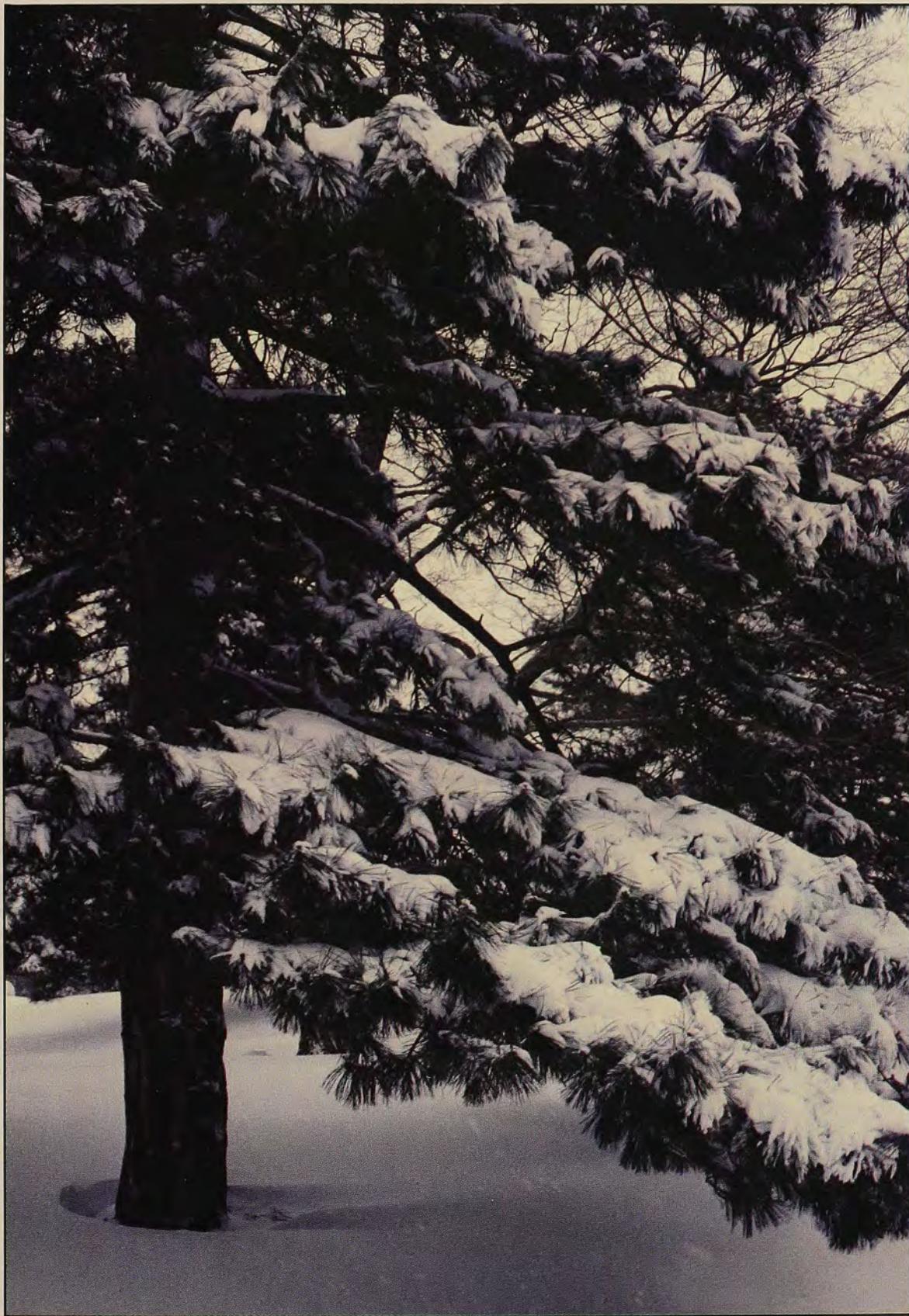


# AMERICAN HORTICULTURIST

DECEMBER 1980



COMING IN FEBRUARY



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Illustration of hardy anemones by Virginia Daley

To the gardener *February* is probably the cruellest month, but our February issue of *American Horticulturist* brings promises of spring. Read about windflowers—the hardy anemones—by Lorraine Burgess; discover the pleasure of Japanese tree peonies as described by Anthony De Blasi; learn how to grow peanuts in containers; find out how to use color effectively in the garden—R. Milton Carleton tells you how; and consider Alexander Irving Heimlich's suggestions for dwarf annuals for the garden. In addition, look for our regular features: President's Page, Book Reviews, Strange Relatives and the new Pronunciation Guide. All this and more coming up in February.

# AMERICAN HORTICULTURIST

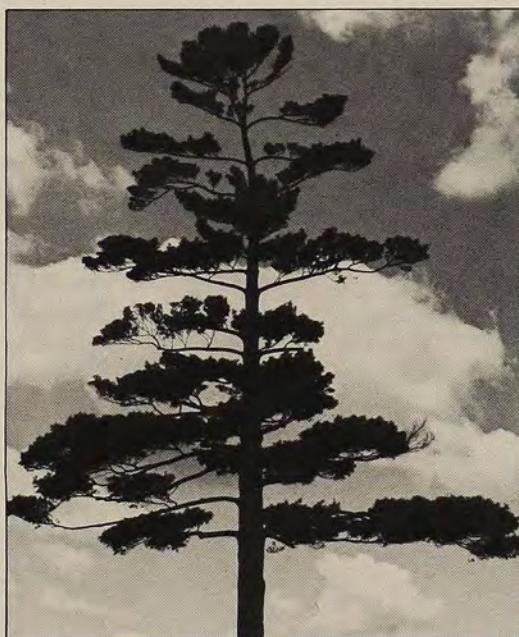
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**ON THE COVER:** This Austrian pine (*Pinus nigra*) wears a holiday mantle of snow and at the same time suggests the variety of beautiful forms trees take on during the year. For more discussion of the beauty of branching and bark, turn to Clarence Lewis' article on page 26. Cover photograph by Anita Sabarese.

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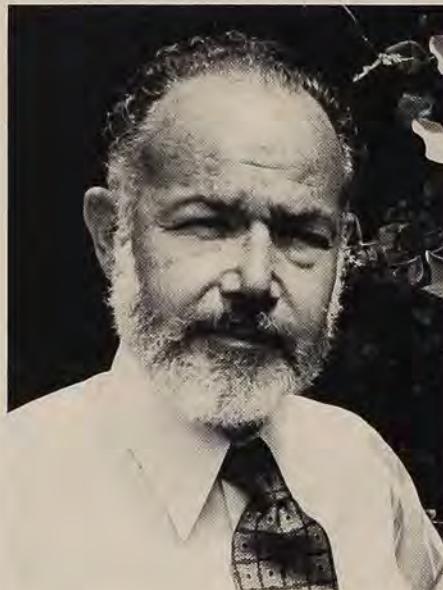
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# PRESIDENT'S PAGE



**F**rom time to time the Society staff samples the membership to find out more about you and what you look for from the organization when you join. This past August we mailed a questionnaire to a randomly selected sample of one out of every 30 of our members. More than 60 percent of those of you who received the questionnaire returned it, and the analysis of the data produced information which we can assume is representative of our membership as a whole. Perhaps you will be interested in some of the results:

- Our membership is about evenly divided between men and women.
- More than 60 percent of you are married.
- The median age of our membership is 55.
- 87 percent of you have attended college and 27 percent hold advanced degrees.
- 88 percent of you own your own homes.
- Most of you (38 percent) live in the suburbs, but 18 percent of you live in the city.
- 40 percent of you own more than one acre of land, while 11 percent of you own 10 acres or more.
- If you have belonged to the Society for more than two years, you are in the majority (59 percent).
- 25 percent of you earn your living in horticulture or a related field.
- 60 percent of you find our seed distribution program and the gardener's information service to be the most important benefits of membership—after

the receipt of the Society publications. You regard discounts on gardening books as the next most popular benefit.

- You read *American Horticulturist* and our newsletter with equal enthusiasm.
- 77 percent of you find the technical level of *American Horticulturist* articles "just right." The remainder of you are divided between thinking it "too technical" or "too simple."
- 55 percent of you devote more than one hour to reading each issue of *American Horticulturist*.
- About 80 percent of you also read other gardening magazines, but you are loyal to the Society. If you could read only one gardening magazine, 30 percent of you said your choice would be *American Horticulturist*.
- Vegetable gardening is a popular pastime for our members. 79 percent of you have your own garden, and 44 percent of you have plots that are greater than 200 square feet in size.

In addition to answering our questions, those of you who responded to the questionnaire also sent along your own ideas and suggestions for future articles in our magazine. These will be of great help to us in planning our editorial calendar, and you can be sure we are already taking action on many of them.

**G**enetic engineering—a magic phrase that has received a lot of press coverage in recent months. But is it really all that new? Certainly the creation of new life forms in bacteria is a new and remarkable development for the betterment of mankind. The potential to produce purified organic chemicals in large quantities through the growth of cloned organisms is an exciting promise for the very near future. But I think it's time for all gardeners to take a little credit for what we have been doing for centuries. Every time we attempt to propagate and perpetuate a new plant form we engage in genetic engineering, and having created something new, we often use cloning (vegetative propagation through cuttings, division, grafting, etc.) to multiply the result.

Genetic engineering for the creation of new plant forms has been the aim of plant breeders since prehistoric times. When two plants are crossed and the offspring are selected for the desired combination of parent characteristics, we are dealing with a new genetic entity. The chromosomes

of this new organism contain the sought after new combination of genetic information. This is exactly the same result that is achieved by the creation in the laboratory of a new bacterium through the direct transfer of DNA (the carrier of the genetic code which makes up the chromosomes). With plants we are fortunate in that the large numbers of offspring resulting from seed production allow us to examine and select from among many random genetic combinations to find the one individual representing the desired combination for which we are looking. With animals or bacteria this random combination is too restrictive and slow for practical use, so the laboratory approach to selectively combining genetic characteristics is a real breakthrough. But the basic concept is not new.

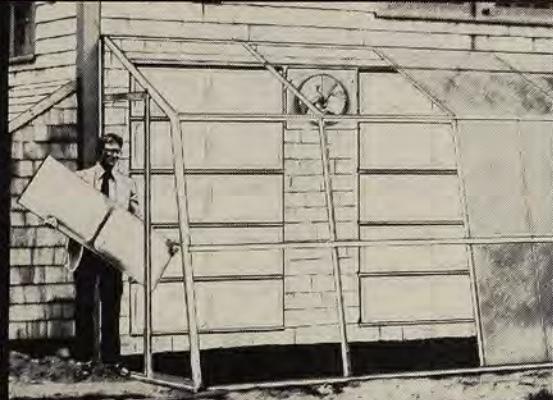
Nearly all the plants which we grow for food or ornament have been significantly changed from the wild forms from which they originated. They have first been subjected to genetic modification through breeding to produce something new, and then they have often been stabilized by cloning the particularly desirable new forms that were produced.

Understanding the direct parallel between plant breeding and propagation and the "new" genetic engineering has two messages for the gardener. The first is that this creation of *new life forms* is not really new but is the application of new methodology to selective breeding in bacteria and animals. The second point is that gardeners can help their friends and neighbors to understand and appreciate the potential value that genetic engineering offers for their benefit. That giant marigold or that delicious ear of sweet corn wasn't growing on this earth a hundred years ago. Such plants are just as much new life forms as the bacteria that will be producing insulin in the laboratory next year.



—Gilbert S. Daniels  
President

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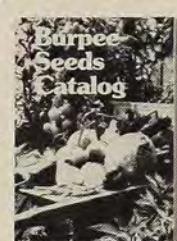
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# LETTERS

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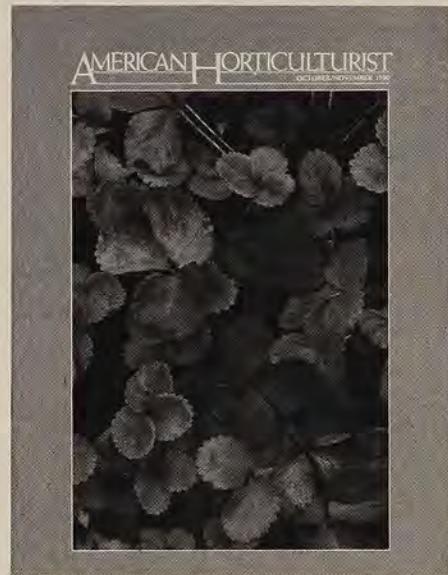
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### Cover Kudos

The cover of the October/November issue of *American Horticulturist* is spectacular. The colors are just beautiful and foliage as a subject makes a pleasant change from flowers. Congratulations!

—Elizabeth Pullar  
Thomaston, Connecticut

### Ideas for Class

A quick note to tell you how great I think the magazine has become. In the last issue, I found the "Money Saving Ideas" article written by the staff an especially useful section. I can assure you right now that I will be quoting from it extensively . . . both to my classes and periodically in my column in the Thursday, HOME Section of the *New York Times*.

—Linda Yang  
New York, New York

### Help from the Newsletter

I have read in the July issue of "News & Views" an article entitled "Blankets for Plants" describing the use of microfoam as a winter plant blanket.

I expect to have rooted shortly some crape myrtle cuttings to be potted in 2½-inch pots in about four weeks. Since I have no greenhouse, I would like to bring these young plants through the winter, and I felt the method of Dr. Gouin might be the answer.

Thank you in advance for your help!

—Luther K. Ziegler  
Allentown, Pennsylvania

### Taking Exception

A few words on the articles about soils for potting and broad-leaved evergreens in your August/September issue.

