants available, combined with great intellectual fervor, resulted in a unique "horticultural happening."

For almost 250 years intensive studies were undertaken of the natural plant and animal kingdoms, lasting until the re-establishment of imperial rule in 1867. Learned men delved into the natural products of the country, and medicinal gardens arose in all parts of the empire. The medicinal garden at Azabu in Tokyo, for example, was established in 1661 and was moved to Koishikawa in 1684 to become the basis of the botanical garden of the



University of Tokyo. Food plants were not neglected, and numerous studies were conducted on plants of potential use during times of food scarcity. This, in part, probably accounts for the vast number of native plants still used in the Japanese diet.

Ornamental plants did not escape notice. Great interest developed in the culture of the azalea, camellia, chrysanthemum and iris, as well as the morning-glory, for which the goal was and still is the development of platter-sized flowers. But lesser-known plants also interested these horticulturists—*Rohdea*, *Psilotum*, *Goodyera*, *Dendrobium*, *Adonis*, *Selaginella*—all natives, and for each species special cultural techniques and proper containers were prescribed. Hundreds of selections were introduced at grand exhibitions in the larger cities. The ones held in Kyoto and Tokyo in 1717 displayed over 700 varieties of chrysanthemums.

Horticultural publishing was also important. Great and lengthy volumes with wood-block illustrations were not uncommon. An excellent paper prepared in conjunction with the Third Pan-Pacific Science Congress (11) in 1926 describes the history of botany in old Japan and identifies some 80 works produced during the natural history period dealing with various botanical, horticultural and related natural product matters—some running into hundreds of volumes. An essay by Bartlett and Shohara (1) elaborates on the development of natural history, especially botany in Japan, and catalogues an exhibition of 111 Japanese books and manuscripts in conjunction with the Hundredth Anniversary (1954) of the First Treaty between the United States and Japan.

The flowering cherry, of course, received special attention. After all, the mountain cherry (*Prunus jamasakura*) had long been considered the national flower, symbolizing the spirit of the Japanese people. Double flowering cherries were said to have been known a thousand years before, but most of the cultivars arose during the natural history period. Along with the development of new cultivars came large public and private collections, especially for "cherry viewing." In a sense these collections became what are genetic resource collections today. A number of natural history period publications appeared on the cultivated flowering cherries with short descriptions and illustrations. In *Kadan Komoku* (1681), 40 flowering cherries are mentioned while in an early 18th-century manuscript, *Honzo Hosel*, 167 cultivated varieties appear. An actual floral calendar with 17 cherries was mentioned in *Kash-*

*inpu* (1795). It is unfortunate that so many distinct plants that were produced during this exciting era no longer exist. Even in the instance of those which survived into the 20th century additional losses continued, so that today, it has been necessary for the Japanese to recover some from collections in the United States.

The development of so many new ornamentals from native plants also created new schools of landscape architecture. The great park, Korakuen, started in 1687 by the feudal lord Ikeda at Okayama, represents a style of landscape architecture that was popular during this period. It was completed in 1700. It is laid out so the visitor can enjoy many vistas. Hillocks, ponds, a waterfall, miniature farm fields, a forest—all artificial—are tastefully arranged. Arbors, islands and alleys are built everywhere. The distant views of the verdant Misaoyama hills are taken in as a borrowed background. It is a typical Japanese garden, rich in scenic beauty and composed almost entirely of native plants. I can think of no other style of landscape architecture that is built on native plants and is of such an enduring nature.

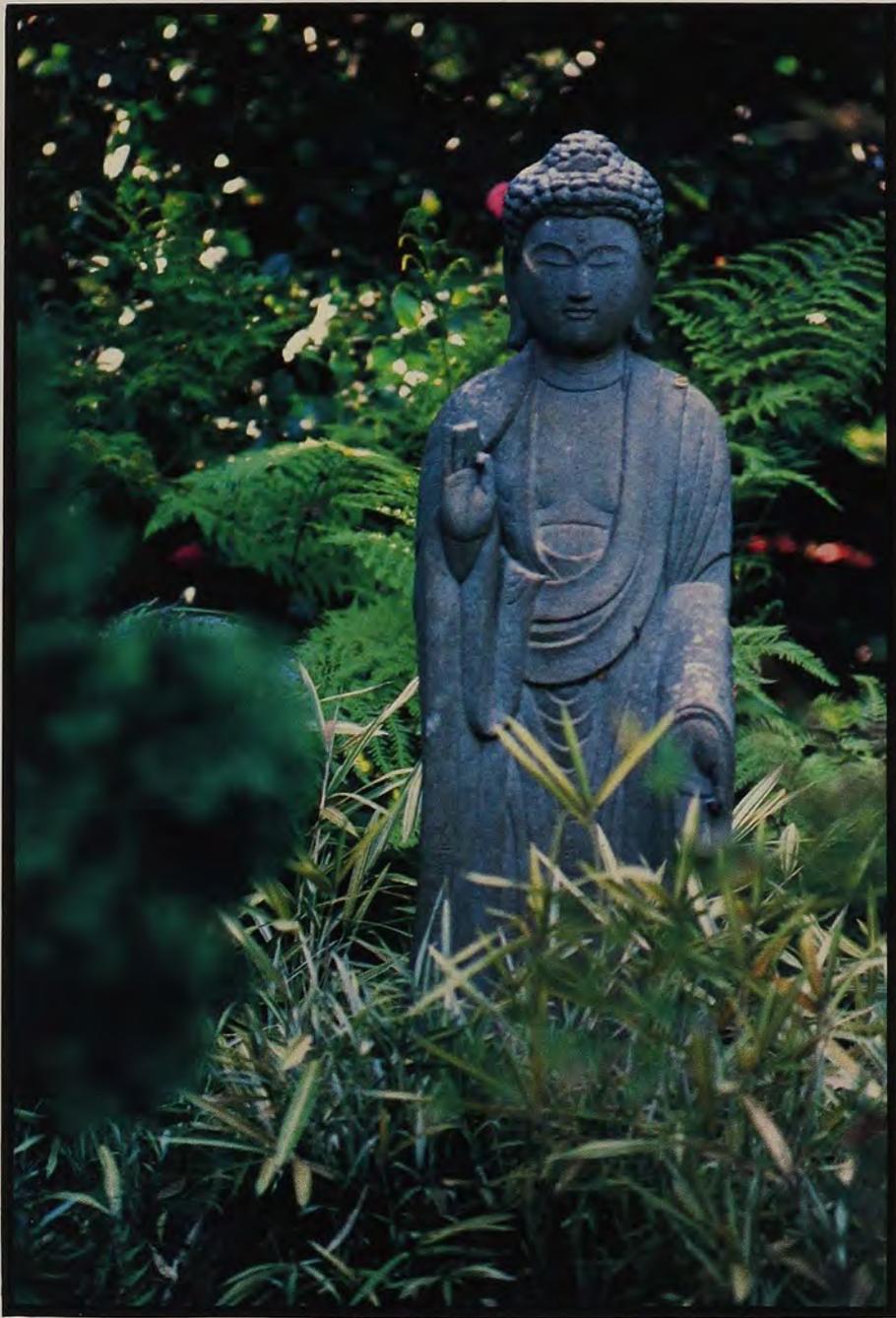
Although Japanese gardens take some of their character from a thousand years of Chinese influence, Chinese plants of an ornamental nature were not introduced in great numbers, and when they were established in Japan their foreign origins became so obscure they were thought to be native, e.g., the giant bamboos, flowering apricot, peony, nandina, etc. What western plants reached Japan were mainly through their Chinese contacts, mostly for herbal use, although the sweet potato was first cultivated in Japan in 1615 by Cocks, Factor of the British East India Company establishment (13). That plant soon demonstrated its importance as a food in times of scarcity, the most recent being during WWII.

Prior to Perry's arrival in Japan there appear to have been no horticultural contacts by Americans despite the fact that our sailing ships touched Japanese shores on numerous occasions from 1790 onward. Our horticultural contacts began in earnest when Perry arrived in 1854. There was an immediate interest in the plants of that strange land, and periodicals such as *Country Gentleman* frequently reported on trials with new plants in the United States, both pro and con (3). Private individuals, consular officials and professionals hired by the Japanese government sent plants back from Japan at various times. No fewer than 16 USDA plant collectors made some kind of contribution of

plants between 1898 and 1955. Similarly, nurserymen and collectors from private institutions, often on their way to China, paused to do some collecting in Japan.

One of the lengthiest stays in Japan before 1900 was that of William S. Clark and colleagues from the University of Massachusetts (Massachusetts Agricultural College). The University was hired by the Government of Japan in 1876 to direct the establishment of a new college in Hokkaido. One or another of their professors stayed until 1893. While Clark was there (1876-77) he sent back at least two shipments of seeds to the college and the Arnold Arboretum, but another person, scarcely known in American horticulture, was active in Japan during the same era. He was Louis Boehmer, a naturalized American who was employed by the Kaitakushi, a development corporation for the pioneering of Hokkaido. (2). The Kaitakushi was headed up by Horace Capron, U. S. Commissioner of Agriculture, who arrived in Japan in 1871. Boehmer went along as the horticulturist and spent several years collecting plants and herbarium material in Hokkaido. The plants were tested in a garden he developed in Tokyo, and his herbarium specimens were to form the beginnings of the University of Tokyo Herbarium. After his work in Hokkaido was completed, Boehmer stayed in Japan and opened a plant exporting business in Yokohama, where he remained until 1892, exporting plants to his homeland, Germany. Boehmer's beautifully illustrated catalog is really more of a commentary on Japanese plants. A copy of this rare work is in the Rare Book Collection of the Smithsonian Institution Library. Strangely, this 20-year effort rarely surfaces in reports of foreign horticultural activities in Japan.

Both Fairchild (USDA) and Sargent (Arnold Arboretum) visited Japan and sent back collections, but neither was persuaded that Japan could offer as much as China. Both of "their men in the field," Meyer (USDA) and Wilson (AA), collected in Japan, although neither was as enamored of Japan as he was of China. Japanese plants did not arrive in the United States in the numbers that might have occurred had these leaders of plant explorations been more enthusiastic. When Wilson introduced us to the famous Kurume azaleas from Japan in 1914, he was aware "that garden lovers of America and Europe knew virtually nothing of this wealth of beauty." (12) The lovely Satsuki azaleas were unknown to us until Morrison arranged for a large shipment from the Chu-



gai Nursery in 1939. Yet both of these classes of azaleas had been cultivated in all the population centers of Japan for over 250 years.

It was not until the series of USDA/Longwood collecting trips to Japan in 1956 and 1961 that we appreciated the complexity of the distribution of *Rhododendron japonicum* and *Camellia japonica* in the wild. Such information is extremely important in selecting parental materials for breeding for cold resistance, flowering time and color range. We still continue to uncover new knowledge of plants of Japan, both wild and cultivated, with each additional plant collecting trip.

Perhaps the most striking example of our reluctance to accept Japanese agricultural prowess is the fact that our Agricultural Attaché reported on the popularity and value of the Durum short-strawed wheats of Japan in 1874, yet they did not make their profound contribution to the "green revolution" until after they were introduced from Japan as the Norin strains by Salmon in 1947 (9).

