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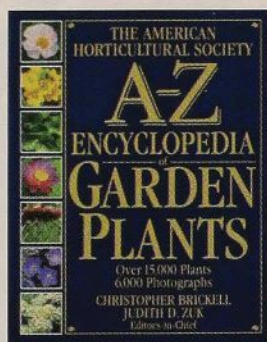






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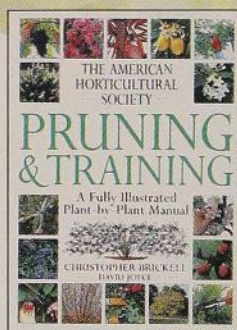
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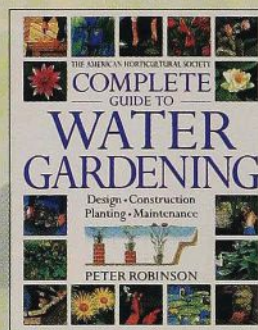


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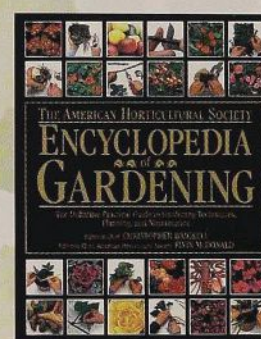


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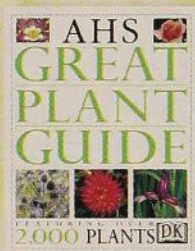
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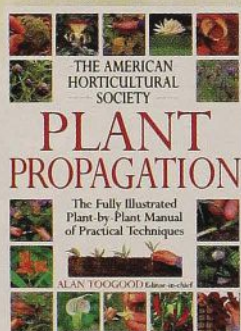
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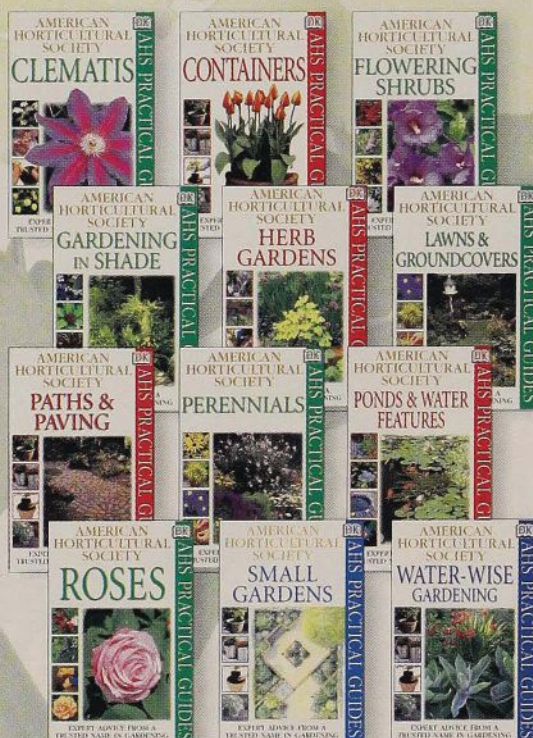


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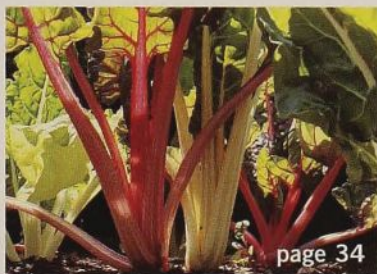
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## An Inside Look

"For those of us who live in urban areas and have few opportunities for picking wild fruits, growing them at home is the best alternative."

COLLECTING RIPENING FRUIT from all sorts of naturalized plants was a tradition in our family. My dad—Mr. Carl—had identified numerous sites on public land where strawberries, blackberries, huckleberries, pawpaws, persimmons, and apples could be harvested in season. The objective was to pick these fruits at the peak of flavor and dry, can, preserve, juice, or freeze them for use over the next year. Of course, we always ate a few out of hand as well. The locations of some particularly special fruit-bearing plants were never revealed to us, however; Dad seemed to consider these sites his own secret gardens.

My two brothers turned out to be very sensitive to the bites of chiggers and ticks that were prevalent in these fields—and allergic to poison ivy—which eventually curtailed their fruit picking and other gardening activities. Becoming a horticulturist was clearly my destiny, though, because I was never bothered by those problems.

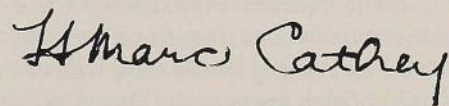
Dad would have particularly enjoyed this issue of *The American Gardener* because articles by Lee Reich ("Natives for the Edible Landscape"), David Cavagnaro ("Amaranth"), and Nancy McDonald ("Flavorful Flower Beds") all focus on growing edible plants, including some of the wild fruits we harvested in my youth. And for those of us who live in urban areas and have few opportunities for picking wild fruits, growing them at home is the best alternative.

Mr. Carl did grow vegetables and fruits at our home, but he restricted these plants to the side or back yard, leaving me the front yard for a colorful flower garden. The heat-tolerant plants described in John Bryan's article on summer-flowering bulbs would have helped me fill the color void between the last of the spring-blooming flowers and the start of fall-flowering species. With droughts and hot weather predicted again this summer for many parts of North America, the ongoing process of assigning AHS Plant-Heat Zone codes to plants will help all gardeners make good choices for heat tolerance.

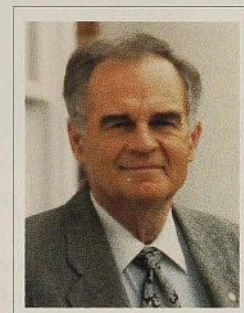
Our Millennium Focus section, a collaboration between Rick Lewandowski and John Creech, looks ahead to the challenges facing American plant explorers in the 21st century. There are prime locations and important plant genera that need to be explored before much more diversity is lost. Nationalism, conservation ethics, and international legislation are greatly affecting the way plant collecting is done. When you add the potential for patenting genes from specific plants, the complexities ahead are daunting.

No matter what your particular interest is in plants, you can rely on *The American Gardener* to keep you abreast of the latest developments and research in gardening.


Yours in green,



—H. Marc Cathey, AHS President Emeritus







# Members' Forum

## NEW JERSEY CACTI

I read David Salman's article on cold-hardy cacti (March/April) with great interest. We have cold-hardy *Opuntia* here along the Atlantic Coast, but they are not widespread and few people seem aware of their presence. I was given two or three pads more than 25 years ago. They were collected in Cape May, the southernmost tip of New Jersey, and I have since seen them in some protected coastal nature preserves.

Over the years, these particular plants have been grown in an apartment window, an east-facing patch in the backyard of our first house, and now in a shady south-facing yard in our current home. In their natural habitat—where they receive full sun and ample rainfall year round and grow in very sandy, rather infertile soil—the cacti remain compact and grow slowly. Here—where the soil is rich and direct sunlight is rather limited—the cacti grow like weeds, with the pads reaching eight or nine inches in diameter. Multiple yellow flowers bloom profusely on pads from the prior season.

About four years ago, we transplanted some cuttings of these cacti to our second home on the Barnegat Bay in Point Pleasant, New Jersey. There, the conditions are more like those of their natural habitat. Though taken from the same stock, the two sets of plants bear little resemblance to each other except for a willingness to bloom.

I have read that the larger cousins of these *Opuntia* were exported to the Mediterranean for use as natural fencing for cattle ranches. Apparently, these plants soon became a nuisance, forming forests and taking over. I have seen examples of such forests in the Hawaiian Islands, where similar problems were experienced. I suspect that, when grown in rich soil, most *Opuntia* behave badly.

Ours must be rigorously pruned each spring to keep them under control, and everyone to whom we give cuttings is warned to be cautious about where and how many they plant.

Brian A. Carlin  
Rutherford and Point Pleasant, New Jersey

EDITOR'S NOTE: *Most likely your cactus is Opuntia compressa, which is commonly found on sand dunes in the coastal Mid-Atlantic region.*

## TIMELY TIPS

I was a subscriber to *Wild Garden* and was not sure if I would renew my subscription to your magazine—that is, until I went out to my front yard yesterday and noticed a patch of violets blooming in my lawn.

You see, in 1982, when I purchased my home, a well-meaning relative gave me a small clump of "some kind of violet." Over the next 18 years this clump gradually enveloped an area the size of Delaware in my front yard and lawn. Last fall, I removed nearly all of this enormous patch of violets before a biking accident put me out of commission for three months. Just yesterday, while going out to check the mail, I noticed a little hold-out patch and thought, "Yikes, what am I going to do until I can get to them?" I opened the mailbox, and there was your March/April magazine. I made a fresh cup of coffee and opened the magazine and started to read. Which article first? "Native Violets," of course, and there on page 32 was a sidebar on violet control. Wow! *That's* what I need to do: deadhead until I can get to them once and for all! Well, I have decided to definitely renew my membership in AHS. Thanks for a great magazine and the tips and hints that you just never know will be useful.

Dala Williams-Amberson  
Rancho Cucamonga, California

## APPLAUDING VIOLETS

As president of the American Violet Society, I commend your March/April issue. Marc Cathey's reminiscences of placing violets in glass jars with "right-sized" hands in his "Inside Look" column evoked a delightful picture of an enterprising 11-year-old boy. I also found the descriptions of SMARTGARDEN™ practices interesting: My response to the concerns about "invasive violets" is to recommend using the leaves and flowers in recipes!

It is encouraging to those of us who have been promoting *Viola odorata* for years to read the articles on violets by Kim Blaxland and Janet Walker. Thank you for featuring violets in your publication.

AnneBelle Rice  
President, American Violet Society  
Long Beach, California

## ENCOURAGING NATURE

Thank you for publishing such a wonderful magazine. I eagerly read each issue, although I admit I still miss *Wild Garden*. I plant natives exclusively and am trying to achieve a natural look—what some would call organized chaos. Please consider emphasizing wildlife, restoration of habitats, and native plants. It's the best thing we can do for the planet next to recycling. You carry some material with this emphasis, but I would love to see even more.

Susan Wheatley  
Crabapple, Georgia

**WRITE US!** Do you want to voice an opinion or share some gardening information? We'd like to hear from you. Letters to the editor should be addressed to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308, or you can e-mail us at editor@ahs.org. Letters we print may be edited for length and clarity.



## Article from *The American Gardener* Wins Award

PAM BAGGETT, a regular contributor to *The American Gardener*, recently received the 2000 Quill & Trowel award for magazine writing from the Garden Writers Association of America for an article titled "Bold Plants" published in the January/February 1999 issue of *The American Gardener*. The article focused on plants with eye-catching foliage or flowers that add a dramatic presence to otherwise staid flower borders. Baggett described bold plants suitable for both large and small gardens and discussed how to combine them with appropriate companions. If you missed Baggett's article the first time around, you can order a back issue of the magazine from our Web site ([www.ahs.org](http://www.ahs.org)). You can also read the text of the article by visiting the section of the Web site devoted to *The American Gardener* and clicking on the link to the January/February 1999 issue.



## Glasses Retire

AUBREY GLASS, long-time caretaker and groundskeeper at the American Horticultural Society's River Farm headquarters in Alexandria, Virginia, and his wife, Eleanor Jane, who had been River Farm's housekeeper for many years, retired in May to spend more time with their children and grandchildren. Their association with River Farm spanned more than 40 years.

After returning from military service in the Korean War, Aubrey Glass began his career at River Farm in the 1950s when the Matheson family, who owned the property at that time, hired him as a groundskeeper for the 27 acres of woodland, lawn, and gardens along the Potomac River. The Glasses took up residence at River Farm in 1969 and then stayed on when AHS acquired the property in 1973 and moved its headquarters here. The couple's two sons, Aubrey Jr. and Glen, were raised at River Farm, and Aubrey Jr. assisted his father on the grounds for many years.

Among his many duties over the last four decades, Aubrey Glass was largely responsible for pruning and maintaining River Farm's historic collection of boxwoods, some of which are believed to date back to the Civil War. His green thumb also extended to houseplants—at one time his collection of African violets numbered in the hundreds.

During their tenure at River Farm, the Glasses provided a unifying presence for the countless AHS staff, board members, interns, and volunteers who have come and gone over the years. "For

nearly three decades Aubrey and Jane Glass have played an integral role in day-to-day buildings and grounds maintenance at the Society's headquarters," says AHS President Linda Hallman. "Their dedication to River Farm and the surrounding community has been outstanding and I know I speak for all the staff and board members when I wish them all the best in their retirement."

## Youth Workshops

THIS SUMMER, show your kids that gardening is fun by enrolling them in an AHS Youth Workshop at River Farm. On July 8, "Scarecrow Creations" combines the history and purposes of scarecrows in the garden with teaching kids how to make one to take home. On August 12 "Dried, Pressed Flower Masterpieces" includes instructions for making bookmakers, decorated folders, and other gift items using preserved plant materials. And on September 9 "Colonial Herbs" focuses on early American colonists use of herbs; attendees will also learn how to make potpourri.

Workshops are held 9 a.m. to 10 a.m. at River Farm, the headquarters of the American Horticultural Society, in Alexandria, Virginia. Boys and girls ages five to 13 are welcome, and parents are encouraged to attend the workshops with their children. Classes are limited to 20 children; the cost is \$3 per child. Call (703) 768-5700 ext. 144 to make reservations.



## William Carlson Wins First Cathey Award

by Margaret T. Baird

WILLIAM H. CARLSON, a distinguished professor of horticulture and Extension specialist at Michigan State University (MSU) in East Lansing, was honored with the Society's inaugural H. Marc Cathey Award this past March. The award was presented by Cathey himself at the Society's Annual Meeting in Houston. Formerly the Scientific Award, the award was renamed last year by the AHS Board of Directors in honor of Cathey, AHS president emeritus and a renowned research horticulturist. The biennial award recognizes outstanding horticultural research in American institutions related to the basic problems of horticulture as they pertain to gardening and landscape restoration. A panel of five judges drawn from all segments of American horticulture selects the winner.

Carlson has been a member of the Michigan State horticulture faculty since 1966, after earning all of his academic degrees from Pennsylvania State University. Over the course of his career, his work has had a significant influence on the floriculture industry and gardening public. Thirty years ago, Carlson recognized the demand for high-quality bedding plants—annuals, biennials, and tender perennials—in the spring marketplace and established the national grower's organization, Bedding Plants Foundation Inc., that disseminates the latest information on production techniques to growers, thereby improving the quality and diversity of plants available to home gardeners.

"I would describe Dr. Carlson as a 'grower's researcher'," says Peter Konjoian, president of Konjoian's Floriculture Education Services in Andover, Massachusetts, and a member of the 2000 Cathey Award selection committee. "I've known him for many years and have been impressed by his dedication to helping professional growers continually raise the bar."



William H. Carlson of Michigan State University is recipient of the first H. Marc Cathey Award.

Carlson's research has primarily focused on the physiology of flowering crops. He is one of three scientists overseeing an ambitious perennial cultivation project at MSU. Started in 1993, their research has helped Michigan greenhouse growers—the third largest producers of floriculture crops in the nation—efficiently meet the increased demand for perennials in the marketplace. "Dr. Carlson and his research group are investigating the factors that make perennial plants flower," says Konjoian. "The benefit for garden enthusiasts is not only a better understanding of this important group of landscape plants, but the ability to use that information to force perennials into bloom for special occasions—such as flower shows and the like."

An internationally recognized researcher and lecturer on floriculture, Carlson has published hundreds of scientific and popular articles on the physiology of a variety of ornamental plants, including geraniums, chrysanthemums, poinsettias, and roses.

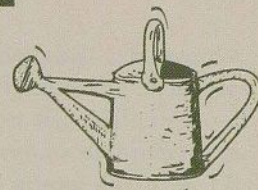
In 1986 Carlson spearheaded the development of the acclaimed MSU Horticultural Demonstration Gardens, a collection of public gardens that serve and educate adults as well as children; the 4H Children's Garden is considered by many to be the finest in the United States.

Carlson continues to serve as the faculty coordinator for both the gardens and the Michigan Master Gardener program, run by the university's Extension office. Since the program's inception in 1978, more than 10,000 Michigan residents have been trained as Master Gardeners. "Dr. Carlson's work has affected so many gardeners, young and old," says long-time colleague John Peterson, president and chief executive officer of the Massachusetts Horticultural Society. "His research has enhanced commercial horticulture's economic viability and vitality—providing the basic resources that make home gardens such an important part of people's lives."

*Margaret T. Baird is communications assistant for The American Gardener.*



# SMARTGARDEN™ — Water Conservation



Watering wisely saves time and natural resources

Given the droughts and higher average temperatures many parts of North America have been experiencing in recent years, water consumption in the garden is a growing concern. By combining conservation and efficiency, both the amount of water used and the time spent delivering it to the garden can be minimized.

## PLANT SELECTION AND PLACEMENT

While all plants need water to thrive, some need less than others. For instance, succulent plants store water in their fleshy leaves for use when needed and the foliage of plants such as lamb's-ears (*Stachys* spp.) and wormwoods (*Artemisia* spp.) are covered with fine white hairs that shade the leaf surface and reduce moisture loss. Many ornamental grasses and prairie natives have deep roots that range far to seek water. Once established in the garden, these and other drought-tolerant plants minimize the need for supplemental watering.

But most gardeners don't want to limit their plant selection to drought-tolerant species. To make watering more efficient, however, group thirsty plants together—ideally close to a water source. By designing your garden with plants' water requirements in mind, it will be easier to develop watering systems tailored to the needs of different sections of the garden.

## SUPPLEMENTING NATURE

Water requirements are affected not only by the type of plant, but by a number of environmental variables such as temperature, wind, sunlight, and season. Soils also vary in their capacity to retain water. Thus there is no fixed rule for how often you will need to water; observing your plants and checking your soil regularly will provide the best clues.

All plants should be watered when they are first set out, and regular watering should continue until their roots are well established. When watering plants, be sure to water thoroughly to encourage deep root development. Plants with extensive and deep root systems can obtain more water from the soil and are less subject to injury from temperature or moisture fluctuations.

Early morning or evening—before or after the heat of the day—are the best times to water because less will be lost to evaporation. Because wet leaves are more prone to disease, try to water at the base of plants.

## WATERING SYSTEMS

*Hand watering*, using a watering can or a hose with a water breaker, allows you to get "up close and personal"

with your plants, but this system requires a great deal of time and is impractical for large gardens.

One of the most efficient watering systems is *drip or trickle irrigation*. It takes effort to set up initially, but in the long run it saves time and reduces water use. It can be designed to accommodate any garden size or style and can also be used for container plants. Water is delivered directly where needed through emitters at the end of water tubes. Little water is lost to evaporation or wasted on areas between plants. The spacing of emitters and rate of flow can be adjusted. If the water in your area is hard, however, the narrow tubes can quickly become clogged with minerals. If a tube is clogged, or becomes displaced, plants can suffer before the problem is noticed.

A *soaker hose* allows water to seep slowly into the soil along the length of the hose. Soakers are similar to drip systems but are easier to move from place to place. They are particularly useful in vegetable gardens, where they can be stretched along the rows.

For permanent plantings, an *underground, automated sprinkler system* can be installed, preferably before the garden is planted. These systems must be carefully maintained, and plants must not be allowed to grow over the nozzles to block or divert the spray. These systems can be programmed to run on a timer.

*Portable sprinkler systems* are relatively inexpensive and versatile but rarely deliver a uniform spray. Hoses connect the water source with a variety of sprinkler attachments—fans, oscillators, pulsating heads. A significant amount of water from sprinklers is lost to evaporation, and use of overhead sprinklers may lead to an increase in foliar disease problems.

## RECYCLING NATURE

A rain barrel that collects water from the roof saves water that would otherwise be lost as runoff. Several manufacturers produce plastic barrels with fittings to connect the downspout with the barrel, and a spigot so you can access the water. The barrels can be attached to drip irrigation systems or simply used to fill your watering can.

## MULCHING

Mulching around plants conserves moisture in a number of ways. By physically covering the soil, less moisture is lost to surface evaporation. Mulches inhibit the growth of weeds that compete with your desired plants for water. And mulches help prevent soil crusting—the formation of a dry surface layer that impedes water penetration into the soil.

Rita Pelczar, Associate Editor



# Gardener's Notebook

Horticultural News and Research

## SAGE ADVICE FOR THE MIDWEST

THERE ARE MORE THAN 900 species and countless cultivars in the genus *Salvia*, so selecting the best sage for your garden can be a challenge. The Chicago Botanic Garden's Plant Evaluation Program is making the choice a bit easier for midwestern gardeners. After five years of testing—from 1993 to 1998—the garden's staff has just released the results of their evaluations comparing ornamental characteristics of 15 perennial sages that are considered potentially hardy to at least USDA Zone 5.



*Salvia verticillata* 'Purple Rain' reblooms without cutting back.

Among the criteria considered for comparison were flower color and size, bloom period, foliage quality, habit, and reseeding potential. Half the plants of each selection tested were cut back after first bloom to determine reblooming potential and late-season ornamental value. Also evaluated were winter hardiness, cultural adaptability, and insect and disease resistance.

The top-performer was *Salvia x sylvestris* 'Mainacht' ('May Night'), which received high ratings in all categories. Its deep violet flowers occur profusely on plants that are 27 to 30 inches tall, with a slightly greater spread. While cutting back plants following their initial bloom period did not significantly influence rebloom, it did improve the overall appearance of plants late in the season. Another cultivar of the same species, 'Wesuwe', also performed well. It is similar in appearance to 'Mainacht', but its flowers open a week later and are slightly lighter in color.

Exceptionally high ratings were also given to *Salvia verticillata* 'Purple Rain'. Its purple flowers are set off by violet bracts, which remain attractive after the flowers have faded. This selection displayed the highest degree of rebloom of all those tested, and cutting back was not necessary to encourage a second flush of flowers or to retain an attractive habit.

All the sages tested proved to be hardy, easy to grow, and re-

sistant to insects and diseases. To receive a copy of the hardy sage evaluation (Issue 14), send \$2 with your request to: Plant Evaluation Notes, Chicago Botanic Garden, 1000 Lake Cook Road, Glencoe, IL 60022. Checks should be made payable to the Chicago Botanic Garden.

## THE (PLANT) DOCTOR IS IN

IF YOUR DOGWOOD IS looking a little droopy or strange bugs are munching your prized hibiscus, fear not. Thanks to a unique new degree program at the University of Florida's College of Agriculture in Gainesville, professional plant doctors may soon be on call in your town, willing and able to diagnose and dispense prescriptive cures for ailing flora.

Applications are now being accepted for admission into the world's first and only Doctor of Plant Medicine (DPM) degree program, a three-year, multidisciplinary graduate program designed to train plant practitioners in a manner parallel to medical doctors and veterinarians. In addition to interdepartmental coursework in sciences, business, and communications, students will spend internship rotations with plant pathologists, entomologists, horticulturists, weed scientists, and plant protection specialists, and professionals from other related disciplines. Prior to completion of the program, students will be expected to pass a comprehensive examination, followed by a post-graduate exam before a state licensing board.

Doctors of Plant Medicine may indeed find employment as private "plant doctors," as well as careers in plant protection, integrated pest management, regulatory inspection, and agribusiness sales. "Graduates are not expected to become researchers," says George Agrios, DPM program director. "Rather, they will be trained to diagnose and offer recommendations for control of anything from disease, insects, weeds, or abiotic causes that adversely affect plant health." The first classes will begin in August 2000. For application materials or more information, call (352) 392-3631, or visit the Web site at <http://plantpath.ifas.ufl.edu>.

## KELAIDIS WINS SCOTT AWARD

THE SCOTT ARBORETUM OF Swarthmore College in Pennsylvania has honored Panayoti Kelaidis, curator of plant collections at Denver Botanic Gardens in Colorado, with the 2000 Arthur Hoyt Scott Garden and Horticultural Medal and Award. The Scott award, established in 1929, is given annually to indi-



Kelaidis with the Scott medal



viduals who have made outstanding national contributions to the science and art of gardening.

During his two decades at Denver Botanic Garden, Kelaidis has been instrumental in developing its Rock Alpine Garden, one of the best collections of alpine plants in North America. He has also helped develop and now oversees Plant Select, a plant introduction program tailored to the Rocky Mountains region. Some of the plants introduced through the Plant Select program are the products of Kelaidis's plant exploration trips to South Africa (see page 20 for more details).

An accomplished writer and speaker, Kelaidis has helped stimulate an interest in native and exotic plants suitable for harsh climates such as the Rocky Mountains. He has published more than 100 horticultural articles in a variety of gardening publications and is the recipient of several other awards from organizations such as the North American Rock Gardening Society. He is also a member of the Editorial Advisory Board for *The American Gardener*. (For more on Kelaidis and his wife, Gwen, see "Love on the Rocks" in the January/February 1998 issue of *The American Gardener*).

## BAD NEWS FOR FRUIT GROWERS

TWO IMPORTED DISEASES ARE posing serious threats to American fruit growers and home orchardists. Citrus canker, a highly contagious bacterial disease, has infected orange, grapefruit, and lime trees in southern Florida, and it's spreading north. Plum pox, the most destructive viral disease of stone fruits in Europe, was detected last fall in Adams County, Pennsylvania. There is no known cure for either disease.



Symptoms of citrus canker on infected fruit

**Citrus Canker.** This is the third and most serious outbreak of citrus canker in southern Florida in the past 100 years. The present strain, apparently imported from Asia, was first detected in a backyard in Miami in 1995. The disease has now spread to three Florida counties—Dade, Broward, and the south end of Palm Beach. Symptoms of the disease are small, round, blisterlike lesions that appear on fruit, leaves, and twigs of infected trees. As they age, leaf lesions turn tan with a yellow halo, eventually leaving holes in the leaf; fruit lesions become corky. As the disease advances, fruit production drops off and the tree ultimately dies.