Some warning of vermiculite's ugly side should have been given in the article on potting soils. When the vermiculite crumb is broken, a great number of small, thin flakes of a mica-like stuff are freed. This may happen when the mix is too vigorously mixed (for example, when screening), firmly packed when potting, or otherwise roughly handled, and especially if damp. These flakes, when sufficiently abundant, will give the mixture many of the less desirable attributes of a clay soil—poor drainage, high shrinkage upon drying. Indeed, in my experience, I would rather make a mixture using clay or a clay soil which I know instead of vermiculite when I am making up a mix. On several occasions I've used bought mixes containing vermiculite which had been so roughly handled, whether in the making, shipping or elsewhere, that the stuff was like a heavy clay soil—stiff wads or balls of soil which could only be saved by amending with sand and peat.

On broad-leaved evergreens, there are two kinds of boxwood which are growing almost under your nose at River Farm yet which are hardy much farther north. Both I got as family "heirlooms," as it were, and if the family tales be true, they came from Virginia estates. One kind is said to come by way of Tennessee from Mt. Vernon. It is a "pointy" leaved, smelly, dark-green, fairly loose growing bush which blooms and sometimes makes seed here. I've seen this bush growing to a good size in Michigan, say four or five feet high and about as wide, trimmed to a rough square. In Michigan it has withstood cold of -30°F. The other box I know less about. It is very compact, "round" leaved, slow growing, and of a lighter green. I've grown it here where the coldest it had to suffer through was some -20°F. Supposedly it came from some rather big bushes on Madison's estate. How these came into the family I don't know, as the family lived in Michigan from 1865 onward.

Another broad-leaved evergreen worth mentioning is leatherleaf (*Chamaedaphne calyculata*). What I grow is a small or low

kind, 18 inches or so in height. In summer it has a pleasing dark-green foliage. In winter it is "bronzy," that is, the leaves look dead and brown. Come spring it greens up, and the long shoots of last summer's growth are strung with little white flowers, more delightful in mass than up close alone. It seems to favor sun or high shade. Some I grow in a big pan in peat with live sphagnum. Others I grow in a bed that gets somewhat drier than the bog in a pan, sharing ground with hemlock, mountain laurel, northern bayberry and some kind of weedy cranberry vine. Here I keep the clay soil loosened with sand, pine needles and other stuff. What is nice about this is that it spreads and covers its ground so that weeds don't become much of a problem.

—James O. Porter  
Mars, Pennsylvania

## More Praise for Double Flowers

In catching up with some of my periodicals I was pleasantly surprised to come across Mrs. Ralph Cannon's article, "In Praise of Double Flowers." I was wondering if readers are familiar with several gems in the double types. One of the nicest is the *Anemonella thalictroides* where three cultivars have been named. These include 'Schoaf's Double Pink' (a lavender pink), 'Cameo' (a pale but true pink), and 'Snowball' (a pure white one). The story of the 'Schoaf's Double Pink' is nicely told in the Bulletin of the American Rock Garden Society, Vol. 24, No. 33, July 1966, pages 90-92. I am unaware of the others being described in the literature, although I do not try to keep up on all the rock garden publications. I indicated these are garden gems as they will often stay in bloom for many weeks, unlike the single forms that drop their petals in a few days.

Another unusual double flowered plant is *Hepatica acutiloba* 'Louise'. This was found by a Minnesota lady from Owatonna. It is a fully double flower although the petals are not as long as the anemoneellas, so they don't have the nice rounded form. I felt if readers weren't aware of these doubles, they would be interested in hearing about them.

—Mervin C. Eisel  
Extension Horticulturist  
University of Minnesota  
Chaska, Minnesota

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# GROWING VANILLA PLANTS

**N**ow that the trend is to home-grow vegetables, have you ever thought of growing your own vanilla beans? Although *Vanilla* is a member of the often temperamental orchid family, it is, happily, a genus that does not require greenhouse conditions for survival. It is adaptable as a house plant as long as these cultural requirements are met: give it warm temperatures, partial shade and a very light, humusy soil that is kept evenly moist. In return, a vanilla plant will reward you with distinctive foliage, lovely, fragrant flowers and, of course, its well-known fruit.

Vanilla is an epiphytic orchid, although it often starts life as a terrestrial with its roots growing in soil. Its leaves are attractive, large, succulent, leathery and evenly spaced along the stem. Both the leaves and the stem are green in color. The flowers, borne in clusters of about 20, are greenish-yellow. Although each flower opens and fades in a day or two, the plant may bloom for a month or more since usually only one or two blossoms open per day in each cluster. The vanilla plant is a vine which can become very large. Under optimum conditions, about one meter is added to the vine's length each year. For best growth, these plants should be grown on a pole and eventually will require a 12-inch pot.

Vanilla is derived from the Spanish word, *vainilla*, meaning "little sheath," which refers to the shape of the elongated seed pod. The fruit, which is considered the only product of commercial importance within the Orchidaceae, is an elongated capsule (incorrectly termed pod or bean) containing the vanilla seeds. The species *Vanilla planifolia* is the chief source of commercial vanilla as its capsules produce the highest quality flavoring. Two other species, *V. pompona* and *V. tahitensis*, are also grown commercially for vanilla but their "beans" are of a lower quality than *V. planifolia*. The capsules of all three *Vanilla* species are harvested when mature but not yet ripe and must be cured before they will develop their characteristic flavor and aroma.

*Vanilla* can be grown in various types of containers as long as they have excellent



*Vanilla planifolia* is one of three species of the genus *Vanilla* which is grown commercially for its flavorful seed capsules, commonly called "beans."

drainage. Drainage holes not only serve as an outlet for excess water but also provide necessary ventilation for the roots. Clay orchid pots, with slotted drainage holes on the sides, are good for all orchids. The soil for this semi-terrestrial orchid should be high in organic content. Sphagnum peat moss is an excellent choice, along with leaf mold, small grade osmunda and fir bark. Drainage can be provided by incorporating perlite into the mixture.

To pot a vanilla cutting, fill the bottom third of a clean container with pot shards or rocks. Then, with the plant in place, add the potting medium around the roots. Firm the soil in place with a flat object or use your fingers. A stake may be needed to hold the plant in place until its roots become established. For about the first week after potting, simply mist the plant and soil without actually watering the roots. This allows time for the plant to recover from transplant shock. Overwatering can easily cause root rot at this time. Slowly increase watering when signs of growth

begin. Plants started from cuttings with six to eight internodes will take three years to attain flowering size.

"Normal" watering is a subjective concept. Because it really depends on many different factors—the size of the pot, the type of potting medium, environmental conditions—one set standard rule cannot be given. I have always heard the saying, "When in doubt, don't." This is a good rule to follow when watering vanilla plants. Keep the root ball equally moist throughout without letting it become water-logged since *Vanilla* is subject to root rot.

*Vanilla* can tolerate the lower light conditions and dry atmosphere of the home or other interior situations. Ideal temperatures range from 62-65°F at night to 70-85°F during the day. It is very easy to adjust the temperature that the plant is receiving by placing it closer to or farther away from the window. Increasing the humidity around the plant can be done by simply misting or by placing your plant on a pebble tray. During the spring and

summer misting should be done every day. If water remains on the leaves overnight, there is a risk of disease, so avoid misting late in the day. An east or west window with around 1,000-3,000 foot-candles

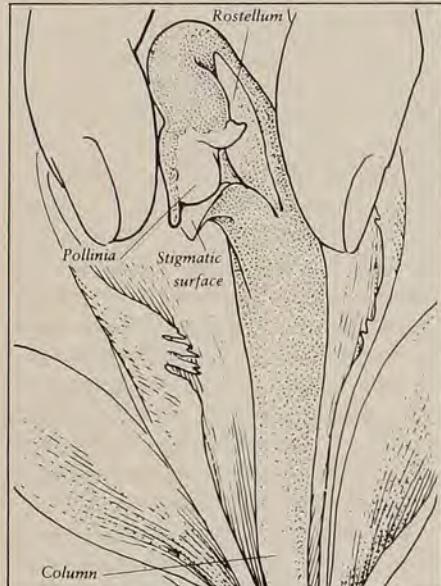


Illustration by Alice R. Tangerini

Vanilla flowers can be pollinated by removing the pollinia and placing them on the moist stigmatic surface; or, shown above, by moving the rostellum aside with a sharpened toothpick and pressing the end of the column containing the pollinia down onto the stigmatic surface.

provides the best light conditions for vanilla. Free air circulation is also important for healthy flowering plants.

*Vanilla planifolia* was first known and used in southeastern Mexico by the Aztecs. New World history shows evidence that the Spanish conqueror Cortez was served a delicious and highly perfumed chocolate drink flavored with vanilla by the Aztec emperor Montezuma. After the secret ingredient was discovered, the Spaniards began importing vanilla beans into Spain and manufacturing chocolate flavored with vanilla. During the 16th century *Vanilla* was widely used for healing purposes as well as for flavoring, but it was not grown commercially with much success until after 1841 when an ex-slave from Haiti, Edmund Albinus, discovered a practical method for hand pollinating the flowers. His method is still used in all the *Vanilla* producing countries. Today, Madagascar is the biggest producer of vanilla.

In nature, *Vanilla* sets relatively few beans. What pollination does occur is per-

formed by bees and a hummingbird native to Mexico. In order to obtain vanilla from your plant it will be necessary to hand pollinate each flower as it opens. Pollination is a simple operation performed with the aid of a sharpened match or toothpick. While plantation workers are able to pollinate from one to two thousand flowers per person per day, your job will be no where near as tedious since you will have only one or two flowers each day. By studying the flower carefully you will see that the anther hangs over the stigma, and a flap, or rostellum, stands between the two and prevents self-pollination. To pollinate, remove the pollinia and place them on the moist stigmatic surface. You will be able to tell if your efforts have been successful within a few days. If so, the ovary will begin to enlarge into a pod; if not, the flower will wilt and drop within a day or two.

The flavor and aroma characteristic of vanilla is due to an aromatic oil that develops as the beans are cured. The beans, which reach a length of from five to eight inches, are best harvested when the blossom-end begins to turn yellow. Since the curing process is rather lengthy and involved, harvest as many beans as possible before beginning. You will, of necessity, have beans at several different stages of ripeness. The following guidelines may help you decide when to harvest your crop. Commercial research shows that beans with a blossom end that has turned brown will develop an agreeable fruity aroma but will lack the true vanilla character. Beans that are harvested green will develop vanilla aroma but the aroma will not be as strong as the blossom-end yellow beans, which produce the best quality vanilla.

Curing can be accomplished by several methods, all of which require a number of steps to be performed over a period of weeks or months. The most suitable method for the home gardener seems to be the hot water method, and an adaptation of the commercial process follows.

After harvest the beans are subjected to three cycles of scalding and sweating:

1) Immerse the beans in scalding water (178°F) three times for 10 seconds at 30-second intervals.

2) Drain the beans, wrap them in wool rags and place them in a tightly closed box for sweating overnight. Set aside any split-open beans at this point until step #5.

*Continued on page 33*

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# THE TINY POMEGRANATE



*Punica granatum 'Multiflora'.*

The only pomegranate with which most people are familiar is the tree grown outdoors in frost-free climates, *Punica granatum*. Those of us in the temperate zone know it as fruit we buy at the grocery store. A dwarf variety, *Punica granatum 'Nana'*, also bears fruit. Although smaller than the commercial pomegranate, this cultivar still reaches a shrublike size.

At maturity, these two pomegranates may be grown in tubs although 'Nana' can be kept in a very large pot. They need lots of direct sunlight to set fruit and in summer they can be easily accommodated outdoors in yards, on patios or on balconies. Locating a spot for them indoors, however, is a must in cold winter areas because pomegranates don't tolerate frost. Apartment dwellers find it particularly difficult

to locate a place large and sunny enough for them. Even *Punica granatum 'Nana'*, at three feet tall, is too big to put in many artificial light gardens. In addition, apartments today are built with fewer and smaller windows to save fuel. Many houses also have overhanging eaves, awnings and trees that block valuable light in winter, which these plants need.

With the trend toward energy conservation, today's house plants need to be able to thrive in lowered winter temperatures, low humidity and with restricted light exposure. Miniature plants that will tolerate these new conditions make it possible for even an apartment dweller to find a niche to enhance with beauty.

One little known type of pomegranate has long been overlooked as an energy-saving plant, although it is one of the easiest plants to grow indoors. It is surely a variety of *Punica granatum*, there being only one species in this genus, but the nursery trade labels it *Punica multiflora*. It probably should be referred to as *Punica granatum 'Multiflora'*.

'Multiflora' comes in two colors—scarlet and pink. Its tiny, lush foliage is a joy to behold and the price for a few plants is negligible, especially if they are grown from seed. It quickly becomes a well branched little tree no more than 12 inches tall with profuse, bell-shaped blooms which blanket the entire plant when they appear from midsummer to fall. This *Punica* is uniquely attractive all year round, and it looks nothing like any other commonly seen house plant.

## CULTURE

The tiny pomegranate is indifferent to temperatures ranging from 50°F at night to 100°F during the day. There aren't too many house plants that thrive in such a wide temperature range. Like the other pomegranates, however, it won't survive frosts or freezes.

'Multiflora' is equally indifferent to humidity variations. I've had it outside where the hot, sticky Nebraska summers reach 100 percent humidity levels. Relative humidity outdoors is often between 60 and 80 percent. On the other hand, it thrives indoors at levels below 20 percent. You

Photograph courtesy of Geo. W. Park Seed Co.

don't have to mist this plant, but it won't mind if you do.

Light requirements are only slightly more demanding than temperature and humidity needs. The little punica won't survive in a dark closet, but neither will anything else. At the least, it needs bright, indirect light. Ideally, it likes a little sun or a spot in the artificial light garden. Its small size makes it a good candidate for even the most minute windowsill. Flower quantity increases and stems become bright reddish-pink with optimum light exposures.