In the same manner, we have been slow to use the Japanese horticultural literature that spans several centuries. Obviously the language barrier has been a great deterrent. Although there is a broad array of

*Continued on page 32*

LEFT: Japanese gardens often have a limited color palette. The design instead emphasizes inspired combinations of foliage shapes and textures. TOP AND ABOVE: Literally hundreds of plants native to Japan now grace our gardens. Pictured here are two—*Rhododendron* 'Hino Red' and *Adonis amurensis*.

# AN AMERICAN PERSPECTIVE

BY DON L. JACOBS



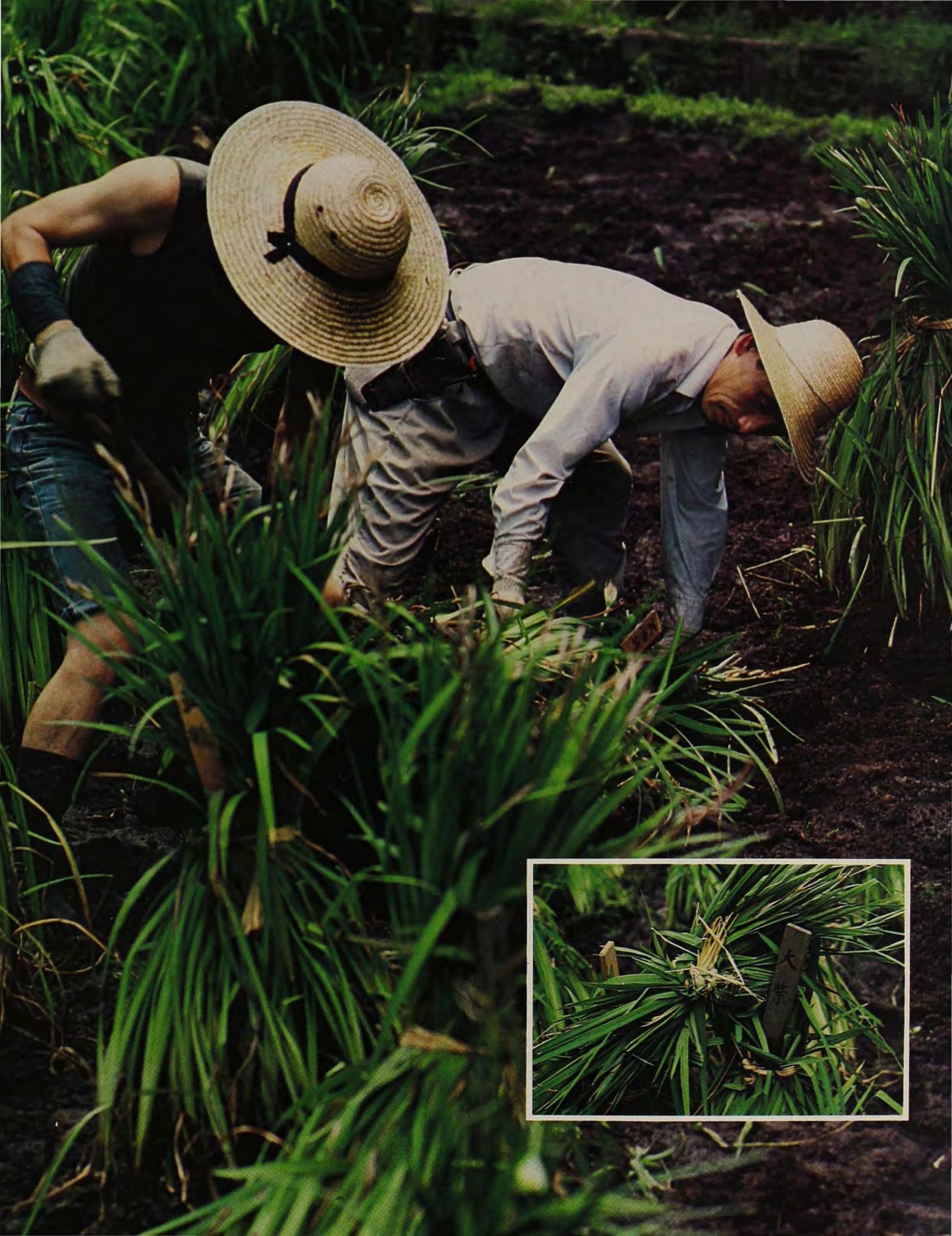
Because space is a luxury in Japan, gardens are especially important. Though designs are labor-intensive, parks and public gardens abound. At right, workers stake iris growing in the Meiji gardens in Tokyo.

How often has it been said that Americans take for granted what others have never had? Never has this saying been made more dramatically clear to me than on a tour of Japan with the American Horticultural Society last November. There, on the countless islands that make up the Japanese archipelago, live some 117 million people, equaling half the population of the United States. The country's total land area is about equal to that of California, but four-fifths of it is steep mountain slopes covered with grand forests of *Cryptomeria*, Sawara and Hinoki false-cypress, spruce, fir, maple, etc.—not well suited to residential use. The country's large population occupies the valleys and coastal plains, a total area about half that of the state of Iowa. To be sure, the inhabitants are ever inching their way up the slopes and pushing out shore lines, but no great gains in tillable land or home sites can be anticipated in the near future. Is it any wonder that space is such a precious commodity there?

Coping with limited space and the high

cost of land is inherent to all gardening pursuits in Japan. Nevertheless, the Japanese' soul is close to nature and this closeness is expressed in his gardening, his art, his total way of life. Virtually every citizen in Japan is a gardener to some degree. His interest may range from essentially plantless rock gardens, through elaborate, condensed, stratified scenic gardens, formal courtyard gardens, vegetable and container gardens to the omnipresent bonsai.

Such inherent closeness to the environment, and plants in particular, is revealed in several ways. Japan is well supplied with shrines of several religions, and gardens are associated with each, to the extent that they command much of the time and effort of the followers. Parks and public gardens abound, and they appear always to be crowded by people of all ages. Guided tours of these places are apparently part of the school curriculum, so uniformly dressed students—girls in black dresses, boys in black suits—are encountered in all of them. Potted plants appear at most apartment windows and balconies. Small shop own-



ers often have choice personal plant collections in their shop windows as well as on the walk out front. Many remain undisturbed on the walk day and night. The only leopard-spotted *Rohdea japonica* I saw anywhere on the trip was in a mall in front of a stocking shop. The shop owner shrugged and walked away in disdain when asked if he would sell it.

Further evidence of the bond between the Japanese and their environment is found in the flourishing bonsai industry. Probably nowhere else on earth could an industry based on containerized miniature landscapes and dwarf trees be developed to such a state. Relatively large nurseries produce nothing but bonsai trees. Bonsai containers are available in endless variety and sizes at prices from less than a dollar to over \$100. Established bonsai are available for a few dollars or more than \$5,000. Beautiful small pines and other conifers with wrapped roots, ready to plant in containers, are for sale in front of grocery stores, fruit stands, in public gardens and garden centers. Most are priced below \$10.

The variety of plants used by the Japanese in bonsai art seems limited only by what is available. The most surprising to me were chrysanthemum bonsai. Since our visit was in November these were being specially featured. The small-flowered, twiggly varieties used were in a full range of colors (white, yellow, orange and dark reds). They were trained in erect cones, erect spreading, cascading or forest groups, or even projecting from lofty rocky crags with more than a foot of exposed roots clinging to the rock faces and stretching to the earth below.

Only since the beginning of the reign of the prudent Meiji Emperor in 1868 has the Western World had the opportunity to learn from the Japanese and the Japanese from the West. The benefits to both can hardly be exaggerated. Virtually by decree, the beloved Meiji outlawed illiteracy and ignorance and placed a high value on the virtues of the arts, science, industrious creativity and patriotism. To this day his influence is felt everywhere on these vibrant isles.

To be sure, perfection is to be strived for but seldom attained. Although a tremendous amount of labor is spent weeding, sweeping the mossy lawns, pruning trees and shrubs, stripping old pine needles and twigs, and even sweeping clean the small rocky streams, litter-bugs are at work even in Japan. Since most sites are clean and well-groomed, it was all the more disconcerting to see a trashy collection of drink cans, bottles, cigarette packs and other lit-

ter swept into the brush at the side of the road at a very picturesque overlook above the city of Atami, at Ten-Provence Pass.

The close association of the Japanese soul with things of nature is not entirely unique. Rather, it is their environment and their response to it that are unique. More than 3,000 Japanese islands stretch in a 1,800 mile arc from Hokkaido in the north to Okinawa in the southwest end of the Ryukyus. Their climates range from cold-temperate to tropical-oceanic. Yet, to most of the world, "Japan" is the largest island, Honshu, which makes up nearly two-thirds of Japan's land area and includes Tokyo, Kyoto, Osaka, Hiroshima and Mt. Fuji. Here, as with all but the coral atolls far to the south, the topography is of volcanic mountains rising quite abruptly from the sea. These are steep, but graceful, naturally-contoured and commonly forested to the summit. They are not like the jagged rock pinnacles of the Rockies or the European Alps.

The coastal plain around Tokyo Bay is the most extensive flat-land in Japan, and here the daily mean temperature averages about 38° F lower in January than in July (39°/77°). The heaviest rains come from June to October. November through March is relatively dry. Much of the year one can stand on sun-bathed coasts, feeling the warm moist air, and look inland to the mountains where dense clouds drop their clear, life-giving loads as the warm thermals rise and condense in the cool mountain air. Everywhere are clear streams, waterfalls and mossy banks. Where water penetrates through crevices to hot volcanic layers, hot springs are spewed back, to the awe and delight of the residents.