Spread by wind, rain, and contaminated tools, citrus canker can move quickly to infect an entire orchard or the citrus trees in a neighborhood. Overhead irrigation also facilitates local spread of the bacteria, while the transportation of infected fruit and plants can spread disease over much greater distances. The only known way to halt its spread is to eradicate infected trees. Once a tree has been positively diagnosed with the disease, that tree and any other citrus trees within a 600-yard radius must be removed. Over 500,000 trees have already been cut down and destroyed in the Miami and Fort Lauderdale areas. Inspectors and growers continue to monitor citrus trees for symptoms and track the disease's movement.

**Plum Pox.** Originally observed in the early 1900s in Bulgaria, plum pox has spread throughout Europe, where it is known as *sharka*. It infects stone fruits such as peaches, plums, apricots, nectarines, almonds, and cherries, as well as ornamental *Prunus* species. It can also infect other hosts,



Plum pox on peaches from Pennsylvania

including zinnias, white clover, and some weeds that belong to the nightshade family. Spread over short distances by more than 20 species of aphids, plum pox can travel much great distances in infected plant stock, which is the most likely way it was introduced to Pennsylvania. Though the disease is well known in parts of Africa and in Chile, until last fall, plum pox had not been detected in the United States.

As of this March, 218 acres of infected trees located in the Huntington and Latimore townships of Adams County, Pennsylvania, had been identified and destroyed. Though they have yet to pinpoint the initial source of infection, researchers suspect it was introduced on nursery stock—perhaps an ornamental host. Researchers believe that the virus has probably been in Adams County—Pennsylvania's largest fruit-producing county—for at least three years, but was not recognized immediately. Symptoms include rounded spots or "pox" on fruit, stems, leaves, and seeds. Initial symptoms resemble a nutrient deficiency or insect damage. Infected fruit, while not harmful to humans, becomes disfigured and unmarketable. Yields of infected trees are significantly reduced—as much as 80 to 100 percent.

Pennsylvania ranks fourth among states in production of stone fruit, and is taking an aggressive approach to preventing the spread of plum pox. The United States Department of Agriculture and its Pennsylvania counterpart have teamed up in an effort to control and eradicate the virus where it has been detected by destroying infected trees, preventing the movement of potentially infected plants from the area where the disease has been detected, and monitoring for new outbreaks. The Pennsylvania Department of Agriculture will test stone-fruit orchards in the state as well as residential trees in the infected area in an effort to detect additional infestations.



# Offshoots

## Sarah's Garden

By Catherine M. Brown

ON THE SURFACE, SARAH AND I were the most unlikely of friends. She was a pastor's kid and new to my high school. I was born and ill-bred in Brooklyn. If we were flowers, I would have been a rough, rugged rose growing defiantly in a concrete garden—complete with thorns and a nasty attitude. Sarah would have been a carpet of well-tended marigolds: sweet, sunny, and kind. But for some reason,

she and I gravitated toward each other. In school, we were misfits, but with each other, all of the pieces mysteriously fit together and made perfect sense.

I taught Sarah how to navigate the neighborhood with a native's non-sense, stern, set jaw. *She* taught me how to embroider daisies onto my faded denim shorts. I taught Sarah how to eat Napoleon pastries on subway platforms with aplomb. *She* taught me how to bake flat bread and make soup with herbs and tomatoes from her mother's garden.

Somehow, in spite of ourselves, Sarah and I grew into young women. I stayed in New York, attended a local college, and tried to learn how to become a writer. Sarah would first "find herself" at a retreat in the wilds of Washington State's Chelan Valley, then go to school in Minnesota to learn how to help people walk again, before moving to Wisconsin, where she now lives. Yes, thinking back, Sarah and I were very much like flowers; most young women are. But she was—and still is—the far nobler of the pair.

Sarah has a way with flowers *and* with people. Physical therapy seemed the perfect career for her: teaching people to regain use of their limbs with her gentle determination and her strong hands, whether they are recovering from an auto accident or exercising legs withered by disease. I imagine Sarah put the same determination into her little city garden in Madison—breathing life into tired soil, removing pebbles with her bare fingers so her plants could grow more easily. Over the years, Sarah sent photos of her garden, which always looked vibrant.

When I moved into an urban row house in Brooklyn, Sarah gave me bulbs



from her garden to plant in my postage-stamp-sized plot, where they flourished—and still do. Every winter, I think they have died; every spring, I am surprised by their return. At first, green shoots peek through the hard earth, then the shy, closed flowers burst open in a rainbow of colors; eventually the petals droop and fall to the ground like shooting stars.

After my mother died, Sarah sent me a heart-shaped wreath made of flowers from her garden that she had dried. A note with the wreath explained the wreath was created both in memory of my mother and in celebration of the new love I had found with a good man, Peter. Sarah's wreath now hangs in the entrance of our home.

After almost a decade of pursuing our different paths, Sarah and I finally arranged a get-together a few years ago. Both of us had secret concerns: Would we still know each other? Would we have anything to talk about?

It was August when Peter and I visited Sarah, her husband Jim, and two young sons on their 147-acre farm in Wisconsin. They had worked hard to realize their dream of buying a cabin in the woods. And Sarah finally had enough room to grow her flowers, which thrived in a bright patch near the log cabin Jim was restoring.

With Sarah and me, it was as though we'd never left each other's sides. Many things had changed in the more than 20 years since we first met in high school—including us—but the fundamentals had not. We were both still those very same flowers—those very different flowers—we'd been in Brooklyn.

We all ate dinner on a picnic table outdoors, watching the sun disappear into the valley. Sarah and I washed dishes by candlelight, because there was no electricity in the cabin yet. The next day we hiked through the hills, encountering meadows thick with alfalfa. Her boys showed me the deer blind. Sarah showed me where they would plant beds of ginseng.

In a few years, she hoped to have a working farm: Jim could leave his carpentry job and work their land full-time, Sarah would have a field of flowers to sell fresh-cut or to dry for adorning wreaths and filling baskets. But Sarah, I think, would *still* travel from school to school as a physical therapist, coaxing young limbs to walk. There is a need in her to do this that's as strong as the need in her to grow things in soil.

Peter and I spent three days on the farm. The day before we left, Sarah and I sat outdoors with her sons reading the story of *The Town Mouse and the Country Mouse* aloud to each other. I'd brought the book more as a gift for Sarah than for the boys, who didn't grasp its significance. But Sarah and I understood: We *were* the Town Mouse and the Country Mouse. And we savored this unspoken bond as we sat amid all the flowers in Sarah's garden.

Catherine M. Brown is a free-lance writer living in Brooklyn, New York.



# Gardeners Information Service

## ROTTING BEGONIAS

My tuberous begonias have been blooming non-stop in hanging baskets for at least 10 years. Now the stems have started to rot and break off. The soil doesn't seem too wet. What am I doing wrong?

—M.W., WAUSAU, WISCONSIN

Your plants could be infected with a fungus that causes stem rot, a common problem with tuberous begonias that is usually associated with over-watering or planting the tubers too deep. The tubers should be covered with only half an inch of light potting soil, and the soil should be allowed to dry out a bit between waterings. Keeping the plant in a location where it receives good air circulation is helpful, and good plant hygiene is essential. Remove spent flowers before they fall into the foliage, where they can encourage fungal growth.

However, 10 years may be about as much as you can expect out of your tuberous begonias; the plants may simply be displaying the stress of old age. In this case, new tubers are the answer. Although tuberous begonias can be overwintered in their pots, it may be better to remove the tubers in autumn and put them in a sunny, airy location to "ripen." When the stems and leaves have dried, clean the tubers, dust them with a fungicide, and store them in dry sand or peat moss at about 45 degrees Fahrenheit until it's time to plant them again next spring.

## CONTROLLING EARWIGS

Earwigs seem to be eating everything in my garden. Are there any synthetic or natural controls?

—H.E., ARLINGTON, VIRGINIA

Earwigs are omnivorous—they eat plants, other insects, and decaying organic matter—but the damage they cause to garden plants is usually negligible. In fact, they are predators and often help control populations of far

more destructive plant feeders such as aphids, nematodes, and mites. Night-feeding earwigs are sometimes blamed for injury that other pests have caused, because they like to hide in damaged plant tissues during the day. There's no reason to control earwigs unless you are sure they are responsible for unacceptable plant damage. In that case, you can keep them in check with insecticidal soap, which is available in most garden centers and hardware stores.

## NON-FLOWERING HYDRANGEA

My big-leaf hydrangeas aren't producing flowers. Any suggestions on how I can encourage them to bloom?

—S.M., RAYTOWN, MISSOURI

The most common reasons for a lack of flowering in hydrangeas are that flower buds are removed by pruning or they are killed by cold. Big-leaf hydrangeas (*Hydrangea macrophylla*) produce most of their flowers on the previous season's growth. In areas with mild winters, pruning should be done immediately after flowering.

In cooler regions such as yours, low winter temperatures or late spring frosts can kill flower buds. Old flowers left on the plant over winter can provide a measure of insulation from cold, but obviously that's not going to help your situation. Try setting up a screen of burlap around the hydrangea this winter to give it some protection. One other possibility for a lack of flowers is over-fertilization, which can cause the plant to grow foliage at the expense of blooms. If you think this may be the problem, cut back on fertilization and try switching to a fertilizer with a higher ratio of potassium and phosphorus in relation to nitrogen.

*William May, Gardeners Information Service, and Marianne Polito, Gardeners Information Service Manager*

**Join AHS's** Gardening Community Listserve—a lively discussion of gardening topics among participating members. Questions, comments, answers, and advice are exchanged between experienced and novice gardeners alike. Recent topics of discussion have included seeding techniques, magnolia care, recommended roses, and wildflower identification.



*The following exchange took place recently on the listserve:*

## SOIL SIFTERS UNITE!

I like to sift the soil to get rid of stones as well as remove weeds. I use a 2-foot-by-4-foot sifter over a tablelike stand (with legs but no top). The sifter is made of 1/4-inch wire mesh attached to a frame, with supports across the its span to prevent the mesh from sagging. The sifter and a tiller are my favorite tools for working the soil.

—C.H., LITITZ, PENNSYLVANIA

My sifter has a two-foot-square frame, made of 2-by-2's with 1/4-inch hardware cloth stapled to it, fits over my wheelbarrow. I dig beds out in my rocky soil by first using a digging fork, then sifting out the weed roots and replacing the soil before using the tiller to incorporate organic matter.

—L.D., VESTAL, NEW YORK

I've been sifting rocks and roots out of soil for nearly 30 years. My clay soil needs gravel-sized rocks to help it drain, but I use a sifter with 1/2-inch screen mesh to remove larger rocks.

—M.T., POTOMAC, MARYLAND

**WE'RE READY TO HELP:** For answers to your gardening questions, call Gardeners Information Service at (800) 777-7931, extension 131, between 10 a.m. and 4 p.m. Eastern time, or e-mail us anytime at [gis@ahs.org](mailto:gis@ahs.org).



# Conservationist's Notebook

## Tennessee's Treasured Coneflower

article and photograph by Kenny Clarke

NOT ALL PLANTS CAN BE PLACED by their name, but the Tennessee coneflower (*Echinacea ten-  
nesseensis*) doesn't hide its southern roots. This extremely rare plant is found in the wild in only one location on earth: within a 30-mile radius of Nashville, Tennessee. When the flower was placed on the federal endangered species list on June 6, 1979, it was one of the first plant species to be awarded

that dubious honor. There is good reason for its inclusion on the list: The Tennessee coneflower has suffered from massive habitat loss due to the pressures of the ever-expanding country music mecca.

Skirting the edges of Nashville are dense cedar forests. Islands of limestone outcrops known as cedar glades are sparsely scattered throughout these forests. These desolate, inhospitable habitats, where temperatures reach in excess of 145 degrees Fahrenheit, were once treated as wasteland, but a handful of rare plant species prosper in this brutal environment, including the Tennessee coneflower. Despite minimal rainfall, high temperatures, and thin alkaline soil, the plant's five naturally occurring populations thrive here. When in bloom, this showy flower floods the cedar glades in a sea of deep fuchsia.

The Tennessee coneflower is similar in appearance to purple coneflower (*Echinacea purpurea*) but is somewhat shorter—reaching only 12 to 20 inches in height. Another feature that distinguishes the Tennessee species are the ray flowers, which extend from the center in a flat plane or curve upward rather than drooping. Plants have a somewhat sprawling habit, and leaves are more linear and less hairy than purple coneflower.

### Diminishing Returns

At first glance you wouldn't think that the coneflower is at risk of extinction since it puts on such an impressive showing. "Our largest coneflower site has between 100,000 and 200,000 plants and our smallest has about 200 plants," says Andrea Shea, rare species protection coordinator with the Tennessee Department of Environment and Conservation. "It's amazing that anyone would ever want to destroy such a beautiful area," says Shea.



Tennessee coneflower growing with sunflowers in its native cedar glades near Nashville.

Unfortunately, the Tennessee coneflower is all too familiar with habitat loss and destruction.

When the J. Percy Priest Dam impounded the Stones River in the late 1960s, thousands of acres of cedar glade were lost to the rising water. Interestingly, prior to the dam project, the Tennessee coneflower was thought to be extinct. Only when the flower was rediscovered in 1973—by Elsie Quarterman, a botany professor at Vanderbilt University—did anyone realize the impact of the U.S. Army Corps of Engineers' dam project.

Today, private ownership of prime coneflower habitat is the largest cause of the plant's declining numbers. Like many endangered plant species, the Tennessee coneflower grows in a very specialized habitat that is easily disturbed. Unaware of the stellar qualities and rarity of this plant, developers have been bulldozing the area in which it thrives. Many of the cedar glades are at risk of becoming parking lots, homes, and shopping malls.



Most recently, the development of an automobile racing facility outside Nashville has threatened three of the Tennessee coneflower's remaining sites. The racetrack sits in the midst of the plant's natural range, and it is feared that secondary growth around the 100,000-seat facility will further affect the surrounding cedar glades.

As subdivisions approach natural areas, another concern arises: hybridization. With the popularity of similar species such as purple coneflower in home landscaping, cross-pollination could alter the genetic makeup of Tennessee's namesake flower. Shea explains that the natural ranges of the three *Echinacea* species that occur in Tennessee do not overlap, so cross-pollination is not a problem in the wild, but it does occur when people plant more than one species in their gardens or near a natural area.

### Restoration Efforts

That the Tennessee coneflower has inhabited the glades of central Tennessee for eons is a testament to the resiliency of the species. However, the lack of a natural mechanism to distribute seeds to new areas has limited the flower's domain.

To stack the cards in the coneflower's favor, the Tennessee Department of Environment and Conservation is working to establish new coneflower populations in protected areas of existing cedar glades within the state. This has given local growers an opportunity to play a key role in the conservation efforts by supplying Tennessee coneflower seedlings for the project.

Under permit from the state of Tennessee, four local native plant nurseries are cultivating the Tennessee coneflower with seed stock supplied by the Department of Environment and Conservation. The plants of each of the five populations are kept separate in an effort to maintain their genetic purity. Mike Berkely of GroWild, Inc., in Fairview, Tennessee, has been growing Tennessee coneflower for three years and has found it easy to cultivate and extremely drought tolerant. "We promote the plant to people who have a brown thumb; plant it in full sun and poor soil, leave it alone, and it grows," says Berkely.

## Sources

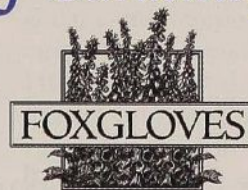
**Elixir Farm Botanicals**, P. O. Box Brixley, MO 65618. (417) 261-2393. [www.elixirfarm.com](http://www.elixirfarm.com). Catalog \$2.

**Plant Delights Nursery**, 9241 Sauls Road, Raleigh, NC 27603. (919) 772-4794. [www.plantdelights.com](http://www.plantdelights.com). Catalog 10 stamps or a box of chocolates.

**Prairie Moon Nursery**, Route 3, Box 163, Winona, MN 55987. (507) 452-1362. [www.prairiemoonnursery.com](http://www.prairiemoonnursery.com). Catalog free.

**Sunlight Gardens**, 174 Golden Lane, Andersonville, TN 37705. (865) 494-8237. Catalog free.

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Growers who propagate endangered species and sell plants across state lines are required to obtain a federal permit from the U.S. Fish and Wildlife Service and submit annual reports regarding their propagation and sales of the species.

Although the additional paperwork required to sell endangered species discourages some nurseries from growing the Tennessee coneflower, the mail-order nurseries listed in the box on the left do carry the plant. According to the permit these nurseries are required to send with the plants, however, the plants cannot be transplanted to natural habitats outside their original or historic range; they can be planted in a garden, but not in wild areas.

There has been speculation that the Tennessee coneflower may be removed from the federal endangered species list in as little as one to two years—which could eventually make the plant more available to gardeners—but if destruction of this plant's habitat continues, de-listing may never happen. By the time this article goes to press, one of the three Tennessee coneflower sites threatened by the racing facility will be a finished parking lot.

Efforts by The Nature Conservancy and the state of Tennessee are now underway to preserve the Tennessee coneflower and its habitat, but until key coneflower sites can be purchased and destruction of the cedar glades stops, the future of this plant in the wild remains in jeopardy.

*Wildflower photographer Kenny Clarke volunteers with the Tennessee Department of Environment and Conservation in restoration efforts for endangered plants.*



# Urban Gardener

## Seeing the City for the Trees

by Michelle Buckstrup

IT'S A PLACE where few urban gardeners dare venture. The tree lawn—the band of turf between the sidewalk and the curb of a public road, sometimes called the utility or “hell” strip—is municipal property and off-limits to gardeners in many cities. But not in Ithaca, in upstate New York, where gardens routinely spill out of traditional bounds. Combine this heady freedom to venture across the sidewalk with an unusually diverse urban forest, and you get a city gardener's delight.

In one Ithaca neighborhood, joggers and motorists slow down for a closer look at the locally famous curbside gardens of Laurie Conrad, a concert pianist. Her tree lawn gardens are a wild pageant of annual and perennial color that starts in front of her house, spills across the sidewalk, surges down to the end of her street, around the corner, and down another block. The neighbors wholeheartedly ap-



Laurie Conrad's Ithaca tree lawn is an exuberant mixture of colorful plants.

prove of the ever-expanding gardens that slow traffic through an intersection once notorious for speeding motorists.

“In some towns you can get arrested for this,” says Conrad of her adoption of the tree lawns. “We’re lucky that this town supports it and that the city forester is so supportive. Even when the town workers or utility people come to do work, they are careful in the gardens, trying not to step on plants.”

### Cooperative Efforts

City Forester Andy Hillman, who came to Ithaca in 1995, is willing to work with city gardeners like Conrad to integrate what he affectionately calls “guerrilla gardens” into the city’s street tree program. Hillman oversees the program, which selects trees based on their ability to mitigate urban heat, reduce the load on city

storm water management systems, and help purify the air—as well as for their aesthetic qualities. Whereas some municipalities strictly enforce street tree regulations, Hillman believes in a more flexible program. “We can definitely work with homeowners—for instance, to prune some branches out to let light in a garden, or avoid planting a tree where it would interfere with a garden. Trees and flower beds both beautify the city,” says Hillman. A purple-leaved tree planted adjacent to Conrad’s perennials is a testament to Hillman’s knack for getting residents to appreciate trees. “I wanted to plant a small tree in the tree lawn near her place, and I knew Laurie was a professional pianist,” says Hillman. “When she heard it was a ‘Schubert’ chokecherry, she warmed up to the idea.”

In planning for Ithaca’s urban forest, Hillman works closely with Nina Bas-

**IF YOU’D LIKE** to try curbside gardening in your neighborhood, Andy Hillman suggests you first check the tree ordinance in your locality or talk to the city forester. Permits are often required to plant on utility strips; be prepared to submit a plan of the proposed garden and a plant list.



suk, director of Cornell University's Urban Horticulture Institute (UHI) in Ithaca. "At UHI, research on urban trees, site modification, and transplanting is worked out in test plots. When an idea shows merit and is ready for the rigors of the city, it gets tried out in Ithaca," says Bassuk.

It's a relationship that both Hillman and Bassuk relish. "I get a kick out of working with someone who's in the trenches," says Bassuk. "Andy wants to make Ithaca the best urban forest in the U.S." Says Hillman, "We pursue projects that benefit students, UHI, and the city. It's exhilarating. The city benefits greatly from UHI research, and the city provides UHI with equipment and personnel it might not otherwise have access to."

Together, under the auspices of the Ithaca Shade Tree Advisory Committee, Hillman and Bassuk have seen the number of tree taxa on the streets of Ithaca grow to more than 250, a level of diversity few other East Coast cities can match. To circumvent largescale destruction of plants due to monoculture—as happened to American elms, which once lined streets in towns across the United States—Bassuk advises that cities plant no more than five percent of any given species.

Finding new street tree candidates is part of that quest for diversity. "We know what the challenges of city tree lawns are: limited space, soil compaction, poor drainage or drought, de-icing salt, high soil pH due to leaching from concrete-based materials," says Bassuk. "We look for trees that have evolved in their native habitat to deal with challenges that mimic those of city sites." That includes taking a look at non-traditional street trees.

## Unconventional Choices

A good example of this matching process is hardy rubber tree (*Eucommia ulmoides*). Though not commercially useful, the leaves of the hardy rubber tree exude a rubbery substance when torn. In the mid-'90s the city began planting this species because in its native sites in Asia it tolerates drought, high soil pH, and marginal soils—conditions found in city sites. Bassuk often takes visitors to see a particularly nice specimen of this tree



Hardy rubber tree, above, is one of several non-traditional street trees that are replacing the traditional weak-wooded silver maple in Ithaca. The stump of a maple that had to be cut down has been turned into a "house," below, by resident Debby Thompson.



growing in the paved commercial heart of downtown Ithaca.

Another unusual tree flourishing in Ithaca's tree lawns is American hop hornbeam (*Ostrya virginiana*), a native understory tree that grows 25 to 40 feet tall. Its use as a street tree had previously been unexplored. In the woods around

the city, American hop hornbeam grows in dry, rocky sites. It turns out to be equally adaptable to the frequently dry, high-pH sites along city streets. The city also uses the notoriously tough black locust (*Robinia pseudoacacia*), although Hillman prefers the perfectly round-headed cultivar 'Globosum' or the upright 'Pyramidalis' over the species. Turkish filbert (*Corylus colurna*) also shows promise in Ithaca's urban forest.

As the street tree population becomes more diverse, the city is gradually saying goodbye to its ubiquitous and increasingly dangerous silver maples (*Acer saccharinum*). Although long favored in city plantings for its quick growth and resistance to pests, silver maple's weak wood can pose a hazard, especially in trees that were not properly pruned when young. Just blocks from Laurie Conrad's gardens, for example, the sculptured stump of a once-huge silver maple in the tree lawn in front of the home of Debby Thompson attests to the species' inability to age gracefully.

"Some of our family rituals happened under that tree," says Thompson. "We'd circle the tree to celebrate special occasions." Thus it was painful when, in 1996, Hillman informed Thompson that the unstable branch configuration of the tree meant it had to come down. In the spirit of Ithaca's unconventional tree lawn horticulture, however, Hillman granted Thompson's request to leave the bottom seven feet of trunk.

Today, a cylindrical "silver maple house"—complete with door and cedar shingle roof—charms all who pass by the Thompson home. Neighborhood children play inside the house, and adults regularly stop to marvel at the structure. "Inside the tree we've found notes saying how much they love it; Buddhist figurines; toys; beautiful stones; stacks of shiny pennies," says Thompson's daughter Susan. "It's special for a lot of people."

Bygone trees memorialized as sculpture, a diverse and plentiful urban forest, and an abundance of colorful curbside landscapes make the city of Ithaca a grand public garden.