Water is the one thing 'Multiflora' is fussy about. Don't let the plant completely dry out or it will keel over. It dislikes being overwatered too. A good time to water is whenever it's almost dry or barely damp. Keeping a balance between bog and desert soil moisture levels assures success in cultivating a punica.

Miniature pomegranates also like well-drained soil mixed with vermiculite, perlite or sand. Because it never hurts to be careful, always use sterile potting soil—never backyard dirt which can harbor insect eggs. This plant also seems to have excellent resistance to insect and disease problems.

#### SHAPING AND PINCHING

This *Punica* cultivar is unique in that it has little sprouts in the joint between each leaf and stem, while most plants have only dormant buds in their leaf axils. When you pinch other types of plants to encourage branching, usually only the top two buds form branches; the lower buds often grow at a slower, weaker rate. Sometimes it takes "battle strategy" to end up with a passably symmetrical result. If you snip off the top two leaves of a pomegranate, however, all the sprouts branch out. In fact, they grow like they're competing for a post position in the Indianapolis 500! Frequent clipping of the plant's upper leaves provides a strong, bushy plant.

#### PROPAGATION

'Multiflora' is easily and inexpensively raised from seed. A large frozen yogurt or cottage cheese container cut in half is an excellent germinating container. If the lid is snapped back on the top half of the cannister, two little flats can be formed. Punch holes in the lid and in the bottom of the other half for drainage. Fill the containers with sterile, loose potting soil. Place the hard, round seeds about an inch apart

on top of the potting medium. Press them slightly into the mixture, then cover lightly with surrounding soil. Water the prepared flats before planting; in this way the seeds aren't disturbed. Check the containers every day or so and don't let them dry out.

Pink or scarlet, you get several plants from a packet of seeds. Scarlet punica sprouts in about three weeks; the pink type takes a little longer. The seeds require light to germinate. Almost all the scarlet seeds produce plants; the germination percentage is somewhat lower for the pink variety. The pink punica's leaves are slightly larger and lighter in color than the scarlet variety.

When the young plants have six true leaves they can be moved to two-inch pots. Start pinching them at this point, as described before, to induce bushiness. As the seedlings reach four inches or so in height, put them in three-inch containers. Once the plants reach maturity, they can be transplanted permanently into four-inch pots.

To collect seed yourself, let the plants form pods. (Note: although *Punica granatum* and *P. granatum* 'Nana' are edible, don't eat the fruits of 'Multiflora'.) Allow the little capsules to ripen on the plants, then harvest the seeds, dry them for a few days and plant as usual. Both the seeds of pink and scarlet flowering *Punica granatum* 'Multiflora' and *P. granatum* 'Nana' (dwarf ornamental pomegranate) are available from George W. Park Seed Company, Inc., Greenwood, South Carolina 29647.

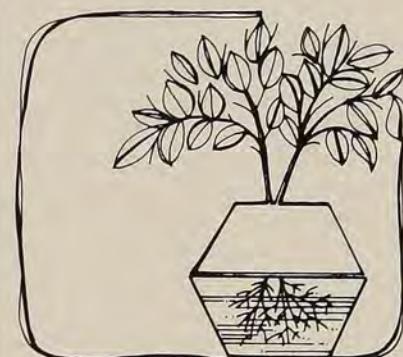
Cuttings are another possible method of propagation, but since the seeds sprout and mature so quickly, cuttings aren't recommended. The plant reaches blooming size from seed in four to five months.

An energy-conserving plant, this unusual *Punica* cultivar combines the advantages of beauty and indifference to temperature and humidity extremes with miniature size. It can grow in the tiniest of windowsills, fluorescent gardens and bright nooks, and it adds an airy, light touch to any area it graces. In addition, its splashes of scarlet and pink brighten our summers and early autumns. It is not often we find a house plant so easy to maintain that is also beautiful. Everyone should grow this plant; it possesses the unique ability to change the brownest of thumbs into green. ☺

—Mary Baker

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# THE BUCKWHEAT FAMILY

**A**t River Farm we have a clump of plants that deserve more attention than they get because they are a unique clone of a very ordinary plant. Moreover, for a brief span of time in the autumn, the sprays of scarlet flowers contribute to the season's glow. Dried branches of these flowers make an elegant winter bouquet. This is not a common landscape plant, and its attributes are worth recognizing.

The name of the plant is *Polygonum cuspidatum* 'Crimson Beauty'. It was described for the first time by Dr. Fred Meyer of the U.S. National Arboretum in *American Horticultural Magazine* (Vol. 49 #3, Summer 1970, page 138). This clone, 'Crimson Beauty', is of unknown origin, according to Dr. Meyer. The scarlet flowers produced in September and October and the clump-forming habit of the plant distinguish it clearly from all other known varieties of *P. cuspidatum*. To quote Dr. Meyer, "Anyone who has ever grown *P. cuspidatum* knows how quickly the plant gets out of control because of the vigorous fast-growing rhizomes. Few plants are as unruly and as difficult to control." Not so with 'Crimson Beauty'! Another distinguishing characteristic is that *P. cuspidatum* has white or greenish flowers in contrast to 'Crimson Beauty's' scarlet.

The River Farm 'Crimson Beauty' is about six feet in diameter with erect or arching stems six to eight feet tall. Although the plant is neither Mexican nor bamboo, the green stems do in fact resemble bamboo, and are hollow, thus the common name, Mexican bamboo.

Because of the distinction of 'Crimson Beauty' among polygonums I became interested in the family of plants to which it belongs, the Polygonaceae, where I found some surprising relatives. Would you believe it? Buckwheat and rhubarb!

Familiarly, this plant group is identified as the buckwheat, rhubarb or sorrel family. So much for the gardener's interest in ornamental species! However, within it are herbs, shrubs, trees and vines of potential use in the landscapes of both north temperate and semi-tropical areas, as well as plants with edible leaves, stalks, berries and seeds.



Illustration by Alice R. Tangerini

The leaves of Polygonaceae vary in size, arrangement and shape, but the leaf stalk is always surrounded by a membranous or chaffy sheath at the base. Flowers are often grouped in clusters made handsome by the color of the sepals or bracts, for there are no petals. Occasionally male and female flowers grow on separate plants. The fruit is a triangular nut, sometimes prominently winged.

Genera of Polygonaceae cultivated in cool, temperate climates include *Polygonum*, *Eriogonum*, *Rheum* (rhubarb), *Rumex* (sorrel), *Fagopyrum* (buckwheat) and a number of less frequently grown relatives.

Among the cool, temperate species, the polygonums or knotweeds are probably

the best known. Polygonums may be annuals or perennials, herbs or climbing plants. Some are ornamental, some are fast-spreading weeds, all are useful bee plants. Common names are descriptive of their diverse natures: fleece flower, knotweed, smartweed, prince's-feather, lady's-thumb, Mexican bamboo, to name a few. The minute flowers, without petals, are borne in terminal spikes or loose racemes. Stems are swollen at the joints where the leaf base clasps the stem—thus, knotweed—the name polygonum from Latin alluding to many knots or joints.

Here are some of the best known polygonums or knotweeds:

*P. amplexicaule*—mountain fleece; rose or white-flowered border plant.

*P. aubertii*—silver fleece vine; vigorous white-flowered vine.

*P. cuspidatum* var. *compactum*—low Japanese fleece flower; vigorous creeper; needs restraining.

*P. orientale*—prince's-feather; a good garden annual.

*P. vacciniifolium*—rose carpet knotweed; vigorous creeper; good groundcover in the South.

*P. cuspidatum*—Japanese fleece flower or Mexican bamboo; perennial weed and extremely vigorous spreader.

*P. pensylvanicum*—Pennsylvania smartweed; native weed common throughout the United States; a garden pest.

*P. hydropiperoides* and *P. persicaria*; smartweeds which are a source of yellow dye.

*P. bistorta*—snakeweed; used by Indians in soup.

*P. convolvulus*—black bindweed; twining, prostrate weed.

Another temperate zone member of the family, *Eriogonum*, is native to western North America where it is used as an ornamental. The stems of these shrubs are downy at the joints; the *erio* part of the name is based on the Greek word for wool. *Eriogonum umbellatum*, the sulfur flower, with its soft, yellow, fragrant flowers, can be grown in the east from Washington, D.C. southward.

In the part of the country where I grew up, we often had buckwheat cakes for breakfast in the winter. While researching the subject of this column a jingle kept running around the back of my mind—"buckwheat cakes and Injun batter, make us fat and a little fatter." I tried to identify the melody for some time, then suddenly, *voilà: Dixie!* How did buckwheat get into this American song when buckwheat isn't even an American plant? Without pursuing the origins of the words of *Dixie*, we can surmise how this Asian plant came to America.

Buckwheat is first mentioned as cultivated in Germany in 1436 and was probably among crop plants brought to America by early settlers. Used as a fodder crop and for its edible seeds, buckwheat is of little interest to the gardener unless he keeps bees which favor the fragrant white flowers; the bees produce a dark brown, strongly flavored honey which is usually considered an acquired taste.

Buckwheat's petal-less flowers, triangular seed and sheath on the leaf petiole

indicate its relationship to the other Polygonaceae. Botanically, its name is *Fagopyrum esculentum*. Both the Latin name, *Fagopyrum*, and the common name, buckwheat, have complex backgrounds deriving from its cultivation as a crop in a variety of geographic and ethnic regions.

### *Polygonums may be annuals or perennials, herbs or climbing plants. Some are ornamental, some are fast-spreading weeds, all are useful bee plants.*

Benjamin Franklin is generally credited with having introduced rhubarb to America. He recommended it as an "esculent vegetable." But in both England and America it was first grown for its medicinal roots rather than for the fruity, acid tartness of its pink and green stalks. Many Americans know it as pie plant. Its Latin name is *Rheum rhabarbarum*. It was new in England in 1640, probably having come in a roundabout fashion by way of ancient Rome and the China silk trade from its place of origin in Siberia. Although leaf stalks of rhubarb are edible, the leaves are poisonous to man and animals.

As a landscape plant, another rhubarb, *Rheum palmatum* var. *atrosanguineum*, is grown for its striking, deeply lobed leaves and reddish flower clusters reaching six feet in height. Too large for a small garden, it is impressive on the banks of a water garden or in a woodland setting.

The genus *Rumex* is commonly known as dock or sorrel and it is common . . . most representatives being garden weeds. A few are grown for their edible leaves. Both wild and cultivated sorrels have long enjoyed popularity as food plants. *R. scutatus* is the French sorrel, cultivated in Europe since the 14th century; it adds piquancy to French fish and soup recipes. The 'Belleville' variety of English dock (*R. acetosa*) is naturalized in America; it is the chief ingredient of a delectable French soup. Curled dock (*R. crispus*) from Europe and North Asia, introduced to America, is used as a vegetable and potherb. A number of edible American sorrel species (Alaskan, Brazilian and Mexican) are variously used in Indian and Eskimo cultures.

Some members of the Polygonaceae family cultivated in warm climates are *Antigonon*, *Coccoloba*, *Triplaris*, *Homalocladium* and *Muehlenbeckia*.

The flamboyant *Antigonon leptopus* conspicuously festoons porches, fences and pergolas in some of our southern states and in Caribbean islands. In Mexico, where it is native, it is known as "chain of love" because of the locket-like, heart-shaped pink calyx. Coral vine and rosa montana are other names for this rival of bougainvillea which flowers in late summer.

The sea grape, *Coccoloba uvifera*, is characteristic of ocean beaches throughout tropical and subtropical America. It grows like a weed in gawky, dusty, unkempt masses along sandy roads, or it sprawls near the beach. It is tolerant of salt spray and is not found growing naturally inland. Inconspicuous flowers are borne in spikes followed by fruits resembling a bunch of grapes. The "grapes" are much used for jelly. Landscape designers, incorporating native plants in a design, occasionally use sea grape for the emphasis furnished by its crooked habit of growth. Plants grown from seed make exotic, three-foot tall house plants, decorative because of their stiff, waxy, bronze-green leaves, which look like four- to eight-inch platters.

The tropical tree, *Triplaris*, is highly visible in the landscape with its purple-red blossoms and huge leaves, followed by great clusters of red-winged seeds resembling flowers. All *Triplaris* species harbor fierce stinging ants, which inhabit the hollowed out trunk and stems.

A curious single species of Polygonaceae is *Homalocladium platycladum*. This oddity, suited for greenhouse culture, has recently been appearing among foliage plants in plant stores and as a subject in indoor gardening magazines. It is known as ribbon bush or centipede plant. As an indoor plant it attains a height of possibly three feet, producing numerous erect, ribbon-like, jointed green stems, with delicate small green leaves except at flowering time, when minute pinkish-white flowers spring from the joints of the segmented stems.

This last is really a strange plant itself, but there is no question that the whole family Polygonaceae is a strange assortment gathered together because of botanically similar, comparable or identical features. ☺

—Jane Steffey

# The Charm of Hellebores

TEXT BY MRS. RALPH CANNON  
PHOTOGRAPHY BY PAMELA HARPER

**T**here is something about the plants in the genus *Helleborus* that never fails to attract admiration and affection. As a result, there never seem to be enough to go around. They can become the prime favorites of the winter garden. At a time when scarcely any herbaceous plants are in flower, the quiet, curiously colored flowers of the hellebores bloom in spite of the cold and frost.

Hellebores are members of the Ranunculaceae family and are especially prized for their early bloom. They are perennial herbs with stout root systems and mostly basal leaves. Each leaf is palmately divided with leaf margins that range from slightly toothed at the apex to sharply or doubly serrate. The majority of the commonly grown species are evergreen, especially if given protection from winter winds. The blooms generally last from four to five weeks but may persist longer in a protected location. The showy part of the flower is a petaloid calyx. The petals themselves form small, tubular nectaries which stand behind conspicuous stamens. These sepals may be white, plum, pink, green or reddish-purple and are sometimes spotted with other colors.