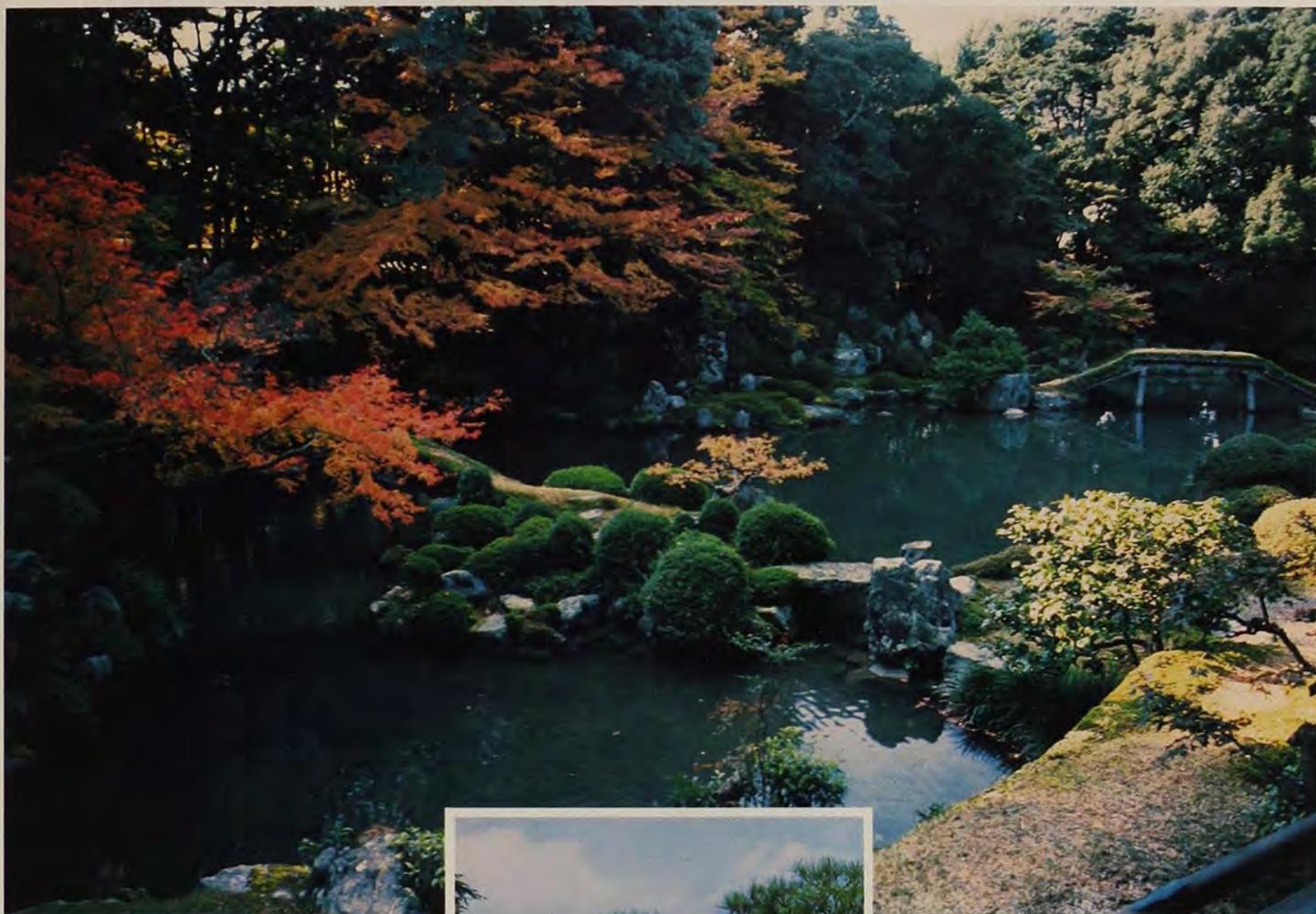
Such is the backdrop for Japan's gardens. Their composition includes rocks, sand, sky and water, and a rich variety of plants. The rocks are as carefully selected and positioned as the actors in a Hollywood film. Sand may be virtually eliminated or developed to a major role depicting sea or sky, or perhaps, symbolically, limbo. Water in Japan is seldom stagnant; it is vibrant and alive with the sounds associated with dripping, splashing, tumbling over rocks and waves breaking on the shore. Water brings not only reflections, but also action and sound to the garden, further enhanced by the music of birds attracted by the water and punctuated by popping, sucking and splashing of koi fish as they chase and voraciously feed at the water surface. Here we may also encounter the rhythmic "thump-thump" of a *shishi odoshi*, a novel device made of a section of bamboo a few feet long and

several inches in diameter, balanced like a teeter totter below a gentle water fall. It slowly fills with water, teeters down with a thump, empties, returns with a thump, and repeats, to frighten any browsing deer from the garden. But the Japanese garden symphony would be unfinished were it not for the bamboo leaves and pine boughs for the wind to play upon.

The finest gardens in Japan use a wide variety of native mosses as virtually a complete groundcover. They include hair caps (*Polytrichum*), broom mosses (*Dicranum*), *Catharinea*, white mosses (*Leucobryum*), and fern mosses (*Thuidium*). They thrive in the moderate climate that is free from summer droughts and are kept attractive by frequent sweeping. All of these genera are well represented throughout the United States, but perhaps only the fog belt of northern California to British Columbia would support such a groundcover with comparable lushness. Elsewhere summer watering would be essential, except in local seepage or perched water table sites.

One of the most prominent features among Japanese landscape plants is the large selection of broadleaved evergreen trees and shrubs. Many of these are also extensively planted in our southeastern states and on the West Coast, but many more are relatively unknown here. Some are native to Japan, but many are introduced from China. *Aucuba* occurs generously in the wild in Japan, and cultivars are being developed there as well as in suitable parts of our country. *Mahonia japonica* was abundant everywhere in Japan although we seldom see it in this country. On the other hand, we rarely encountered *Mahonia bealei* on our tour, one of the most common landscape plants in our Southeast (it even naturalizes). We noted many species of *Camellia* in great numbers and sizes. Some on the palace grounds in Tokyo were nearly 30 feet tall with trunks about eight inches in diameter.

The several varieties of teas are included in *Camellia*, and fields of tea are almost as abundant as rice paddies in Japan. Theaceae also includes three other genera of important evergreen Japanese shrubs. They have been much confused in the United States. *Ternstroemia gymnanthera* is one of the Orient's most valued contributions to landscape design throughout Zones 7-9. It is almost universally (and incorrectly) known as *Cleyera* to nurserymen in our Southeast. This plant is usually encountered as a shrub under six feet tall and is used for hedges and foundation plantings. It is essentially disease-free and has coppery, waxy, blunt-tipped, oblanceolate



leaves up to three inches long and with smooth margins. It produces half-inch, berry-like fruit which begin green, develop red cheeks and mature orange-gold with beautiful red-orange seeds. The foliage turns redder in winter. 'Burgundy' is a cultivar that retains its bright foliage well through the year. 'Variegata' is a fine, low, compact, tricolored cultivar. 'Nana' is a small-leaved, slow-growing, upright cultivar, about five feet high. Both in this country and in Japan, more vigorous, upright-specimens, in tree-form, are often encountered. There is a specimen over 30 feet tall on an old estate in Savannah, Georgia, and in the Orient the hardwood is valued for furniture and construction work.

The related genera, *Cleyera*, with about 17 species, and *Eurya*, with about 70 species, are abundant and highly valued in Japan, but are seldom seen in the United States. Boughs of either are commonly used in ceremonies in Shinto shrines. Although these three genera are often confused, they are quite distinct. The berry-like fruits of the species of *Cleyera* and *Eurya* most frequently cultivated are black and only about one-fourth inch in diameter. The leaves of

*Eurya* species are finely-toothed and dark, glossy green, similar to *Sasanqua* camellias. They are usually two to three inches long, and two-ranked in one plane on some of the wand-like branches. Leaves of *Cleyera japonica* are essentially toothless, lighter green, longer and more tapered (five by one inches). 'Tricolor' is a graceful variegated cultivar of this desirable species.

*Continued on page 38*

ABOVE: Temple gardens are also numerous in Japan. Pictured here is the famous "Samboin" Garden at Daigoji Temple in Hara, near Osaka. LEFT: The form preferred for many trees is not left to nature to determine. Here workers hand-strip pine needles and unwanted twigs on a tree in Ritsurin Park, Takamatsu, to achieve the desired shape.

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# The Florists' Cyclamen



BY DR. ROBERT E. LYONS

Although their kinship may not immediately be apparent, *Cyclamen* species are members of the Primulaceae, or primrose family, putting them in company with the true primroses, *Primula* spp., the shooting-star, *Dodecatheon meadia*, and the loostrifes, *Lysimachia* spp. There are about 15 species of *Cyclamen* found throughout both the northern and southern Mediterranean countries and east through the Greek islands, Syria and Iran. All of the species are perennials in their native habitat, although in our climate some are hardy and some are not.

The foliage of these attractive plants is very variable, even within a single species; leaves may range from circular to heart shaped with margins ranging from smooth to jagged. Generally, the leaves are attractively blotched or marbled with silver, and the patterns may vary drastically from plant to plant. This is especially true in the case of the popular florists' cyclamen, *C. persicum*, as anyone who has examined specimens growing on a greenhouse bench will know. The familiar flowers of these plants range from white to various shades of pink to red, and several of the species have fragrant blooms. The different species of cyclamen may bloom during the autumn, winter or spring, and the blooms may appear either before or after the appearance of the full complement of foliage.

The florists' cyclamen, decidedly the most well-known member of this genus, is not of hybrid origin as one might suspect. Instead, it is the result of decades of intensive cultivation of a single species, the product of generation after generation of careful selection among plants grown from seed.

*Cyclamen persicum*, as it is known today, has had many different scientific and common names throughout its long history. Before genus names became commonly used Persian violet, now a common name for *Exacum affine*, another popular florist plant, and sowbread, or the Latin equivalent *Panis porcinus*, were popular names. *C. persicum* has also been called *C. indicum* and *C. vernale*. Contrary to its name, it has never been found naturally in Persia (modern-day Iran), although as a native of the eastern Mediterranean it grew in countries that once were part of the ancient Persian empire. In the October 1949 issue of *The National Horticulture Magazine* W. C. Blasdale offered explanations for the origin of the species name and the rationale for its use. *Persicum* may actually be a corrupted form of another species name, *puniceum*, incorrectly applied to the plant and also a disputed name in itself. It also could refer to the peach-colored

flowers described by an early botanist (the peach tree is, significantly, *Prunus persica*), or the individual who gave the plant the name *persicum* may have erroneously thought the plant he was looking at came from Persia. The actual acquisition of a botanical name is never a simple process, and the confusion these names often create is understandable, especially for those researching the earliest reports of a particular plant.

In addition to the scientific descriptions by botanists, herbals are important to completing the overall picture of a plant's history by revealing reputed medicinal qualities. The cyclamen has been reported to heal spleen ailments and prevent premature births. Its reputed aphrodisiac qualities, however, played second fiddle to many other plants thought to be more reliable in this respect.

*C. persicum* is a native of Lebanon, Syria, the Sinai peninsula and Turkey, where it blooms during the cool, moist winters and dies back to its corm-like tuber at the advent of the hot, dry summer. The tuber functions as the plant's food storage organ during the most stressful part of the year just as the roots, corms, bulbs and tubers of our familiar perennials function as overwintering food storage. In both cases these organs are the plant's key to survival.

*C. persicum* has been cultivated for well over 250 years. By the early eighteenth century it was available in the florist trade, but it did not become popular until 1850. Individual plants were very expensive since a "rest period," which simulated the natural summer climate, was included in the production schedule. This time-consuming practice often resulted in a 2 1/2-year lapse from sowing seed to flowering. Later that same century the rest period was eliminated and the growth cycle was shortened to 15 months, but approximately 75 more years would pass before additional cultural improvements were made that allowed the growth cycle to be shortened to eight months.

At the same time, cyclamen fanciers were devoting much time to flower improvement. By 1853, major efforts by the French produced, in addition to the original pink hues, shades of lilac, rose, purple and the colors in-between. The flower size remained small (usually no greater than 1 1/2-inches in length), similar to that of the native species, but the base of the petal was broader and less twisted. The first large-flowered forms, much like our present-day varieties, became available under the names 'Giganteum', 'Univsum', 'Unicum' and 'Splendens' by 1870. 'Giganteum' created

a sensation in England and was hailed as "a break from whence we may expect great things." (*The History of the Persian Cyclamen*, H. Veenman and Zonen. The Netherlands.) The prediction neared reality when 'Giganteum compactum. Magnificum' was released in 1877.