*Michelle Buckstrup is a free-lance writer and a member of the education staff at Cornell Plantations in Ithaca, New York.*



# Plant Exploration in the 21st Century

## Seeking New Plants for American Gardens

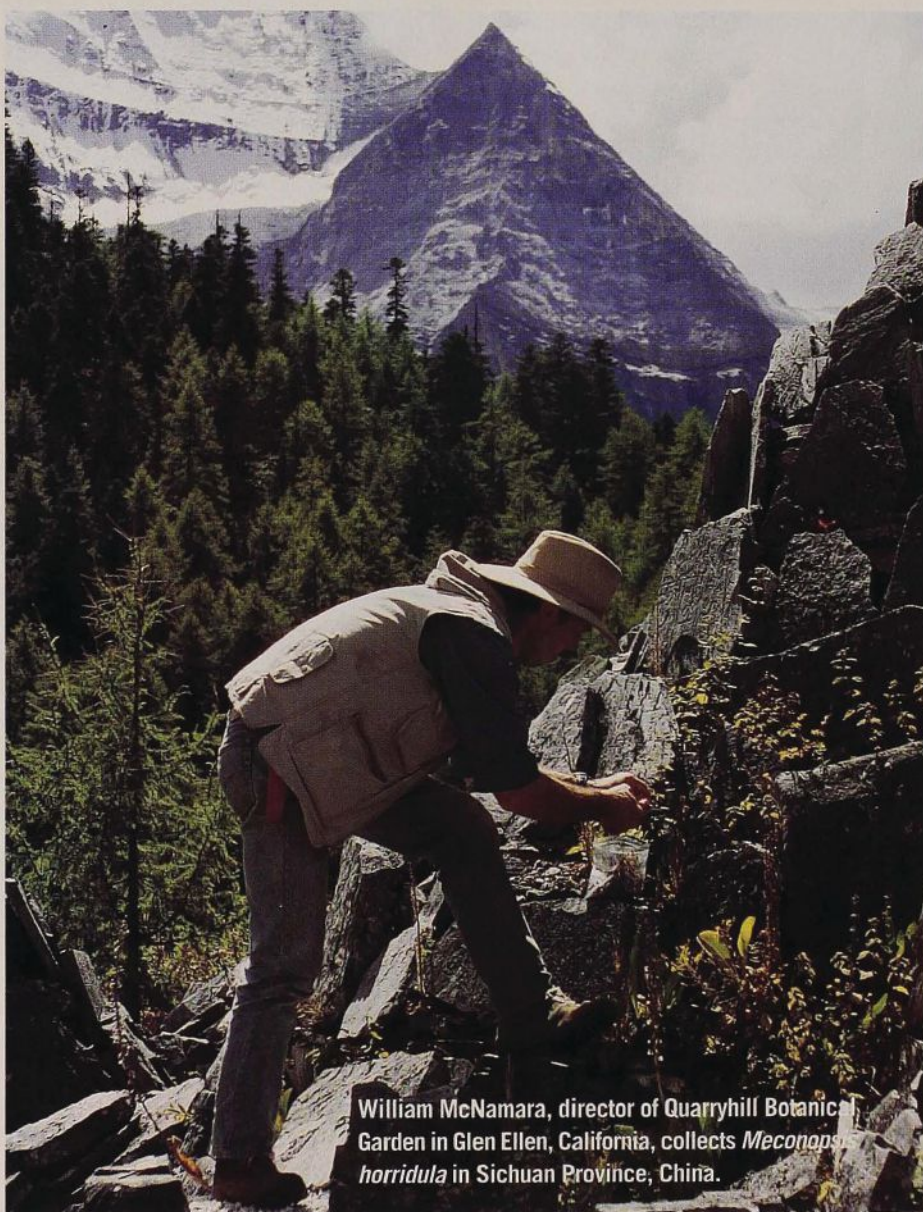
BY RICK J. LEWANDOWSKI

A CASUAL STROLL through any garden center reveals a world of botanical wealth. Each of these garden plants or their pre-hybrid parent species was brought into cultivation from a place where they occur naturally, sometimes thousands of miles away, in locations completely inaccessible to the average gardener.

### Discovering Diversity

Most of us take for granted the circuitous, multi-year path plants follow from discovery, evaluation, and development to sale and planting in our gardens. But this process has dramatically altered the horticultural landscape in the past two centuries, influencing the variety and quality of the food, fiber, medicinal, and ornamental plants we enjoy today. It begins with the efforts of professional plant explorers with the vision to recognize “diamonds in the rough” and the dedication to bring such plants into cultivation.

Nineteenth- and early 20th-century plant explorers such as David Douglas, Thomas Nuttall, Reginald Farrer, Joseph Rock, Frank Meyer, and Ernest Wilson are renowned for the seemingly endless list of plants that they noticed, collected, studied, and ultimately shared (see “Plant Hunting: Then and Now,” page 24). Supported by wealthy individuals or botanical gardens, most of these men traveled alone and often were gone for a year or more at a time.



William McNamara, director of Quarryhill Botanical Garden in Glen Ellen, California, collects *Meconopsis horridula* in Sichuan Province, China.



Plant exploration has changed dramatically in the past 200 years. Improved air and ground transportation, communication systems, and more accurate environmental and mapping data have made the logistics of collection much easier. Most plant hunting is now accomplished by teams of explorers representing consortiums of public gardens, universities, commercial nurseries, and government organizations. Trips usually last only a month or two and have clearly defined objectives.

The goals of these expeditions are diverse, but among the most important are finding plants that tolerate environmental stress and resistance to insects and diseases, increase the genetic diversity of existing cultivated species, and—of course—offer something new and exciting for American gardens.

Asia—particularly China and Japan—has historically been one of the richest sources for new ornamental plants and is still a popular destination for many plant explorers. But as we move into the 21st century, plant hunters are also turning their attention to less-publicized regions such as Eastern Europe, southern Africa, South and Central America, Southeast Asia, as well as underexplored areas of North America.

### Ongoing Exploration

The North American-China Plant Exploration Consortium (NACPEC), which includes the Morris Arboretum, Longwood Gardens, Holden Arboretum, U.S. National Arboretum, the Arnold Arboretum, and others have conducted seven expeditions to Asia since 1994. One of the consortium's goals has been to diversify the genetic representation of species already in cultivation.

Paul Meyer, director of the Morris Arboretum and a participant in several ex-

peditions, offers the examples of kousa dogwood (*Cornus kousa*) and paperbark maple (*Acer griseum*). Most plants of these species that are available to gardeners in the United States, Meyer explains, originated from a few trees introduced nearly a century ago. NACPEC is trying to improve the vigor of these species by broadening their genetic diversity.

According to Meyer, NACPEC is also looking for "tough urban trees" that perform well in a variety of stressful situations, or that can be used in breeding programs to improve tolerance to temperature extremes, salt spray, insects, and diseases. For example, in 1998 the U.S. Department of Agriculture (USDA) and NACPEC initi-

University of Minnesota Landscape Arboretum, and others. Seeking plants tolerant of extremes in climate and soil conditions, the consortium hopes to expand the diversity of landscape perennials, shrubs, and trees adapted to the upper Midwest.

### Commercial Collectors

Not all plant hunting expeditions are sponsored by botanical gardens or government agencies. The passion to seek new and better plants for our gardens still infects many private plant explorers who work for commercial nurseries.

Dan Hinkley, co-owner of Heronswood Nursery in Kingston, Washington, has observed and collected plants in Asia and Chile, as well as in remote areas of North America. While traveling in China in 1996, Hinkley found a clematis that appears to be a new species. Presently he is "keen on woodland lilies—the Convallariaceae [lily-of-the-valley family]...trying to find garden worthy specimens and sorting out the species."

Bob McCartney of Woodlanders Nursery in Aiken, South Carolina, says, "As I am primarily interested in new plant introductions for the warmer regions of the southern United States. I consider the warm temperate and subtropical regions to have the greatest potential for plant exploration." McCartney is especially eager to further explore parts of Ar-

gentina that have largely been ignored by collectors from cold-climate regions.

The highlands of Mexico are also drawing the interest of American plant hunters seeking warm climate plants. McCartney, along with Tony Avent of Plant Delights Nursery in Raleigh, North Carolina, are among the nursery owners who have followed up on the groundbreaking plant-collecting expeditions to Mexico undertaken by John Fairey and Carl Schoenfeld, now of Peckwood Garden



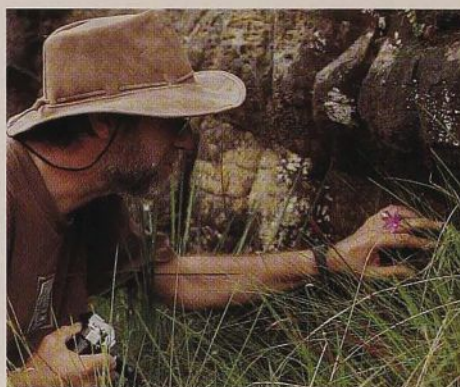
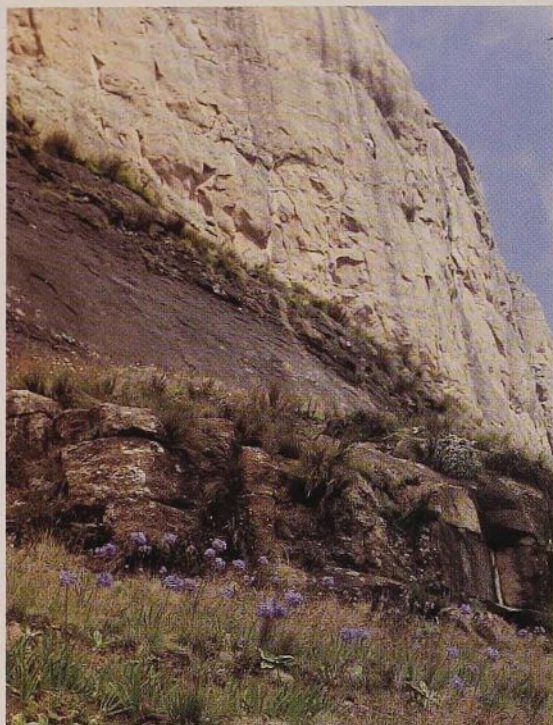
Above: During a 1996 expedition, plant collectors representing the North American-China Plant Exploration Consortium (NACPEC) gather seeds and specimens of *Abies fargesii* in China. Right: USDA plant hunter Ned Garvey, left, and Chinese colleagues display *Magnolia sprengeri* blossoms.



ated a multi-year plant exploration program to collect hemlocks (*Tsuga* spp.) throughout China. Their objective is to assess hardiness and adaptability of several species potentially resistant to the hemlock woolly adelgid, an aphidlike pest devastating the native hemlocks of the eastern United States.

Russia is a focus area for the Midwest Plant Collecting Consortium, which includes Chicago Botanic Garden, Holden Arboretum, Morton Arboretum,





Left: Scottish explorer Jim Archibald, who traveled with Panayoti Kelaidis of Denver Botanic Gardens during a 1996 plant hunting expedition to South Africa, examines *Hesperantha scopulosa*, a bulbous perennial, growing at the base of a cliff. Far left: *Agapanthus campanulatus* subsp. *patens* blooming nearby.

and Yucca Do Nursery, respectively, in Hempstead, Texas. Garden treasures found on these trips have included salvias, agaves, and rain lilies (*Zephyranthes* spp.).

### New Frontiers

A relatively "new" area for plant hunters is South Africa, which many plant explorers boycotted in the 1970s and '80s because of the country's policies on racial segregation. But since the lifting of apartheid in 1994, South Africa—which contains an estimated 10 percent of the Earth's plant species—has been getting a fresh look.

Panayoti Kelaidis, curator of plant collections at Colorado's Denver Botanic Gardens (DBG), was one of the first American plant collectors to travel to post-apartheid South Africa. Among the collections he has made on behalf of DBG are numerous high altitude succulents that are hardy throughout North America, including the now popular ice plants (*Delosperma* spp.) and aloes; hardy bulbs such as angel's-fishing rods (*Dierama* spp.) and gladioli; and perennial alpine species such as the hardy gazania. Many of these plants are already in the retail trade, and more are in the testing pipeline.

### No Place Like Home

Just as Dorothy learned in *The Wizard of Oz* that happiness can often be found

in our own backyards, many plant hunters recognize the value of continuing to tap into the rich botanical wealth that exists in remote areas of North America. At the Mt. Cuba Center for the Study of Piedmont Flora in Greenville, Delaware, exploration focuses on plants of the Piedmont region of the eastern United States.

One priority is searching for, propagating, and introducing new selections of underused native plants—such as trilliums, hardy gingers, and Allegheny pachysandra—in an effort to encourage their landscape use. Another goal is to extend or verify the hardiness and stress tolerance of southeastern Piedmont species—including *Stewartia malacodendron* and *S. ovata*, *Osmanthus americanus*, and *Leucothoe* species—that have potential for growing further north.

### Habitat Loss and Species Survival

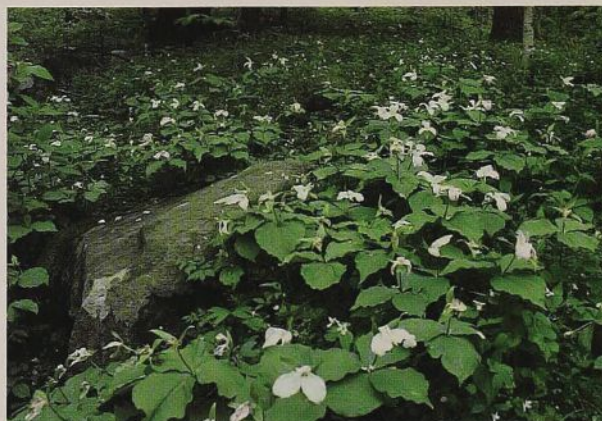
Increased awareness of the limited amount and fragile state of our natural habitats has raised serious concerns over the loss of biological diversity. Extensive deforestation and conversion of land to agriculture have left fewer places of refuge for potentially useful garden plants and a narrower gene pool from which to sample. Unscrupulous collecting methods exacerbate the problem.

More than 25 years ago, the international community recognized the poten-

tial for over-exploitation of plants and wildlife and ratified the Convention on the International Trade of Endangered Species of Wild Fauna and Flora (CITES). More than 150 countries, including the United States, are now signatories to this treaty. CITES regulations ban commercial international trade on an agreed list of endangered species as well as regulate and monitor trade of others that might become endangered. CITES has dramatically reduced the international trade in a number of wild-collected ornamental plants, including *Galanthus nivalis*, *Cyclamen neapolitanum*, and several orchids. The good news is that most growers are now propagating these plants rather than collecting them from the wild.

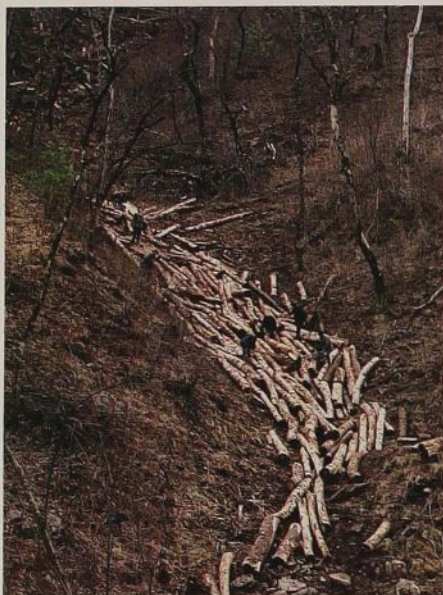
### Weeding Out Invasives

Biological diversity is being threatened from other angles as well. In recent years, many ecologists, conservation biologists, horticulturists, and home gardeners have become increasingly concerned about how invasive, non-native plant species are affecting established plant communities.



Trilliums, such as these growing in the Great Smoky Mountains National Park, are among North America's horticultural gems.





Clear-cut logging, as pictured in this scene from China's Shaanxi Province, is a major factor in worldwide habitat loss.

For plant explorers, this raises ethical and practical concerns: How do they encourage the discovery, development, and introduction of "well behaved" garden plants and still prevent the introduction of the next serious weed? "Many people equate exotics and invasives, and that is not good," notes Paul Meyer of the Morris Arboretum. "We don't want to throw the baby out with the bath water. On the other hand, we don't want to introduce the next kudzu or Japanese honeysuckle."

Some nursery professionals have begun to address this issue pro-actively. At Plant Delights Nursery, owner and seasoned plant explorer Tony Avent notes, "We have an extensive trial system where we test plants for up to five years before releasing them. Sometimes we just have to rip out plants that are too aggressive, no matter how much we like them."

Meyer suggests it may take eight to 10 years to evaluate some new herbaceous plants, and 20, 30, or even 40 years to adequately evaluate a tree. Unfortunately, as yet there is no widespread and accepted system for evaluating new introductions.

### Assessing Our Cultivated Resources

Thousands of ornamental species have been collected and brought into cultiva-



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### THE POLITICS OF EXPLORATION

Although 19th- and early 20th-century plant explorers faced many dangers in their travels, they were able to move about and collect plants largely unhampered by regulations or borders. Nowadays, however, international politics is playing an increasingly significant role in plant exploration.

Ownership rights to genetic resources have become an increasingly important issue. The Convention on Biological Diversity (CBD), released in Rio de Janeiro in 1992 and signed by more than 170 countries, specifies the ownership rights of indigenous people and nations over their genetic resources—including plants—and the products derived from them.

But there is still debate over the ownership of genetic resources: Should they be shared freely for the benefit of mankind, or do sovereign nations hold exclusive rights to those resources found within their boundaries? The United States signed the CBD in 1993, but the treaty has yet to be ratified by the U.S. Senate.

In this battle over genetic resources, ornamental plants appear to be victims of "bio-prospecting," the high-stakes search for plants with pharmaceutical properties. High profits are rarely obtained from new ornamental plant introductions, but the regulations as written apply to the ornamental plant industry as well. Barry Yinger, a plant hunter who works with Hines Horticultural Inc., a wholesale nursery headquartered in Irvine, California, is concerned that the convention "will gradually make wild collecting by anyone other than government agencies impossible."

—R.J.L.

tion in the United States during just the past 100 years. As plant exploration continues in the next century, there is an increasing need to comprehensively assess the resources already in cultivation.

The USDA Agricultural Research Service's National Plant Germplasm System (NPGS) maintains nearly 10,000 plant species for developing new and improved varieties of plants; however, NPGS has historically focused on agricultural crops and their relatives.

Recently, the USDA, in cooperation with the American Association of Botanical Gardens and Arboreta (AABGA), has developed an initiative known as the North American Plant Collections Consortium (NAPCC). Its goal is to build a network of national collections for a wide range of ornamental plant groups using the documented living collections of AABGA member institutions as repositories.

Projects such as these are taking small steps toward a more thorough inventory of our cultivated plants and will provide valuable information to plant explorers as they set priorities in the future.



## Resources

**The Explorer's Garden: Rare and Unusual Perennials** by Dan Hinkley. Timber Press, Portland, Oregon, 1999.

**The Garden Plants of China** by Peter Valder. Timber Press, Portland, Oregon, 1999.

**Garden Shrubs and their Histories** by Alice M. Coats. Simon and Schuster, New York, New York, 1992.

**The Gardener's Atlas: The Origins, Discovery, and Cultivation of the World's Most Popular Garden Plants** by John Grimshaw. Firefly Books, Buffalo, New York, 1998.

**A Reunion of Trees: The Discovery of Exotic Plants and Their Introduction into North American and European Landscapes** by Stephen A. Spongberg. Harvard University Press, Cambridge, Massachusetts, 1990.

**Shade and Ornamental Trees: Their Origins and History** by Hui-Lin Li. University of Pennsylvania Press, Philadelphia, 1996.

### Moving Forward into a New Century

The next century is certain to provide challenges and limitations for conducting plant exploration. As countries restrict access to plant genetic resources, plant exploration is going to depend increasingly upon greater collaboration among people and governments. We must also become better stewards of our natural resources to protect their integrity for the future. Despite these challenges, plant exploration will continue to expand our knowledge of the world's rich botanical diversity and enhance our gardens.

*Rick J. Lewandowski, director of the Mt. Cuba Center for the Study of Piedmont Flora in Greenville, Delaware, has participated in numerous plant hunting trips in China, Korea, and in the United States. John L. Creech contributed to this article.*

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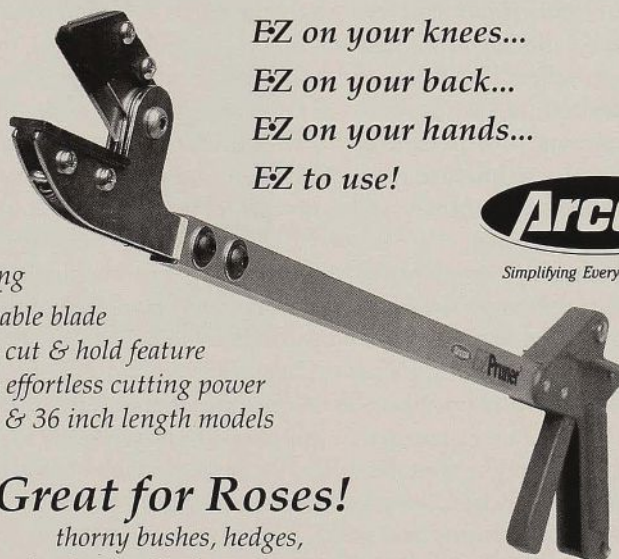
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# Plant Hunting: Then and Now

BY JOHN L. CREECH

WHEN THE 20TH century began, David Fairchild's USDA office of foreign plant exploration was in full swing, with Frank Meyer in China and the Arnold Arboretum preparing to send Ernest "Chinese" Wilson to China and Japan in search of ornamental plants. These two men dominated the American plant hunting scene for the first two decades of the new century. At the same time, renowned British plant collectors, George Sheriff, Reginald Farrer, and Frank Kingdon-Ward still combed the remote hills of western China in search of new plants.

All of these stalwart explorers traveled through some of the wildest country, rife with banditry and danger, to discover new plants. Their journeys lasted not months, but years at a time. The logistics of getting their collections back home were daunting: plants, seeds, and specimens had to be carried back hundreds of miles to ports where they could be sent home by ship. Live plants often did not survive the journey, and whole shipments were sometimes lost en route. But many did survive, and today's landscapes reflect the efforts of these horticultural giants.

This grand period of ornamental plant exploration ceased before 1920 because of strict plant quarantines and the political turmoil in Asia.

After being cut off from plant resources in Asia and Europe for more than 30 years, a new era of ornamental plant collecting began after World War II. Russell Seibert, director of Longwood Gardens, realized that a partnership with the USDA might revitalize ornamental plant collecting. Between 1956 and 1971, 13 explorations under this joint effort returned thousands of new and interesting plants to enhance our nursery industry and ultimately our gardens.

Among the many notable discoveries made were the fabulous New Guinea impatiens, collected by Harold F. Winters and Joe Higgins, and *Lagerstroemia fauriei*, the basis of today's disease-resistant hybrid crape myrtles, which I introduced from Japan.

This program ushered in the era of a team approach to collecting, as well as air transportation and the use of plastics for shipping living collections—resulting in remarkable survival rates. The duration of explorations shrank as swift access to collecting sites became routine.

When the Longwood program ended, the U.S. National Arboretum picked up the effort, sponsoring 13 expeditions between 1976 and 1989. National Arboretum explorers such as Fred Meyer, Sylvester "Skip" March, and myself were active on these trips, which involved horticulturists from various institutions and multiple sources of funding.

By the end of the 20th century, the nursery industry began to assume a more active role in plant collecting as a new generation of explorers such as Dan Hinkley, Barry Yinger, and Tony Avent took to the field. Introduction and evaluation programs such as that of the late J.C. Raulston at North Carolina State University in Raleigh began to yield many new plants for the nursery industry.

The past century has seen a transition from an era of free-wheeling solitary plant collectors to organized consortiums of participants with distinct scientific goals. Though the ground rules for plant collecting have changed dramatically, there will always be players ready to participate in "the greatest game"—to add new plants to our gardens.

*A former director of the U.S. National Arboretum during his long career as a horticulturist and plant explorer, John L. Creech lives in Columbus, North Carolina.*

## All in a

While modern technology has eliminated many of the rigors that earlier explorers faced, the following accounts from two active plant explorers reveal that romance and intrigue are still very much a part of the quest for new plants.

**BARRY YINGER**

*The North Korean border, 1981*

AFTER AN unusually harsh south-central Pennsylvania winter, an early spring this year brought a breath of the Deep South, as one group of camellias, with rich glossy green foliage, bursts into bloom. These beautiful shrubs are a stark contrast with the other "hardy" camellias I grow, which now were crispy and brown from frost damage.

This remarkable sight takes me back to 1981, when the prospect of hardier varieties of *Camellia japonica* was only an exhilarating dream. At that time, while working at a botanical garden in Korea, I read an article written around the turn of the 20th century by the Japanese botanist Homeki Ueki. I was excited by Ueki's descriptions of the distribution of broad-leaved evergreen shrubs, including *Camellia japonica*, all the way up the west coast of Korea to the North Korean border.

Suspecting these plants might prove hardier than others in cultivation, I decided to go and see for myself. The problem was that the places I wanted to visit were near the North Korean border, a restricted area controlled by the military.

Thus I found myself hanging around the flophouses and bars of the Inchon waterfront, looking for a way to this se-



# Day's Work

*Two tales from the field*

cured area. Abetted by a friend who was then a corporal in the Korean army, we finally found a sailor who agreed—in return for a gift in a bottle—to let me board a ferry traveling to the islands I wanted to visit.



*Camellia japonica* 'Korean Fire'

My first view of the Taechong Island hillside with its scattered ancient camellia trees is an experience that is burned in my memory. The glistening green of the evergreen trees contrasted sharply with the dreary brown of the dead vegetation of winter. The frigid winds from Mongolia buffeted the hillside.

After the military occupants of the island decided I was simply crazy and not really harmful, I was able to marvel at the sight of these survivors and gather the seeds that lay thick on the ground.

My faith in these camellias has been rewarded, providing not just wonderful memories of an exciting trip, but year after year of enjoyment here in our Pennsylvania garden. And Hines Horticultural, Inc., is introducing one of these, 'Korean Fire', this year.

*New products resources manager at Hines Horticultural, Inc., a wholesale nursery headquartered in California, Barry Yinger also operates Asiatica, a mail-order nursery in Lewisberry, Pennsylvania.*

## WILLIAM MCNAMARA *China, 1990*

**I**LLICIUM SIMONSII was unknown in cultivation when I came across it during a 1990 plant hunting expedition to China with Lord Howick of the Howick Arboretum in Northumberland, England, but I immediately suspected that it held promise as a landscape ornamental.

We were searching for woody and herbaceous plants in a mountainous region about 19 miles southeast of Xichang, in the Sichuan province of south central China, accompanied by two professors from the Chinese Academy of Sciences. We had driven from Xichang on a winding dirt road to the small, mist-shrouded village of Bai Baiding at about 9,000 feet elevation. There we hired porters and ponies to continue our journey.

Mist and rain made visibility poor as we began our steep ascent through dense



*Illicium simonsii*

vegetation. The trail got steeper as we climbed above the clouds nearing the tree line. As we neared the summit just below 14,000 feet, icy rain began to fall. Once over the top, we quickly descended to a valley at about 12,000 feet, where we spent the next several days collecting seeds

from rhododendrons, maples, roses, gentians, and other botanical treasures.