Careful site selection and preparation are important when growing any of the members of this genus. Hellebores resent being disturbed and may take several years to fully recover and reestablish themselves depending on the extent of the disturbance. A permanent site should therefore be selected and prepared for the plants. Since winter bloom is a consideration, a site with easy accessibility during the winter months is an added plus. Gardeners should remember that several of the hellebores make excellent, long-lasting cut flowers. To prevent cut buds and flowers from wilting, make a one- or two-inch slice on one side of each stem with a sharp knife while keeping the stalk immersed in water. This will expose more of the drinking cells

inside the stem and result in a long, crisp life for the flowers.

All hellebores love chalky soil but will grow happily enough in a neutral soil as well. They require a deep, rich loam full of humus and leaf mold. The soil should be supplemented with organic matter such as leaf mold, peat moss, well decayed manure or compost before planting in order to keep post-planting disturbance to a minimum. Hellebores require a site that provides both ample moisture and perfect drainage. Dappled shade is a must.

On a carefully selected and prepared site these plants will thrive with little care from year to year. Add a spring mulch of well rotted manure or compost to prevent summer drought. Irrigate whenever the soil becomes dry. Old, spent leaves can also be removed in the spring. A handful or so of ground limestone scratched into the soil every three or four years to raise soil pH also will be appreciated. If desired, a plastic frame, which allows free air circulation, can be placed over the plants during the winter. This added protection prolongs the life of the flowers and keeps them from getting muddy.

Although disturbance is not recommended, propagation can be achieved by division as well as by seed. The hellebores have very brittle roots which must be handled with care in order to avoid breakage. Clumps may be divided in the early spring as soon after flowering as possible or in the late summer or fall. The plants should definitely not be disturbed or left to recover during the heat of the summer.

Seed-grown plants often are more readily established in the garden. Collect seeds as soon as they are ripe, generally the first week of June. Be sure to wear gloves when collecting since the sap of hellebores can cause skin blisters (the plant, if eaten, is

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*Helleborus niger*, commonly known as the Christmas rose, is the most popular of all hellebores.



## *Hellebores require a site that provides both ample moisture and perfect drainage. Dappled shade is a must.*

highly poisonous). Place the collected capsules in a paper bag or other container. The seed will fall out as the pods dry and open. The seed of the hellebores have a dormancy requirement that must be fulfilled before germination can occur. Outdoors, sow seed at once after they ripen for spring germination and cover the planted seeds with minced, dry leaves or other covering to prevent them from being washed away by rain. Leave the small plants to grow into a colony or transplant some of the seedlings to other permanent spots. Indoors, place the seeds in a moistened medium such as peat and store them in the freezer for three weeks. Seeds may require two periods of indoor freezing or two winters in the garden before dormancy is broken and germination can occur. Seedlings sown by either method require from three to four years to attain blooming size.

To achieve the greatest satisfaction from growing hellebores, it is essential to carefully select the species and variety to be grown. They should be chosen for earliness and length of bloom as well as for foliage value. From the numerous species and garden varieties in existence, a selection has been made here on the basis of merit, adaptability and availability. Personal predilection may lead to a preference.

The most popular and treasured of all hellebores is *Helleborus niger*, or the Christmas rose, a native of Europe and western Asia. The name niger refers to the color of the black roots and not to the color of the flowers, which, not unexpectedly from its common name, appear in time for Christmas in most areas. The charm of the Christmas rose results from the architectural beauty of its large white flowers; each individual flower looks as if it were carved from alabaster.

One excellent cultivar of *H. niger* to consider growing is 'Potter's Wheel', which is superior in beauty and carries its large,

glistening, white flowers on stiff, erect, 10-inch stems above the foliage of dark-green leaves. Another worthy cultivar of *H. niger* is 'Angustifolius', sometimes called St. Brigid's Christmas rose. It has narrow leaves of lovely apple green and flowers of snowy white that are enhanced by the gold of the showy stamens. A subspecies worthy of the garden is *H. niger* subsp. *macranthus*. This is the earliest of all hellebores to bloom. It grows two feet tall and has white flowers, three to four inches in diameter with a pinkish shade on the outside. A half-open bud, if present, resembles a tulip and adds to the beauty of the clump.

*Helleborus lividus* subsp. *corsicus* is a native of Corsica and a majestic plant. It is a hardy perennial with green flowers that last around 10 weeks. The foliage, which grows three feet tall, is bold and gleaming green with spine-edged leaves, deeply cut. Carried on the tip of the stems are the cup-shaped bunches of apple-green bells. The flower heads develop in the crown of the leaves; after the seeds ripen, the shoots die, making room for the new shoots. This plant flowers very early and makes a beautiful sight when blooming above a carpet of snow.

*H. viridis* is a native of England and Europe and is known as the green hellebore. The flowers are pale green with a hint of yellow and look like shallow saucers about two inches in diameter. They are carried in clusters of two to four flowers on 15-inch stems. This is a deciduous species which flowers in February and March before the new green leaves appear.

*H. foetidus*, also an English and European native, is known as the stinking hellebore because of the malodorous nature of the foliage when bruised or crushed. This species has small, soft-green, bell-shaped

*Continued on page 33*

*Helleborus orientalis*, known as the Lenten rose, is available in many colors. The sepals may even be checkered or flecked with color.





# Plant Collecting in Korea & Taiwan

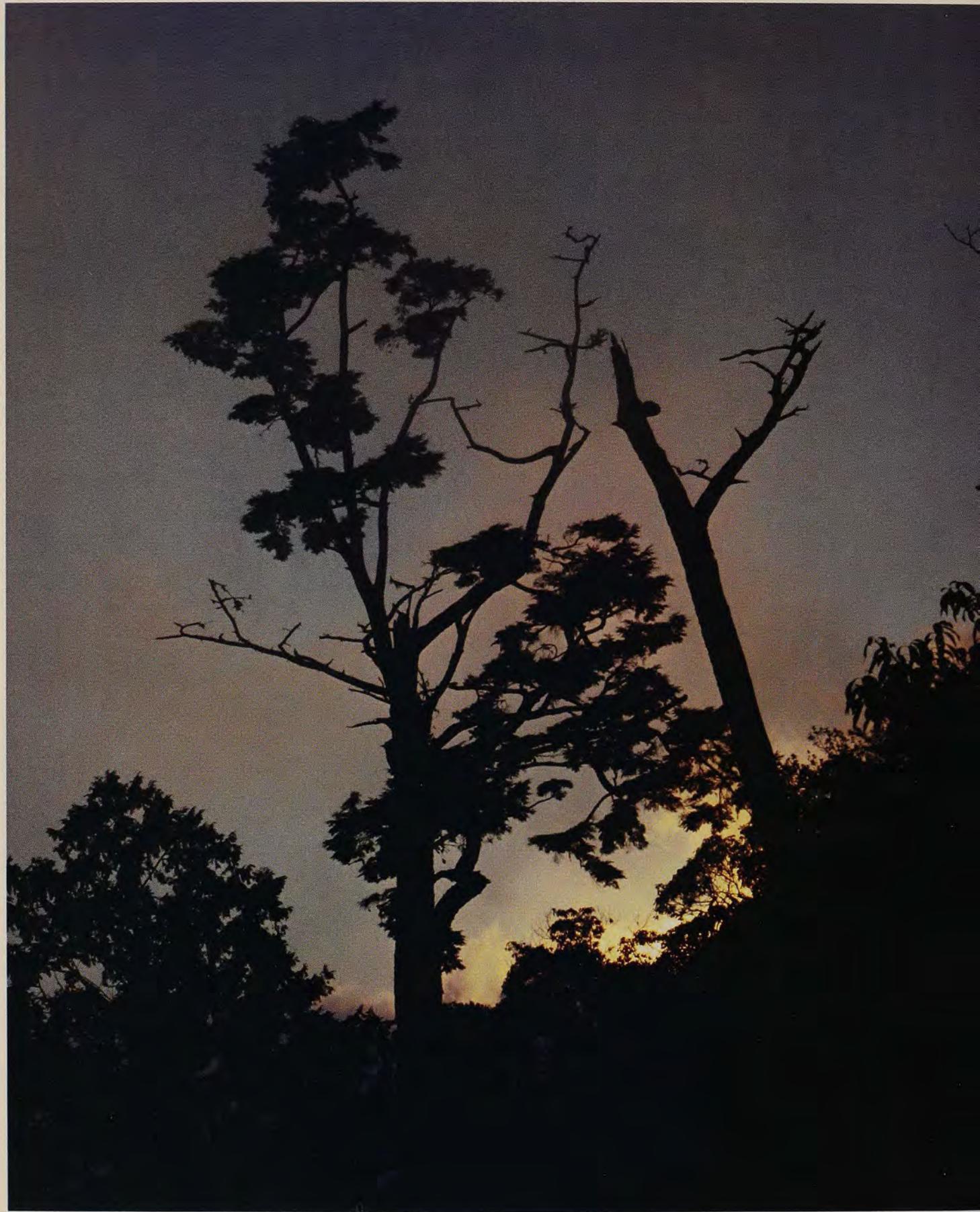
TEXT AND PHOTOGRAPHY BY PAUL MEYER

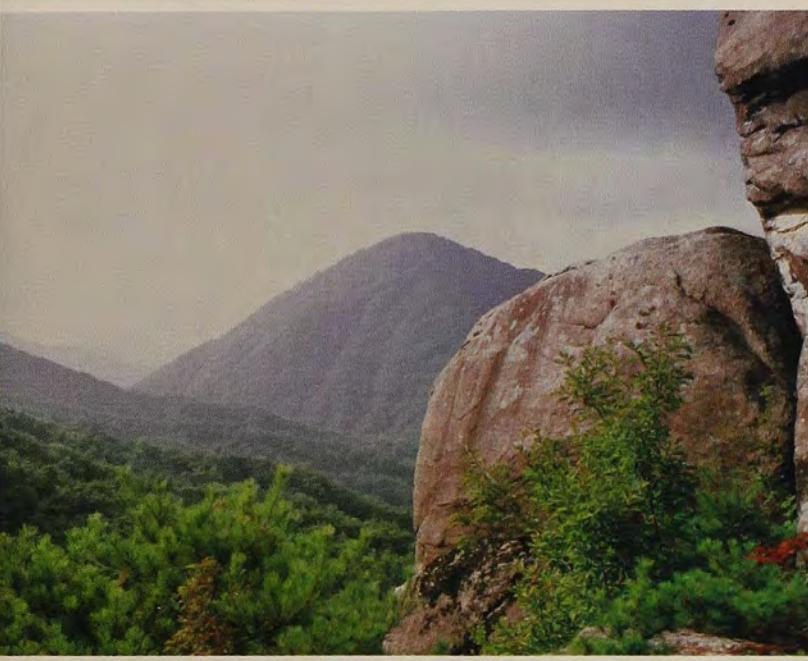
**I**t was like meeting a group of old friends in unfamiliar territory. On my first outing into the Korean landscape on Kwanak Mountain near Seoul, I found familiar plant species growing in wild habitats where they have evolved for millions of years. Many, like *Rhododendron schlippenbachii*, I have known as garden plants. Other equally beautiful species are still rare in the western world. Carl Ferris Miller was my host and partner on this collection trip. Miller, a consultant to the Bank of Korea, is a native of Pottstown, Pennsylvania. He has lived in Korea for the past 34 years and is privately developing an extensive collection of woody plants at his Chollipo Arboretum on the west coast of Korea.

I met Miller for the first time in 1976 at the American Holly Society meeting. We continued to correspond and shared seeds of plants native to our respective localities. In the fall of 1978 he proposed a joint collecting trip to Korea and Taiwan. Dr. Klein, Director of Philadelphia's Morris Arboretum, was eager to continue the Arboretum's tradition of collecting Oriental species and quickly agreed. On September 11, 1979, after a year of planning, we finally made our first foray into the field. With us was Dr. Lee Tchang-Bok, a taxonomy professor at Seoul National

LEFT: *Pinus thunbergii* grows here in its native habitat on the Korean coast of the Sea of Japan.  
BELOW: *Hemerocallis* blossoms, drying on mesh screens outside a mountain home, are used as ingredients in Taiwanese cooking.







*Mt. Daxueshan in Taiwan  
was a particularly rich  
collection site.*

University and Director of Kwanak Arboretum near Seoul.

Japanese snowbell (*Styrax japonicus*) was our first find. It is a small, flat-topped tree with horizontally spreading branches. In mid-May white, bell-shaped flowers cover the undersides of the branches. Like many plants collected in Korea, this species has a wide distribution in Northeast Asia.

One of our major goals was to obtain variations within species different from those already in cultivation. When

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OPPOSITE: *Tsuga wilsonii*. LEFT: Rocky ravines are the only trails in some parts of the Mt. Songni region. BELOW: The brilliant red fruits of *Viburnum foetidum* var. *rectangulatum* are commonly seen in the higher elevations of Taiwan.





*One unexpected collection was a two-foot pit viper found along the mountain trail. It served as an appetizer for our evening meal.*

a species has a wide geographic range these variations can be horticulturally important. For example, greater cold hardiness can often be obtained by collecting from the coldest part of a plant's range. Even in a particular region, differences can occur in vigor, form, flower color or environmental tolerances. Thus, to maximize genetic diversity, we took seed from as many individual plants as possible as well as from a variety of geographic areas. Later, when the resulting plants are grown at the Morris Arboretum and other sites, selections will be made for superior growth and landscape qualities.

Another of our objectives was to find new trees suitable for urban streetside plantings. One candidate collected on Mt. Kwanak was the Japanese alder (*Alnus japonica*). Its dark, glossy-green leaves show no sign of insect or disease problems. Like

many alders, it grows in moist soil along stream sides. Experience has shown that species native to floodplains where soil oxygen levels are low often make good street trees. Dr. Lee, who has encyclopedic knowledge of the natural history and economic uses of plants, reported that this alder is called the five-ri tree in Japan. A "ri" is a unit of distance, and Japanese alders were planted along roads by Koreans at five ri intervals like mileage markers.