This new type was heralded as being far superior by virtue of its compactness. Unfortunately, the breeding records of the original 'Giganteum' types are not available, but an incredible chance duplication of those events in the 20th century may explain the appearance of those first large-flower types, despite the lack of records. As the story goes, a horticulture lab in the Netherlands collected a wild plant and self-pollinated the flowers. The subsequent seeds were sown and grown to maturity, at which time the flowers were twice as large as the typical parent plant's.

By 1907 these larger-flowered cyclamen were available in salmon, true red and bicolors, with crested, double, frilled and fringed petals. In fact, numerous varieties developed at the turn of the century remain popular today (e.g. 'Rosa of Zehlendorf', 'Perle of Zehlendorf', and 'Rococo').

Due to the continued efforts of the Europeans there are now many new cultivars of cyclamen that bloom early, grow compactly, display an abundance of flowers and, in some cases, are quite miniature. The easiest way to enjoy cyclamen in the home is to buy a mature, blooming plant. Bright, indirect light, regular fertilization with a complete formula and, above all, a constantly moist root environment contribute to optimum plant health.

Starting cyclamen from seed can be challenging, generally requiring more than a year of waiting before the plant reaches the flowering stage. Since the tubers of a cyclamen do not produce offsets, growing plants from seed is the only way these plants can be propagated. Purchase seed from one of the companies in the Sources Section on page 39, or try pollinating one of your own plants. You will need to hand-pollinate the flowers with a brush, since the pot plant cultivars do not set seed readily.

All the cyclamen species, except *C. persicum* and its cultivars, exhibit an interesting characteristic when they set seed—the flower stalk neatly coils back beneath the leaves to the base of the plant. The coiling action seems to aid in seed dispersal by ants, which are thought to be attracted by a sweet exudate. The flower stalks of *C. persicum* remain above the foliage where they bend and twist haphazardly. It is puzzling, however, that even though this spe-

*Continued on page 41*



ABOVE: Designs of many styles and periods happily co-exist in the gardens at Barnsley House. Through a rose-vine arch adjacent to an 18th-century Gothic summerhouse is a small garden dominated by a modern fountain sculpture. RIGHT: At the rear of the house, built in 1697, the garden begins with an expanse of lawn framed by herbaceous borders.



# Barnsley House

BY LORRAINE BURGESS

A garden, to be beautiful, must be loved," believes Rosemary Verey, owner of Barnsley House in Gloucestershire, England. Hers is a friendly admonition based on personal experience, for she has been the prime renovator and garden designer of the grounds at Barnsley House. She has also made her mark as a garden writer. Gardeners in this country will recognize her as the editor, along with Alvide Les-Milnes, of the extremely popular book, *The Englishwoman's Garden*.

Mrs. Verey became a gardener about 20 years ago, when she decided the time was right to begin renovating and improving the grounds at her family's home. The house itself, a charming structure of Cotswold stone, was built in 1697. An addition was made in 1830. Around it, gardens had been plotted and an impressive eight-foot-high wall of Cotswold stone had been constructed to enclose the area. These existing buildings, walls and garden beds provided her with departure points for her design.

Today, the front of the house is hand-

some and beautifully landscaped, but the real focus of the garden is to its rear. Here the garden is screened from roadside traffic, convenient to view from upstairs windows and accessible from ground floor rooms of the fine old mansion.

A broad green lawn bordered by herbaceous plants mingling with flowering shrubs is the focus of one area. Mrs. Verey has given special attention to flower combinations and exciting leaf textures. It is her boast that "every inch of ground in the beds is covered."

A wide gate in the high, rear walls leads to the vegetable gardens, but even here nothing is solely utilitarian. The plots are laid out in what Mrs. Verey calls "a patterned potage." She uses unusual vegetables and gives special attention to leaf textures and plant design. Salad greens are not planted in rows but rather into diamond shapes as a series of central accents. A very old cast-iron urn is the focus of a circular bed. Even the pathways are paved in an unusual way with a mix of salvaged

rose-red and metallic brick and twice-used stone blocks. The resulting path is pleasant and attractive. Because of the strong design of individual beds the pattern remains intact even after the crops have been harvested and the soil stands bare.

Other new features include a lily pool, an Elizabethan knot garden, a tree tunnel and a pleached corridor of linden trees.

Most striking, perhaps, is the tree tunnel, which she planted, nurtured and trained to a thing of beauty. It is so striking that a photograph of it was chosen to adorn the book jacket of *The Englishwoman's Garden*. Twenty-foot-high trees parallel a carefully laid path of flintstones. The trees are *Laburnum X watereri 'Vossii'*, a hybrid that produces longer, narrower racemes than the common variety of golden chain tree. In early spring the new foliage provides delicate beauty, beneath which red and white tulips add color. In early summer bright-yellow flower clusters on the trees are particularly handsome. Under-plantings include Spanish bluebells,



Golden chain trees, planted by the owner and now 20 feet high, form a tree tunnel in one corner of the garden. In spring underplantings of tulips add color. RIGHT: Tubs filled with seasonal flowers line the terrace at the rear of the house.



golden balm (*Melissa*) or *Allium aflatunense*.

Another outstanding feature of the garden is the pleached corridor of large-leaved linden trees, *Tilia platyphyllos* 'Rubra'. These are planted on either side of another attractive garden path and each circled with a base of groundcover. The trees are trimmed to a uniform box shape about six feet high. At the end of this long vista a tall, dark-green cypress serves as a terminus.

A matter of great pride in the Barnsley garden are the two summerhouses, both of which date back to 1770. One structure is of classical style, having been moved in by the Verays from nearby Fairford Park to rest before a pre-existing reflecting pool. The other summerhouse is Gothic, built at Barnsley House about the same time as the high Cotswold stone garden wall. Today the building is arched with sturdy rose vines and serves as an entry point in the garden plan.

Within the garden itself designs of many

styles and periods exist, but never a contradiction. Prominent along one outside wall is a delightfully modern fountain, a sculptural piece of two sheep, either rampant or in fond embrace, perhaps commemorating the region's traditional farming industry.

In another area of the grounds tribute is paid to a much earlier style of garden design. A knot garden made of rosemary hedges and interlacing threads of different types of box adds a touch of formality to her eclectic design scheme. In *The Englishwoman's Garden* she explains her fascination with this formal approach: "In the sixteenth and seventeenth centuries the design was of tremendous importance for there were many less plants to use, in fact formality and design were essential. Borders as we think of them only came about with the availability and introduction of plant material."

Today Barnsley House is a true delight, prospering in the hands of a knowing garden-maker. Mrs. Verey's 20-year effort has

lent vitality to an aging garden plot and has done wonders for the land. She deserves all the incidental pleasures she has reaped.

One such pleasure was surely the honor of having her library terrace garden view chosen as the photographic subject for a widely-distributed poster announcing a national exhibit at the Victoria and Albert Museum. The exhibit commemorated a thousand years of gardening in England—20 of which Rosemary Verey has admirably put to good use.

Travelers to England will be pleased to know that the Barnsley House gardens are open to the public every Wednesday from 10 a.m. to 6 p.m. and on the first Sundays of May, June and July, or by appointment. The telephone number is Bibury (0285 74) 281. ☎

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Lorraine Burgess is a frequent contributor to *American Horticulturist*. She is the author of the recently published book, *Garden Art* (Walker & Co.).

# Mini-Flora<sup>®</sup> Roses

BY JUDY POWELL



I confess to being one of those people for whom roses hold little allure. The flowers are lovely, but other flowers are lovelier, and a rose bush without flowers has no charm for me at all. Imagine my surprise, then, when I discovered that the little shrub I was admiring at a special nursery display recently was a rose bush! In a raised bed containing a variety of dwarf shrubs was one plant that had a pleasing mound shape, attractive green foliage and dainty but prolific yellow flowers.

This bedding plant turned out to be one of several cultivars of a new group of roses called Mini-Floras®. They are sure to appeal to gardeners who previously have been lukewarm on roses or have had little space for them, and to florists who are looking for a flowering pot plant to sell during the slow winter months.

Mini-Floras®, as their name implies, are a cross between miniature and floribunda roses. They are heartier than most roses because of this parentage and, to my mind, have the best characteristics of both: like their miniature parent, their size allows them to be more versatile in a planting scheme; like their floribunda parent, their flowers are large and abundant. They do beautifully as edging or bedding plants, as I discovered, but they also thrive in containers (six- or eight-inch pots), which makes them suitable for a patio garden as well. Their average height is 12 to 18 inches (some can reach 24 inches), and they have 1½- to two-inch blooms, which appear in abundance every 32-38 days under normal care; in all, five blooming series are possible before they go into dormancy.

Roses have been used as bedding plants in the past, and rose fanciers have also grown them in containers. What is new about these Mini-Floras®, however, is that they have been hybridized just for these purposes, and it will be the first time this type of rose will have been bred to sell in this country. In what has become an all too familiar refrain, "Europe has grown them for years."

There are seven cultivars in the series. Rose hybridizer J. Benjamin Williams of Silver Springs, Maryland, has contributed 'Patio Patty', 'Amber Flash', 'Astra' and 'Stardance'. 'Patio Patty' was the first Mini-

Flora® to be developed and has been on the market a couple of years. Williams, in fact, is the originator of the concept of Mini-Flora® roses. 'Patio Patty' is a fragrant, creamy rose, tinted rouge, with two-inch blooms. The plant can reach a height of 24 inches. 'Amber Flash' grows to a height of 20 inches and has large blossoms in a yellow-orange blend. 'Astra' has pink, dogwood-like blossoms and is especially low-growing, reaching a height of only about 12 inches and a breadth of 18. 'Stardance' is a lovely white rose with large yellow centers. It is a vigorous grower and will reach 24 inches in height.

Two other cultivars, 'Orange Sunblaze' and 'Scarlet Sunblaze', have glossy, deep-green foliage and non-fading flowers in brilliant orange and scarlet. Both grow to heights of between 15 and 18 inches. These were developed by the famous House of Meilland of Antibes, France. Another cultivar in this group, 'Yellow Sunblaze', will also be available, although it is not a Meilland contribution.

Home gardeners will be able to buy all these Mini-Floras® for the first time this spring at nurseries or florists' shops. They will be sold ready to bloom in containers. Cultural requirements are simple, but Williams offers this tip for those who buy hothouse-grown Mini-Floras®: "All miniature-type roses which have been propagated and grown under 'high' culture will have an adjustment period—leaves will yellow, etc. Don't assume the plant is dead. Be patient. Prune down at least a third of its height when it has finished blooming. The plant will immediately put out new growth that's adjusted to its new environment."

Nursery-grown plants will fare better outdoors from the start. They will be sold in pots with adequate soil and fertilizer to sufficiently maintain several cycles of bloom—under normal conditions.

If you choose to keep your Mini-Floras® in containers for the patio or deck, insulate the containers to prevent the plant from drying out. Williams suggests putting one container within another and filling the space with sphagnum moss or potting soil to help retain moisture. Water the liner and be sure both pots have drainage holes.

Put potted roses on a patio or deck where they will get about six hours of sunlight, and water frequently. Use a liquid fertilizer, and feed at half the label strength twice as often as recommended.