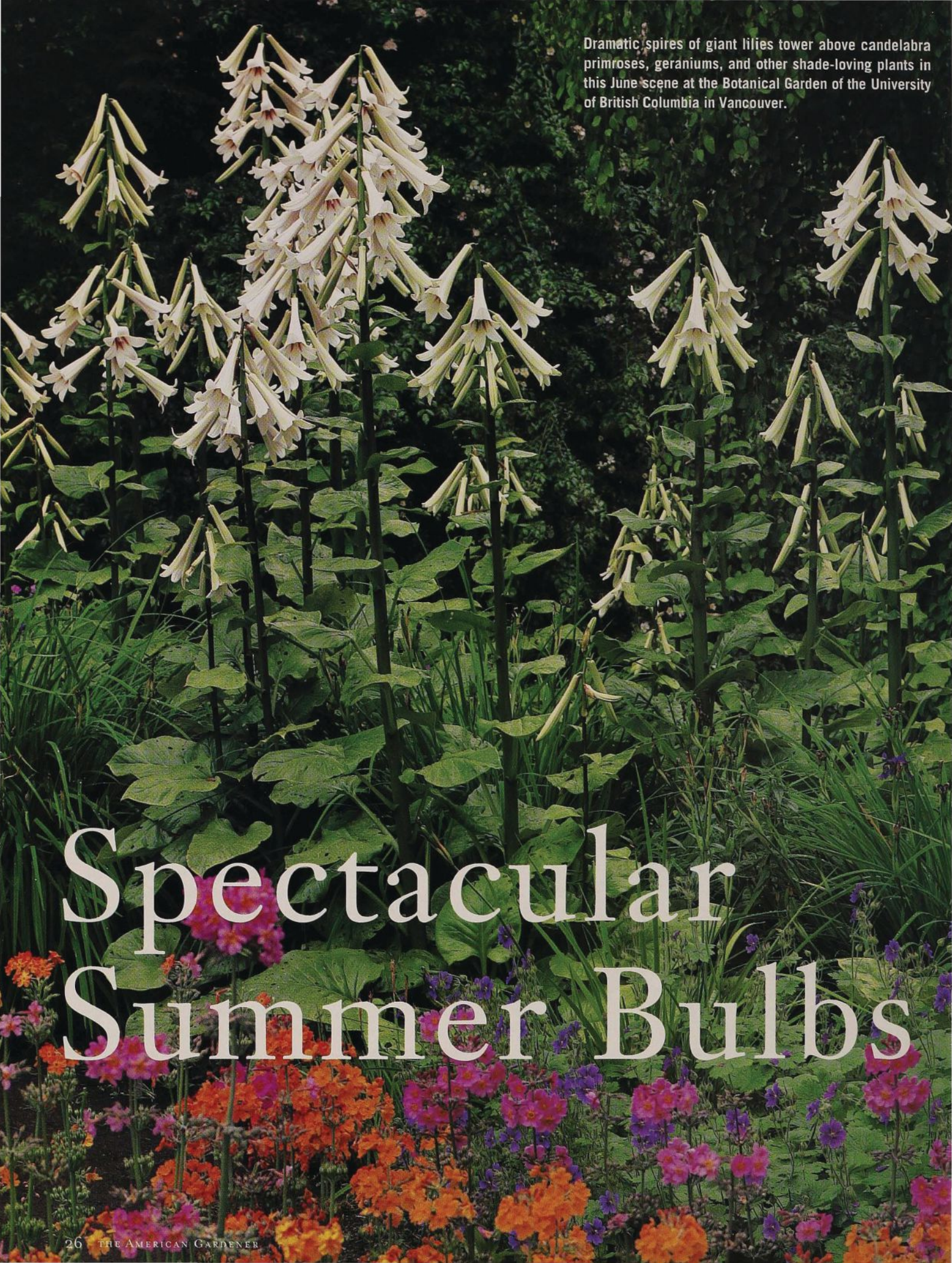
Returning to Bai Baiding loaded with dozens of seed packets, the weather was warm and clear. To our surprise, the area just above the village—which had been hidden in mist and fog days earlier—contained a diverse mix of interesting species. Our hosts, who were anxious to return to civilization, were frustrated when we began collecting again. But it was there, growing among *Osmanthus delavayi* and *Magnolia wilsonii* that I found hundreds of six-to-10 foot, densely pyramidal *Illicium simonsii*. Against the dark evergreen leaves the curious circular seed capsules with pointed segments looked like green stars. The segments opened to reveal bright red seeds—many of which we eagerly gathered.

Admiring the *Illicium simonsii* in our garden now, years after that expedition, my hunch about its landscape appeal seems justified. The creamy yellow to white one-and-one-half-inch-diameter flowers appear in late February and continue through March. The plants have reached about eight feet in height after seven years in the ground. While I believe they would benefit from some protection from afternoon sun, they have adapted to our wintertime temperatures, which can drop to 18 degrees Fahrenheit.

There are several other illiciums in cultivation—*Illicium henryi*, *I. anisatum*, *I. mexicanum*, and *I. floridanum*—but in my experience none of them measures up to *Illicium simonsii*, which would make a great addition to many gardens. It is currently being tested for introduction. ~

*William McNamara is director of the Quarryhill Botanical Garden in Glen Ellen, California, which focuses on conservation, study, and cultivation of plants from temperate regions of Asia.*





Dramatic spires of giant lilies tower above candelabra primroses, geraniums, and other shade-loving plants in this June scene at the Botanical Garden of the University of British Columbia in Vancouver.

# Spectacular Summer Bulbs



Your bulb show doesn't have to end in spring—these bulbous plants thrive in the heat of summer.

BY JOHN E. BRYAN

IT'S LATE SUMMER and your garden has gone into its usual doldrums. Most of the perennials and shrubs have finished blooming, and their foliage is beginning to take on that brownish hue that comes from too many hot days. Wouldn't it be nice to have something just coming into bloom—something with lush, glossy green foliage and exotic-looking flowers? Consider trying some bulbous plants. While gladioli and dahlias are commonly used to add color in the late-summer garden, there are dozens of little-used but spectacular bulbous plants well suited to summer gardens or container plantings throughout North America. Here's a brief overview of a few of the best.

### SUNNY BORDERS AND ROCK GARDENS

**GALTONIA CANDICANS.** One of the easiest summer bulbs to grow comes from the genus *Galtonia*. The three or four species in the genus are native to moist grasslands in South Africa, but only *G. candicans*—commonly known as summer hyacinth—is really worth growing. The genus was named after Sir Francis Galton, a 19th-century English scientist who traveled widely in South Africa. Galton's wider claim to fame is that he is established the use of fingerprints as a means of identification.

Summer hyacinth resembles its spring-blooming cousins, but is much taller. The flowering stem—an elegant terminal spike—extends above the arching, green, straplike leaves to four feet in height. Up to 40 creamy white, pendulous, bell-shaped flowers open in stages beginning in late July or early August. The sweetly fragrant flowers are magnets for bees.

Summer hyacinths can be grown outdoors in areas where temperatures do not fall below around 14 degrees Fahrenheit, especially if they are mulched. In cooler climates, simply dig up the bulbs in the fall, pack them in slightly moistened peat moss or perlite, and store them in a dry, frost-free location over the winter. Replant the bulbs the following spring.

Summer hyacinths will tolerate most soils, but grow best in moderately fertile, well-drained sites in full sun. They are untroubled by major pests and diseases, although slugs can cause unsightly damage to the foliage. Use galtonias to add late-season highlights to perennial borders or as a bold accent among summer annuals; they look most dramatic planted in groups of three or five.



Summer hyacinths have pleasantly fragrant, creamy, bell-shaped flowers.



LEFT: CHRISTI CARTER; RIGHT: ALEXANDRA SZYBALA



**SCILLA PERUVIANA.** Another relatively easy bulb to grow is *Scilla peruviana*, commonly—and misleadingly—known as Peruvian squill or hyacinth. It hails not from Peru, but from Mediterranean regions of Europe and North Africa.

The erect, medium green, straplike foliage surrounds the flowering stalk, which rises just a little above the foliage to a height of about a foot. In early to mid-summer, hundreds of small, up-turned, blue to violet flowers bloom in a compact, roughly cone-shaped inflorescence as much as six inches in diameter at the base. In addition to the species, a white-flowered form is sometimes offered; this is often listed as a cultivar, 'Alba'.

Peruvian squills are not hardy where temperatures drop below 24 degrees, but in mild climates they are almost evergreen. Plant bulbs in fall in areas where they are hardy. As with summer hyacinths, the bulbs can be protected by a thick layer of mulch or dug and stored over winter in a frost-free location. They grow best in well-drained soil with full sun, so are suitable for a sunny border or rock garden. They will thrive with regular moisture in spring and early summer, but as soon as the flowers fade, reduce any irrigation to allow the bulbs a rest period. Plant Peruvian squills in groups of five or more close to a path or walkway where they can be admired.



**TULBAGHIA VIOLACEA.** Long a popular bedding plant in its native South Africa, *Tulbaghia violacea* is gaining a loyal following among gardeners and landscape designers in western North America, who

value its tolerance of drought and a wide variety of soils. It is commonly called society garlic or pink agapanthus; the former refers to the pungent scent of its bruised or cut foliage, the latter to its flowers, which are reminiscent of miniature *Agapanthus*.

Society garlic develops vigorous clumps of narrow, gray-green leaves. From midsummer to autumn, pink to violet tubular flowers with yellow centers are borne on strong stems one to two feet in height. The inflorescences, arranged in small terminal umbels of up to 20 flowers, are often pleasantly scented—especially toward evening—and the combination of pink and yellow on the blossoms is quite eye-catching. A cultivar with variegated foliage, 'Variegata', is available, as is a white-flowered species, *T. simmleri* (sometimes listed as *T. fragrans*), although this species blooms earlier and is not as heat or drought tolerant as *T. violacea*.

In California, I have seen society garlic withstand temperatures in the low 20s. It will flourish in a sunny, well-drained border or rock garden with minimal attention, al-



Top: The pink flowers of society garlic add a splash of color to this predominantly white border. Left: Peruvian hyacinths flower in early to midsummer. Above: Wand-flowers bloom on springy stems that sway in the wind.



# Growing Summer Bulbs in Containers

With the exception of giant lilies (*Cardiocrinum giganteum*), all the bulbous plants described in this article are suitable for growing in containers throughout North America. In cooler regions, this is probably the best way for gardeners to enjoy these beautiful bulbs, which perform best if left undisturbed for several growing seasons.

## CULTURE

As with most bulbs, these plants will grow best in a soil mix that drains freely. A blend of equal parts coarse sand and organic matter such as compost or a commercial potting soil is ideal, but perlite, fine bark mulch, or gravel can also be included to improve drainage.

Bulbs planted in containers need more feeding than those grown in the ground. To replace soil lost through decomposition or runoff, top dress bulbs annually with a thin layer of sterilized compost. Apply a balanced slow-release fertilizer as the bulbs emerge from dormancy and start producing foliage. Supplement this by spraying the foliage with a dilute compost tea or balanced liquid fertilizer as needed during the growing season.

## PLANTING TIME

In their native habitats, many bulbs from the southern parts of South Africa come into growth in winter—the rainy season there—bloom in early spring, and are dormant in the summer dry season. When grown in containers year round, these plants will do best if allowed to follow their natural cycles. Where possible, pot up bulbs such as wandflowers (*Ixia* spp.) and

harlequin flowers (*Sparaxis* spp.) in late summer or fall and place them in a sunny, frost-free site. Water sparingly until they come into active growth. Once blooming starts, water regularly until early summer, when the foliage begins to die back. Then reduce watering to induce dormancy until fall, when growth will recommence. If you live in a cold region and don't have a greenhouse or conservatory, you should plant these bulbs in spring.

Bulbs such as summer hyacinths (*Galtonia candicans*), crinums (*Crinum* spp.), and Peruvian squills (*Scilla peruviana*) should be potted up in spring and watered sparingly until foliage emerges. Then water regularly throughout the summer until the foliage begins to fade in early fall. Keep the pots dry and cool through winter—an unheated garage or cool greenhouse makes a good storage place.

## SPACING BULBS

In general, follow the directions for planting depth and spacing listed in the chart on page 33. Smaller bulbs such as wandflowers and harlequin flowers should be planted at least six to eight to a six-inch pot to provide a good display. Summer hyacinths and Peruvian squills can be planted singly in a six-inch pot, or plant three of each in a 10- to 12-inch pot. Crinums generally bloom best if they are planted with the tip of the bulbs just above soil level and allowed to become potbound. Plants such as flame lily, Chinese lantern lily, and Peruvian squill develop roots that require a soil depth of 12 to 18 inches, so be sure to provide containers that are deep enough.

—J.E.B.

though it may bloom more profusely if a balanced fertilizer is applied in early summer. Grow it along the edge of a border or group bulbs in clusters to provide patches of late-season color among low-growing herbaceous perennials or shrubs. Where the bulbs aren't hardy, dig them in late fall and overwinter them in a cool, dry place.

If you can tolerate the garlicky aroma, society garlic also makes an excellent cut flower and container plant.

## CUTTING GARDEN FAVORITES

**IXIA SPP.** Members of the iris family, ixias are known as wandflowers because the springy stems that carry their flowers

aloft to a height of some 18 inches are so thin they sway in the slightest breeze. The stems bear as many as 20 showy, star-shaped flowers in a variety of colors, often set off by darker centers. Slender, grasslike leaves are held boldly erect alongside the stems.

There are some 30 to 50 *Ixia* species—mostly native to grasslands in the Cape Province of South Africa—but the majority of the ixias in cultivation are hybrids, often sold by color. One species, *Ixia viridiflora*, is so outstanding it is worth seeking out—the flowers are an unusual shade of glowing greenish blue, highlighted by a central blotch of purple.

Wandflowers grow best in well-drained soil in full sun and are ideally suited to sunny borders, rock gardens, or

cutting beds. They are drought tolerant once established, and a little fertilizer or a top dressing of finished compost given as soon as the first growth emerges from the soil will keep them happy. They have few problems with pests and diseases.

Ixias are hardy in regions where temperatures don't drop much below freezing. Where they are hardy, plant them in fall; they will bloom in late spring to early summer before going dormant. In cooler regions the corms can be planted in spring for late summer bloom, then dug and stored over the winter. They are also inexpensive enough to be grown as annuals.

If you like to see waves of color stirring in the slightest of breezes, then this dependable genus is for you. Though the flowers are numerous on the stems, they



are fairly small, so plant wandflowers in bold groups of 15 or more for maximum effect. Place them near pathways, where their flowers can be seen at close range.

**SPARAXIS SPP.** Closely related to wandflowers, *Sparaxis* species are known as harlequin flowers because their flowers come in a multitude of colors. There are some six species native to South Africa, but the most widely grown is *S. tricolor*, which has flowers ranging from white to yellow, deep orange, or crimson with yellow to orange centers outlined in black. These cup-shaped, three-inch-diameter flowers are carried two or three to a stem. Harlequin flowers grow about a foot in height, though the stiff, fanlike foliage is generally slightly shorter.

As is the case with ixias, harlequin flowers will withstand a few degrees of frost but not prolonged cold. In cold climates, they should be treated as annuals or dug up in autumn and stored over winter. If planted in the spring, they will flower in June to July, or even into August. Where hardy, they should be planted in fall and will bloom in May or June. In either case, reduce watering and stop fertilizing after they finish blooming. When grown in the ground or in a container, leave the corms undisturbed for two or three years if possible.

Harlequin flowers grow best in sites that have full sun and good drainage, but are tolerant of a wide variety of soils. Grow them in cutting beds, in clusters in a rock garden, or at the front of a well-drained perennial border.

## BULBOUS CLIMBERS

**GLORIOSA SUPERBA** and **SANDERSONIA AURANTIACA.** At one time botanists counted as many as 30 species in the genus *Gloriosa*, a member of the lily family. Now most authorities agree there is but one highly variable species, *G. superba*. In their native habitat in open woodlands in the tropics of southern and eastern Africa and Asia, these vining plants either climb up and through shrubs—with the help of tendrils produced from the tips of their leaves—or clamber over the ground.

The stems can grow up to four feet in length, producing flowers on long stalks



Native to South Africa, harlequin flowers make a highly colorful display when massed.

at the point where the glossy, bright green leaves join the stem. The striking flowers, which bloom in midsummer through early autumn in the Northern Hemisphere, are what gave rise to the double superlative in the botanical name, as well as to common names such as flame lily and glory lily.

As the nodding buds open, the flowers basically turn inside out, with the six showy tepals—petallike flower parts—unfurling upwards and the prominent stamens and stigma jutting out horizontally underneath like spokes on a wheel. The tepals—which curve upward so strongly that their points almost meet to form a globe—are deep crimson to yel-

low with yellow margins and bases. They are usually broadest at the center, narrowing to a sharp point at the top, often with crinkled or wavy edges. The cultivar 'Rothschildiana' is considered the largest and most colorful selection; 'Citrina'—sometimes listed as 'Lutea'—is a yellow-flowered cultivar.

Closely related to glory lily is Chinese lantern lily (*Sandersonia aurantiaca*), also a bulbous climber in the lily family. Native to open woodlands in South Africa, it has lovely nodding, bell-shaped, bright orange flowers that hang in profusion on lax, wiry stems that grow two to three feet long.

Flame and Chinese lantern lilies can only be overwintered outdoors in frost-



free regions, but are ideal for growing in containers and in cool greenhouses. They can also be dug up in fall and overwintered indoors in a cool, dry room. Plant the fleshy, elongated tuberlike corm—often shaped like a V or an L—horizontally in a well-drained, moderately fertile soil that contains considerable organic matter. They will grow best in full sun but tolerate dappled light or afternoon shade in warmer regions. Both plants should be watered regularly and fed with a balanced organic fertilizer while coming into growth but are fairly drought-tolerant once established. Towards the end of summer, reduce water-

## BULBS FOR MOIST SETTINGS

**CRINUM SPP.** There are well over 100 species in the genus *Crinum*, a group of tender and semi-hardy bulbous plants in the amaryllis family. Crinums are native to coastal regions and moist habitats in tropical and subtropical regions around the world and are well-known “heirloom” plants in the American South.

Like their amaryllis relatives, crinums have glossy, arching, strap-shaped leaves up to three inches wide. Strong, upright flowering stems emerge from amid the leaves to a height of two to three feet, eventually

es and swampy ground from Florida to Texas. Southern swamp lily produces creamy white, fragrant flowers on 18- to 36-inch stems periodically through the summer months if planted in shallow water or in a bog garden.

Crinums are tough, sun-loving plants for the most part—although *C. moorei*, a woodland species, does best with some shade. All grow best in well-drained soil that is rich in organic matter and stays consistently moist in spring and summer, but most are tolerant of clayey or sandy soil. They will develop dense clumps of persistent foliage and bloom most profusely if their bulbous roots are left undisturbed for three to five years at a time. With the exception of *C. moorei* and *C. xpowellii*, most are not hardy north of USDA Zone 8.

Crinums will add interest to a water garden or irrigated perennial border and are worthy container plants. They are known to be poisonous, however, so be sure to plant them where children and pets aren't likely to ingest them accidentally.

**DIERAMA PULCHERRIMUM.** If you ever have the good fortune to see the graceful, arching, flowering stems of a dierama—



Flame lilies look their best when provided with the support of a trellis or fence.

ing and feeding to induce dormancy. They develop quite deep and extensive root systems, so where the plants are hardy, allow the tuber to remain undisturbed for several years before digging and dividing.

Flame and Chinese lantern lilies can be displayed most effectively by providing them with a trellis or plastic netting for support; with a little assistance, they make a spectacular adornment to a sunny mailbox. They can also be allowed to clamber over or through shrubs, as they do in the wild.

All parts of both plants are poisonous, so take care to ensure they are not accessible to children or pets.

bearing as many as 15 long-lasting, trumpet-shaped, fragrant flowers in a range of colors from pure white to deep red.

The hardiest and most commonly grown crinums are *C. moorei*—a native of South Africa known as the Cape coast lily—and *C. xpowellii*, a hybrid between *C. moorei* and *C. bulbispermum*. Numerous cultivars of *C. xpowellii* are available in a wide range of flower colors. A popular heirloom selection in our southern states is ‘Ellen Bosanquet’, a hybrid of murky ancestry that bears fragrant, wine-red flowers from June to September. North America is home to one species, southern swamp lily (*C. americanum*), which is native to marsh-

## SMARTGARDEN™ Tip

### MULCHING

Although adding a thick layer of organic mulch such as chopped leaves, shredded bark, wood chips, or finished compost will help protect these bulbs in regions where they are borderline hardy, such a practice also provides a perfect environment for voles or mice, which feed on many bulbs. If these rodents are a problem in your region, you may need to substitute a gravel mulch to deter them. You can also protect your bulbs by planting them in a wire mesh cage.

Regular use of organic mulch offers many other benefits beyond extending hardiness: It conditions the soil and provides nutrients to the plants as it breaks down; helps reduce moisture loss from the soil; and lowers maintenance time by smothering weeds.



## Resources

**Cape Bulbs** by Richard L. Doutt. Timber Press, Portland, Oregon, 1994.

**The New RHS Dictionary: Manual of Bulbs.** John E. Bryan, editor. Timber Press, Portland, Oregon, 1995.

**International Bulb Society**, P.O. Box 92136, Pasadena, CA 91109-2136. (949) 369-8588. [www.bulbsociety.com](http://www.bulbsociety.com). Membership \$30/year. Seed exchange available to members.

## Sources

**Brent and Becky's Bulbs**, 7463 Heath Trail, Gloucester, VA 23061. (877) 661-2852. [www.brentandbeckysbulbs.com](http://www.brentandbeckysbulbs.com). Catalog free.

■ *Crinum* × *powellii*, *Galtonia candicans*, *Gloriosa superba*, *Sandersonia aurantiaca*, *Sparaxis tricolor*, *Tulbaghia violacea*.

**Kirstenbosch National Botanical Garden**, Private Bag X7, Claremont 7735, Cape Town, South Africa. (021) 762-9120. [www.nbi.ac.za](http://www.nbi.ac.za).

■ *Ixia viridiflora*.

**McClure & Zimmerman**, 108 W. Winnebago Street, Friesland, WI 53935. (800) 883-6998. [www.mzbulb.com](http://www.mzbulb.com). Catalog free.

■ *Crinum* × *powellii*, *Sandersonia aurantiaca*, *Tulbaghia violacea*.

**Thompson & Morgan**, P.O. Box 1308, Jackson, NJ 08527. (800) 274-7333. [www.thompson-morgan.com](http://www.thompson-morgan.com). Catalog free.

■ *Cardiocrinum giganteum*, *Dierama pulcherrimum*, *Gloriosa superba*, *Tulbaghia violacea* 'John Rider'.

**White Flower Farm**, P.O. Box 50, Litchfield, CT 06759. (800) 255-2852. [www.800allbulb.com](http://www.800allbulb.com). Catalog free.

■ *Scilla peruviana*.

known by evocative common names such as angel's-fishing rods, hairbells, and wand flowers—reflected in a quiet pool, you will appreciate the beauty of these iris family members. Native to moist, grassy highlands in eastern and southern Africa, dieramas grow from corms, producing semi-evergreen clumps of grasslike foliage and small clusters of delicate, bell-shaped, pink to purple flowers suspended on four- to six-foot-long wiry stems.

There are some 40 species of *Dierama*, but the most popular species are *D. pulcherrimum* and *D. pendulum*. Both are hardy in protected sites in USDA Zone 7, particularly on south-facing slopes. There are numerous hybrids on the market in shades of pink, white, and purple.



Plant them in full sun in most areas, although they will appreciate afternoon shade in summer in the Deep South. They are not particularly choosy about soil, but a consistent supply of moisture is essential throughout the growing season; even in winter they should not be allowed to dry out completely. Where dieramas are borderline hardy they should be protected with a thick layer of mulch or dug and stored indoors during the winter. If left undisturbed, dieramas will form good-sized colonies over a period of a few years and are prone to naturalize where conditions are to their liking. Once flower production begins to decline, divide the corms in early spring.

Dieramas are great plants for an irrigated border or where they can overhang a pond. Plant in groups of five to seven for maximum effect.

## FOR THE SHADE GARDEN

**CARDIOCRINUM GIGANTEUM.** If your garden is too shady for most of the sun-loving bulbs described above, consider growing a giant lily (*Cardiocrinum giganteum*). These spectacular bulbous



Top: Breeders have created numerous cultivars of *Crinum* × *powellii* with a variety of flower colors. Above: Complemented by the airy flowers of a heuchera, bottom center, the bell-shaped flowers of angel's-fishing rod bloom in July in this Oregon garden.