#### Life in the Mountains

Later that week we traveled to Mt. Songni in Central Korea. Besides myself, the collection party consisted of Barry Yinger, a 1979 graduate of the University of Delaware's Longwood Program, and Park Sang Yoon. Both are on the staff of Chollipo Arboretum.



As we approached the mountains in a country bus, we were awed by their beauty. The contoured rice paddies in the valleys, shadowed by rugged mountains, reminded me of photos taken by the great plant collectors in Central China around the turn of the century.

The three of us stayed in a small, two-room house that served as the local inn at the end of the bus line. For the equivalent of six dollars each, we received lodging and three meals. Our room (eight feet by eight feet) was completely unfurnished and equipped only with two comforters for each person. Dinner, consisting of rice and kimche (assorted pickled vegetables), was brought in on a small round table much like a coffee table. We ate around this while sitting on the floor.

After dinner, we walked around the village and purchased some sweet cakes to

supplement our austere dinner. At the local bar, which was essentially someone's living room, we washed the cakes down with makoli, a mild fermented rice brew. After a few minutes we were startled to hear a television in the next room. Even in the rural mountain villages of Korea, television is becoming common.

Back at our room we slept on the floor, each using one comforter as a pad and the other as a blanket. The floor was warmed by heat which rose from a wood fire in the lower-level kitchen, a real luxury on a frosty autumn night. The toilet facility was a three-foot-square pit in the barn next to the cow stall. We were certainly a world away from the modern conveniences of Seoul.

The flora in the Mt. Songni region is rich. Collections included *Ilex macrocarpa*. *Continued on page 36*

OPPOSITE TOP: This inn near Mt. Songni was our base for two nights. Though our room was not furnished, the heated floor made a fine bed. OPPOSITE BOTTOM: Seed collection was easy in the local Korean market. Here are shown (clockwise from top) Chinese chestnuts (*Castanea mollissima*), jujube (*Ziziphus jujuba*), ginkgo (*Ginkgo biloba*) and Korean pine nuts (*Pinus koraiensis*). ABOVE: Ullung Island, located between Korea and Japan in the Sea of Japan, is the home of over 40 endemic species.

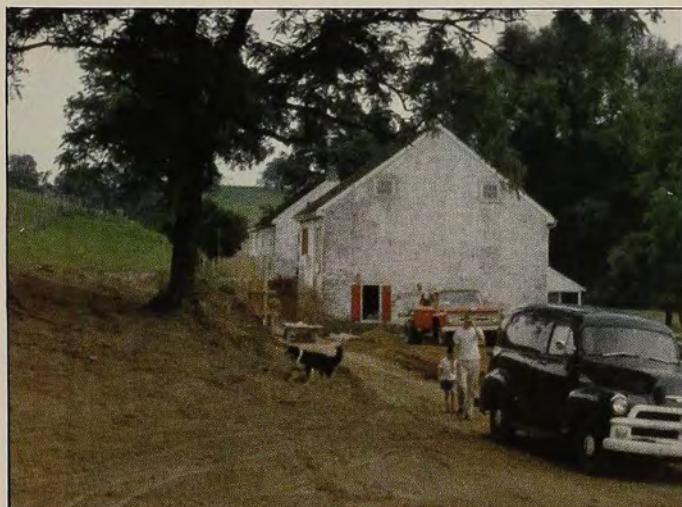
# High Meadow

TEXT BY JANE PEPPER  
PHOTOGRAPHY BY J. FOLSOM PAUL

**I**t is fascinating to see what can be done in 15 years by only two gardeners who started with 12 acres of beautiful meadow, a little old stone house covered with white stucco and a garden overgrown with weeds, scrub trees and vines. This was what confronted Mr. and Mrs. J. Folsom Paul when they acquired "High Meadow." Today they still have an old stone house, enlarged to meet their needs but carefully preserved to maintain its unique character, and the meadow is still as beautiful, but the garden has changed. The willows, black walnuts, poison ivy and chokeberry have been replaced with brick paths and a terrace, shade trees and a host of interesting plants. It's not an elaborate garden, but one that reflects the care and enthusiasm the Pauls have lavished upon it.



LEFT: Hemlocks frame "High Meadow" seven years after the Pauls started work on the garden. ABOVE: A willow oak, *Quercus phellos*, overlooks the garden fence and the beautiful rolling countryside of Chester County, Pennsylvania. RIGHT: Regrading was necessary at the driveway entrance to "High Meadow" before the Pauls could establish the beautiful garden pictured on page 24.



"High Meadow" is located in Chester County, Pennsylvania. The surrounding countryside is rolling and rural, and for Lois the location had the added advantage of being close to Longwood Gardens, one of the finest horticultural display gardens in the world. Trained as a horticulturist, Lois joined the staff at Longwood in 1960 and retired four years ago. It was during these busy years that she and her husband, nicknamed Fully, planned their garden and laid the foundation upon which they will build in the years to come.

As the Pauls cleared the jungle around the house and gradually developed a landscape plan, they established several principles concerning their future garden: it had to be small and with minimum maintenance requirements as this was to be a do-it-yourself operation for two people with full-time jobs; the garden had to be all around the house so they could enjoy it from as many doors and windows as possible and during every season; in addition, they planned to select plants in



keeping with the old house and its rural surroundings. Columnar maples, weeping pines or yellow chamaecyparis would not be appropriate in this garden.

Soon after the Pauls moved into "High Meadow" it became obvious that they would have to fence their new garden because the neighbor's cattle were frequently on the loose. The resulting post and board fence has proved to be a great asset, visually separating the garden from the surrounding meadow, providing support for vines such as clematis and acting as a background for informal plantings of lilacs, peonies and daylilies. Other major early investments included the building of a brick entranceway from the driveway to the garage, bordered by a stone retaining wall, a brick terrace to the east of the house and a small woodshed/tool storage area to the north.

In the early sixties, old, used sidewalk bricks were available for seven cents apiece from demolition sites in Philadelphia and Wilmington. Today they are hard to obtain at any price, but happily they were plentiful when the Pauls renovated this garden. The warm red color of the old brick complements the white stucco of the main house.

Beside the new entrance, regrading made it necessary to build a retaining wall. Once again the Pauls turned a necessity into an asset. The retaining wall is of dry stone, and the cracks are filled with a variety of plants that thrive in this situation—rock cress (*Arabis caucasica* and *Aubrieta deltoidea*), strawberry begonia (*Saxifraga stolonifera*), *Geranium sanguineum* var. *prostratum*; sempervivums (*Sempervivum arachnoideum*; the spiderweb houseleek is a special favorite) and the Dalmatian bellflower (*Campanula portenschlagiana*), valued for its midsummer bloom.

From the parking bay to the front door the visitor follows a brick path bordered by a dark-blue vinca (*Vinca minor* 'Bowlesii') underplanted with *Iris reticulata* and crocus. Many of the deciduous trees are also underplanted with bulbs—grape hyacinths and daffodils bloom in spring, and the winter

ABOVE LEFT: Hardy begonias, astilbe and impatiens thrive along the terrace in shade cast by Chinese dogwoods, *Cornus kousa*. LEFT: French hybrid lilacs frame the rock wall leading to the garage entrance where little evidence of the earlier regrading operation remains. BELOW: A decorative lead dish in the shape of an ivy leaf sits above a small terrace waterfall and serves as a bird bath.



daffodil (*Sternbergia lutea*) provides a welcome splash of color in September.

In keeping with the principle that this was to be a low-maintenance garden, Lois chose shade trees with as few known pest and disease problems as possible. Because of their special need for shade in one location, the Pauls employed a nurseryman to plant a large three- to four-inch caliper (about 14-16 feet tall) willow oak (*Quercus phellos*) on the southeast corner of the house. The other deciduous trees—Chinese elm (*Ulmus parvifolia*), black gum (*Nyssa sylvatica*), katsura (*Cercidiphyllum japonicum*), Chinese dogwood (*Cornus kousa*), red maple (*Acer rubrum*), Chinese scholar tree (*Sophora japonica*) and yellowwood (*Cladrastis lutea*), were all small (eight to 10 feet) trees which the Pauls planted themselves. They also planted the evergreens—two clumps of white pine (*Pinus strobus*), a single lace-bark pine (*Pinus bungeana*) whose mottled bark and billowing shape they enjoy during the winter, and a clump of hemlocks (*Tsuga canadensis*). It's interesting to note how much the trees have grown since 1965. As Lois pointed out, this should be a lesson to those of us who are impatient and tend to plant too close.

Should the visitor ignore the front door and continue on the brick path towards the terrace on the east, he will pass two large sweet bay magnolias (*Magnolia virginiana*) and a fragrant viburnum (*Viburnum carlesii*). The Pauls planted these beside the house to enjoy the fragrant viburnum blossoms during spring and those of the magnolia in late June and July. These shrubs also have grown rapidly, and last year many of the magnolia blooms were borne too high on the plant to be appreciated in the living room. This fall Lois followed a practice she often emphasized in her courses on home landscaping at Longwood: never let the plants rule you. With a pair of pruning shears, a small saw and a step ladder you should be able to prune most plants to fit your needs.

The brick terrace is small and intimate, looking over the meadow down to the Pocopson Creek. The splashing of a small wall fountain adds to the peaceful atmosphere. Three sides of the terrace are enclosed by a yew hedge. Three Chinese dogwoods and a yellowwood provide shade. Beneath the dogwoods it has now become very shady, but cultivars of *Astilbe*, *Epimedium*, a Christmas rose (*Helleborus niger*), Jacob's-ladder (*Polemonium reptans*) and *Vancouveria hexandra* still bloom well here. *Begonia grandis* (*evansiana*), the only begonia hardy in this area (Hardiness Zone 6), also flourishes in the shade. The leaves of this begonia are slow to develop in spring, but by July they are a beautiful pale green with red margins and undersides. The pale-pink flowers are attractive from late August until frost. Against the wall of the house the delicate dark-green leaves of Boston ivy (*Parthenocissus tricuspidata* 'Lowii') make a wonderful design on the white stucco.

Throughout the garden Lois and Fully have carefully mixed common plants such as Japanese hollies, red maple, lilacs and peonies with those you don't see frequently in private gardens such as lace-bark pine, katsura and yellowwood, to name a few. The result is an interesting variety of plants, but by careful use of two important principles of garden design—repetition and massing of plants instead of using them singly—they have created a very special garden. Their creation is the sort of garden that can be enjoyed by both avid gardeners and by those who only seek a quiet place to relax. ☀



# CELEBRATING THE BEAUTY OF BRANCHING AND BARK

TEXT AND PHOTOGRAPHY BY CLARENCE LEWIS

Nature paints many living pictures. Some are made with broad, bold strokes; others are more subtly wrought, such as the lovely effect of tree branches blending with a pasture or woodland. The upright growth of a sugar maple (*Acer saccharum*), for example, becomes doubly interesting when set against the backdrop of a rich meadow or hill which emphasizes the maple's vibrant, orange-red autumn foliage or its verdant summer coat of green. The same hill or meadow in winter accentuates the maple's naked silhouette, delicate against a background of snow.

A mature white pine (*Pinus strobus*) presents a different yet equally picturesque form. Because the horizontal branches are of varying lengths, one does not immediately see the tree as a unit. Instead, a first impression may be of a collection of separate but related shapes floating in midair. Each time you look something new becomes evident. Stand beneath such a tree and let the overhead panorama occupy your thoughts for a few seconds. The asymmetry of such a tree has a beauty all its own. Other trees that could command your attention in this manner are the Japanese white pine (*Pinus parviflora*), cedar-of-Lebanon (*Cedrus libani*), Monterey cypress (*Cupressus macrocarpa*) and Scots pine (*Pinus sylvestris*). Each creates branching effects with characteristics that are unique.

Trees often look like majestic sculpture, sometimes contemporary, but always compatibly woven into nature's artistic display. Stand and look at just one twisting, turning branch as it reaches ever outward to become an essential part of its surroundings. Here is something to excite the mind!



The Eastern hemlock (*Tsuga canadensis*), with its ever present mantle of green, relaxed and confident, reaches willingly for the floor it stands on. In a woodland or ravine, but also when standing alone, its branches sweep gracefully earthward, creating fine, soft textures on the landscape. In the winter it is magnificent when laden with snow, some branches supported and cherished by the earth itself.

The weeping hemlock (*Tsuga canadensis 'Pendula'*) is a green fountain of beauty that spreads and droops. While usually no more than eight to 10 feet high, it may, after many years, spread in width to 20

feet or more. Find your way beneath an old specimen. It will be necessary to bend your head in order to make an entry and to study the tangle of branches which try to find an opening through which to reach the light. You will sing the glory of this grand specimen and willingly rate it as one of the most beautiful of nature's creations.

Trees such as the American plane tree, or sycamore (*Platanus occidentalis*), present a variety of patterns on their trunk and branches. The older growth may reveal areas that are chalky white, others that are tan or gray, lending a mottled appearance to the entire tree. Growing in a moist woodland, it prominently displays its patchwork of designs and stands out when complemented by nearby tall evergreens or the darker bark of other deciduous trees. Winter is a good time to make this observation, but even during its growing period in summer, late spring and early fall, the contrast is evident. It is interesting to come out of a cluster of white pine and, looking through the soft, green needles, spy a patterned sycamore in the immediate or distant foreground. The loose spacing of its branches makes the sycamore a sentinel of interest, so much so that you will find yourself drawn to it, wishing to inspect it more thoroughly.