Pot Mini-Floras® in rich, well-drained soil. Any good packaged potting soil will

do, or make your own using one-half each by volume of organic matter such as peat moss, and perlite, vermiculite or sharp builder's sand. Arrange the roses in masses in tubs along a walk or beside an entrance, put them in identical pots to form a decorative border at the edge of a deck or a swimming pool. If you're a city dweller, put them in window boxes or along the railing of a high-rise patio.

Because of their parentage, these roses are very hardy and can withstand winter temperatures outdoors whether planted in containers or in the ground. In the ground, Mini-Floras® can be used the way any deciduous shrub is used in the landscape. I think the yellow types are especially attractive in a grouping with other small shrubs, especially ones with variegated foliage.

Potted plants can be removed from their containers and planted in the ground anytime. Feed them monthly with 5-10-5 or prepared rose food from pruning time to two months before frost. Spray with any good, all-purpose rose spray every 10 to 14 days to ward off black spot, mildew, rust and insects. Happily, Mini-Floras® seem to be less disease susceptible than other roses. Prune them once a year in early spring. Williams suggests that the roses be cut back in mid-August as well to stimulate a mass of fall blooms if the fall climate allows. He also suggests that roses left outdoors during the summer but returned to the house in winter be pruned back in the late fall to encourage a new cycle of bloom in February.

Mini-Floras® also make good indoor pot plants. They will bloom under most conditions indoors but prefer strong sunlight (a southern exposure). They will rebloom for extended periods if given 16 hours of fluorescent light a day. They need plenty of humidity, which is often difficult to achieve in a house during winter unless you mist them regularly or place them on a tray of pebbles and water. Also be sure to water pots frequently to offset the warm dry conditions of a house in winter.

Mini-Floras® will make it possible to use roses in a number of new ways in the house or garden. As these types become more popular, rose breeders are sure to develop new strains, thus increasing the variety and availability of stock. Also in the offing are plans to develop hanging basket and creeping types, as well as tree roses grafted on 18-inch standards for pot culture. ☼

Judy Powell is the editor of *American Horticulturist Magazine*.

ABOVE: Mini-Floras® grouped in pots make attractive plantings on a terrace. From left to right beneath a tree standard backdrop are 'Yellow Sunblaze', 'Orange Sunblaze', 'Amber Flash', 'Stardance' and 'Astra'. LEFT: The dogwood-like blossoms of 'Astra' and the snowy white blooms of 'Stardance'.

Japanese books in collections in this country, they are not readily available to most horticulturists. For a long time there seemed to be no interest in the horticultural and landscaping arts so peculiar to Japan. How many professionals can recall any degree of mention of Japanese horticulture in their academic training? But with the occupation of Japan after WW II, there arose a new and enduring interest in this subject. Flower arranging, bonsai and Japanese gardens attracted considerable interest among the military and diplomatic people stationed in Japan. It is an interesting commentary that a style of horticultural art restricted to the samurai and noble classes of Tokugawa, Japan received its greatest attention in the United States through their modern American counterparts who occupied their country. This post WW II interest in Japanese plants is yet another incentive to better understand the foundations of Japanese horticulture and make even more provisions for students to study there.

We need to move quickly in this direction. Post WW II recollections of Japan are dimming, and there is a trend toward western-style commercial horticulture in Japan. The traditional Japanese nursery has always been small, and the families tended to congregate into specialized communities—mainly Angyo, north of Tokyo; Ikeda, near Kobe; the vicinity of Kurume; and around Nagoya. These nurseries consist of hundreds of small patches of individual plants, each block owned by a single nursery family. Every nurseryman became a specialist following methods handed down by his father. Many of the plants now grown are described only in handwritten lists or elaborate calligraphic manuscripts, some dating back to the natural history period. The present day owner may train exactly the same specimens as did prior generations, particularly black pines and maples.

I recall visiting one such small nursery near Angyo specializing in *Adonis amurensis*. This is a typical "natural history period" plant. *Fukuju-so*, as it is known in Japan, is given at the New Year as a symbol of prosperity because of its bright-yellow flowers. Once there were more than 250 cultivars in this nursery, but now the owner grows no more than 20. He is presently engrossed in the culture of American cultivars of Oriental magnolia hybrids, which he propagates with ease. He laid out on the straw mats of his farmhouse a volume of folded pages several feet long displaying 46 old types of *fukuju-so*, beau-



Japanese maples have become favorite ornamental trees in American landscapes. This specimen was photographed in the Meiji gardens in Tokyo.

tifully illustrated in color. On another occasion, we visited a grower of *Ardisia japonica* who grows 57 cultivars of this popular natural history period plant. In this case, the cultivars are described and illustrated in a contemporary Japanese horticultural periodical. But in either case, it is unlikely that American horticulturists will encounter these publications. Similarly, *Psilotum* (a primitive fern relative) achieved great popularity, and hundreds of bizarre forms were cultivated and described in wood-block prints. When I sought these in 1956, there were scarcely a dozen varieties in the hands of a few growers.

The point I want to make here is that for every native plant in the hands of the skilled Japanese horticulturist a bewildering array of unique variants arose, often selected for characteristics that would be obscure to the casual observer.

As we now know, many of these forms no longer exist and this loss of cultivars is certain to continue. The Japanese nursery industry is changing due to economics and opportunities for export. Large cooperatives have been formed, in one instance producing over 36 million small plants annually. Obviously under such a system only the most popular and readily propagated

varieties will be accommodated. A further distraction is the arrival of the garden center with shipped-in plants and packaged merchandise. At the old Akashi nursery site where Wilson collected the Kurume azaleas, a modern garden center has replaced the nursery. In 1976, when we asked to see the guest book that Wilson signed in 1914 and which I had signed in 1955, no one seemed to know or care about this small point in horticultural history.

Older nurseries are under particular threat from urban sprawl and super-highway construction. This is particularly noticeable in the Angyo region where great highways to the north are being developed. When David Fairchild visited Japan in 1902, he emphasized that those who appreciated how well Japanese plants thrive in America would find new forms and get new ideas from a visit to the nursery regions of Japan. But this had better be soon or the new ideas will be mostly Western.

We can expand our knowledge of Japanese horticulture in several ways. Modern Japanese books often have English summaries; others are written in both Japanese and English. A good example is the five-volume series of technical illustrations of important Japanese trees (5). Since the

interpretation of *tree* is rather liberal, a number of familiar horticultural species are included. The descriptions are in both Japanese and English, and although that portion of the text relating to the distribution maps is only in Japanese, this is not a serious defect. Anyone studying Japanese plants should have access to this series. Likewise, Ohwi's *Flora of Japan* is the English counterpart to the original Japanese edition (8) and is considered to be more extensive. It is, in fact, the only comprehensive flora of Japan in English.

Many classical books written in early style are being reprinted with modern Japanese supplements since the younger Japanese cannot read the old characters readily. There is no reason why similar English supplements to the most important ones could not be prepared. For example, the five volumes on azaleas, *Kinshu Makura*, written in 1692, have been reprinted in Japan with a modern supplement. We are now in the process of preparing an English supplement. It should be of interest to azalea enthusiasts because it dates many current varieties and illustrates flower forms of value to plant breeders.

We must continue our plant collecting efforts for both wild and cultivated trees and other plants. Fortunately, there is no serious threat to most wilderness areas of Japan because the entire population is conservation-minded and has historically understood the value of their natural areas. Desirable characteristics are constantly being discovered in seed populations from recent Japan explorations, including pest resistance and improved range of adaptation. One of the best illustrations of this trend is the discovery of powdery mildew resistance in collections of *Lagerstroemia fauriei* that I first introduced into cultivation from Yakushima during the USDA/Longwood exploration of 1956. This species has been used with great success in crosses with the common crape myrtle at the National Arboretum.

There are some excellent technical aids dealing with plant distribution in Japan. One of these is the publication by Nuttson (7) on Japan's vegetation and climatic analogues in North America. Armed with such materials, we need to explore each significant species throughout its natural distribution in Japan. Because Japan is linearly disposed over only 1,500 miles, a great opportunity exists to do this. The validity of this procedure can be demonstrated by the decumbent *Aucuba japonica*



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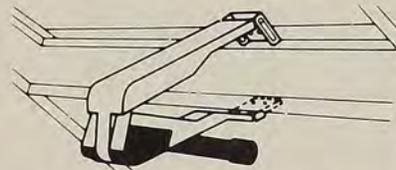
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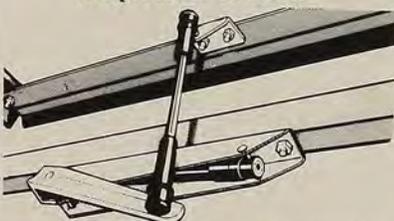
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var. *borealis*, native to northern Honshu and Hokkaido. Because of its habit, this variety takes the species much farther north than the normal upright plant. It has proved sufficiently stable and hardier than the species so that collections I made in Hokkaido in 1961 have become a useful, low-growing, broad-leaved evergreen for landscape use. We now appreciate that *Cryptomeria japonica* comes in at least four geographical races related either to the moist, high snowfall regions of Japan Sea or the sunny, dry winters found on the Pacific Ocean side of Honshu. We are aware from extensive collections of *Rhododendron japonicum* I gathered in this precise manner that populations from its extreme southern station in Kyushu differ markedly in range of flower color from those at the northernmost end of Honshu and that this may be correlated with hardness. The fact that *Rhododendron kaempferi*, one of the most useful Japanese species, occurs from the sea level paddies of Kyushu to alpine bogs in Hokkaido must be taken into account in any serious breeding program.

The daylily is an interesting case in point. There are several species of *Hemerocallis* described for Japan and these are distributed from Kyushu to Hokkaido and beyond. The earliest flowering is in May but most bloom in June through August. In southern Shikoku, *Hemerocallis littorea* from Cape Ashizuri does not begin to flower until October and continues until December. This Cape is decidedly a warm-temperate environment. When plants I collected were cultivated at the National Arboretum, *H. littorea* flowered at precisely the same time as in Japan. As a consequence, it is a most useful species for breeding. But to the best of my knowledge no other foreign collector has visited this remote locality since my visit in 1956. It is well worth the attention of future collectors investigating Japanese plants. Because of my years of field experience in Japan and the increasing background of resource information, I am convinced that nowhere else do we have so unique a plant-collecting situation in relation to ornamental plant improvement in the United States as we do in Japan.

Again, we must turn our attention to the fact that Japanese plants are easily adapted to the cultural environment of a significant portion of the United States. Japan proper is a mountainous and hilly country extending from the 31st parallel to the 45th parallel. Add to this the Ryu-

kyu Islands and the range is extended into the tropics by 700 miles to the 24th parallel. A latitudinal comparison of Japan and North America reveals that the northernmost parts of Japan equate to Maine and New York, while the southernmost

**Fortunately, there is no serious threat to most wilderness areas of Japan because the entire population is conservation-minded and has historically understood the value of their natural areas.**

part of Kyushu is in line with Florida, Alabama and Georgia. In between are many localities with analogous climates as established by Nuttinson using a comparison of total climatic data. There are many examples of related species in Japan and the eastern part of the United States that bear out this analogy, especially when cultivated in their counterpart climates. For example, we have *Cornus florida* in the eastern United States and *C. kousa* in Japan. *C. kousa* grows extremely well here in the East and compliments its American relative by flowering a month later. *Pachysandra procumbens* is native to Appalachia and *P. terminalis* to the mountains of Honshu and is, of course, one of our most useful groundcovers. But it is particularly interesting to me to see how the wild azalea, *Rhododendron bakeri*, grows on Gregory Bald in western North Carolina exactly as its counterparts do on the eroded volcanic cones (*daira*) of southern Japan, even evolving similar series of natural hybrids. If we examine the counterpart station climatological tables prepared by Nuttinson, we find that the two localities have precisely the same climates.