# Comparing Summer Bulbs

BOTANICAL/COMMON NAME	PLANTING DEPTH	SPACING	HEIGHT	FLOWER COLOR	BLOOM TIME	ZONES (USDA/AHS)
SUNNY BORDER, ROCK GARDEN, CUTTING GARDEN						
<i>Galtonia candicans</i> (Summer hyacinth)	soil level to 6"	8–15"	4–5'	white	July–Sept.	7–10/10–7
<i>Ixia</i> spp. (Wandflower)	1–2"	4–6"	1–1½'	many colors	March–May (July–Aug.)*	8–10/12–7
<i>Scilla peruviana</i> (Peruvian lily)	1–3"	10–12"	½–1½'	deep blue	May–June	8–9/10–8
<i>Sparaxis tricolor</i> (Harlequin flower)	2"	3–5"	½–1½'	many colors	May–June (July–Aug.)*	9–11/12–1
<i>Tulbaghia violacea</i> (Society garlic)	1–2"	8–12"	1½–2'	pink to purple	July–Sept.	8–11/12–4
VINES FOR THE SUNNY BORDER						
<i>Gloriosa superba</i> (Glory lily)	2–4"	12–24"	2–4'	red/yellow margins	July–Sept.	10–11/12–7
SUNNY, REGULARLY IRRIGATED BORDER OR EDGE OF WATER						
<i>Crinum ×powellii</i> (Crinum)	soil level	12"	3–5'	pale to deep pink	July–Sept.	7–11/12–8
<i>Dierama</i> spp. (Angel's-fishing rod)	2–5"	24"	3–6'	pale pink to purple	July–Sept.	7–10/10–8
WOODLAND OR SHADE GARDEN						
<i>Cardiocrinum giganteum</i> (Giant lily)	soil level	18–36"	6–12'	white/dark stripes	July–Sept.	7–9/9–7

\*Bloom times in parentheses indicate when bulbs planted in spring will flower, versus those grown in the ground year-round. "Soil level" means the neck of the bulb should be even with the surface of the soil.

plants are somewhat slow to flower, but they eventually produce a six- to 12-foot flowering stalk bearing up to 20 pendulous flowers. The flowers are creamy white to pale green, with hints of purple toward the base and maroon stripes on the inside.

Because the flowers are highly fragrant and have the typical trumpet shape of lilies, the three species in this genus were for years included in the genus *Lilium*. But the foot-long, prominently veined leaves of *Cardiocrinum* are cordate, or heart-shaped, rather than linear or lance-shaped like true lilies.

For the first few years after planting, a giant lily bulb produces only flowerless green shoots—attractive in their own right because of the glossy green leaves. Finally, one season the shoot will tower to a height of six to 12 feet, with the main stem reaching up to four inches in diam-

eter. This Bunyanesque structure is needed to support the many six-inch-diameter flowers that open in mid- to late summer. After flowering, the main bulb dies. The offshoots that have formed around the main bulb will bloom in turn, or you can dig up the spent bulb in early fall and transplant the offshoots; these will bloom in another four or five years.

Native to highland forests of the Himalayas, China, and Japan, *cardiocrinums* are ideal woodland plants, thriving in garden sites that offer moist, humus-rich soil and filtered sunlight. Bulbs can be planted in fall or early spring. Top dress with composted leaves or feed with a balanced fertilizer in spring.

## EXPERIMENT!

As you evaluate your garden this summer and think about the next, consider how

these versatile bulbous plants could fit into your current plantings. Use them to brighten areas and fill in the gaps where early-flowering shrubs or herbaceous perennials have finished blooming, or use them as vertical focal points in beds of summer annuals. If you don't have a place to grow them in your garden, most of them are well suited for container culture (see "Growing Summer Bulbs in Containers," page 29).

The bulbs described above come in such a variety of habits, flower colors, and adaptability to garden habitats, there's sure to be one or two that can be used to add some pizzazz to your garden in the dog days of summer.

*A garden writer, lecturer, and consultant, John Bryan lives and gardens near San Francisco. He is currently working on a revised edition of his two-volume series, Bulbs.*



by  
Nancy McDonald

# Flavorful

Many edible plants can be deliciously ornamental in the garden.

**I** BLAME THE CHIVES. It was late summer, 1984, and we had bought an old farmhouse in Michigan, the first home we'd ever owned. Before we even signed the paperwork, I had dug a garden and planted perennials. And there I found myself holding a clump of chives and dirt, dropped off by one of our new neighbors. Into the flower garden with it!

The chives bloomed heavily the next year, unlike some of the proper perennial flowers, which seemed to be sulking. Someone gave me a few tomato plants that spring, and not wanting to keep them in pots forever, I stuck them between clumps of Siberian irises—just until we got the vegetable garden dug, you understand. But the vegetable garden was a long time coming, what with all the work on the house and the expansion of that flower garden. While tomatoes are seriously challenged by our short growing season, the added greenery looked nice in the flower bed. So that's where I planted the thyme, sage, and lavender my mother-in-law brought me from her garden. While my perennial flowers seemed to be taking their time becoming established, the herbs looked right at home.

Out in the field we could see a brighter green rectangle of tall grass where the old barn once stood, evidence that years of

accumulated barnyard manure had improved the soil. We finally dug our vegetable garden there. And it stayed a pure vegetable garden for a good two or three months—until a shipment of 50 Asiatic lily bulbs arrived in an autumn snowstorm. The only open space available was the vegetable garden, so that's where they were planted. Just for one year, of course.

So it went. One year I started a number of species roses from seed. I placed the tiny seedlings in the vegetable garden to overwinter, intending to move them to their permanent homes come spring. Just one winter, I promised. Five years later, we struggled with masses of gnarled roots as we finally moved the roses to their home in the hedge. There was also the year my husband, Ira, ordered hundreds of Siberian irises on sale. Guess where they wound up?

Not too many vegetables actually inhabit our vegetable garden, though most years we do manage to shoehorn in a few tomatoes, carrots, and greens. We still call it the vegetable garden because we always have, but the definition has blurred. The inevitable result is that we turned to other garden beds to find places for our vegetables. My first love is perennial flowers, but among them I leave room for annuals and biennials.





# Flower Beds

What, after all, are most of the vegetables we grow but annuals and biennials? And while I enjoy the flavors of my many cooking herbs, I value them at least as much for their ornamental qualities.

## ALLURING ALLIUMS

SEVERAL MEMBERS OF the onion family (Alliaceae) are as useful in the garden as they are in the kitchen. Indeed, many are sold strictly for their ornamental value, though all are edible. The showy spring flower heads of chives (*Allium schoenoprasum*) are usually deep lavender, but there is a rosy lavender variety called 'Forescate', and I've just found seed of a white-flowered form. White-flowered garlic chives (*A. tuberosum*) offer late-summer bloom, and their leaves taste like chives with a hint of garlic. Both species form attractive clumps of foliage and mix easily with more traditional border flowers.

True garlic is curiously ornamental. There are two principal kinds of garlic: soft-necked or braiding garlic (*A. sativum*), and hard-necked or rocambole (*A. sativum* var. *ophioscorodon*). I

grow an heirloom variety of rocambole given to me years ago by a little old German lady in Dayton, Ohio. I plant individual cloves of it every fall and mulch them well with compost. They get up very early in spring and by early summer are sending up tall stalks. In soft-necked garlics, these stalks bear flowers, but in rocambole they produce appealing onion-dome clusters of tiny bulblets. Better yet, the stems twist and coil as they grow, reaching full madness here in late July.

I grow most of my garlic in the vegetable garden but can never resist tucking some among the perennials and roses. Vis-



**Background:** In full flower, chives are so ornamental that you may forget they're herbs. Here, the cultivar 'Forescate' is flanked by santolina and feverfew. **Inset, left:** The author's "vegetable garden" runs riot with flowers and herbs, including heliopsis, beebalm, borage, and rocambole garlic. **Inset, above:** Decked in late-summer flowers, garlic chives and purple-tinted basil edge a fenced terrace.



iting flower arrangers go berserk over the sinuous stalks during the peak of the frenzy. I usually allow them to cut a few stalks, but only from the vegetable garden. Rocambole garlic is not just fun to look at, it's also flavorful and a good keeper. The tiny top-set bulblets are a fine addition to herb vinegars, stir fries, or—for the true garlic fan—just to munch on in the garden. You can also plant the bulblets for a harvest of mild-flavored garlic greens. The underground clusters of cloves are arranged around the central stem like the sections of an orange and are very easy to peel.

## BOLD FOLIAGE

IF CULINARY RHUBARB (*Rheum x cultorum*) were rare or challenging, we'd fall all over ourselves to find a way to grow it for its dramatic foliage. In fact, it is difficult in hot, steamy climates; I've known several southern gardeners who struggle to grow it as an annual, the way we grow tender perennials in the North. Of course, there are many equally ornamental vegetables that prefer warmer climes, such as okra, cardoon, and globe artichoke (see sidebar, opposite page).

Out behind the shed, hidden in the tall grass, we found a patch of rhubarb on our old farm. No one had cared for it in donkey's years, yet it struggled along. We moved it to the edge of the vegetable garden and planted it in a giant hole, adding chicken manure and rotted sawdust to the soil. It has never looked back. Each fall when the rhubarb leaves die back, I top dress it with a wheelbarrow of horse manure; in spring it produces leaves two feet in diameter on stalks more than three feet long. In early summer, thick, five-to-six-foot-tall stalks bearing huge heads of tiny, creamy flowers erupt from the clump of leaves. These ultimately turn to rusty red seeds, nearly as decorative as the flowers.

The rhubarb looks right at home now that the vegetable garden is a flower garden. Conventional wisdom advises one to remove the flower stalks for maximum leaf production, but the plant produces far more than we can use, even with the flowers left on. One year, a well-meaning but officious ac-



Many common edible plants are worthy of a place in the ornamental garden. Besides its slow-spreading habit and two-toned foliage, variegated horseradish, above, bears dainty sprays of white flowers. If allowed to flower, rhubarb, left, produces large, attractive stalks of cream-colored blossoms. Its flowers are usually removed if it is being grown principally for its edible leaf stalks.

quaintance pulled out *all* the flower stalks. Luckily for him, and for me, the plant threw up a second batch, somewhat shorter and sparser than the first crop, but enough to keep me pacified.

The key to growing culinary rhubarb is to recognize that it's a heavy feeder and that it naturally dies back in late summer—or even earlier if the weather is dry. It's huge, so it can leave a great gap in the border if you don't disguise it well. If I had known I was planting a flower bed rather than a vegetable garden, I'd have put the rhubarb in back, but mine grows right up front. In spring, when the rhubarb first unfurls its mighty leaves, it is surrounded



by daffodils, which die back as the rhubarb grows. By the time the rhubarb has begun its annual retreat, it's well camouflaged by the tall stems of flowering tobacco, *Nicotiana glauca* 'White Perfume', that surround it, and by the massive rough heliopsis hybrids (*Heliopsis helianthoides* subsp. *scabra*) that grow behind it in four-foot mounds covered in late summer with deep yellow, daisylike flowers.

Rhubarb reminds me of rhubarb chard, a delicious, nutritious, and lovely vegetable that is no relation whatsoever. Rhubarb chard is so named because the stems are red and the large, slightly wrinkled leaves are deep green, a color scheme it shares with rhubarb. Rhubarb chard is a form of Swiss chard (*Beta vulgaris* subsp. *cicla*), a member of the spinach family (Chenopodiaceae). You may eat the young leaves and stems in salad, or wait until they're older and cook them. If you cut the stems carefully, the plant stays as attractive as hosta.

Selections of Swiss chard are available



The 'Bright Lights' strain of Swiss chard is available as a mix or in separate shades based on the color of the leaf stalk and veins.

with pink, purple, white, gold, or orange stems and veins. Try the 1998 All-America Selections winner 'Bright Lights' mix, or buy individual colors. The stems and veins of 'Bright Yellow' are yellow, those of 'Ruby Red', 'Rhubarb', and 'Vulcan' are red. Even the traditional white-veined types like 'Lucullus' and 'Fordhook Giant' make excellent foliage plants in the flower garden.

Another superb foliage herb, this one perennial, is the variegated horseradish

## ORNAMENTAL EDIBLES FOR WARM CLIMATES

The following ornamental edibles are best suited to the warm climates of the South or Southwest, or the year-round mild climates of the coastal West.

**Cardoon (*Cynara cardunculus*).** Cardoon is closely related to the globe artichoke, and they share similar growth requirements. Its coarse, silvery gray leaves are two feet long, deeply toothed, and very striking. Bright purple two- to three-inch thistlelike flower heads appear in summer. The thickened, spineless stems can be harvested for eating raw or cooked.

**Globe artichoke (*Cynara scolymus*).** The perennial globe artichoke prefers mild winters and cool summers, a climate found along the coast of northern California, but it can be grown as an annual in other areas if plants are started early indoors. These are bold accent plants producing coarse, thistlelike leaves and large, edible flower buds. 'Green Globe' is often grown in California; 'Violetto' is somewhat hardier; and 'Imperial Star' is well suited for growing from seed as an annual.

**Hyacinth bean (*Lablab purpureus*).** Grown as an annual everywhere but in the Deep South, where it is perennial, the hyacinth bean is a twining climber that grows best in hot and humid climates. It flowers from midsummer to frost, producing lightly fragrant, lilac-purple or white pealike blossoms that are held above the foliage. The showy pods that follow are purple and highly decorative. Both seeds and flowers are edible.



Purple pods of hyacinth bean

**Okra (*Abelmoschus esculentus*).** An essential ingredient in gumbo, okra can also be a standout in the garden. Plants range in size from the three-foot 'Baby Bubba' to the six-to-seven-foot heirloom 'Cow Horn', which has unusual, twisted pods. Okra's two-inch flowers are pale yellow with maroon centers. For eating, harvest pods while immature. Left to dry, pods are attractive both on the plant and in arrangements. 'Burgundy' is a variety with red stems and pods, and 'Cajun Delight' is known for its early crop.

**Peanut (*Arachis hypogaea*).** Peanuts need a long, hot summer to produce a decent crop. These legumes have cloverlike leaves and small yellow flowers. After the flowers are fertilized, their stems—called pegs—elongate, pushing the old flower into the soil where it forms the "nuts." Use peanuts as a tall edging, placed where their curious life cycle can be observed. Variety names such as 'Valencia Tennessee Red' and 'Virginia Jumbo' reflect their preference for southern climes.

**Scarlet runner bean (*Phaseolus coccineus*).** Tennessee gardener Denis Garrett finds the scarlet runner a fine choice as a climber for the South because it reliably sets its pods in hot weather. This twining vine produces clusters of scarlet flowers followed by green pods that age to purple. Garrett says that they are particularly attractive grown together with another vine such as morning glory (*Ipomoea* spp.) or cup-and-saucer vine (*Cobaea scandens*). Harvested young, beans can be eaten like snap beans.

—Rita Pelczar, Associate Editor



(*Armoracia rusticana* 'Variegata'). Ordinary green horseradish is highly invasive, but the lovely green-and-white selection spreads so slowly that I may never harvest the roots; a big patch of green horseradish by the barn will suffice for that. Horseradish bears large but delicate sprays of small white flowers in late spring and early summer.

All beet (*Beta vulgaris*) greens are attractive to my eye, but 'Bull's Blood' is special: It *smolders*. The bold leaves are deep red-purple overlying deep green; the stems are burgundy red. Seedlings vary in color, so if you intend to save seed, choose the reddest plants. The flowers, which appear the second year, are said to be nondescript but scented of musk.

Kale (*Brassica oleracea*, Acephala group) has been grown ornamentally for decades. There are many selections worthy of the flower garden, including 'Redbor', with its curly purple-red leaves on upright plants. I prefer the large, flat, tender leaves of 'Red Russian'; its stems and

veins are purple, and the beautifully lobed leaves are a deep gray-green with blue overtones. In cool weather, the leaves take on a red-purple blush. Last year I planted 'Red Russian' kale near *Rosa glauca*, which has purple stems and purplish leaves with gray-blue-green tints. Sprinkled between and among them grew the self-sowing annual cornflower, *Centaurea cyanus* 'Emperor William', a Victorian heirloom bearing true blue flowers on branching three-foot stems. The effect was superb.

Kale, incidentally, is a biennial and produces small, bright yellow flowers the second year, which does nothing for the color scheme above. I save seed harvested from plants growing in a less conspicuous place. The leaves of 'Red Russian' kale stay tender even when large—unlike the chewy, bitter, curly-leaved kale used to garnish restaurant plates—making it a fine choice for those of us who prefer kale raw in salads. Breeders at Territorial Seeds have produced an especially colorful form called 'Winter Red'.

All mustards (*Brassica* spp.) make good foliage plants in the border. Mizuna (*B. juncea*, Japonica group) is a particular favorite with us. Tasty and long-lasting, the fernlike, finely cut leaves show no insect damage and may be harvested heavily without diminishing the lacy effect.

## SEASONING THE BED WITH HERBS

MANY CULINARY HERBS are beautiful to look at, and although a special herb bed can be a pleasing thing, there's no reason why herbs must be segregated. Many, such as thyme (*Thymus* spp.) and garden sage (*Salvia officinalis*), are worth growing even if you don't cook. Winter savory (*Satureja montana*) is a delightful small ground cover. And recently everyone's gone crazy over purple-leaf varieties of basil (*Ocimum basilicum*) such as 'Dark Opal' and 'Purple Ruffles'. I love to mix purple basil with more traditional annual flowers in large pots near the kitchen door, or to use it as an accent among my perennials. Other fine forms of basil include anise-flavored 'Siam Queen', which bears dense clusters of purple flowers on compact plants, and 'Spicy Globe', which produces uniform, rounded plants with tiny leaves.

Eight large wooden planter boxes are spaced along our driveway to deter people from driving on the lawn. Most years I grow annual flowers in these. When the take-over of the vegetable garden by flowers drove me to despair, I planted bush beans and basil in these planter boxes. I mixed burgundy snapdragons, blue pansies, 'Purple Teepee' bush beans, and 'Mexican Spice' basil. The beans and the basil both have deep green leaves with

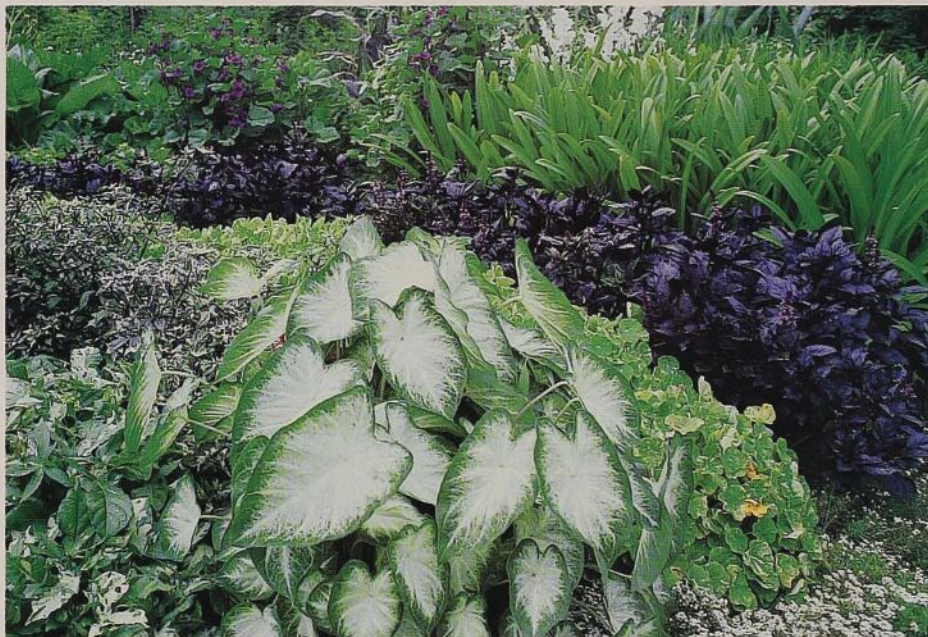
## SMARTGARDEN™ Tip

### STRETCH YOUR OPTIONS

Whether you grow vegetables in a flower border or in a traditional vegetable garden, you can broaden your options and extend your season by selecting varieties suited to your region.

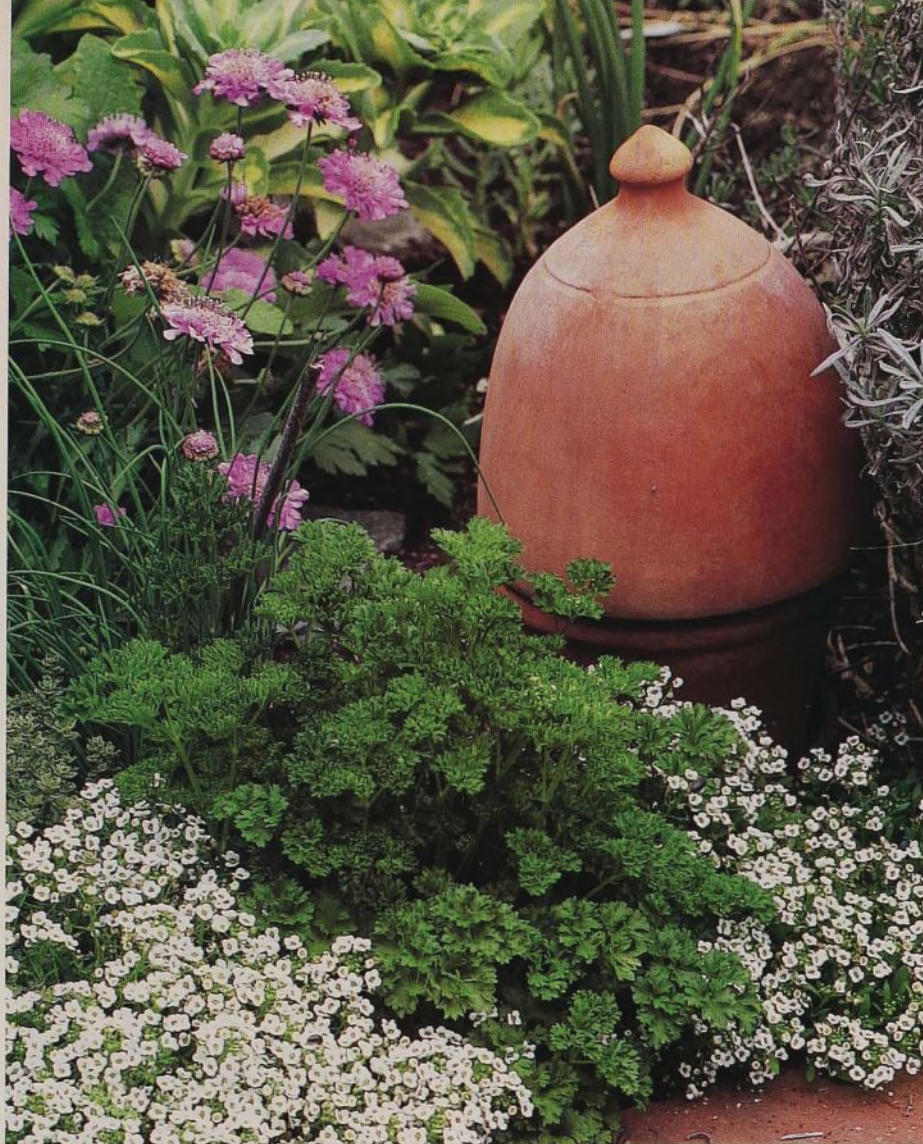
While some vegetables need a long growing season, fast-maturing varieties are available for gardeners who live in cooler climates. Okra and watermelon, for example, are generally best grown in the South, but many northern gardeners can successfully grow varieties such as 'Cajun Delight' and 'Baby Bubba' okra, which begin producing their crop nearly two weeks earlier than standard varieties. 'Garden Baby' and 'Sugar Baby' are short-season watermelons.

On the other hand, lettuce and spinach are cool-season crops that stop producing as soon as temperatures get warm—unless, that is, you have selected a variety that tolerates more heat, such as 'Prizeleaf', 'New Red Fire', and 'Simpson Elite' lettuce and 'Melody' and 'Tyee' spinach.



Looking right at home among an assortment of plants with ornamental foliage, purple basil lends a strong counterpoint to this garden's predominantly green-and-white theme.





Curly-leaf parsley provides a refreshing contrast to the pink flowers of scabiosa and the tiny white blooms of sweet alyssum. A biennial, parsley bears yellow-green flowers in its second season.

purplish tints in the veins; both have lavender flowers. The rich purple bean pods are borne above the leaves, so they harmonized with the basil, snapdragons, and pansies below. The combination was such a success that I've since taken it into the perennial border, among blues and pinks and purples, wherever there's a space to fill.

I grow curly-leaf parsley (*Petroselinum crispum*, Crispum group) in my flower gardens for its lush, bright green leaves that are a perfect foil for any flower. Its flowers, produced its second year because it is biennial, are pale yellow-green umbels on tall, airy sprays. Like so many inconspicuously colored flowers, these carry more than their weight among showier flowers. They're also nice fillers in bouquets. Some years I grow carrots in the same way, for carrot foliage is lacy and a pleasant shade of green.

## CLIMBERS

I'M FOREVER STRUGGLING to find good climbers for my cold climate. Pole beans and peas are edible options, and I experiment with those a bit in the flower gardens, but last year I hit on indeterminate tomatoes as climbers; they will keep growing upward (or flop on the ground) until you or the frost stops them. I selected the small-fruited *Lycopersicon pimpinellifolium* 'Yellow Currant' and *L. esculentum* var. *cerasiforme* 'Matt's Wild Cherry', and, as usual, I sowed far too many seeds. I wedged a number of both plants into the vegetable garden. Rather than composting the leftovers, I tucked them among the yellow-flowered *Clematis tangutica* on my pergola. Indeterminate tomatoes have no tendrils and do not twine, so they must either be tied on or woven in to their supports—or so I thought. In practice, the

## MORE CHOICES

### Anise hyssop

(*Agastache foeniculum*)

**Bronze fennel** (*Foeniculum vulgare* var. *azoricum* 'Rubrum')

**Dill** (*Anethum graveolens*)

**Gourds** (*Lagenaria siceraria*)

**Hot peppers** (*Capsicum* spp.)

'Firecracker', 'Mirasol', 'Poinsettia', 'Pretty in Purple', 'Super Chili', and 'Thai Hot'

**Jerusalem artichoke**

(*Helianthus tuberosus*)

**Kohlrabi** (*Brassica oleracea*,

Gongylodes group) 'Azur Star', 'Kolibri'

**Lettuce** (*Lactuca sativa*) 'Brunia'

'Galactic', 'Outredgeous', 'Ruby Ruffles', 'Simpson Elite'

**Lovage** (*Levisticum officinale*)

**Nasturtium** (*Tropaeolum majus*)

'Empress of India', 'Moonlight'

**Oregano** (*Origanum laevigatum*)

'Hopley's Purple'

**Pot marigold** (*Calendula officinalis*)

**Red perilla** (*Perilla frutescens*)

**Rosemary** (*Rosmarinus officinalis*)

**Sunflower** (*Helianthus annuus*)

'Sun Goddess', 'Sunspot'

clematis, with its clasping petioles, or leaf stems, grabbed the tomato plants and carried them skyward as they grew, with no assistance on my part. Tomato leaves and flowers are attractive, and the grapelike clusters of fruit are pleasing to the eye and just the right height for grazing gardeners. And the bright colors worked well with the golden blooms of the clematis.