While enjoying a walk through a Northeastern woodland, you may be attracted to a green-barked tree with vertical white stripes. It is so striking that you will no doubt wish to get a closer look. This tree is the striped maple, or moosewood (*Acer*

LEFT: *Quercus alba*, white oak. ABOVE: The striped maple, also known as moosewood, *Acer pensylvanicum*.



*pensylvanicum*), which enjoys the protection of a loose woodland and the absence of long, hot summers. This conspicuous striping is most noticeable in winter; in the summer, the large, coarse leaves try to hide the attractive bark but never quite succeed.

Observe an American hornbeam (*Carpinus caroliniana*) as its trunk rises from the ground and thrusts several muscular, gray, smooth-barked branches skyward. Sometimes there may be only one, two or

four branches, but, in any case, the real show of the hornbeam's strength is evident in the branches' twists and turns. The convoluting begins to appear once the branches are two or more inches in diameter and becomes increasingly apparent as the tree matures. On large branches depressions and ridges gradually appear but the bark remains smooth. This characteristic accounts for another common name for hornbeam, musclewood. So muscle-like are these depressions and ridges that an active

imagination may even detect the impression of motion.

When the muscular trunk of a tree rises from a rich, green turf or a groundcover of thick, green growth such as pachysandra or myrtle, the contrast and harmony which result add lasting interest to the garden. Such a spot easily becomes a most favored part of the landscape. Such simple partnerships as this contribute immeasurably to lasting pictures and are important in making the overall environment



restful and pleasing to the eye and mind.

Stand at the base of a giant sequoia (*Sequoia**dendron giganteum*) in Yosemite National Park and really look at the rugged trunk of a 2,000-year-old specimen. The thick, orange-colored bark reflects a strength beyond that of almost any other tree. There are no others with the same vibrant color and bark quality. Such words as splendid, glorious, superb and imposing come to mind but do not adequately de-

*Continued on page 34*

ABOVE: The weeping hemlock, *Tsuga canadensis* 'Pendula', with its tangled branches, is especially prized for its unique habit of growth. ABOVE RIGHT: *Cupressus macrocarpa*, Monterey cypress, is a familiar site along the coast of California. RIGHT: The needles of a white pine, *Pinus strobus*, frame the chalky colored trunk of a sycamore, *Platanus occidentalis*.



# A Holiday Design

TEXT AND PHOTOGRAPHY  
BY GEORGE TALOUMIS

**C**hristmas is a time for many activities, not the least of which is making your own indoor and outdoor decorations. This pastime always seems to be more enjoyable when you can gather decorative plant materials from your own garden.

One handsome item worth making, which is sure to delight family and guests, is a Williamsburg apple cone. It is made with fresh apples and other fruits and greens, including the green rosette of leaves from a pineapple.

To make the cone, gather the materials early, particularly if you want to include some exotics. It will take hours from start to finish, but the result will be enormously satisfying. Thoroughly soak the greens you plan to use to make them last longer. Then, on the day before you want to make the arrangement, cut off the pineapple top, leaving about two inches of the fruit as the base. Insert three to four toothpicks at its base and rest it on a dish overnight to bleed.

Gather all your materials together when you are ready to assemble the arrangement. Start with a 14-inch Styrofoam cone, preferably green, though white will do if green is not available. With a sharp kitchen knife, cut off two to three inches from the top of the cone. A more expensive but long-lasting wooden cone can be purchased instead. Its top has been pre-cut and nails on which to impale apples have already been inserted in the cone. See the list of mail-order suppliers of both cone types at the end of this article.

The plant materials you will need include apples, greens and other small fruit for additional decoration. In addition, have on hand wired florist picks and round, hard, double-pointed toothpicks.

After affixing the green top of the pineapple to the top of the cone with toothpicks, arrange the apples around the cone. Lady, crabapple or other small types are suitable. I was able to obtain small Delicious apples from a local farmer. Keep the larger apples at the base, working upward with smaller and smaller ones as you approach the top. Each apple will need to be secured with three toothpicks so that it will remain steady and not swivel. Be sure to leave enough space among the apples for the greens.

Next, wire the greens on florist picks and insert them in the openings among the apples. A variety of greens can be used, depending on what is available, but be certain the tufts of green are small and do not cover the fruit. Their purpose is to soften the overall effect. There are any number of different greens you can consider, depending on what is available in your area and what seems suitable for your design. Consider boxwood, balsam fir, false-cypress, yew, arborvitae, Douglas fir, small-leaved English ivy, holly (preferably without berries), ardisia, Japanese privet, white and other pines, myrtle, vinca, cedar-of-Lebanon, deodar cedar, cryptomeria, pittosporum (if small), pieris, lavender for touches of gray, and small-leaved evergreen barberries. Avoid spruces and hemlocks because they shed their needles.

RIGHT: Gathered together are all of the materials needed to make a Williamsburg apple cone, including a 14-inch Styrofoam cone before its top has been cut off, a pineapple top on toothpicks resting on a dish to bleed, wired florist picks, greens, apples and other fruit. CENTER LEFT: Now partially completed, the cone is covered with apples, including one row of 'Yellow Delicious', and the pineapple is fixed in place. CENTER RIGHT: At this stage of completion, the cone may be displayed alone, or additional greens and fruit can be arranged at its base. BELOW: Even though the Styrofoam cone used in this arrangement was white, since green was not available, careful placement of the balsam fir tufts has completely obscured it.



When the cone has been completed, rest it on a dish, bowl or tray and place it wherever you want it permanently displayed. Mantels or small dining tables are particularly good choices. Finish the design by arranging additional greens and fruit around the base in a natural and graceful manner. I find lush clusters of grapes particularly suitable for this portion of the design, but you may want to try small oranges, lemons, limes, tangerines, pomegranates, kiwis, quinces or mangoes instead. As a final touch, position a red or white candle at each end of the design. Better still are four candles, as they will give off a glowing, soft light that will brighten the arrangement on all sides.

The Williamsburg apple cone will last two or more weeks if it is placed in a cool spot at night. Keep the fruit from going bad by stealing pieces here and there before they soften, replacing them with fresh material. In this way your special Yuletide arrangement will become not only a feast for the eye but also a feast for the body.

**Mail-order sources for apple cones:** Styrofoam—Country House Floral, 95 Greenwood Road, Andover, MA 01810; Dorothy Biddle Service, VC-GT, Hawthorne, NY 10532; Designer's Bench, Box 839AH, Auburn, NY 13021. Wooden cone—Colonial Williamsburg Craft House. 10-inch cone, \$16.50 (Order #18852); 12-inch cone, \$19.50 (Order #18853). Price includes postage and handling. Virginia residents, add 4% sales tax. To order, write Colonial Williamsburg Order Department, 201 5th Avenue, Box CH, Williamsburg, VA 23185. ☐

## VANILLA PLANTS CONT'D

Continued from page 7

3) Repeat the scalding process with only two dippings at 160°F and then store as in #2 overnight.

4) Scald the beans one last time with one dipping at 150°F, rewrap and sweat overnight as in step #2.

These first steps serve to initially kill the beans and cause them to begin to sweat out excess moisture. A further cycle of drying and sweating follows step #4:

5) Place the beans in a warm (45° to 50°C, 115°F) oven for two hours.

6) Wrap and store overnight as in step #2. Repeat steps #5 and #6 for about seven days in a row. Carefully inspect the beans on several occasions to be sure that no mold develops. Air-drying on a rack will further reduce moisture content and thus concentrate the flavor and reduce the chance of mold development during storage.

Follow the drying/sweating cycle by one last process. Pack the beans in a tightly closed box for several months for conditioning and the development of aroma. While you may want to begin using your beans at this point, any unused beans should be stored in this manner as they will improve in quality.

Today vanilla is used for flavoring in baked goods, chocolate, beverages and ice cream as well as for scenting in soaps, perfumes, tobaccos, candles, glues and powders. The demand for it exceeds production, so an artificial substitute is often used in the baking industry. A true cook knows there is no substitute for the real thing, however, and gardeners who discover this easy-to-grow house plant will be doubly pleased—the vanilla plant not only provides ingredients for cooking, at a price that's right, but its attractive foliage also makes it a welcome addition to the interior garden.

—Darlene L. Conley

**Source:** Small plants can be obtained from the Rod McClellan Company, 1450 El Camino Real, South San Francisco, CA 94080.

**Editor's note:** Readers interested in obtaining more extensive information on Vanilla will find the following two books helpful: *Home Orchid Growing* by Rebecca Tyson Northern, published by Van Nostrand Company, 1970; and *The Book of Spices* by Frederic Livingston Rosengarten, published by Livingston Publishing Co., 1969. ●

## HELLEBORES CONT'D

Continued from page 14

flowers borne in drooping clusters. The mouth of each green blossom is rimmed with purplish-brown. Its leaves are divided and almost black-green.

*H. odorus* is another green-flowered hellebore. It is a native of Hungary, and although rarely cultivated, it is hardy and usually evergreen. The two- to three-inch flowers are nodding and sweetly scented. The flowers last a long time both as cut flowers and in the garden.

Although not as popular as the Christmas rose, the Lenten rose (*H. orientalis*) is a delightful plant, and it should be grown together with its Christmas cousin. *H. orientalis* in all its multitudinous forms and hybrids will delight with its bowl-shaped blossoms. The colored perianths may be white, cream, green, pink, rose, purple, red and almost black. The sepals may also be checkered and flecked with color. The nodding flowers are on branched flower stems, which is an obvious difference from the Christmas rose that bears its flowers on separate stems. The Lenten rose flowers later in the year than any of the other species mentioned. Each year it becomes more beautiful and is among the finest of the April flowers. It will reseed itself readily, producing new crosses and varied flower forms.

There are many cultivars of *H. orientalis*. They include such jewels as 'Pet-samo', pure white, cup-shaped flowers; 'Snow White', a pure white; 'Prince Rupert', silver-white; 'Black Prince', mahogany-brown flowers, bronze-green foliage; 'Hazy Dawn', a clear shade of rose-plum; 'Wood Nymph', pale-rose flowers; 'Purple Prince', a lovely shade of rich, deep, velvet-purple, mottled blood-red at the base.

The hellebores are among the most useful plants for brightening up the garden in late winter and early spring with their bold foliage and waxy flowers. Because these plants are both beautiful and rewarding, they warrant consideration by all gardeners.

**Where to obtain hellebores:** Geo. W. Park Seed Co. Inc. Greenwood, SC 29647; Powell's Gardens, Route 2 Hwy. 70, Princeton, NC 27569; The White Flower Farm, Litchfield, CT 06759; The Wayside Gardens, Hodges, SC 29695; Ingwersen Ltd, Gravetya, Eastgrinstead, Sussex, England RH 19, 4LE; Perry's Hardy Plant Farm, Theobold Park Road, Enfield, Middlesex, England. ●

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## BRANCHING AND BARK CONT'D

Continued from page 29

Scots pine, *Pinus sylvestris*, is one of the hardiest pines and grows to a height of 100 feet or more. The varying lengths of its horizontal branches form an interesting asymmetrical silhouette against the sky.



scribe this tree's magnificence.

Branches with colorful bark are always fascinating, particularly if you come upon them unexpectedly. The element of surprise usually creates a refreshing reaction. A tree whose branches are orange, red, yellow or some other unusual color attract the attention of even the most unobservant bystander. When, in addition, the bark curls or peels, an even greater interest is generated.

Sunlight, with its varying intensity and changing direction, will alter the picture from moment to moment and hour to hour. A piece of bark peeling away from a branch or stem may appear fragile with the early morning sun shining through it, yet it may cast a harsh shadow at midday. Other impressions can be captured on film. Often a camera's eye reveals images that the eye doesn't see. Late afternoon or early morn-

ing are good times to observe colorful bark, either through the lens of a camera or with your own eyes. It is then that the light is best.

The paperbark or cherrybark maple (*Acer griseum*) is an excellent small tree to examine for its bark display because it exfoliates from a branch or trunk in different ways. At times it curls, at times it may stick straight out. The colors—orange, bronze to tannish-orange—vary in intensity and may be lustrous or muted.

A tree will reveal its life story to the alert observer. An Eastern hemlock growing in what seems to be pure rock will tell a completely different tale from that of a maple growing in a lush meadow. Trees such as the hemlock and, in the West, the Jeffrey (*Pinus jeffreyi*) and bristle-cone pines (*Pinus aristata*), can be extremely tenacious. The scars of their existence will be



*Pinus strobus*, the white pine, possesses a branching effect similar to that of its cousin, the Scots pine. Native to the eastern United States, the white pine is an important timber tree which grows to 120 feet or more.

there for all to see. The bristle-cone pine, with its twisted, gnarled growth and deeply grooved bark, stands in defiance of the winds, rain and snow and still fights to live after 3,000 years. No tree has survived as many battles as this one and lived to exhibit such an expression of strength and determination.

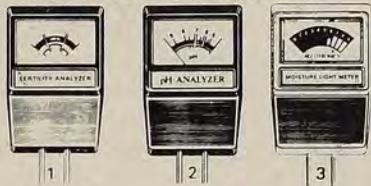
Looking at tree trunks and observing their many variations is a study in itself. The smooth, gray bark of an old American or European beech (*Fagus grandifolia* and *F. sylvatica* respectively) can easily be seen from some distance, whether it be on a rolling lawn or in a woodland with scattered old and young trees. As the tree gets older, it takes on a grandeur that you sense whenever you are in its presence. There are many adjectives that do honor to old beeches which grace our woodlands, lawns and parks. A few are "lordly," "majestic,"

"mighty" and "distinguished."