In summary, Japan is a remarkable resource for ornamental plants, both as a result of its natural wealth of species and the impact of historical circumstances on the use of these resources. Many Japanese species and cultivated forms have been introduced already, but this is only the tip of the iceberg. Opportunities exist for American students to make an impact on the use and improvement of earlier introductions through study in Japanese institutions. Many remote areas of Japan have been visited perhaps only once by American collectors, and many species are known

only superficially from a breeding standpoint. We need to better understand the natural variability of Japanese plant species and the extent that they have been used during so long a horticultural history. A vast array of horticultural forms developed in old Japan has been lost, and with the changes in modern technology and western horticultural practices, this may continue. Young American horticulturists still have opportunities to become knowledgeable in this classical field. They need to be given an opportunity to undertake research, plant collecting and academic study in Japan. ☉

Dr. John L. Creech is a world-famous plant explorer and retired Director of the United States National Arboretum. This article was adapted from Dr. Creech's B. Y. Morrison Memorial Lecture, given at the Society's Annual Meeting in Boston last year.

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# BOOK REVIEWS

## NORTH AMERICAN HORTICULTURE - A REFERENCE GUIDE.

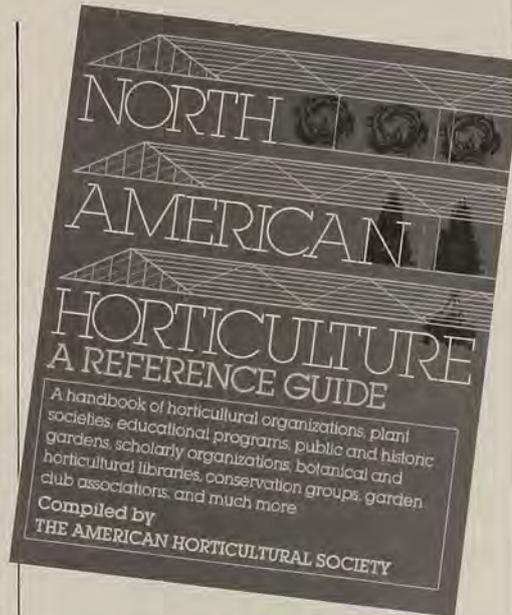
Compiled by the American Horticulture Society. Charles Scribner's Sons. New York, New York. 1982. 367 pages; hardcover, \$50.00. AHS discount price until January 1, \$45.00 including postage and handling.

This newly produced directory of horticultural organizations is not only up-to-date, but also covers more aspects of horticulture than any previously published work of this sort. In addition to the usual names and addresses of national and specialty plant and garden societies, the listings include scholarly organizations, garden centers, conservation organizations, registration authorities, government programs, educational institutions, botanical libraries, herbaria, gardens open to the public, test gardens, flower shows and a list of record trees, vegetables, fruits and flowers. An excellent index enables the user to find all pertinent references independent of the category under which they may be listed. Thus the index entry for *Rosa* will lead the reader to test gardens, test programs and specialty societies that are interested in any aspect of the rose. Both amateur and trade organizations are included. The educational listings include entry requirements and degrees granted. For the serious gardener, the horticultural professional or the reference desk of the public library, this book is a necessary working tool.

## TREES AND SHRUBS FOR DRY CALIFORNIA LANDSCAPES.

Bob Perry. Land Design Publishing. San Dimas, California. 1981. 184 pages; hardcover \$28.50. AHS discount price, \$26.90 including postage and handling.

Lucky gardeners in California have a tremendous choice of plants to grow in their gardens, but unless they are willing to add copious quantities of water, the choices become more restricted. As the population grows and our water resources become more limited, gardeners and landscapers should pay more attention to growing plants that can survive on a limited water supply. This timely and much needed book presents more than 360 species of native and



introduced plants that will grow under the natural conditions of the dry California climate. Each species is described as it will grow in the garden, and 490 color photographs illustrate all of the plants mentioned. For gardeners in California and all throughout the Southwest, this is a long awaited guide to having a beautiful garden without unduly wasting our precious water resources.

## PENJING.

Hu Yunhua. Timber Press. Beaverton, Oregon. 1982. 166 pages; hardcover \$39.95. AHS discount price, \$35.95 including postage and handling.

Most gardeners recognize bonsai as the ancient Japanese art of growing miniaturized plants, but how many realize this technique has its origins in an even older Chinese tradition known as *Penjing*? Written by the staff of the Shanghai Botanic Garden, this book explains in simple terms how these miniaturized trees and landscapes are prepared and grown. The techniques are clearly illustrated in black and white drawings accompanying the text, and 93 color plates show many fine examples of mature specimens. In *Penjing* gardening becomes art, and anyone can do it. For individuals interested in growing these plants, or knowing something about their ancient history, this is a fascinating addition to western garden literature.

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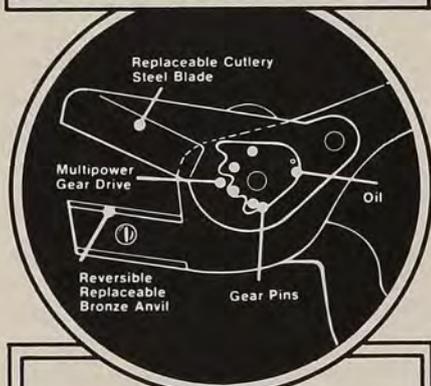
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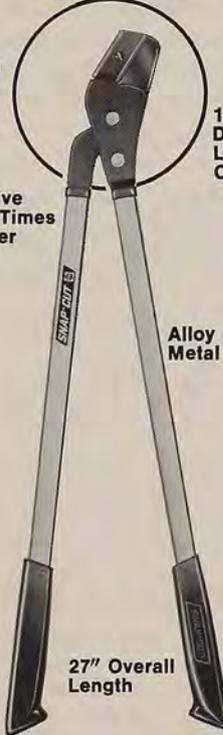
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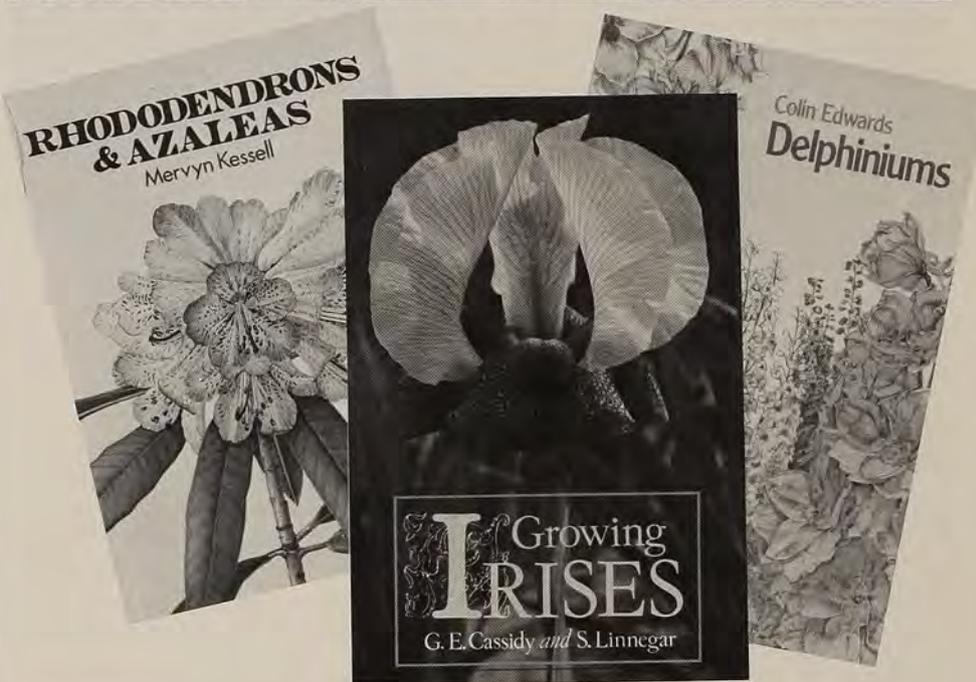
### THE CACTI OF THE UNITED STATES AND CANADA.

Lyman Benson. Stanford University Press. Stanford, California. 1982. 1,044 pages; hardcover \$85.00. AHS discount price, \$78.50 including postage and handling.

Of the estimated 1,500 species of cacti native to North and South America, 151 species with 133 varieties occur within the boundaries of the United States and Canada. The majority of these are native to the arid Southwest, but some species are found as far north as Saskatchewan. Cacti

occur in all of the states of the continental United States except Maine and New Hampshire. This monumental study includes 12 chapters on the general biology, taxonomy and ecology of the family, and devotes more than 650 pages to descriptions and discussions of the many species. Illustrations include 165 line drawings, 977 photographs (194 in color) and distribution maps. Identification also is aided by keys to all genera and species. This book is an essential addition to the reference library of any serious specialized cacti grower.

## A LIST OF RECOMMENDED NEW BOOKS ON INDIVIDUAL PLANTS



### CARNATIONS.

Steven Bailey. Blandford Press. Dorset, England. 1982. 215 pages; hardcover \$17.50. AHS discount price, \$16.15 including postage and handling.

### DELPHINIUMS.

Colin Edward. J.M. Dent and Sons, Ltd. London, England. 1981. 192 pages; hardcover \$22.95. AHS discount price, \$19.60 including postage and handling.

### TULIPS

Taxonomy, morphology, cytology, phytogeography and physiology. A.P. Botschantzeva. A. A. Balkema. Rotterdam, Netherlands. 1982. 230 pages; hardcover \$70.00. AHS discount price, \$57.50 including postage and handling.

### FUCHSIA LEXICON.

Ron Ewart. Van Nostrand Reinhold Company. New York, New York. 1982. 336 pages; hardcover \$29.95. AHS discount price, \$19.60 including postage and handling.

### GROWING IRISES.

G. E. Cassidy and S. Linnegar. Croom Helm Ltd. London, England. 1982. 100 pages; hardcover \$15.50. AHS discount price, \$13.65 including postage and handling.

### RHODODENDRONS AND AZALEAS.

Mervyn S. Kessell. Blandford Press. Dorset, England. 1981. 176 pages; hardcover \$17.50. AHS discount price, \$16.15 including postage and handling.

### CROTALARIA IN AFRICA AND MADAGASCAR.

R. M. Polhill. A. A. Balkema. Rotterdam, Netherlands. 1982. 389 pages; hardcover \$65.00. AHS discount price, \$53.50 including postage and handling.