## CHOOSING ORNAMENTAL VEGETABLES

YEARS AGO, IRA AND I went on a gardeners' pilgrimage to England, where we were lucky enough to visit garden writer Alex Pankhurst. Her cottage garden burst with plants that were new to me. There I saw a handsome legume with rich green leaves and the most intriguing black-and-white flowers. "What on earth is that?" I asked breathlessly.



## Resources

**The Art of the Kitchen Garden** by Jan and Michael Gertley. Taunton Press, Newtown, Connecticut, 1999.

**Creative Vegetable Gardening: Accenting Your Vegetables with Flowers** by Joy Larkcom. Artabras, New York, 1999.

**Great Garden Companions: A Companion-Planting System for a Beautiful, Chemical-Free Vegetable Garden** by Sally Jean Cunningham. Rodale Press, Emmaus, Pennsylvania, 1998.

**Growing Herbs and Vegetables: From Seed to Harvest** by Terry and Mark Silber. Knopf, New York, 1999.

## Sources

**Abundant Life Seed Foundation**, P.O. Box 772, Port Townsend, WA 98368. (360) 385-5660. Catalog \$2.  
■ Beet 'Bull's Blood'.

**Bountiful Gardens**, 18001 Shafer Ranch Road, Willits, CA 95490. (707) 459-6410.  
[www.zapcom.net/~bountiful/bgmain.htm](http://www.zapcom.net/~bountiful/bgmain.htm). Catalog free.  
■ Broad beans; kale 'Red Russian'; pepper 'Thai Hot', 'Poinsettia'; Malabar spinach 'Rubra'; rhubarb; Swiss chard 'Lucullus', 'Ruby Red'.

**Glasshouse Works**, P.O. Box 97, Stewart, OH 45778. (740) 662-2142. [www.glasshouseworks.com](http://www.glasshouseworks.com). Catalog free.  
■ Horseradish 'Variegata'.

**J.L. Hudson**, Star Route 2, Box 337, La Honda, CA 94020. Catalog \$1.  
■ Anise hyssop; dill; garlic chives; Malabar spinach 'Rubra'; mizuna mustard; kale 'Russian Red'; nasturtium 'Empress of India'; Swiss chard 'Rainbow', 'Ruby Red'.

**Johnny's Selected Seeds**, 1 Foss Hill Road, RR 1, Box 2580, Albion, ME 04910. (207) 437-4301.  
[www.johnnyseeds.com](http://www.johnnyseeds.com). Catalog free.

■ Anise hyssop; broad beans; dill; Jerusalem artichoke; kale 'Redbor', 'Red Russian'; kohlrabi 'Kolibri'; lettuce 'Simpson Elite'; mizuna mustard; pepper 'Pretty in Purple', 'Super Chili'; rhubarb; rocambole garlic; Swiss chard 'Bright Lights', 'Bright Yellow', 'Fordhook Giant', 'Ruby Red'; tomato 'Yellow Currant', 'Matt's Wild Cherry'.

**Nichols Garden Nursery**, 1190 North Pacific Highway, Albany, OR 97321. (541) 928-9280.  
[www.gardennursery.com](http://www.gardennursery.com). Catalog free.  
■ Basil 'Mexican Cinnamon Spice'; chives 'Forescate'

**Park Seed**, 1 Parkton Avenue, Greenwood, SC 29647. (800) 845-3369. [www.parkseed.com](http://www.parkseed.com). Catalog free.  
■ Bush bean 'Purple Teepee'; garlic chives; kohlrabi 'Kolibri'; lettuce 'Brunia', 'Ruby Ruffles', 'Simpson Elite'; mizuna mustard 'Red Giant'; nasturtium 'Empress of India'; rhubarb; sunflower 'Sun Goddess', 'Sunspot'; Swiss chard 'Bright Lights', 'Lucullus', 'Vulcan'.

**Thompson & Morgan**, P.O. Box 1308, Jackson, NJ 08527. (800) 274-7333. [www.thompson-morgan.com](http://www.thompson-morgan.com). Catalog free.  
■ Dill; kale 'Red Bor'; nasturtium 'Empress of India'; pepper 'Firecracker'; rhubarb.

**Southern Exposure Seed Exchange**, P.O. Box 460, Mineral, VA 23117. (540) 894-9480.  
[www.southernexposure.com](http://www.southernexposure.com). Catalog free.  
■ Broad beans; garlic chives; kale 'Red Russian'; rocambole garlic; Swiss chard 'Lucullus', 'Rainbow', 'Ruby Red'.

Alex looked at me a little oddly. "Broad beans," she replied.

Now, had I recognized those plants as vegetables—broad or fava beans (*Vicia faba*)—I might never have given them a second glance. But in that setting they were unfamiliar to me, arranged in a small bed with other flowers rather than in the straight rows of a traditional vegetable garden. I saw them with new eyes and found them beautiful. And that is what I do now with vegetables in my own and other gardens: look at them as individual plants, as if I'd never seen them be-

fore. I do the same as I browse through seed catalogs.

This summer I want to try Malabar spinach (*Basella alba*), a six-foot climber with deep green, edible leaves and red stems. Vegetable amaranth (*Amaranthus tricolor*) sounds intriguing; there are varieties with leaves splashed with green, red, gold, or purple, looking much like coleus, but edible. I want to try 'Red Giant' mustard greens and metallic crimson 'McGregor's Favourite' beets. Some year soon I'm going to try growing asparagus as a frothy summer hedge behind my flower garden.

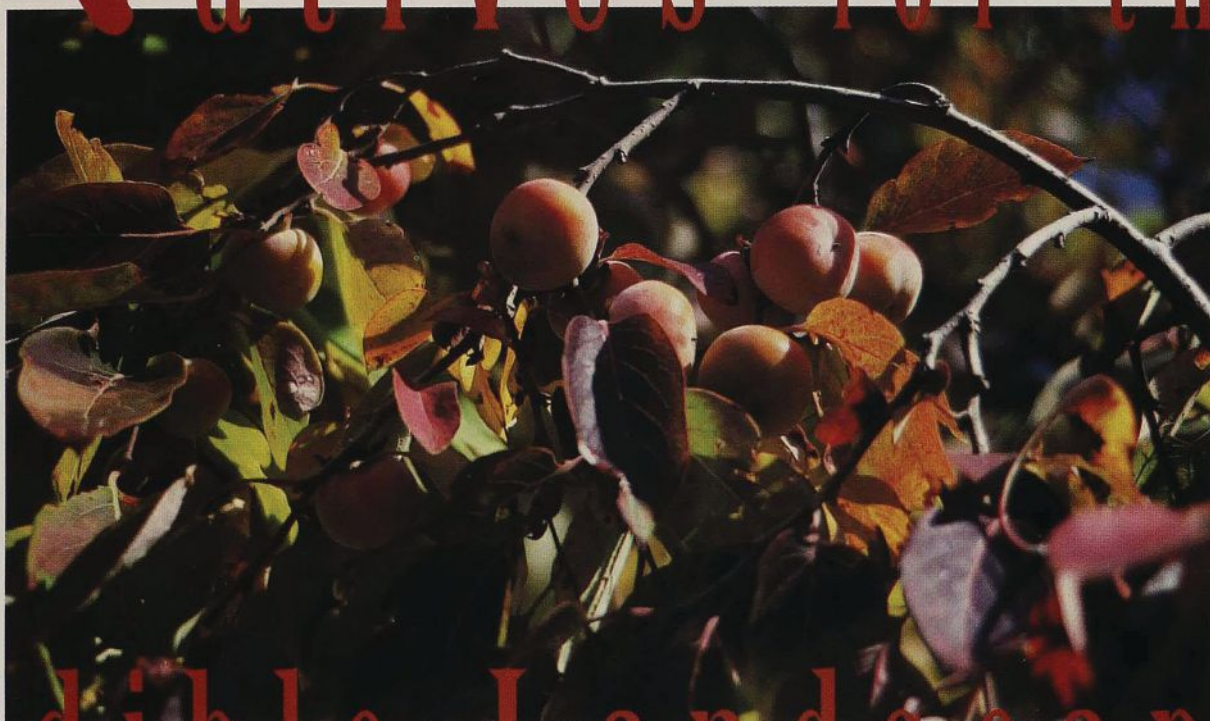
And somewhere out there is a rhubarb with variegated leaves.

The chives that first corrupted my beds have long since been banished to a wooden planter box by the drive, because—unless deadheaded before the seeds form—they will quickly take over a garden. But I thank them for opening my eyes to the notion that edibles can be deliciously ornamental.

*Garden writer Nancy McDonald tends a blend of ornamentals and edibles in her cottage garden on Michigan's Upper Peninsula.*



# Natives for the



# Edible Landscape

These fruit-bearing trees, shrubs, and vines make tasteful additions to the ornamental garden.

BY LEE REICH

MORE AND MORE GARDENS are going native these days. Butterfly weeds are edging out delphiniums, summersweet (*Clethra* spp.) is hobnobbing with flowering dogwood, and sunflower is strutting about like a prima donna. Fruit plantings, though, seem stalled in the past, with most people still planting apples or peaches or pears—all non-native species that reflect the European heritage of the first colonists.

Yet many native plants with edible fruit are also worth cultivating, even if they are less familiar. Many are relatively tolerant of pests and diseases, which is more than can be said for apples, peaches, and the like over most of North America. In addition to offering unusual and delectable flavors, some native fruits are also borne on handsome plants. There's no need to relegate them to an orchard or dedicated fruit planting; they are right at home mingling in the landscape with other ornamentals. For plantings near patios or children's play areas, pest resistance becomes doubly important because it means use of chemical pesticides can be reduced or eliminated.

For gardeners who like to attract wildlife, native fruiting plants are ideal additions to a naturalistic landscape. The flowers on these plants have evolved to meet the needs of our native pollinators, and the tasty fruits will draw a variety of birds and mammals to the garden.

The following native fruiting plants have been selected because they are truly tasty—fruits you'd pluck right off the plants and pop into your mouth without having to doctor them up with sugar. What's more, they are suited to a wide array of landscape uses, from ground covers to stately shade trees.

## ALL-AMERICAN PERSIMMON

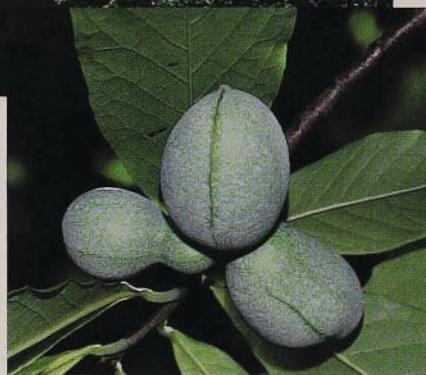
AMONG TREES OR LARGE SHRUBS with edible fruit, there's no better place to start than a plant deeply rooted in American folklore, the American persimmon (*Diospyros virginiana*). Despite the legendary puckering of the mouth that occurs if its fruits

**Colorful orange fruits and yellow or purplish foliage are a persimmon's fall finery.**





Above: Planted in full sun, pawpaw trees grow to about 20 feet tall and develop an attractive pyramidal to rounded shape. Their distinctive drooping, dark green foliage adds a lush tropical appearance to the garden. Right: Pawpaw fruits form singly or in clusters in late summer and ripen in early autumn.



are eaten before ripe, this native lives up to its genus name, *Diospyros*, which translates roughly to “food of the gods.”

At their best, American persimmons have the rich flavor and texture of apricots that have been soaked in honey. The secret to ensuring good flavor is to plant a named variety, such as ‘Early Golden’, ‘Florence’, ‘Garretson’, ‘Killen’, or ‘Morris Burton’, rather than seedlings, which can be quite variable. Persimmons are native from Connecticut to Florida and west to Kansas, but if you live towards the northern limit of growing persimmons, choose a cultivar—such as ‘Szukis’, ‘John Rick’, or ‘Mohler’—that ripens within a shorter season. Contrary to popular opinion, frost is not necessary to ripen a persimmon, just a sufficiently long

season, but don’t harvest American persimmons until they are fully colored and soft.

The fruits of American persimmons bear a passing resemblance to an oversized cherry tomato with a slightly flattened base. They are greenish and hard when immature, turning yellow to rich orange glazed with a distinct bloom—a whitish coating—at maturity. Persimmon trees grow to 50 feet tall or more and are draped through summer in drooping, slightly bluish leaves that turn a rich golden yellow or purple in autumn. Their distinctively fissured “alligator-hide” bark is quite ornamental in winter. In a few varieties—‘Szukis’, for example—the colorful fruits cling to branches long after the leaves drop, festooning the bare limbs like Christmas ornaments. Naturalize persimmons along the edge of woodland, or plant a few in a cluster where you could use some shade or a summertime screen.

The trees are usually dioecious—having male and female flowers on separate plants—so for reliable fruit set you should plant both a male and a female tree. However, some female cultivars, including ‘Garretson’ and ‘Szukis’, produce fruit without a pollinator plant.

## OTHER FRUITFUL TREES

FOR A LUSH, TROPICAL LOOK in the garden, consider pawpaw (*Asimina triloba*), which has large and droopy leaves similar to those on avocado trees. Despite its exotic appearance—it is the northernmost member of the custard apple family (Annonaceae), which includes trees that produce such tropical delicacies as the cherimoya and soursop—pawpaw is quite hardy, ranging in the wild from Michigan and eastern Canada down to Georgia and west to Nebraska.

In mid-spring, unusual, drooping purple flowers develop directly on the branches just before the foliage emerges. Pawpaw sheds some of its tropical airs as late summer gives way to fall and its leaves turn a clear yellow.

But the fruits, ripening then, still carry on the tropical theme. They are about the size and shape of small mangos and develop singly or in clusters. Inside the rubbery skin is creamy, yellow flesh surrounding several large, brown seeds. The custardlike flesh tastes somewhat like banana—with flavor hints of pineapple, avocado, vanilla, and mango—and is rich in vitamins A and C. Cultivars such as ‘Davis’, ‘Overleese’, and ‘Sunflower’ will offer more reliably flavorful fruit than seedling pawpaws.

Pick pawpaws when their yellowish skins become speckled brown and exude a richly sweet fragrance. The easiest way to eat a pawpaw is to cut it in half and scoop out the flesh with a spoon. People who are predisposed to fruit allergies should be cautious



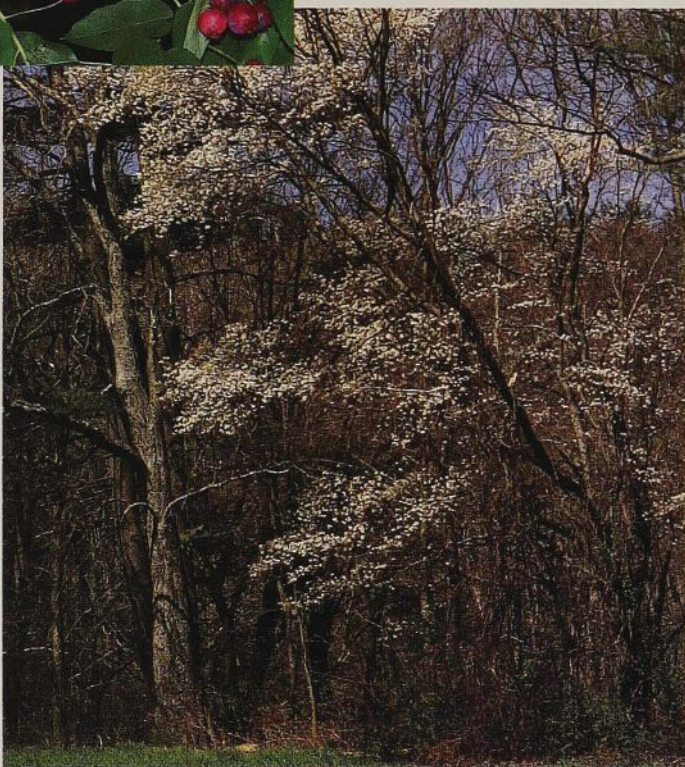
when consuming pawpaws for the first time—they have been known to cause allergic reactions. Pawpaw seeds and immature fruits are toxic and should not be eaten.

Pawpaws tend to grow in moist, shady sites in the wild but will develop a better shape and fruit more successfully if planted in near full sun. They grow 15 to 25 feet tall and slightly less broad, with a pyramidal to rounded shape. Group three or more to showcase their lush foliage—and to ensure cross-pollination—or plant one as a specimen tree. They are seldom bothered by pests or diseases.

Juneberries (*Amelanchier* spp.)—also known as serviceberries or shadblows—are small trees or large shrubs more often planted



**Bottom:** Drooping clusters of white blossoms adorn downy serviceberry (*Amelanchier arborea*) in early to mid-spring. **Left:** The tasty fruits of downy serviceberry—prized by birds and humans alike—turn dark purple when they ripen in June.



as ornamentals than for their fruits. There are several useful species native to various regions of North America, and they are adapted to a variety of soil types and habitats, although they grow best in moist, slightly acidic soil in full sun. Juneberries offer year-round beauty, starting in early spring with clouds of white to red blossoms, followed by bright red to purple fruits in summer. Fall ignites the leaves in purples, oranges, and yellows, and the plants continue to earn their keep through winter with a tidy habit and attractive gray bark.

Although juneberry fruits resemble blueberries and are often compared to them, they have their own appeal. The fruits—technically pomes, like apples and pears—are sweet and juicy,

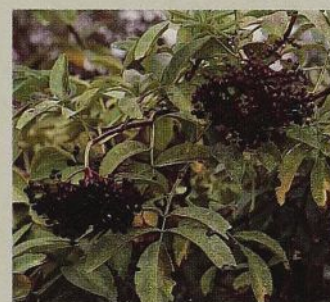
## MORE FRUIT-BEARING NATIVES

These plants are self-fertile unless otherwise noted, but for optimal fruit production, it is best to grow two or more of each species in the garden.

**Aronia melanocarpa** (black chokeberry): An upright shrub to six feet tall. Bears corymbs of white flowers in spring, purple-black berries in fall, and has crimson autumn color. Native to eastern and north central North America (N.A.). (Zones 4–9, 9–4)

**Gaultheria shallon** (salal): A suckering, compact shrub to four feet tall. Bears panicles of pinkish white flowers in spring and has yellowish, evergreen leaves. Its blueberrylike fruits have a robust flavor. Northwestern N.A. (Zones 6–8, 8–3)

**Sambucus canadensis** (American elderberry): A multi-stemmed shrub to 10 feet tall. Bears flat clusters of white flowers in early summer above attractive, compound leaves. Clusters of small, blue-black, edible berries ripen in late summer. Eastern and southern N.A. (Zones 4–9, 9–3). Blueberry elder (*S. caerulea*) is an alternative for western gardeners. (Zones 4–9, 9–3)



**The fruits of American elderberry have many culinary uses.**

### **Shepherdia argentea**

(silver buffaloberry): A thorny shrub or small tree to 10 feet. Has silvery, downy leaves and produces small red or orange fruits in summer that are used to make jam. Pollinator plant needed. North central N.A. to Plains and Great Basin states. (Zones 3–7, 7–1)

**Viburnum lentago** (nannyberry): A large, open shrub to 15 or 20 feet tall and half as broad. Bears rounded clusters of white flowers in spring. The late-summer fruits turn yellow, reddish, then black and are tasty when fresh but not very fleshy. Foliage may turn purple in autumn. Eastern N.A. (Zones 2–8, 8–1)

**Viburnum prunifolium** (blackhaw viburnum): A multi-stemmed shrub or small, rounded tree to 25 feet tall and slightly less broad. Bears flat-topped clusters of creamy white flowers in spring. Autumn foliage is purple, and edible black berries develop in fall. Eastern and central N.A. (Zones 3–9, 9–1)

**Viburnum trilobum** (American cranberry bush): A rounded, dense shrub to 10 feet tall and wide. Bears flat-topped clusters of white flowers in late spring. Persistent red fruits begin ripening in late summer, and the foliage turns yellow to red-purple in fall. Northern N.A. (Zones 2–7, 7–1)



## Resources

**Rodale's Successful Organic Gardening: Fruits and Berries** by Susan McClure. Rodale Press, Emmaus, Pennsylvania, 1996.

**The Smart Gardener's Guide to Growing Fruits** by Bob Gough. Stackpole Books, Mechanicsburg, Pennsylvania, 1997.

**Uncommon Fruits Worthy of Attention: A Gardener's Guide** by Lee Reich. Addison Wesley, New York, 1991.

## Sources

**Forestfarm**, 990 Tetherow Road, Williams, OR 97544. (541) 846-7269. [www.forestfarm.com](http://www.forestfarm.com). Catalog \$4.

■ *Amelanchier laevis* 'Cumulus'; *A. stolonifera*; *Asimina triloba*; *Diospyros virginiana*; *Gaultheria shallon*; *Ribes odoratum* 'Crandall'; *Sambucus caerulea*; *S. canadensis* (cultivars); *Shepherdia argentea*; *Viburnum lentago*; *V. prunifolium*; *V. trilobum* (cultivars).

**Louisiana Nursery**, 5853 Highway 182, Opelousas, LA 70570. (318) 948-3696. Catalog \$6.

■ *Amelanchier alnifolia* and cultivar 'Smokey'; *A. arborea*; *A. laevis*; *Aronia melanocarpa*; *Asimina triloba*; *Diospyros virginiana*; *Passiflora incarnata*; *Vaccinium* 'Southland'; *V. ashei*; *Viburnum prunifolium*.

**Nolin River Nut Tree Nursery**, 797 Port Wooden Road, Upton, KY 42784. (270) 369-855. [www.nolinnursery.com](http://www.nolinnursery.com). Catalog free.

■ *Diospyros virginiana* 'Early Golden', 'Garretson', 'John Rick', 'Killen', 'Morris Burton', 'Szukis'.

**Raintree Nursery**, 391 Butts Road, Morton, WA 98356. (360) 496-6400. [www.raintreenursery.com](http://www.raintreenursery.com). Catalog free.

■ *Asimina triloba* 'Davis', 'Overleese', 'Sunflower'; *Gaultheria shallon*; *Passiflora incarnata*; *Ribes odoratum* 'Crandall', 'Incense'; *Vaccinium angustifolium*; *V. vitis-idaea* subsp. *minus*; *Viburnum trilobum*.

**Tripple Brook Farm**, 37 Middle Road, Southampton, MA 01073. (413) 527-4626. [www.tripplebrookfarm.com](http://www.tripplebrookfarm.com). Catalog free.

■ *Asimina triloba*; *Diospyros virginiana*; *Passiflora incarnata*; *Sambucus canadensis*.

**Wild Earth Native Plant Nursery**, P.O. Box 7258, Freehold, NJ 07728. (732) 308-9777. [www.wildearthnnp.com](http://www.wildearthnnp.com). Catalog \$2.

■ *Amelanchier canadensis*; *Aronia melanocarpa*; *Asimina triloba*; *Vaccinium angustifolium*; *V. corymbosum*.

with the richness of sweet cherries along with a hint of almond flavor. Once juneberries begin to ripen—you guessed it, in June—harvest them quickly because they soon drop or dry up, and birds are about as fond of them as they are of blueberries.

Native juneberries that achieve treelike dimensions include *A. arborea*, often called downy serviceberry, which grows 15 to 25 feet tall and is native over much of the East Coast and upper Midwest. The 'Cumulus' cultivar of *A. laevis* (Allegheny serviceberry) is particularly ornamental, with white flowers and orange to scarlet autumn foliage.

If you are looking for a shrub-sized plant, try *A. alnifolia*



**Lingonberry is a superlative evergreen ground cover in cooler regions.**

(Saskatoon serviceberry) or *A. stolonifera* (running serviceberry), which have multi-stemmed or shrubby habits. Native to the Great Plains region, *A. alnifolia* (USDA Zones 4–7, AHS Zones 7–4) usually grows six to 10 feet tall and is tolerant of poor, alkaline soils. 'Regent' is a compact cultivar at four to six feet tall and as wide; for tasty fruit, try 'Thiessen' or 'Smokey', which were developed for

commercial fruit production. Running serviceberry (Zones 4–7, 7–4) is a northeastern native that forms four- to six-foot-tall thickets or clumps.

Although serviceberries are, like apples and pears, members of the rose family, they are not as susceptible to the fungal diseases that plague their non-native kin. In areas that experience hot, humid weather, such as the Southeast, however, serviceberries may have some problems with leaf spot, fire blight, powdery mildew, or rust. They are ideal for naturalizing but also make nice additions to mixed shrub borders and can be used as specimen tree alternatives to Bradford pears or dogwoods.