What is it about a tree that attracts and holds your interest? Is it the rugged bark, the great girth of an old tree's trunk, the filtered sunlight splashing on the branches, the flowers, the fruits, the shade created for summer comfort, the many patterns fashioned by the branches, or is it just because it lives? There is strength and life wherever and whenever you walk with trees. It matters not whether it is a mature woodland or a private garden where some man or woman became interested in trees and had the foresight to plant for his or her personal enjoyment. To find a tree that you have never seen but can now identify is a great stimulant. Having once observed in detail the beauty of a majestic tree, there is no going back. This portion of nature's handiwork is a subject you will forever after feel compelled to explore. ☀

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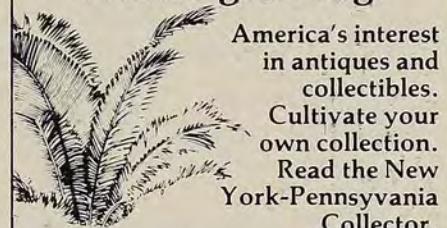


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*Continued from page 21*

*poda*, a deciduous holly tree growing to 20 feet, with abundant red fruit on female plants. Also, we were excited to find siebold magnolia (*Magnolia sieboldii*). In June, this shrubby magnolia bears pendant white flowers accented with red stamens. Though the species has been known in the United States for many years, it is still rarely found in nurseries.

One unexpected collection was a two-foot pit viper found along the mountain trail. At the suggestion of Mr. Kim, our local guide, this snake served as an appetizer for our evening dinner. After three days of rice and kimche, I was ready to try anything. Surprisingly, it was delicious, with a taste similar to spareribs. Snake meat is highly valued in Korea as an aphrodisiac, although I did not notice the effect.

The highlight of the Korean trip was our expedition to Ullung Do, located between Korea and Japan. This mountainous island, the home of over 40 species which occur nowhere else, is a plant collector's paradise. In particular I wanted to collect two endemic maple species. Both are small trees and potentially useful in urban gardens. Although the trees were abundant, seed was very scarce. We finally came across one *Acer takesimense* with a few seeds, but it wasn't until we were about to start down the mountain after two days of searching that I spotted a specimen of *Acer okamotoanum* heavy with seed. I lost no time climbing the tree to prune out fruited branches, while the others bundled seed and prepared voucher herbarium specimens.

While walking along a mountain trail, we met the manager of the island's forestry nursery. Though it was late in the afternoon, we accepted his invitation to visit the nursery. Miller admired several ornamental variants among the thousands of seedlings. Though considered worthless rogues by the foresters, they made no offer to give them to us.

It was getting dark and we still had to cross the mountain that evening to get back to our inn. Nevertheless, we accepted an invitation to drink soju (a strong, clear, vodka-like drink) with our host. After a few rounds, our host proudly offered us the plants that we had admired, and within minutes they were dug and packed. Fortunately, a full moon was just rising over the sea as we left. We could easily see the trail and the island scenery was sublime



TOP: Great areas of Mt. Daxueshan have been stripped of trees by over zealous foresters.  
ABOVE: The picturesque form of Japanese red pine (*Pinus densiflora*) can be seen throughout Korea. Its orange-red bark is a striking identification characteristic.

under the harvest moon. On the way back, Yinger reminded me that in Korea all wheels are greased with soju. If any of the variant seedlings we received ever merit cloning, we should name one of them 'Soju'!

Shortly before leaving Korea, Miller and I were accompanied to Kwang Nung Forestry Station by Mr. Cho Moo Yun, head Curator of the Korean Forest Research Institute. Located northeast of Seoul, this area experiences winter temperatures as low as -25°F. Material found here should certainly be hardy at the Morris Arboretum in Philadelphia and probably much farther north. I was amazed to find har-

lequin glorybower (*Clerodendrum trichotomum*) here. Noted for its brilliant blue berries subtended by scarlet calyxes, previous introductions are only marginally hardy in Philadelphia.

#### On to Taiwan

We arrived in Taipei on the 16th of October and were met by our hosts from the Taiwan Forestry Research Institute. Taiwan is a sub-tropical island, bisected by the Tropic of Cancer. On the western side of the island the broad coastal plain is farmed intensively; on the eastern side mountains rise dramatically as high as

13,000 feet. Only plants collected from cool areas above 7,000 feet elevation would likely be hardy in Philadelphia.

*Mt. Alishan in central Taiwan is reputed to be a rich area for collecting ornamental plants, but we discovered much has changed here since the early 1900's.*

Our first excursion was to Mt. Chilanshan. Accompanied by Mr. Yang of the Forestry Research Institute, we traveled over rough forest roads in a Japanese land rover. As we went up the mountain, the vegetation gradually changed from tropical forest to cold temperate coniferous forest dominated by huge specimens of Formosan false-cypress (*Chamaecyparis obtusa* var. *formosana*). Young trees were without cones, and on larger specimens the cones were far beyond our reach. By chance we found an accessible small specimen heavy with cones. On closer examination, we found it was being girdled by wire wrapped around it years before and was bearing heavily in a last ditch survival effort. It succeeded. With our assistance, it will soon have progeny throughout the world.

Reeves skimmia (*Skimmia reevesiana*) was an interesting discovery in the understory in a boggy area on Mt. Chilanshan. It has foliage similar to the common Japanese skimmia but has perfect flowers (male and female parts present). Thus, all plants can bear the bright-red fruits. References list the maximum height of this species to be one-and-one-half to two feet and those I have seen in cultivation support this. Plants in the wild, however, grow to six to eight feet.

Mt. Daxueshan was a particularly rich collection site. We arrived at our base, a forestry station at 6,800 feet, late in the afternoon and quickly set out for some local collecting before dark. For dinner, we were guests of the resident foresters. Many of the supervisory personnel spoke English, and several had had some forestry training in the United States. Eight of us were seated at a round table with a large lazy Susan in the center heaped with food in quantities suitable for a lumberjack. In

typical Chinese style, we sampled each of the many main courses and frequently paused for a round of toasts.

The next day we continued up Mt. Daxueshan. At 8,700 feet we discovered *Stranvaesia niitakayamensis*, covered with bright-red berries and growing in a very exposed location. If found to be hardy, this stranvaesia will be a fine garden addition. Other collections in this same habitat included *Pinus armandii*, *Pinus mimosicola* and *Juniperus formosana*. Ferris Miller, collecting further up the road at about 9,000 feet, found *Gaultheria itoana*, a wintergreen species with abundant, pure-white fruits. This is likely to make a fine low-growing shrub or groundcover.

Mt. Alishan in central Taiwan is reputed to be a rich area for collecting ornamental plants. However, we discovered that much has changed here since the early 1900's when E. H. Wilson collected in these mountains which were then inhabited by aboriginal head-hunters. The forests have long since been cut over and replanted with pure stands of Japanese cryptomeria (*Cryptomeria japonica*). Our first day out we really had to search for native plants. It made me fully realize for the first time how quickly the botanical resources of our world are being destroyed by man.

By the second day we found some areas of native vegetation. Of particular interest was Mt. Morrison maple (*Acer morrisonense*). Occurring only in the high elevation of Taiwan, this tree has beautiful red fall color. It matures at about 35 feet, making it a good shade tree for small gardens.

By the time we finished collecting in Taiwan, seed of 62 additional species had been collected, bringing the total to 158.

Having the necessary plant importation permits, all the seed passed the United States agricultural inspection without delay. Seed to be grown at the Morris Arboretum was immediately refrigerated in moist peat moss, and surplus seed for distribution to other arboreta and nurseries was placed in dry cold storage. The first seeds were sown in mid-February of this year and a week later the first seedlings appeared. These will eventually be planted in research plots for evaluation; the best will be selected for introduction to the nursery trade and will become part of the Arboretum's permanent collection. These new introductions will help insure the diversity of plants in American gardens in the 21st century. ☺

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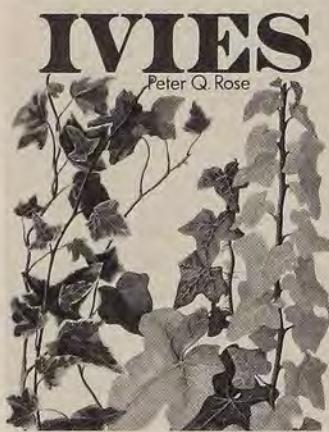
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# GIFT IDEAS FOR THE HOLIDAYS

**IVIES.** Peter Q. Rose. Sterling Publishing Company. New York, New York. 1980. 180 pages; hardcover, \$17.50. AHS discount price, \$13.50 including postage and handling.



To many people ivy is that dull-green stuff that covers the blank walls of old buildings. To the ivy enthusiast it is a group of species and cultivars which offers a remarkable variety of leaf shapes, color and growth forms. There is actually enough interest to support an active American Ivy Society with an international membership. This new book describes 125 varieties of ivy and illustrates more than 60 of them with colored photographs. In addition to the excellent descriptions given for each cultivar, the history and habitat are also discussed. If you are already an ivy collector you will want to own this book. If you are not yet an ivy collector, this book may very well get you started.

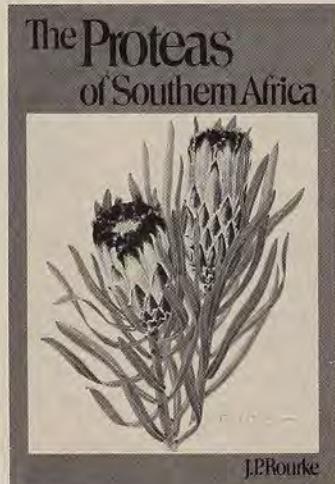
**COOKING WITH EXOTIC FRUIT.** Selma and W. J. A. Payne. Batsford Press. North Pomfret, Vermont. 1979. 144 pages; hardcover, \$19.95. AHS discount price, \$17.20 including postage and handling.

As its name implies, this book is basically a cookbook. It contains recipes for dishes using any of 30 different tropical fruits. However, descriptive, historical and cultural discussions for each of the 30 fruits make this a gardening book as well. For those of you who can't grow these unusual fruits, the recipes may still be useful as more and more tropical fruits appear in local supermarkets.

## TWO ABOUT AFRICA

**IMPATIENS OF AFRICA.** C. Grey-Wilson. A. A. Balkema. Rotterdam, Netherlands. 1980. 235 pages; hardcover, \$58.00. AHS discount price, \$45.00 including postage and handling.

**THE PROTEAS OF SOUTH AFRICA.** John P. Rourke. Purnell & Sons. Capetown, South Africa. 1980. 256 pages; hardcover, \$36.00. AHS discount price, \$30.00 including postage and handling.



Two very different but horticulturally significant genera are treated at length in these two books.

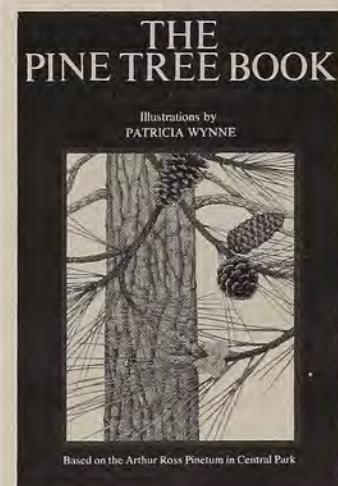
The genus *Impatiens* has a world-wide pattern of distribution with probably upwards of 850 species in all, the greatest number being found in the Old World tropics. The ever popular balsams of the summer flower border are primarily Asiatic in origin. In recent years selected cultivars from New Guinea have brightened both our gardens and our windowsills. Only a very few of the African species are in cultivation. From Grey-Wilson's descriptions and illustrations it is obvious that horticulture is missing a great deal. With more than 100 African species described and almost half of them illustrated in color, the potential for new garden plants from within this genus is tantalizing indeed. This is primarily a botanist's reference work, and the detailed technical descriptions are supplemented with 10 pages of an illustrated key for identification of the individual species. The few pages devoted to cultivation only serve to show how much there is yet to be done before we can enjoy these plants in our own gardens.

*The Proteas of South Africa* is a detailed yet basically popular treatment of the 82 species of *Protea*. Unlike the worldwide distribution of *Impatiens*, all 114 species of *Protea* are native to Africa and the greatest number of them occur in the southern half of the continent. While they can only be grown in a very limited portion of the United States, primarily southern California and some parts of Hawaii, their value as a cut flower has resulted in their regular appearance in florist shops throughout the country. Beautiful full-page paintings illustrate each of the 82 species included in this book. In addition

to a technical description of each species, a historical treatment gives the botanical and horticultural background for each plant. Detailed descriptions of distribution and habitat, together with the distribution map, are also provided for each species. Individual notes on cultivation are brief but extremely useful for any of you who are fortunate enough to be able to grow these exotic shrubs.

## BOOKS ABOUT TREES

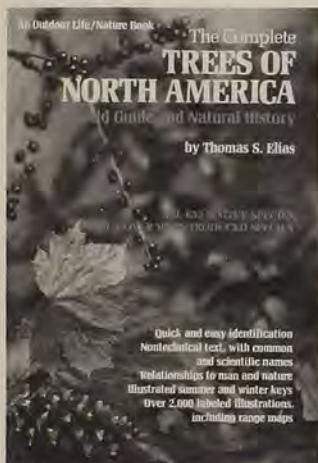
**THE PINE TREE BOOK.** Russell Peterson. The Brandywine Press. New York, New York. 1980. 144 pages; hardcover, \$14.95; softcover, \$7.95.



While a discussion of the world's species of pine trees is not unusual, such a work based on a large collection of pines growing in New York City's Central Park is definitely out of the ordinary. Many more species are described and beautifully illustrated in color and black and white, but the book is based on the 17 species of pines that are grown in large numbers in the Arthur Ross Pinetum. This pinetum covers a large area of

Central Park south of 86th Street and is all the more remarkable for having come into existence only 10 years ago. For any gardener interested in pines this is a useful book; for gardeners in the New York area it is also a guide to a most unusual collection of trees.

**THE COMPLETE TREES OF NORTH AMERICA.**  
Thomas S. Elias. Van Nostrand Reinhold Company. New York, New York. 1980. 948 pages; hardcover, \$19.95. AHS discount, \$15.20 including postage and handling.