This is a botanist's book about an important subtropical and tropical genus with great horticultural value. There are more than 500 species of *Crotalaria* in Africa and Madagascar, and only a few of these are grown in the warmer parts of this country. Many more are worth growing for their decorative features and as potential forage crops in the dryer portions of the Sun Belt states. Each species is described, and many are illustrated with line drawings.

### CURTIS'S FLOWER GARDEN DISPLAYED.

Tyler Whittle and Christopher Cook. Oxford University Press. New York, New York. 1982. 258 pages; hardcover \$45.00. AHS discount price, \$42.00 including postage and handling.

Curtis's *Botanical Magazine*, first published in 1787, has described and illustrated many new plants worth growing in our gardens. This book presents 120 plants selected from the first 25 volumes of the magazine. The original hand colored illustrations have been reproduced full size, and the descriptions have been rewritten to provide more up to date information about each plant. The original issues of the magazine are only available in a limited number of botanical libraries, so this new publication brings a selection of these outstanding horticultural subjects to the attention of a much wider audience.

### EXOTICA 4.

Alfred Byrd Graf. Roehrs Company. East Rutherford, New Jersey. 1982. 2,580 pages (2 volumes); hardcover, \$175.00. AHS discount price, \$162.00 including postage and handling.

When *Exotica* first appeared in 1967 it was received with great enthusiasm by gardeners everywhere, and its success was evidenced by the relatively rapid appearance of *Exotica 2* and *Exotica 3* in 1959 and 1963, respectively. Since then eight updated versions of *Exotica 3* have been published. Now, nearly 20 years later, we finally have *Exotica 4*. The new edition contains more than 16,300 photographs, and whether used to identify an unknown

plant or to select one that you want to add to your collection, there is no other book like it. In addition to fine photographs, descriptions and cultural information are provided for each species. There is also an extensive bibliography and a list of common names, both of which add to the utility of this work. For the serious tropical gardener, house plant enthusiast or greenhouse grower this is the *basic* reference work. A copy should also be in every public library. Although it may seem expensive, *Exotica 4* is a lot of book. *Exotica 3* weighed in at 13 pounds, with 1,824 pages, but this new edition has over 40 percent more pages and tips the scales at 18 pounds.

—Gilbert S. Daniels

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

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## HORTICULTURAL EXPLORATIONS



The American Horticultural Society proudly presents its spring Explorations. They are especially designed and exclusive. We visit both private and public gardens. In addition, local escorts give us highlights of history, scenery, and culture. These programs are suitable for all levels of horticultural interest.

### SOUTHWEST CHINA (April 1-24)

An extremely fascinating itinerary takes us at the peak of spring bloom to the Sichuan (Szechuan) and southwest area of China. The rhododendrons and azaleas on Mt. Omei are world famous. We see Buddhist cave sculptures at Dazu, the great cities of Chungking and Chengdu, the famous "Stone Forest" with its astonishing rock formations near Kunming. Also the remote southwest area with its colorful tribes, an area rich in orchids and tropical flora.

### CALIFORNIA (April 14-28)

The great diversity of climates and conditions within the state of California permits an extremely fascinating and unique itinerary emphasizing the many aspects of horticulture. Visit variety of private gardens and nurseries as well as Strybing Arboretum, U. of C. Botanical Gardens at Berkeley, gardens at SUNSET Magazine, wineries, Carmel, Hearst Castle, Descanso Gardens, Getty Museum and Gardens.

Other horticultural explorations available in 1983 are: Bermuda (April 30-May 7), Spring Japan (April 28-May 18), Spring and Fall England (May 12-26 or Sept 7-21), Germany and IGA '83 (May 26-June 9 or Sept 21-Oct 5), Canadian Rockies (July 16-30), South Africa (Sept 9-30), Fall New England (Oct 3-17), Fall Orient (Nov. 1-24).

For any of these programs, please write for your free brochure to Mrs. Dorothy Sowerby, American Horticultural Society, Mt. Vernon, VA 22121. OR telephone 1-703-768-5700.

## AN AMERICAN PERSPECTIVE CONT'D from page 23

Possibly none of these or the other 80 plus species of *Ternstroemia* are quite as cold-hardy as *Ternstroemia gymnanthera* (erroneously *T. japonica*).

Among many broad-leaved evergreen trees virtually unknown in this country but abundant in Japan are *Dendropanax trifidus*, *Symplocos lucida*, *Daphniphyllum macropodum*, several oriental tanbark oaks (*Lithocarpus* spp.), *Quercus acuta*, *Q. glauca*, *Q. myrsinifolia*, *Q. phillyraeoides*, *Myrica rubra*, *Lindera* spp., *Actinodaphne* spp., *Litsea* and *Neolitsea* spp., *Cinnamomum* spp., *Ilex chinensis* and *Ilex rotunda*.

The oriental evergreen oaks are frequently confused in this country. They are not used abundantly here, but the most available species is *Quercus glauca*, which is usually sold as *Q. acuta*. *Q. glauca* is also the most planted species in Japan. It is grown as a lawn specimen to 50 feet high, as a low sculptured bush, as a hedge or as a tall, close-set windbreak. All of these evergreen oaks exhibit considerable variation in leaf form and color. The new growth on *Q. myrsinifolia* is most attractive. The long, graceful new leaves and shoots are rosy or purplish. They are smooth and have few teeth. The typical, mature sun-leaves of *Q. glauca* average only about 3 x 1½ inches with coarse teeth above the middle, and glaucous with golden fuzz on the underside. All of these characteristics vary.

Few of the large evergreen shrubs are more conspicuous in Japan than *Viburnum odoratissimum*. It is extensively planted as a tall, dense windbreak or screening wall or as a commanding specimen, up to 20 feet tall, with large (5" x 2"), tapered, dark, glossy leaves, flat panicles of small white flowers and large sprays of red berries that turn dark. Its fragrance is not as outstanding to me as the name would imply. It is grown in this country and is hardy from the milder parts of Zone 7 southward but is usually sold as *V. japonicum*, another evergreen species with blunt, oblong, lighter green leaves and small clusters of flowers and fruits.

Most notable for their absence were the endless variants of the Japanese false cypresses, *Chamaecyparis pisifera* and *C. obtusa*. Large, beautiful specimens of the typical forms are abundant in parks and in the wild, but we saw the unique dwarfs, goldens, blues, etc., only occasionally, except in rare plant nurseries.

The underlying principle in most Japa-



Another favorite Japanese import is *Koelreuteria paniculata*, photographed here covered with seed pods in the Hammond Museum Stroll Gardens, North Salem, New York.

nese gardens is apparently "cyclic permanence:" a garden that appears complete, fixed and unchanging, but actually is a living, developing experience, with distinct seasonal phases. In such a garden, form, texture, color and sound are all important but kept in harmony by the constant care and wisdom of the gardener. Seldom does color overpower the other features, and each plant is controlled toward its own perfection as one element in the symphonic composition. Such a garden is admired (but not necessarily coveted) by all who experience it. It may have limited appeal for those who are more at home among large trees and free-running natural areas with minimum controls, or for the specialist growers of orchids, azaleas, day-lilies or alpine rock garden plants. Since control is the key to success, Japanese gardening is not low-maintenance gardening. But if you have a terrace or corner of your lot that doesn't please you, and if you want a consuming and rewarding long-term project, look no further—begin studying Japan to develop your perspective.

The Society sponsors tours of Japan on a regular basis. The next scheduled exploration of this fascinating country will be in November, 1983. Watch for announcements in the newsletter, or write Dorothy Sowerby at the Society for more information. ☉

Don L. Jacobs earned his Ph.D. in Plant Ecology from the University of Georgia. He is the founder of Eco-Gardens, a private research botanical garden in Decatur, Georgia.

# SOURCES

## CYCLAMEN SOURCES

The following companies offer several cultivars of florists' cyclamen.

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

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

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

## TEN PLANTS I HAVE TO GROW

If *American Horticulturist's* catalogue file is an accurate indication, Will Ingwersen's 10 plants are difficult to find in this country. We were able to locate three of the 10. If you know of American sources for these plants, please write to us; if you want to grow some of the plants we were unable to locate, please let us know.

Will Ingwersen's 10 Plants are available from his nursery. To obtain a list write W. E. Th. Ingwersen, Ltd., Birch Farm Nursery, Gravetye, East Grinstead, Sussex RH19 4LE, England. He is willing to export, but he must be supplied with an import permit before he can ship orders. For information on obtaining an import permit write USDA Animal and Plant Health Inspection Service, Permit Unit, Federal Building, Hyattsville, MD 20782.

### Plants

#### *Alchemilla mollis*

Busse Gardens, 635 East 7th Street, Route 2, Box 13, Cokato, MN 55321, catalogue \$1.00.

Garden Place, 6780 Heisley Road, Mentor, OH 44060, catalogue free.

Sweet Springs Perennial Growers, 2065 Ferndale Road, Arroyo Grande, CA 93420, catalogue free.

Rice Creek Gardens, 1315 66th Avenue, NE, Minneapolis, MN 55432, catalogue free.

Twin Peak Nursery, PO Box 196, Oceanside, NY 11572, catalogue \$1.00.

#### *Rhodohypoxis baurei* and *Xerophyllum tenax*

Siskiyou Rare Plant Nursery, 2825 Cummings Road, Medford, OR 97501, catalogue \$1.00.

### Seed

*Alchemilla mollis*, *Corydalis cashmiriana*, *Rhodohypoxis baurei*  
Thompson and Morgan, PO Box 100, Farmingdale, NY 07727

#### *Fremontodendron*

Several sources offer *F. californicum* and/or *F. mexicanum*, but we were unable to locate the cultivar 'California Glory'.

### Plants

The Shop in the Sierras, Box 1, Carstens Road, Midpines, CA 95345, catalogue \$1.00.

### Seed

Larner Seeds, PO Box 11143, Palo Alto, CA 94306.

Plants of the Southwest, 1570 Pacheco Street, Santa Fe, NM 87501, catalogue free.

Clyde Robin Seed Company, Inc., PO Box 2855, Castro Valley, CA 94546, catalogue \$2.00.

#### *Saxifraga longifolia*

We located two sources for the species, but were unable to find a source for the cultivar 'Tumbling Waters'.

### Plants

Alpenglow Gardens, Michaud & Company, 13328 King George Highway, Surrey, BC Canada V3T 2T6, catalogue \$1.00.

### Seed

J. L. Hudson, Seedsmen, PO Box 1058, Redwood City, CA 94064, catalogue \$1.00.

## PHOTOS IN THIS ISSUE:

Cover: Bruce Steakley.

Page 1: Guy Burgess.

Page 4, 5: Margaret Hensel.

Page 6: (1) Will Ingwersen (2) Pamela Harper (3) Janet Ellis (4) Will Ingwersen (5) Will Ingwersen (6) Pamela Harper.

Page 15: Charles Marden Fitch.

Page 16: (Left) Dr. John L. Creech (Right) Charles Marden Fitch.

Page 17: Charles Marden Fitch.

Page 19: (Left) Charles Marden Fitch (Top Right) Charles Marden Fitch (Bottom Right) Pamela Harper.

Page 20: Charles Marden Fitch.

Page 21: Charles Marden Fitch.