## SHRUBS AND GROUND COVERS

BLUEBERRIES (*Vaccinium* spp.) of one kind or another can be grown almost anywhere that moist, humus-rich, acidic soils can be provided. In warmer regions, plant rabbiteye blueberries (*V. ashei* and cultivars) or southern highbush blueberries, such as 'Southland'. In more northerly areas, plant northern highbush blueberries (*V. corymbosum* and cultivars) and lowbush blueberries (*V. angustifolium*), which are native in much of northeastern and north central North America. Dozens of cultivars are available, so it is best to check with nursery owners or Extension agents to find out which ones perform best in a particular region.



## Native Plants with Edible Fruit: A Quick Comparison

BOTANICAL/COMMON NAME	HABIT	POLLINATION	EDIBLE/CULINARY USE	ZONES
<i>Amelanchier arborea</i> Downy serviceberry	Tree	Self-pollinating	out of hand/preserves	4-9/9-4
<i>Asimina triloba</i> Pawpaw	Tree	Needs cross-pollination	out of hand/desserts	4-8/9-5
<i>Diospyros virginiana</i> American persimmon	Tree	Cross-pollination best	out of hand/desserts	4-9/9-1
<i>Passiflora incarnata</i> Maypop	Vine	Needs cross-pollination	out of hand/juices	5-10/12-1
<i>Ribes odoratum</i> Clove currant	Shrub	Cross-pollination best	out of hand	4-8/8-5
<i>Vaccinium angustifolium</i> Lowbush blueberry	Ground cover	Self-pollinating *	out of hand/baking	2-8/8-1
<i>V. ashei</i> Rabbiteye blueberry	Shrub	Self-pollinating *	out of hand/baking	7-10/10-7
<i>V. corymbosum</i> Northern highbush blueberry	Shrub	Self-pollinating *	out of hand/baking	4-8/8-1
<i>V. corymbosum</i> 'Southland' et al. Southern highbush blueberry	Shrub	Self-pollinating *	out of hand/baking	6-9/9-4
<i>V. vitis-idaea</i> subsp. <i>minus</i> Lingonberry	Ground cover	Self-pollinating	out of hand/preserves	2-6/6-1

\*Cross-pollination increases yields

Blueberries would undoubtedly be more widely used as ornamentals if they were not so well known for their fruits. Like serviceberries, they offer multiple-season interest in the garden, beginning with the clusters of blossoms that dangle from the stems like dainty, white bells in spring. A leafy summer raiment of soft greenery, tinged slightly blue, turns in fall to a fiery red that rivals that of the striking but invasive burning bush (*Euonymus alatus*). Even in winter, blueberry's red stems

add welcome color to the landscape, especially viewed against snowy backdrops.

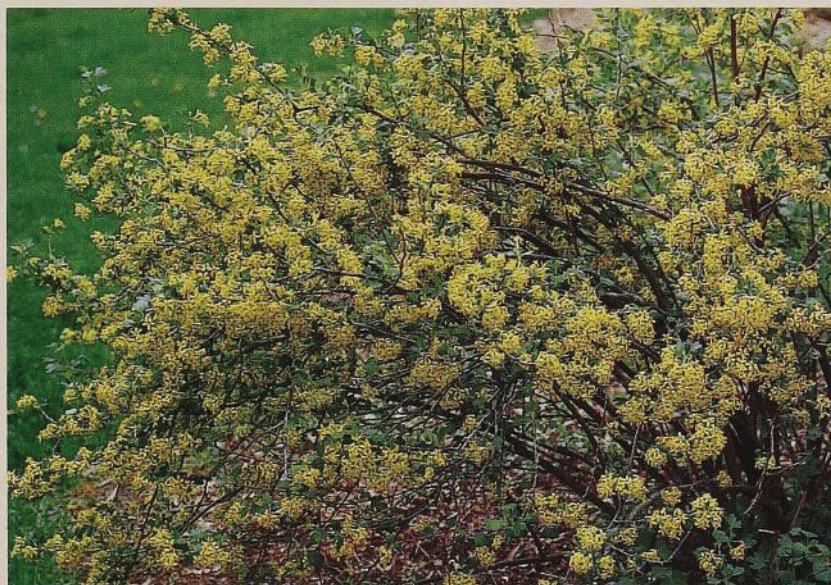
Attention to soil and birds are two keys to a successful blueberry harvest. Blueberries demand a soil that is very acidic and rich in humus. If your soil doesn't quite fit the bill, provide for both by mixing a generous bucketful of sphagnum peat moss into the soil removed from each planting hole. Where soil is naturally very alkaline, plant blueberries in bottomless containers sunk into the ground and filled with a prepared mix of equal parts peat moss and sand, or build a raised bed with the same soil mixture.

Blueberries will grow in full sun as long as the soil is moist but will perform better with some afternoon shade at the southern extent of their range.

Birds enjoy snacking on blueberries, so if you don't want to share too much of your fruit with your feathered friends you will probably have to drape bird netting over the bushes while the fruits are ripening. Even better, construct a portable walk-in, bird-proof cage to protect your plants at the critical time each year.

Lowbush blueberries make a good ground cover mixed with other acid-loving plants. Highbush blueberries can be used to create a low hedge or clustered in a shrub border.

A blueberry relative that makes an excellent evergreen ground cover is lingonberry (*Vaccinium vitis-idaea* subsp. *minus*), which is native to the upper Northeast and also in Alaska and British Colum-



Best suited to informal landscapes, clove currant has delightfully fragrant yellow flowers and bears delicious berries in midsummer.



bia. Plants are bushy and grow about six to 10 inches high, with lustrous evergreen leaves that are as dainty as mouse ears. In spring, small clusters of rosy white, urn-shaped flowers dangle from stems. A second flowering occurs in July. Two waves of flowers give way to two waves of tart red fruits, the first ripening in summer and the second in fall. The fall berries keep well on the plants, in terms of eating and looks, almost all winter.

My lingonberries share a bed with lowbush blueberries, since they crave the same cultural conditions. Both plants spread gradually by rhizomes and are as happy together in that bed as they are in a jar of jam. Lingonberries grow best in full sun in most of their native range, but offer them a site with afternoon shade in warmer areas.

Perhaps the star performer among native plants for both beauty and good flavor is clove or buffalo currant (*Ribes odoratum*). Clove currant is sometimes listed as, or confused with, golden currant (*R. aureum*); apparently even botanists have trouble distinguishing the plants, which have overlapping native ranges in central and western America.

Clove currant is little known now, but at the turn of the century it was a common dooryard shrub because its large, yellow flowers produced a spicy fragrance. It is also tolerant of drought, heat, cold, insects, and diseases. Even deer and birds leave the bushes alone.

Clove currant's loose growth habit makes it best suited to the informal garden. Willowy branches first shoot upwards, then arch



**Native to the West Coast, winter currant is an attractive addition to a border of mixed shrubs.**

toward the ground under their own weight, and vigorous suckers can poke up through the soil a foot or more from the crown. With rigorous and regular pruning, however, clove currant can be kept neat enough for more formal settings; I've even trained a few clove currants as small standards. The leaves are glaucous green through summer, then turn rich, coppery bronze in fall.

Despite its beauty, fragrance, and ease of growth, I plant clove currant mostly for its fruits, which are very aromatic, with sweet-tart flavor. The shiny, blue-black berries ripen unevenly on a bush, but each one is fairly large as currants go—up to one-third of an inch in diameter. A cultivar, 'Crandall', is often sold in lieu of the species, and a variety, *R. odoratum* var. *xanthocarpum*, bears golden yellow fruits. A relative from the West Coast is winter currant (*R. sanguineum*); its fruits are rather bland, but

the pink flowers make an attractive display in cool regions.

## A NATIVE CLIMBER WITH TROPICAL APPEAL

MAYPOP (*Passiflora incarnata*) is a hardy fruiting vine that grows well over much of the country. In contrast to its woody-stemmed tropical passionflower cousins, maypop is an herbaceous perennial. New growth appears often in May, as the name suggests, or into June. Each stem divides into two to five branches that grow as much as 20 feet in a season. Maypop is as vigorous underground as it is aboveground. The roots push outward and send up suckers many feet from a plant's origin. In the warmer parts of its range, it should be grown in a container or in a site where there are natural barriers to check its spread.

The flowers, which begin appearing about a month after shoots emerge, are each an inch and a half to two inches across. Lavender or white petals encircle a purple or pink crown that has a darker halo towards its base. Each blossom opens for only a day, exuding a delicious lemon-musk aroma. 'Incense' is a hybrid variety that is slightly more restrained in growth and produces more intensely blue flowers than the species.

Maypop fruits are yellow to yellow-green, oval, and an inch and a half to two inches across. The inside is filled with seeds surrounded by a tasty gelatinous pulp. Seedling fruits will vary in flavor, but the best have a taste similar to a semi-tart apricot.

Training maypops on a fence or other sturdy form of support brings the flowers to eye level. Mine clammers up a lilac bush. Maypop, being a "late riser," doesn't interfere with the shrub's spring show, and from midsummer on it puts on one of its own. The lawn around my lilac bed keeps the suckers in bounds. 🍷

## SMARTGARDEN™ Tip

### KEYS TO BETTER FRUIT SET

If you're selecting trees—whether native or non-native—primarily for their ornamental or edible fruit, be sure to take their pollination requirements into account. Plants such as juneberries are self-pollinating and don't require another plant of the same species to set fruit successfully, but some plants—including pawpaws—require cross-pollination, and others—such as silver buffaloberry—have "male" and "female" flowers on separate plants and will not set fruit without an appropriate pollinator plant.

For best fruit set, group two or three selections—including male and female cultivars if applicable—of each fruiting plant. Some cultivars flower at different times, so be sure the selections you choose have overlapping bloom times.

Remember also that insects—especially honey bees, bumblebees, and wasps—pollinate most fruiting plants. To encourage nature's helpers, avoid spraying insecticides in your garden, especially once flowers have formed.

*Author and consultant Lee Reich grows dozens of fruiting plants in his garden in New Paltz, New York. His most recent book is The Pruning Book, published in 1997 by Taunton Press.*





**Bold and Delicious**

# AMARANTHS

These versatile annuals can take the heat  
in the garden *and* in the kitchen.

Article and photographs by David Cavagnaro

For anyone interested in creating attractive edible landscapes, amaranths are hard to beat. They thrive in the heat of summer when other plants are fading. Some produce highly nutritious grain, all are edible young as potherbs, and many make bold and colorful additions to the ornamental garden. They are truly plants for both the palette *and* the palate!

## FROM HUMBLE ROOTS

AMARANTHS THEMSELVES may not be widely known to North American gardeners, but the amaranth or pigweed family (Amaranthaceae) contains two popular garden annuals, globe amaranth (*Gomphrena globosa*) and cockscomb (*Celosia* spp.). Two other amaranth genera, *Iresine* and *Alternanthera*, include brilliantly colored foliage plants long grown in tropical and subtropical gardens and now back in fashion as summer bedding plants in temperate regions.

For gardeners, the most familiar member of the genus *Amaranthus* is probably pigweed (*A. retroflexus*), one of the most ubiquitous of summer garden weeds. But don't let this put you off from the rest of this venerable genus.

At least four of the 60-odd species of *Amaranthus* are worthy of consideration for your garden—either flower bed or vegetable patch—because each bears multiple beguiling traits. *A. tricolor* is the main source of amaranths grown for edible leaves; selections of this species also boast the most decorative foliage of the genus. Grown for both its attractive foliage and dramatic floral display



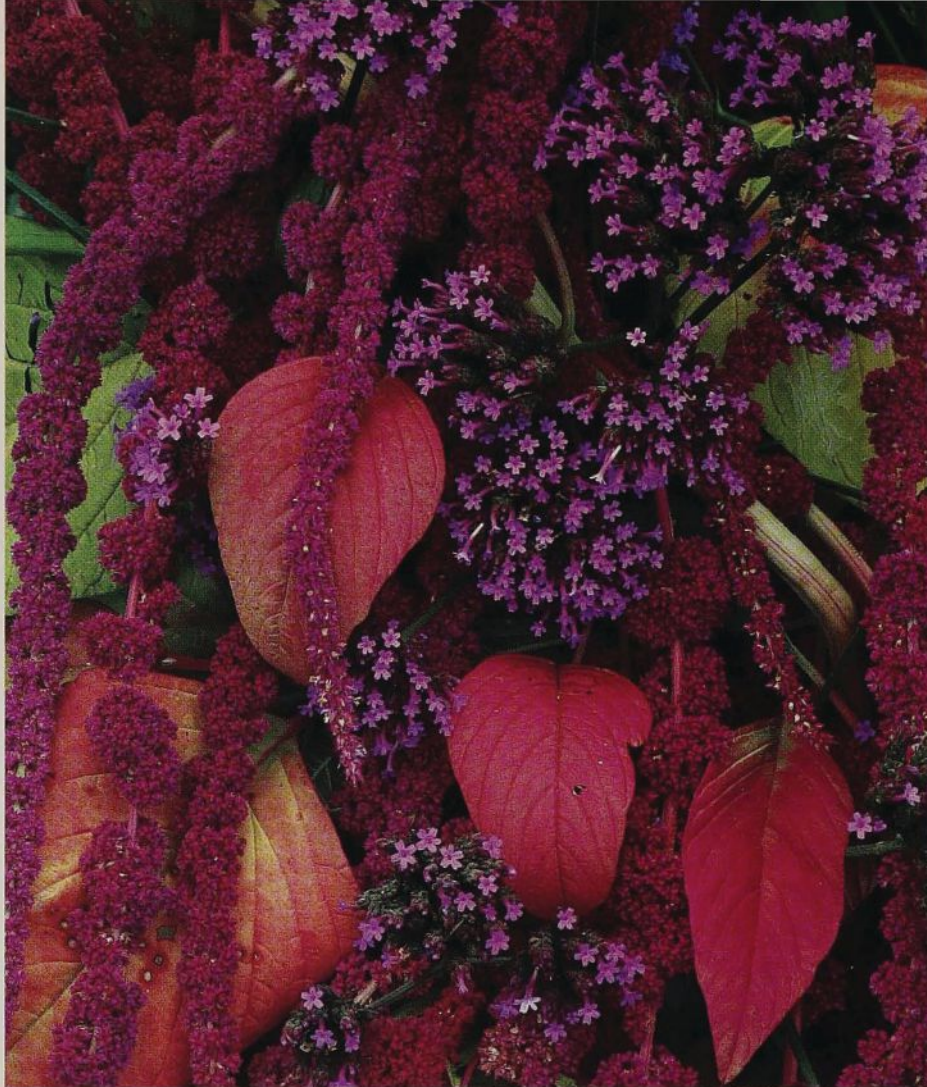


is *A. caudatus*. While *A. cruentus* and *A. hypochondriacus* are two of the most common species grown for grain, they often provide a dazzling, colorful display of flowers for the back of a border as well.

Native in tropical to temperate regions worldwide, amaranths have a long history of cultivation in both the Old and New Worlds. *A. cruentus* and *A. hypochondriacus* were well established in Mexico in Pre-Columbian times, and *A. cruentus* was the staple grain of the Aztecs when the Spaniards arrived in the New World in the 15th century. In addition, *A. hypochondriacus* has been used for centuries in Asia. Modern breeding work with these two species has tailored varieties to mechanized agriculture worldwide. *A. cruentus* is also the source of an ornamental amaranth commonly known as prince's feather.

Asian cuisines often feature the use of amaranth greens—sometimes called Chinese spinach—and much of the ongoing plant breeding for both edible and decorative varieties of *A. tricolor* is being done in Japan. The oldest variety grown in North America, and still one of the showiest, is 'Joseph's Coat', a plant that Thomas Jefferson is known to have grown at his garden at Monticello.

Another heirloom amaranth is 'Love



Lies Bleeding' (*A. caudatus*), a plant described in 16th-century herbals and popular in Victorian gardens. Its melodramatic name is a worthy testament to the wine-red flowers that seem to weep from the plant in long, ropelike tassels in summer. Sometimes called tassel flower, cultivars of *A. caudatus* were offered in seed catalogs as early as 1810. 'Viridis', the bright yellow-green-flowered counterpart to 'Love Lies Bleeding', adds diversity to the potential color combinations for this species in the landscape.

## AMARANTHS FOR THE ORNAMENTAL GARDEN

AMARANTHS ARE perfect for painting the garden in broad strokes of color. Selections of *A. tricolor* are especially well suited for use in hot-color beds and borders. Most start out with mildly colorful leaves—shades of purple, carmine, or green with chocolate markings—but from

midsummer on, when the crowns of upper leaves develop full color, these varieties dominate the garden and remain glorious through late summer or early fall.

The names of the cultivars—'Joseph's Coat', 'Illumination', 'Aurora', 'Flaming Fountain', 'Molten Fire'—say it all: Their bold colors sizzle in the summer garden. 'Joseph's Coat', for instance, develops brilliant red and yellow umbrellas of foliage, while 'Illumination' features crimson crowns that look almost like the colorful bracts of poinsettias. Combine them with red, yellow, or orange flowers for a dazzling statement; juxtapose them with blues and purples for a compelling contrast; or set them off against whites or pale pinks to soften the incandescence. Cultivars of *A. tricolor* generally grow three to five

**Previous page:** A medley of amaranths grown for edible seeds and greens. **This page:** 'Aurora', top left, and 'Love Lies Bleeding'—shown above in combination with purple verbena—are popular ornamental amaranths, but pigweed, left, is a garden pariah.

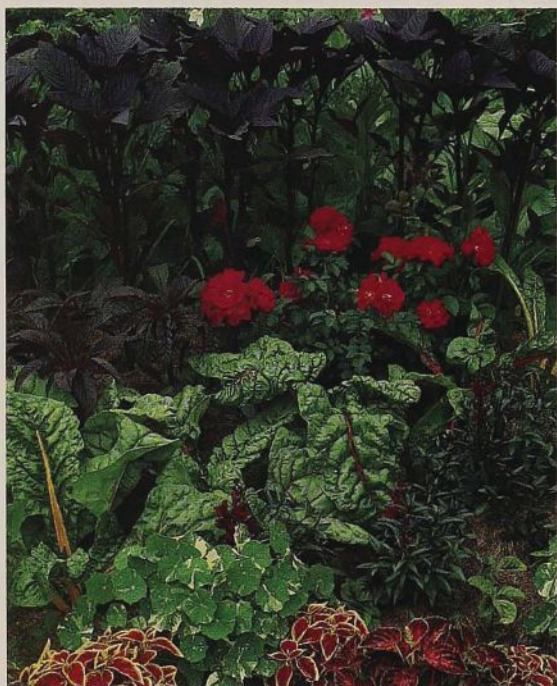




feet tall, so they are best planted in the middle or back of beds.

The flowers of *A. tricolor* selections are generally rather inconspicuous, but cultivars derived from *A. caudatus*, *A. cruentus*, and *A. hypochondriacus* produce dense clusters of flowers in colorful, branched inflorescences known as panicles. Many also have reddish or deep purple foliage.

Selections of *A. cruentus* such as 'Red Cathedral' and 'Hopi Red Dye' are magnificent foliage plants when young, their large purple leaves providing excellent color contrast in the garden. I use these cultivars behind coleus, cockscombs, nasturtiums, chard, and other plants with bright flowers or foliage. When they mature, these amaranths are topped by spectacular plumes of deep burgundy or purple flowers.



Amaranths grown for grain have large, plain green leaves and do not add much to the garden display until they flower. Plants grow five to seven feet tall, topped by two- to three-foot bronze, green, red, or green-and-red blotched flower plumes that remain colorful until harvest time in fall. Many of these plumes can be cut and hung to dry for winter arrangements; the best variety for this purpose is 'Elephant Head', a cultivar of uncertain origin with stiff, upright purple panicles and rigid stems.

'Love Lies Bleeding' and its green look-alike, 'Viridis', create an entirely different effect with their profusion of long, hanging flower tassels. Plants are heavily branched and therefore more spreading, reaching a height of only three feet. Plant these at the front edge of a bed or atop a wall where their unusual flowers can hang in full view. These varieties, too, remain attractive most of the summer, and 'Love Lies Bleeding' becomes even showier in the fall when the green summer foliage turns flaming pink and red.

## AMARANTHS FOR THE PALATE

ALL AMARANTHS are edible when the seedlings are young, but the best greens for eating are the large-leafed grain varieties in their early stages and se-

Vegetable amaranths such as 'Merah', above, are beautiful as well as delicious. Left: Dark purple amaranth forms a backdrop for a mixed planting of coleus, red roses, and chard.

## Sources

**Abundant Life Seed Foundation**, P.O. Box 772, Port Townsend, WA 98368. (360) 385-5660. Catalog \$2.

■ *A. cruentus* 'Hopi Red Dye'; *A. hypochondriacus* 'Golden Giant'; *Amaranthus* 'Elephant Head'.

**J.L. Hudson**, Star Route 2, Box 337, La Honda, CA 94020. Catalog \$1.

■ *A. caudatus* 'Viridis'; *A. hypochondriacus* 'Pygmy Torch'; *Amaranthus* 'Elephant Head'.

**Johnny's Selected Seeds**, Foss Hill Road, R.R. 1, Box 2580, Albion, ME 04910. (207) 437-4301. [www.johnnyseeds.com](http://www.johnnyseeds.com). Catalog free.

■ *A. caudatus* 'Green Thumb', 'Love Lies Bleeding'; *A. hypochondriacus* 'Pygmy Torch'; *A. tricolor* 'Aurora', 'Joseph's Coat'.

**Park Seed**, 1 Parkton Avenue, Greenwood, SC 29647. (800) 845-3369. [www.parkseed.com](http://www.parkseed.com). Catalog free.

■ *A. cruentus* 'Hot Biscuits'; *A. tricolor* 'Aurora', 'Illumination'.

**Seeds Blum**, HC 33, Box 2057, Boise, ID 83706. (800) 528-3658. [www.seedsblum.com](http://www.seedsblum.com). Catalog \$3.

■ *A. tricolor* 'Molten Fire', 'Red Stripe Leaf', 'Tampala'; *A. tricolor* var. *salicifolius* 'Flaming Fountain'.

**Seeds of Change**, P.O. Box 15700, Santa Fe, NM 87506. (888) 762-7333. [www.seeds ofchange.com](http://www.seeds ofchange.com). Catalog free.

■ *A. caudatus* 'Love Lies Bleeding'; *A. cruentus* 'Hopi Red Dye'; *A. hypochondriacus* 'Golden Giant'; *Amaranthus* 'Elephant Head'.

**Select Seed**, 180 Stickney Hill Road, Union, CT 06076. (860) 684-9310. [www.selectseeds.com](http://www.selectseeds.com). Catalog free.

■ *A. cruentus* 'Hot Biscuits', 'Red Cathedral'.



# Amaranths for Food, Flowers, and Foliage

These amaranths are listed by cultivar name with the species in parentheses

VARIETY	DESCRIPTION	HEIGHT
ORNAMENTAL AMARANTHS (FOLIAGE AND FLOWERS)		
'Aurora' ( <i>A. tricolor</i> )	crest of lemon yellow leaves	4–5 feet
'Elephant Head' (hybrid)	upright lumpy purple flowers	4–5 feet
'Flaming Fountain' ( <i>A. tricolor</i> )	willowlike, carmine, crimson, and bronze leaves	3–4 feet
'Green Thumb' ( <i>A. caudatus</i> )	dwarf with green leaves, vivid green upright flowers	2 feet
'Illumination' ( <i>A. tricolor</i> )	lower leaves green and brown; crest of broad scarlet and gold leaves	3–5 feet
'Joseph's Coat' ( <i>A. tricolor</i> )	lower leaves brown, yellow, and green; crest of narrow yellow and scarlet leaves	3–5 feet
'Love Lies Bleeding' ( <i>A. caudatus</i> )	green leaves and long pendulous purple flowers	2–3 feet
'Molten Fire' ( <i>A. tricolor</i> )	reddish brown to maroon leaves with a scarlet crown	3–4 feet
'Pygmy Torch' ( <i>A. hypochondriacus</i> )	dwarf with green leaves; thick, erect, deep maroon flowers	1–2 feet
'Viridis' ( <i>A. caudatus</i> )	pendulous green flowers	2–3 feet
AMARANTHS GROWN FOR EDIBLE GREENS (ALL CULTIVARS OF <i>A. TRICOLOR</i> )		
'Hijau'	lime green leaves	3 feet
'Merah'	magenta-veined green leaves	3 feet
'Red Stripe Leaf'	green leaves marked with red	1–2 feet
'Tampala'	small paddle-shaped green leaves with purple blush	6–8 feet
AMARANTHS GROWN FOR GRAIN		
'Golden Giant' ( <i>A. hypochondriacus</i> )	green leaves, golden flowers	6+ feet
'Hopi Red Dye' ( <i>A. cruentus</i> )	purple-red leaves, dark purple flowers	5–6 feet
'Hot Biscuits' ( <i>A. cruentus</i> )	green leaves, woolly bronze panicles	5–6 feet
'Red Cathedral' ( <i>A. cruentus</i> )	red to purple leaves, woolly burgundy panicles	3–6 feet

lections of *A. tricolor* developed primarily for this purpose. Grain amaranths yield immense amounts of seed; I reserve some of each harvest to sow sequentially for cutting greens.