This book is organized and illustrated as a field guide to the nearly 800 species of trees which are either native to the United States and Canada or are widespread introduced species. It includes many well illustrated keys for identification as well as discussions of the natural history and horticultural applications of each species. It is certainly the clearest and easiest to use field guide to all the trees north of Mexico I have ever used.

**TREES FOR EVERY PURPOSE.** Joseph Hudak. McGraw-Hill. New York, New York. 1980. 229 pages; hardcover, \$21.95. AHS discount price \$21.00 including postage and handling.

The author of this book is a landscape architect, and his subject is trees for use in the landscape. Line drawings for each tree illustrate not only the texture of the leaves and

biology and the mechanism of genetic expression within the single cell. It is a welcome change to find a book that is devoted to the inheritance of characteristics in whole plants.

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branches but also the overall outline of the tree at 10 and 25 years of age. Discussion of seasonal appearance, individual preferences and problems, and lists of desirable cultivars are given for each tree. Two hundred and fifty-seven trees selected as best for landscape planting are treated in groups organized as broadleaf evergreens, needle evergreens and deciduous. For anyone considering the use of trees in their own landscape, this will be a very helpful book.

**THE THEORY OF PLANT BREEDING.** O. Mayo. Oxford University Press. New York, New York. 1980. 293 pages; hardcover, \$69.00. AHS discount price, \$63.35 including postage and handling.

This is not a book for the average gardener but an advanced college textbook for the serious plant breeder. It is a technical discussion of the inheritance of genetic traits as they apply directly to the breeding of plants. It does not deal with the mechanics of pollination, but it does bring together in one volume the latest thoughts and knowledge about the inheritance of physical traits and disease resistance in plants. Today most genetics taught in universities is concerned with micro-

**PLANT BREEDING AND GENETICS IN HORTICULTURE.** C. North. John Wiley & Sons. New York, New York. 1979. 150 pages; softcover, \$14.95. AHS discount, \$13.95 including postage and handling.

An introduction to the genetics and mechanics of plant breeding for the advanced gardener. If you would like to try some plant breeding on your own and want an understanding of how to go about it, as well as what results to expect, this is a good introductory text. Although the cultivars used as examples are primarily British, the methodology described is applicable to all plants.

**CONTRIBUTIONS TOWARD A CLASSIFICATION OF RHODODENDRON.** James L. Luteyn (editor). The New York Botanical Garden. New York, New York. 1980. 338 pages; softcover, \$22.00.

Despite the extensive use of plants of the genus *Rhododendron* (both the rhododendrons and the azaleas of horticulture) in gardens around the world, no agreed upon system of classification has existed to date. A primarily horticultural classification developed in England in 1930 (Sir Isaac Bayley Bal-

four—*The Species of Rhododendron*) had been in use in most of the English speaking portions of the world. The rest of the world adopted the system proposed by H. Sleumer in *A System of the Genus Rhododendron L.* published in 1949. In the 30 years since Sleumer's publication, communication and identification of *Rhododendron* species has become particularly difficult between adherents of the two different systems. In hopes of solving this problem, the International Rhododendron Conference was held at the New York Botanical Garden in May of 1978. The organizer of the conference was Dr. David G. Leach, a former president of the American Horticultural Society and an ardent rhododendron breeder. The positive results of this conference are published in this book. All aspects of variations within species of *Rhododendron* are considered, ranging from the usual taxonomic determinants of morphological characteristics to the more exotic features such as rhododendron diseases and insect pests. A final consensus of the conference attendees should serve as a basis for all future classification within the genus. While individual papers are quite technical in their discussions, this is a basic reference work that should be in the library of any serious rhododendron enthusiast. ☐

—Gilbert S. Daniels

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# PRONUNCIATION GUIDE

## Guide to Botanical Names in This Issue

The accent, or emphasis, falls on the syllable which appears in capital letters. The vowels which 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".

In many cases there are several ways of pronouncing the same word. This guide attempts to convey the most generally accepted version.

*Acer griseum* A-ser GRI-see-um  
*Acer morrisonense* A-ser MOR-i-son-EN-see  
*Acer okamotoanum* A-ser oak-ah-mo-toe-A-num  
*Acer pensylvanicum* A-ser pen-sil-VAN-i-kum  
*Acer rubrum* A-ser REW-brum  
*Acer saccharum* A-ser SACK-ah-rum  
*Acer takesimense* A-ser tack-eh-sih-MEN-see  
*Alnus japonica* AL-nus ja-PON-i-ka  
*Antigonon leptopus* an-TIG-o-non LEP-toe-pus  
*Arabis caucasica* AIR-ah-bis kaw-KASS-i-ka  
*Astilbe* ah-STILL-be  
*Aubrieta deltoidea* aw-BREE-sha del-toe-EYE-dee-ah  
*Begonia grandis* be-GOAN-ee-ah GRAND-iss  
*Campanula portenschlagiana* kam-PAN-yew-la por-ten-schlag-ee-A-na  
*Carpinus caroliniana* car-PY-nuss ka-ro-lin-ee-A-na  
*Cedrus libani* SEE-drus LEE-ba-nee  
*Cercidiphyllum japonicum* sir-sid-i-FIL-um ja-PON-i-kum  
*Chamaecyparis obtusa* var. *formosana* kam-ee-SIP-er-us ob-TOO-sa  
 var. for-mo-SAN-ah  
*Cladraspis lutea* kla-DRASS-tiss LOO-tee-ah  
*Clerodendrum trichotomum* kler-o-DEN-drum try-KOT-o-mum  
*Coccoloba uvifera* ko-ko-LOW-ba yew-VIFF-er-ah  
*Cornus kousa* KOR-nus KOO-sa  
*Cryptomeria japonica* krip-toe-MARE-ee-ah ja-PON-i-ka  
*Cupressus macrocarpa* kew-PRESS-us mack-ro-KAR-pa  
*Epimedium* ep-i-MEAD-ee-um  
*Eriogonum umbellatum* air-ee-OG-o-num um-bell-A-tum  
*Fagopyrum esculentum* fag-o-PY-rum ess-kew-LENT-um  
*Fagus grandifolia* FAY-gus grand-i-FOE-lee-ah

*Fagus sylvatica* FAY-gus sil-VAT-i-ka  
*Gaultheria itoana* gaul-THEER-ee-ah i-toe-A-na  
*Geranium sanguineum* var. *prostratum* jer-A-nee-um san-GWIN-ee-um  
 var. pra-STRAY-tum  
*Helleborus foetidus* hell-eh-BORE-us FE-tid-us  
*Helleborus lividus* subsp. *corsicus* hell-eh-BORE-us LIV-i-dus  
 subsp. KOR-si-kus  
*Helleborus niger* subsp. *macranthus* hell-eh-BORE-us NY-jer  
 subsp. ma-KRAN-thuss  
*Helleborus odorus* hell-eh-BORE-us O-door-us  
*Helleborus orientalis* hell-eh-BORE-us or-ee-en-TAY-liss  
*Helleborus viridis* hell-eh-BORE-us VEER-i-dis  
*Homalocladium platycladum* ho-mal-o-CLAY-dee-um  
 plat-ee-CLAY-dum  
*Ilex macropoda* EYE-lex mack-ro-POE-da  
*Iris reticulata* EYE-riss re-tick-yew-LAY-ta  
*Juniperus formosana* jew-NIP-er-us for-mo-SAN-ah  
*Magnolia sieboldii* mag-NOL-ee-ah see-BOLD-ee-eye  
*Muehlenbeckia* mew-len-BECK-ee-ah  
*Nyssa sylvatica* NISS-ah sil-VAT-i-ka  
*Parthenocissus tricuspidata* par-thin-o-SIS-us try-cusp-i-DAY-ta  
*Pinus aristata* PY-nuss air-iss-TAY-ta  
*Pinus armandii* PY-nuss are-MON-dee-eye  
*Pinus bungeana* PY-nuss bun-jee-A-na  
*Pinus jeffreyi* PY-nuss JEFF-ree-eye  
*Pinus morrisonicola* PY-nuss MOR-i-son-i-KO-la  
*Pinus parviflora* PY-nuss par-vi-FLOR-ah  
*Pinus strobus* PY-nuss STRO-bus  
*Pinus sylvestris* PY-nuss sil-VES-triss  
*Platanus occidentalis* PLAT-in-us ock-si-den-TAY-liss  
*Polemonium reptans* pol-ee-MOAN-ee-um REP-tanz  
*Polygonum amplexicaule* po-LIG-o-num am-plex-i-CALL-ee  
*Polygonum aubertii* po-LIG-o-num o-BER-tee-eye  
*Polygonum bistorta* po-LIG-o-num by-STORT-ah  
*Polygonum convolvulus* po-LIG-o-num kon-VOL-view-lus  
*Polygonum cuspidatum* po-LIG-o-num kus-pi-DAY-tum  
*Polygonum cuspidatum* var. *compactum* po-LIG-o-num kus-pi-DAY-tum  
 var. kom-PACK-tum  
*Polygonum hydropiperoides* po-LIG-o-num hy-dro-PY-per-o-EYE-deez  
*Polygonum orientale* po-LIG-o-num or-ee-en-TAY-lee  
*Polygonum pensylvanicum* po-LIG-o-num pen-sil-VAN-i-kum  
*Polygonum persicaria* po-LIG-o-num per-si-CARE-ee-ah  
*Polygonum vacciniifolium* po-LIG-o-num vacks-sin-ee-eye-FOE-lee-um  
*Punica granatum* PEW-ni-ka gra-NAY-tum  
*Quercus phellos* QUER-kus FELL-os  
*Rheum palmatum* var. *atrosanguineum* REE-um pal-MAY-tum  
 var. at-tro-san-GWIN-ee-um  
*Rheum rhabarbarum* REE-um ra-BARB-ah-rum  
*Rhododendron schlippenbachii* ro-do-DEN-dron schlip-en-BACH-ee-eye  
*Rumex acetosa* RUE-mex a-sa-TOE-sa  
*Rumex crispus* RUE-mex KRIS-pus  
*Rumex scutatus* RUE-mex skew-TAY-tus  
*Saxifraga stolonifera* sacks-i-FRAYGE-ah sto-lo-NIFF-er-ah  
*Sempervivum arachnoideum* sem-per-VY-vum ah-rack-no-EYE-dee-um  
*Sequoiadendron giganteum* see-QUOY-ah-DEN-dron ji-GAN-tee-um  
*Skimmia reevesiana* SKIM-ee-ah reevz-ee-A-na  
*Sophora japonica* so-FOR-ah ja-PON-i-ka  
*Sternbergia lutea* stern-BERG-ee-ah LOO-tee-ah  
*Stranvaesia niitakayamensis* stran-VEEZ-ee-ah  
 nee-tock-ah-ya-MEN-sis  
*Styrax japonicus* STY-rax ja-PON-i-kus  
*Triplaris Trip-LAIR-is*  
*Tsuga canadensis* SUE-ga kan-ah-DEN-sis  
*Ulmus parvifolia* ULL-mus par-vi-FOE-lee-ah  
*Vancouveria hexandra* van-koo-ver-EE-ah hex-AN-dra  
*Vanilla planifolia* va-NILL-ah plan-i-FOE-lee-ah  
*Vanilla pompona* va-NILL-ah pom-PONE-ah  
*Vanilla tahitensis* va-NILL-ah ta-hee-TEN-sis  
*Viburnum carlesii* vy-BUR-num KARLS-ee-eye  
*Vinca minor* VINK-ah MY-nor

# CONTRIBUTORS

Mary Baker is a cost accountant at Western Electric's Omaha Works. She also is a freelance writer whose articles have appeared in many home and garden publications. Her hobby is growing exotic house plants, especially orchids.

Mrs. Ralph Cannon holds a doctorate from the University of Chicago and is now retired as Emeritus Professor from that institution. She owns 26 acres of Illinois woodland where she has experimented with many gardening projects since 1939. She has contributed articles to *The American Daffodil Journal*, the *American Rock Garden Society Bulletin*, the *Hosta Bulletin*, *Flower and Garden* and *American Horticulturist*.

Darlene L. Conley is a recent graduate of Texas A&M Uni-

versity where she received a Master's degree in agriculture with an emphasis in horticulture. She is a member of the American Horticultural Society and the Texas Association of Nurserymen.

Gilbert S. Daniels is the current President of the American Horticultural Society. He holds a doctorate in botany from UCLA and is the former Director of the Hunt Institute for Botanical Documentation, Carnegie-Mellon University.

Clarence Lewis is a former member of the board of the American Horticultural Society and Professor Emeritus at Michigan State University. He was recently the recipient of the Arthur Hoyt Scott Award in horticulture from Swarthmore College.

Paul Meyer is Curator of the Morris Arboretum at the University of Pennsylvania. He received a Master of Science degree in ornamental horticulture from the University of Delaware in 1976. He is the author or co-author of a number of articles which have appeared in the *Journal of Arboriculture*, *The Green Scene* and the *American Nurseryman*, among others.

Jane Pepper is a native of Edinburgh, Scotland who came to live in this country in 1968. She is presently horticulturist at Haverford College, a liberal arts college near Philadelphia. She writes a weekly gardening column for two suburban Philadelphia newspapers.

Jane Steffey is the current hor-

ticultural advisor to the American Horticultural Society, handling member inquiries. She retired from the U.S. Department of Agriculture in 1971 after an administrative career in the Soil Conservation Service and Extension Service. In USDA employee activities she held office in the USDA garden club and in the Organization of Professional Employees of the Department of Agriculture. She is a graduate of Hood College with a major in botany.

George Taloumis, a former editor of *Horticulture*, is a freelance garden writer and photographer. He is the author of four books on gardening and also serves as the New England regional editor of *Flower and Garden* and is the garden columnist for the Sunday *Boston Globe*.

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