Page 22: Don L. Jacobs.

Page 24: Dr. Robert E. Lyons.

Page 26-29: Guy Burgess.

Page 30: Barbara W. Ellis.

Page 32: Charles Marden Fitch.

Page 38: Charles Marden Fitch.

Page 44: Wayside Gardens.

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# PRONUNCIATION GUIDE

## Guide to Botanical Names in This Issue

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

### *Abeliophyllum distichum*

ah-beel-ee-o-FILL-um dis-TY-kum

*Actinodaphne* act-i-no-DAFF-ne

*Adonis amurensis*

ah-DON-iss a-mure-EN-sis

*Alchemilla mollis*

al-che-MILL-ah MOLL-iss

*Allium aflatumense*

AL-ee-um ah-flat-you-NEN-see

*Ardisia japonica*

ar DISS-ee-ah ja-PON-i-ka

*Aucuba japonica* var. *borealis*

aw-KOO-ba ja-PON-i-ka bor-ee-AL-iss

*Camellia japonica*

ka-MEAL-ya ja-PON-i-ka

*Campanula poscharskyana*

kam-PAN-yew-la posh-ar-sky-A-na

*Catharinea* cath-ar-IN-ee-ah

*Chamaecyparis obtusa*

kam-ee-SIP-er-us ob-TOO-sa

*C. pisifera* c. pi-SIFF-er-ah

*Chionanthus retusus*

key-o-NAN-thus re-TOO-sus

*C. virginicus* c. vir-JIN-i-kus

*Cinnamomum* sin-ah-MO-mum

*Cleyera* CLAY-er-ah

*Cornus florida* KOR-nus FLOR-i-da

*C. kousa* c. KOO-sa

*Corydalis cashmeriana*

cor-ee-DAL-iss cash-mer-i-A-na

*Cryptomeria japonica*

krip-toe-MEER-ee-ah ja-PON-i-ka

*Cyclamen indicum*

SYKE-la-men/SICK-la-men IN-di-kum

*C. persicum* c. PER-si-kum

*C. vernale* c. ver-NAL-ee

*Daphne petraea* DAFF-ne pe-TREE-ah

*Daphniphyllum maropodum*

daff-ne-FILL-um mar-o-PO-dum

*Dendrobium* den-DRO-bee-um

*Dendropanax trifidus*

den-dro-PAN-ax tri-FID-us

*Dictanum* dic-TAY-num

*Dodecatheon meadia*

do-de-CATH-ee-on ME-dee-ah

*Eurya* YOUR-ee-ah

*Exacum affine*

eggs-ACK-um ah-FIN-ee

*Forsythia X intermedia*

for-SITH-ee-ah in-ter-MEAD-ee-ah

*F. ovata* f. o-VAY-ta

*F. suspensa* f. sus-PENSE-ah

*F. viridissima* f. veer-i-DISS-i-ma

*Fraxinus americana*

FRACKS-in-us a-mer-i-KAN-ah

*F. excelsior* f. ex-SELL-see-or

*F. latifolia* f. lat-i-FOL-ee-ah

*F. mariesii* f. mare-EES-ee-eye

*F. oregona* f. or-eh-GO-na

*F. ornus* f. OR-nuss

*F. uhdei* f. uh-DAY

*F. velutina* var. *glabra*

f. vel-you-TY-na GLAY-bra

*Fremontodendron californicum*

free-mon-to-DEN-dron kal-i-FORN-i-kum

*F. mexicanum* f. mex-i-CAY-num

*Goodyera* good-YER-ah

*Hemerocallis littorea*

hem-er-o-KAL-iss lit-or-REE-ah

*Hesperis matronalis*

HES-per-iss ma-tro-NAL-iss

*Ilex chinensis* EYE-lex chi-NEN-sis

*I. rotunda* i. row-TUN-da

*Jasminum beesianum*

jazz-MY-num beez-ee-A-num

*J. dichotomum* j. dy-KOT-o-mum

*J. grandiflorum* j. grand-i-FLOOR-um

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

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

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

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

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

*J. sambac* j. SAM-back

*Laburnum X watereri*

la-BUR-num WA-ter-er-eye

*Lagerstroemia fauriei*

la-ger-STROME-ee-ah FAW-ree-eye

*Leptospermum scoparium*

lep-toe-SPER-mum sco-PAIR-ee-um

*Leucobryum* lew-co-BRY-um

*Ligustrum amurense*

li-GUS-trum am-ur-EN-see

*L. japonicum* l. ja-PON-i-kum

*L. lucidum* l. LOO-si-dum

*L. obtusifolium* var. *regelianum*

l. ob-too-si-FOL-ee-um re-gel-i-A-num

*L. ovalifolium* l. o-val-i-FOL-ee-um

*L. vulgare* l. vul-GARE-ee

*Lindera* LIN-der-ah

*Lithocarpus* lith-o-CARP-us

*Litsea* LIT-see-ah

*Lysimachia* ly-si-MACK-ee-ah

*Mahonia bealei* ma-HONE-ee-ah BEEL-eye

*M. japonica* m. ja-PON-i-ka

*Melissa* mel-ISS-ah

*Myrica rubra* MY-ri-ca REW-bra

*Neolitsea* nee-o-LIT-see-ah

*Olea europaea* o-LEE-ah your-o-PEE-ah

*Osmanthus americanus*

oz-MAN-thus ah-mer-i-CAY-nus

*O. fragrans* o. FRAY-granz

*O. heterophyllum* o. het-er-o-FILL-us

*O. ilicifolius* o. il-iss-i-FO-lee-us

*Pachysandra procumbens*

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

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

*Pleione forrestii*

PLEE-o-nee FOR-est-ee-eye

*Polytrichum* pol-ee-TRY-cum

*Primula* PRIM-yew-la

*Prunus jamasakura*

PRUNE-us ja-ma-sa-KUR-ah

*Psilotum* si-LO-tum

*Quercus acuta* QUER-kus ah-KEW-ta

*Q. glauca* q. GLAW-ca

*Q. myrsinifolia* q. mir-sin-i-FO-lee-ah

*Q. phillyraeoides*

q. fill-ee-ree-o-EYE-deez

*Rhodea japonica*

ROW-dee-ah ja-PON-i-ka

*Rhododendron bakeri*

ro-do-DEN-dron BAKE-er-eye

*R. japonicum* r. ja-PON-i-kum

*R. kaempferi* r. KEMP-fare-eye

*Rhodohypoxis baurii*

row-do-hy-POX-iss BOW-ree-eye

*Saxifraga callosa*

sacks-i-FRAYGE-ah cal-LOW-sa

*S. longifolia* s. long-i-FO-lee-ah

*Selaginella* sell-adge-i-NELL-ah

*Symplocos lucida*

sim-PLO-coss LEW-cid-ah

*Syringa vulgaris* sa-RING-ga vul-GAY-ris

*Ternstroemia gymnanthera*

turn-STRO-mee-ah jim-nan-THER-ah

*Thuidium* thew-ID-i-um

*Tilia platyphyllos*

TILL-ee-ah plat-i-FILL-oss

*Viburnum japonicum*

vy-BUR-num ja-PON-i-kum

*V. odoratissimum*

v. o-door-ah-TISS-i-mum

*V. tinus* v. TY-nuss

*Weldenia candida*

well-DEN-ee-ah CAN-did-ah

*Xerophyllum tenax*

ze-ro-FILL-um TEN-ax

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cies lacks the neat coiling characteristic, its seeds are also dispersed by ants.

Sow seed 1/4-inch deep in a well-drained medium with good moisture holding capacity, since constant moisture is essential for successful germination. Pure peat limed to bring the acid pH up to a more neutral level is ideal (add seven ounces of limestone—200 grams—per bushel of peat). Commercial potting media high in loose organic matter are also suitable. Place the container in the dark at 65-68°F. Higher temperatures inhibit germination, and, contrary to the information in most gardening books and publications, lower temperatures retard the plant's growth.

The new seedlings are usually visible 20 to 35 days after sowing. When they appear, place them in a bright location with high humidity, and maintain a temperature of 68°F. Bright, indirect light is essential, but the direct rays of the sun can be disastrous. The seedlings grow very successfully under fluorescent light. It is perfectly normal for a young plant to have only one leaf for almost 75 days before new leaves become visible. For about three months after germination, there is very slow growth, even at the proper temperature of 58°F. During this time the seedling may very well be storing much of its energy in the developing corm for future use. Cyclamen is certainly not a plant whose growth can be hurried, but the long wait is worth it. Transplant when the seedlings have crowded each other and each have from eight to 10 leaves. This probably will be no sooner than five months after sowing.

Although some growers are able to produce a blooming size plant eight months after sowing seed, this schedule requires the closely controlled conditions of a greenhouse. There are new cultivars that reach blooming size more rapidly than older, standard cultivars. Young plants grow best at 68°F, and adult plants prefer temperatures of from 62° to 65°F. Mature cyclamen will grow well in cooler temperatures, even in the fifties.

Adult flowering cyclamen, whether grown from seed or purchased from a garden center or florist, prefer a room temperature of about 62°F, a potting mixture high in loose organic matter (peat moss) and weekly feeding. Place them in the brightest location available during the autumn and winter, but move them to an eastern exposure during the spring and summer.

Cultivated *C. persicum* do not need to

be re-bloomed, because the plants need not stop blooming in the first place. The native plants do indeed exhibit a cycle of active growth and dormancy, but my experience on literally dozens of occasions has shown that these plants can be everblooming as long as dead blooms are removed and they receive *ideal* cultural conditions. Although it is not necessary to force a cultivated cyclamen into dormancy since the plants

retain a corm-like tuber, they can be forced into dormancy by gradually withholding water. To re-bloom a florists' cyclamen, gradually increase watering, be sure the temperature remains around 62°F, and when the plant shows signs of growth, start the weekly feeding schedule. ☉

Dr. Robert E. Lyons is an Assistant Professor of Horticulture at the Virginia Polytechnic Institute and State University.

### Cyclamen Cultivar List

Here is a thorough list of cyclamen cultivars. Not all will be available from a single source, nor will all be priced equally. The F-1 hybrids are generally the most expensive.

**KEY TO CHARACTERISTICS:**

- H—earlier flowering F-1 hybrid
- M—miniature
- R—ruffled or fringed petals
- X—very large flowers

	H	M	R	X
<b>RED</b>				
Aida				
Aquila				
J.S. Bach				
Bambini Fortissimo				
Boheme				
Bonfire				
Cardinal				
Carmen				
Hallo				
Matador				
Taurus				
<b>LILAC</b>				
L.v. Beethoven				
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Rosina				
Tosca				
Willy				
<b>WHITE</b>				
Asbadonna				
Anneke				
Finlandia				
Mount Blanc				
Swan Lake				
Virgo				

	H	M	R	X
<b>PINK</b>				
Bambini Largo				
Brigitte				
Columba				
Gypsy				
Haydn				
Manon				
Nabucco				
Orion				
Pavo				
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Victoria				

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*Potentilla* 'Gibson's Scarlet'

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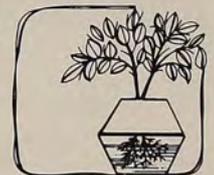
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