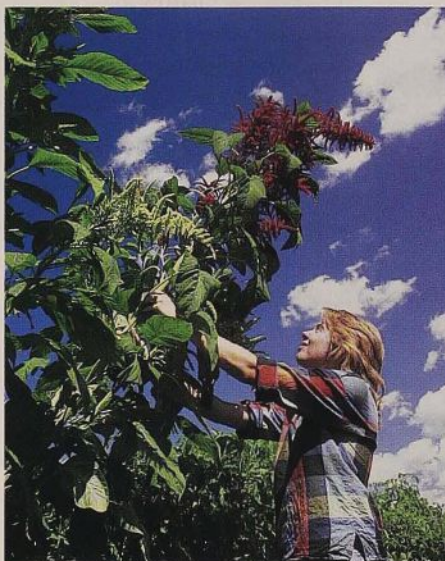
For more attractive greens, I plant cultivars such as 'Red Stripe', 'Hijau', and 'Merah'. Tender leaves can be harvested from these plants well into the summer from one sowing.

I have not detected much variation in flavor among amaranths grown for greens, but those mentioned are most tender. When harvested very young, leaves or whole sprouts can be cut into salads, but the preferred use is as a steamed or lightly sautéed green, rather like chard—an excellent hot-weather substitute for spinach.

The most important nutritional contribution of amaranth, however, is found in the tiny, grainlike seeds. Amaranths are the only "grain" high in lysine—a vital component of a balanced protein diet—and rival soybeans in protein content.

Amaranth seeds are either black or light tan. The larger-seeded tan varieties are those most productively grown for grain. The maturity of amaranth grain can be determined in early fall by rubbing the tassels into the palm of your hand. If plump little

seeds pop out easily, the plants are ready to harvest. Increasing frequency of bird visits to the tassels is another good indication that harvest time has arrived. In fact, these beautiful plants are an excellent addition to gardens designed to attract birds. See the sidebar on page 51 for information on harvesting and using the grains.



## GROWING AMARANTHS

WITH A PREDISPOSITION toward weediness, it's hardly surprising that amaranths are fairly undemanding plants. Since most have their origins in warm climates, however, they are sensitive to cold weather and should not be planted too early in spring. Once cool-weather greens such as spinach have bolted, it's time to plant amaranths. In warm soil, the seeds will sprout in only three or four days!

*Amaranthus hypochondriacus*, grown primarily for grain, can reach over six feet tall.





**Bold-textured, red-topped *A. tricolor* 'Early Splendor' provides a stunning contrast to the dainty carpet of *Sanvitalia procumbens* 'Yellow Sprite' in this ornamental garden.**

I use three different planting methods, depending on variety and use. Plantings for grain are made in shallow furrows about two feet apart and the seeds lightly covered. If I use these tall varieties to add grandeur to the flower garden, I scatter seeds in place in small patches or rows. Once seedlings are a few inches tall, I thin them with scissors or pruning shears so they are eight to 10 inches apart.

Seeds planted solely for cutting greens are scattered thinly across the surface of prepared beds two or three feet wide and lightly covered with soil. Harvest begins as soon as plants are large enough to cut and continues until the leaves get too tough.

For amaranths in the flower garden, I sow seeds in cell-packs in a cold frame, thinning the seedlings to one per cell when their first true leaves emerge. Transplant them into the garden once the seedlings reach four or five inches tall, being careful to keep the root ball intact because ama-

ranths strongly resent root disturbance.

In general, amaranths are very trouble-free, but in moist climates damping off—a fungal disease—can damage seedlings. Early thinning of seedlings and good weed control will improve airflow around the seedlings and reduce incidence of this problem. Flea beetles, tarnished plant bugs, grasshoppers, and amaranth weevils can also be problems in some regions. These pests can usually be controlled with applications of insecticidal soap as needed.

Whether you grow flowers, vegetables, or an edible landscape of both, amaranths are an easy, versatile, and highly decorative addition to the garden.

*A regular contributor to The American Gardener, David Cavagnaro is a free-lance photographer and writer who lives in Decorah, Iowa. His most recent book was Heirloom Flowers, a collaboration with author Tovah Martin, published in 1999 by Fireside.*

## USING AMARANTH GRAIN

It's surprisingly easy to thresh amaranth grains by hand. Hand threshing is best done when the tassels are freshly picked, since they become extremely prickly when dried. Fill a wheelbarrow with the cut seed plumes and pile them on a clean old bed sheet. I like to sit on the sheet on an old stump of wood so that as I rub the plumes vigorously between my palms, I can also bang them against the stump to dislodge the maximum amount of seed.

Hand rubbing the tassels is fairly time-consuming, but in less than a day's work I can thresh a two-year supply of grain for my family's needs. If you try this with varieties such as 'Hopi Red Dye', your hands will be stained deep purple from rubbing those heads that are red or purple in color, but the stain washes off easily.

When you're finished threshing, remove the larger pieces of debris and spread the seeds and chaff over the sheet to dry. After two or three days of drying, rub the mix through window screen mesh into a wheelbarrow or other container to remove the chaff from the seeds and floral caps. The papery caps can be winnowed in a light breeze or blown with a fan. Store the cleaned grain in containers that have tight-fitting lids.

Ground amaranth grain makes excellent flour with a rich, nutty flavor. Since amaranth has no gluten—a protein compound that helps bind dough—and the flavor is strong when used alone, I find that a mixture of one quarter amaranth flour, one quarter whole wheat flour, and one half white flour is a good blend for bread. Whole amaranth grains can also be boiled alone or with other grains to make hot cereal; sprouted like bean sprouts; or popped in the same manner as popcorn in a hot, ungreased skillet. —D.C.



# Book Reviews

## The Landscaping Revolution.

Andy Wasowski with Sally Wasowski. Contemporary Books, Lincolnwood, Illinois, 2000. 176 pages. 8" x 10 1/2". Publisher's price, softcover: \$27.95. AHS price: \$21.

"REVOLUTION" MIGHT SEEM rather a strong term for landscaping practices that place wildlife benefits and resource conservation on at least equal footing with aesthetics and tradition. And yet the revolution is afoot. It is native plants and biodiversity versus the tyranny of turf. Vive la Revolution!

Most Americans believe that the lawn has always been the central element in the landscape. In fact, the lawn has only been a fixture for commoners since the 1930s, albeit a well-entrenched fixture worth \$27 billion annually in products and services.

For many eager horticultural revolutionaries, 1994 was a turning point in the intellectual battle for the American landscape, with naturalists, water conservation planners, and others cheering the arrival of Virginia Scott Jenkins' *The Lawn: A History of an American Obsession* (Smithsonian Institution Press), which provided a scholarly and compelling critique and history of landscaping myopia and environmental abuse. Now, Andy and Sally Wasowski have produced a conversational—and sometimes comic—study on the forces of change in American landscaping. From the author of *Requiem for a Lawnmower*, we have a delightful and light-hearted romp beyond the sea of grass and into the heart of the native plant and xeriscaping movements.

Is it any wonder? With dwindling groundwater reserves in the American heartland, cyclical droughts, and mandatory watering restrictions on the one hand, and Code Red Smog Alerts restricting the



The stereotypical American home landscape, above, is critiqued in *The Landscaping Revolution*. Photo from the book by Andy Wasowski.



use of lawnmowers and backpack leafblowers on the other, our revered lawns are falling somewhat out of favor. In addition, we find the biodiversity of spaceship Earth shrinking with each day as habitat is cleared, developed, and paved over.

Part of the solution rests in America's yards and gardens through the use of a full range of natural landscaping practices. The authors tackle issues such as exotic invasive plants, homogenized landscapes, and peer pressure in a tone both jaunty and familiar. They recognize that even important changes in behavior take time, and that most people have inherited a bulldozed landscape that cannot be undone overnight.

*The Landscaping Revolution* provides graduated steps, or "scenarios," that guide and inspire remedial efforts to restore natural vitality and balance to the most white-bread of landscapes. Moreover, the book is filled with case studies

of revolution: truly heartening sidebar profiles of adventurous gardeners who have successfully lobbied and fought against the turf-only paradigm in numerous North American municipalities.

Like most true revolutions, the conflict for proper land use and self-determination is political as well as philosophical. Decades-old ordinances and weed laws, right-of-way maintenance policies, and strict community covenants are just a sample of the social and political challenges the revolution must overcome. Happily, the Wasowskis' wry approach is empowering and entertaining and the tales of successful "landscape revolutionaries" interwoven throughout the book offer many choices for very personal landscaping revolutions that can and must be undertaken by all gardeners of conscience.

—Joseph M. Keyser

*Joseph M. Keyser is the education specialist for the Montgomery County Department of Environmental Protection in Maryland; he also writes the "Green Man" garden column for the county's Gazette newspapers.*



## Hot Plants for Cool Climates: Gardening with Tropical Plants in Temperate Zones.

Susan A. Roth and Dennis Schrader.  
Houghton Mifflin Co., Boston, Massachusetts,  
2000. 228 pages. 8" x 10". Publisher's price,  
hardcover: \$35. AHS price: \$30.

THIS BOOK MIGHT also be aptly subtitled: "The Bold and The Beautiful." As American gardeners have grown more confident, experienced, and freed from the shackles of formal English borders, they've discovered a world of big leaves and bright colors that stand up to the heat, humidity, and searing sun of a North American summer. This book is an excellent introduction, with equal amounts inspiration and detailed how-to advice.

Even gardeners who espouse a more "natural" look but who remember the unrelenting heat of the summer of 1999 might search profitably here for plants that thrive in high temperatures instead of turning to mush.

Whether you're ready to jump in with both feet or merely dip a toe, *Hot Plants* tells you how to bring a touch of the tropics to temperate climates. The authors visited and photographed gardens as far north as Vermont, south to South Carolina, and west to Washington. Some of the gardeners have clearly embraced the look, while others have used tropical notes to add vitality, especially in late summer and fall, when gardens dependent on hardy perennials often look worn out. Although they interviewed many gardeners, much of the experience related here is firsthand: Roth is an award-winning writer, photographer, and avid gardener; Schrader is a designer, nurseryman, and owner of a wholesale greenhouse.

The book is divided into two sections. The first provides the inspiration: gorgeous photographs of entire gardens and smaller vignettes, a bit of history, and plenty of design advice. A chapter on container planting provides perhaps the best entrée for gardeners who are not sure how or where to start. Another chapter looks at hardy plants that provide a tropi-

cal effect with their enormous leaves or exotic profiles.

The chapter on winter survival techniques is worth the price of the book. Tropicals by definition don't make it through the winter outdoors in much of North America, but it turns out that a greenhouse isn't necessary to get dormant plants through the winter. And you don't need a gardening staff to manage them—although a good sturdy hand truck is probably an excellent investment if you plan to move heavy containers into the basement in the fall and back outdoors in the spring. The advice is detailed, specific and do-able.

The second section is an encyclopedia of plants, with descriptions, advice on use, and cultural instructions for each entry. There's also a detailed list of sources for tropical plants and tropical-looking hardy plants. The authors freely admit they have not exhausted the possibilities, but concentrated on plants they know and have grown, plants that perform reliably even in less than tropical climates.

—Renée Beaulieu

*Renée Beaulieu is a horticulturist and editor at White Flower Farm in Litchfield, Connecticut. She invested in a hand truck to move containers to her basement years ago.*

## The Once & Future Gardener: Garden Writing from the Golden Age of Magazines.

Edited by Virginia Tuttle Clayton. David R. Godine, Boston, Massachusetts, 2000. 312 pages. 7 1/4" x 10 1/4". Publisher's price, hardcover: \$40. AHS price: \$30.

MY LOVE AFFAIR with old gardening magazines began when I ran across some very early issues of *Sunset* magazine at a garage sale. The pages were yellowed and smelled faintly of the cedar-lined closet where they'd been stored for years. The advertisements championed long-extinct seed catalogs. But the gardening articles were as fresh and interesting as anything I read today.

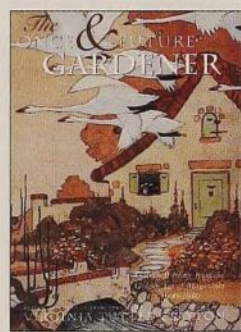
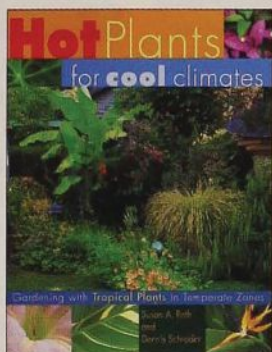
Virginia Tuttle Clayton unearthed a treasure trove of such magazines when she was doing research at the Library of Congress. As she paged through some of the most popular magazines from the first four decades of the 20th century, including *House Beautiful*, *Ladies' Home Journal*, and *Scribner's Magazine*, she realized that she'd found an uncommonly good collection of garden writing, one that was worth sharing.

The authors collected in this anthology—including such well-known names as Louise Beebe Wilder and Grace Tabor, as well as scores of unknown and anonymous contributors—quote poetry, debate fiercely over the geranium's status as a crashing bore or a mainstay of the garden, and insist that one's annual purchase from the rose catalog can be kept to a reasonable nine dollars and twenty-five cents. Some articles offer practical advice on the right kinds of plants for poolside or the virtues of a moonlight garden. Others muse about the proliferation of window gardens in New York (citing a florist who wished

New Yorkers would stay in town long enough to let nasturtiums grow in summer) or make an impassioned plea for more blue in the flower garden.

It is comforting and also bemusing to learn that gardeners' concerns have changed very little over the last 50 to 100 years. Garden writers then, as now, make the case for letting a little wilderness take over the garden; native plants were championed, as were wild meadows. A writer in 1921 reflected on her grandmother's hollyhock-festooned garden with as much nostalgia as we feel looking back on gardens of the 1920s. And any modern gardener will sympathize with Barbara Cheney, who wrote in 1936 that the visitors to her garden were more interested in bragging about their own horticultural triumphs than admiring hers.

*The Once & Future Gardener* is the very best kind of armchair garden reading: It is intimate, funny, informative,





and a fascinating historical read all at once. The book is divided into seven major sections, including "The Philosophical Gardener," "A Year in the Garden," and "Flower Garden Design." A series of color plates shows off some of the most beautifully illustrated magazine covers of the day, and black-and-white photographs accompany many of the articles, as they did when the articles were first published. Clayton provides brief introductions to each author at the beginning of the article, noting who worked as a lawyer and gardened on weekends, and who gained notoriety as the most widely-read garden writer of the day.

Louise Beebe Wilder wrote about old-fashioned gardens in 1921, and she could have been describing the old-fashioned garden articles collected in *The Once & Future Gardener* when she praised "the charm of their settled repose, their unaffected simplicity, and their inviting livableness." I highly recommend this delightful collection. —Amy Stewart

*Amy Stewart's garden book From the Ground Up will be published by Algonquin Books in January 2001.*

### Sunbelt Gardening: Success in Hot-Weather Climates.

Tom Peace. Fulcrum Publishing, Golden, Colorado, 2000. 288 pages. 8 1/2" x 10". Publisher's price, softcover: \$29.95. AHS price: \$27.

GARDENERS IN HOT CLIMATES may well gasp in relief after reading Tom Peace's *Sunbelt Gardening: Success in Hot-Weather Climates*. Most of us southern and southwestern gardeners should be familiar with Peace's central theme by now, but some of us need to be told again: When temperatures soar in the peak summer months, you should be sitting in the shade, enjoying the fruits of work performed in the cooler seasons—not planting, weeding, or fretting over the latest insect invasion.

Peace, a garden designer and nurseryman, understands that it takes more than a glance at the USDA Hardiness Zone map to garden successfully in the South and Southwest. A knowledgeable plantsman, he makes useful suggestions for

maintaining color, beauty and harmonious design in the garden all year long—something that is more problematic for our neighbors to the north. His concept of garden "time sharing"—designing and planting beds with plants that give way to others as the season progresses—is particularly useful to those with small spaces. He thoroughly explores the possibilities—beyond pansies and flowering kale—that southern and southwestern winters offer. He argues persuasively for making the most of the cooler months, despite the threat of the occasional freeze.

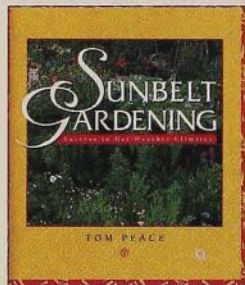
Peace presents the material in three main sections: cool season gardening throughout the southern latitudes; the hot, humid conditions of the Southeast; and the hot, arid and windy conditions of the Southwest. Along the way he discusses soil conditions, microclimates, and appropriate plant material—both exotic and native.

Peace writes in a rather relaxed, informal style that is nevertheless information packed. In fact, it might have been helpful to the busy gardener if the editors had cut a bit of the prose and provided some charts and sidebars for quicker retrieval of some of the information. Abundant photographs—most of them by Peace himself—supplement the narrative, and are both useful and inspiring.

This book is not for the lazy gardener. Gardening successfully in the Sunbelt requires taking the initiative to learn about one's climate and soils, as well as the limitations and opportunities presented by one's garden site. To garden year round, as Peace advocates, requires strong commitment. But the appeal will be there for those of us who prefer to spend torrid summers enjoying our gardens from a shady vantage point as we dream of the cool season and the possibilities ahead.

—Linda Thornton

*Freelance writer, editor, and avid gardener Linda Thornton lives in Tucumcari, New Mexico.*



## Gardeners' Books

The books listed here have not been critically evaluated; they have been chosen for description based on unusual subject matter or substantive content. Through a partnership with Amazon.com, AHS members can order books at a discount by linking to Amazon.com through the Society's Web site at [www.ahs.org](http://www.ahs.org).

### Roses

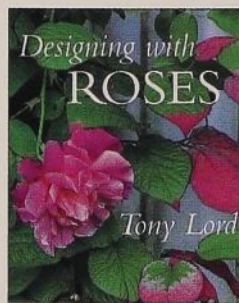
#### The Encyclopedia of Roses.

Robert Markley. Barron's Educational Series, Inc., Hauppauge, New York, 1999. 240 pages. Publisher's price, hardcover: \$35. AHS price: \$28.

THIS COMPREHENSIVE guide gives the reader in-depth information about the history of roses, botanical details, incorporating roses into the garden, and planting and nurturing roses. A detailed "Rose Atlas" covers 200 rose selections for any garden. Hundreds of color photographs depict roses in archways, in perennial gardens, in floral arrangements, and even in recipes.

#### Designing with Roses.

Tony Lord. Trafalgar Square Publishing, North Pomfret, Vermont, 1999. 192 pages. Publisher's price, hardcover: \$35. AHS price: \$28.



TONY LORD shows gardeners how to choose, use, and cultivate roses in *Designing with Roses*. More than 100 color photographs depict beautiful

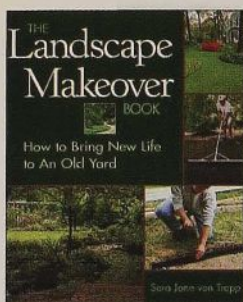
gardens, such as The Queen's garden at Sudeley Castle, the Peacock Garden at Warwick Castle, the Roseraie at L'Hajj-les-Roses, and the Bagatelle in Paris. The versatility of the rose and its use in various settings, from the urban terrace to the kitchen garden, is explored. A detailed directory of recommended rose varieties for each purpose and site is included.



## Landscaping

### The Landscaping Makeover Book: How to Bring New Life to an Old Yard.

Sara Jane von Trapp. Taunton Books, Newtown, Connecticut, 2000. 170 pages. Publisher's price, softcover: \$21.95. AHS price: \$18.50.



USING THIS book as a guide, homeowners can give their yards a facelift. Step-by-step instructions show how to clean up wooded areas, plant trees and

shrubs, reshape planting beds, fix or construct walkways, rejuvenate decks, and add outdoor lighting. Over 200 color photographs and illustrations show "before" and "after" pictures of yards that have been made over.

### Pocket Gardens: Big Ideas for Small Spaces.

James Grayson Trulove. William Morrow, New York, New York, 2000. 208 pages. Publisher's price, hardcover: \$30. AHS price: \$24.

THE FOCUS of this book is on small garden spaces and providing design solutions for modest outdoor plots. Color photographs and illustrations depict 30 gardens designed by 20 noted landscape architects. These gardens from all over the country demonstrate how small garden spaces can be made to appear larger through the use of such devices as screens and terraces. This guide offers a multitude of ideas to gardeners working in confined spaces.

## Travel

### West Coast Garden Walks.

Alice Joyce. Michael Kesend Publishing, Ltd., New York, New York, 2000. 242 pages. Publisher's price, softcover: \$18.95. AHS price: \$18.95.

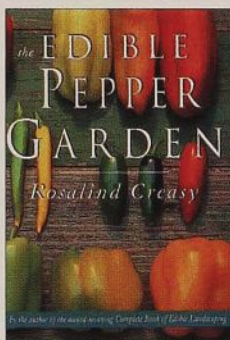
THIS GUIDEBOOK to West Coast gardens includes gardens from San Diego to Vancouver. Each garden is described in detail

with a section for directions and visiting information. Included are winery gardens in California's Napa, Sonoma, and Mendocino counties, plus a host of nurseries with beautiful display gardens. *West Coast Garden Walks* is a great resource of travelers throughout California and the northern Pacific States.

## Edible Gardening

### Edible Asian Garden. Edible Mexican Garden. Edible Pepper Garden.

Rosalind Creasy. Periplus Editions (HK) Ltd., Boston, Massachusetts, 2000. 106 pages (each). Publisher's price, softcover: \$14.95 (each). AHS price: \$13.



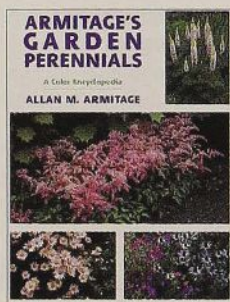
THE EDIBLE Garden Series demonstrates how a large variety of delicious vegetables can be grown in even modest gardens. In addition to detailed growing information,

these new books are filled with color photographs and culinary tips. A large recipe section offers instructions for making a variety of appetizers, soups, salsas, salads, side dishes, and main dishes.

## Perennials

### Armitage's Garden Perennials: A Color Encyclopedia.

Allan M. Armitage. Timber Press, Portland, Oregon, 2000. 344 pages. Publisher's price, hardcover: \$49.95. AHS price: \$38.



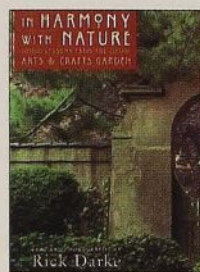
THIS comprehensive encyclopedia describes and illustrates 136 genera of herbaceous perennials. Each listing includes several species and many cultivars along with excellent color photographs. The author's extensive

experience is evident in his commentary and observation. A section on "Selected Plants for Specific Characteristics or Purposes" lists the best choices for cut flowers, drought tolerance, flower color, fragrance, ground covers, foliage, or fruits.

## Summer Reading

### In Harmony with Nature: Lessons from the Arts and Crafts Garden.

Rick Darke. Friedman/Fairfax Publishers, New York, New York, 2000. 160 pages. Publisher's price, hardcover: \$35. AHS price: \$25.



THE ORIGINS AND concepts of the Arts and Crafts movement, which began in the mid-18th century, are examined in this thought-provoking book, which in-

cludes outstanding photographs by the author. Darke explains that while no particular style defines an Arts and Crafts garden, a reverence for natural patterns and processes, concern for quality craftsmanship, and respect for traditions and place were concepts integrated into each design. Gardens in both England and the United States are featured. Includes an appendix listing product suppliers, books for further reading, and places to visit.

### In a Green Shade.

Allen Lacy. Houghton Mifflin, Boston, Massachusetts, 2000. 281 pages. Publisher's price, hardcover: \$25. AHS price: \$21.

OVER 100 selections from Lacy's eight-year-old newsletter, "Homeground," are presented in this new book. The collection of writings springs from the author's 30 years of gardening experience at his home in New Jersey, which he has transformed from a small suburban lot into a landscape that includes woodland, cottage, container, and deck gardens. In addition to his lively reflections about individual plants, the author discusses the seasons, botanical history, Latin pronunciations, and weather predicting. Black-and-white line drawings are interspersed throughout.



# Regional Happenings

## NORTHEAST

JULY 6–16. **Massachusetts Gardens on Tour.** A series of self-guided tours of more than 70 gardens statewide. Sponsored by the Garden Club Federation of Massachusetts. Tewksbury, Massachusetts. (877) 436-8688.

JULY 8 & 9. **Newport Flower Show.** Presented by the Preservation Society of Newport County. Rosecliff, Newport, Rhode Island. (401) 847-1000.

JULY 15. **Vermont Children's Trust Foundation Garden Tour and Tea.** Trapp Family Lodge Gardens, South Burlington, Vermont. (802) 860-7292.

JULY 20. **House & Garden Tour.** Hosted by Camden Garden Club. Rockport, Maine. (207) 236-9797.

AUG. 2. **Plant Science Day.** Connecticut Agricultural Experiment Station open house. Lockwood Farm, Hamden, Connecticut. (203) 974-8500.

AUG. 5. **Summer Garden Day.** Old Sturbridge Village, Sturbridge, Massachusetts. (508) 247-3362.

AUG. 5 & 6. **Berkshire Botanical Garden Flower Show.** Stockbridge, Massachusetts. (413) 298-3926.

AUG. 9. **House & Garden Tour.** Hosted by the Nantucket Garden Club. Nantucket, Massachusetts. (713) 963-0533.

AUG. 11–13. **26th Annual Summer Conference and Celebration of Rural Life.** The Northeast Organic Farming Association. Hampshire College, Amherst, Massachusetts. (978) 355-2853.

AUG. 18 & 19. **Private Garden Tour.** Hosted by Blithewood Mansion, Gardens & Arboretum. Westport, Massachusetts. (401) 253-2707.

AUG. 19. **9th Annual Plant Sale.** The Fells, John Hay National Wildlife Refuge, Newbury, New Hampshire. (603) 763-4789.

## MID-ATLANTIC

**AHS** JULY 8. **Summer Youth Workshops: Scarecrow Creations.** Sponsored by Friends of River Farm. George Washington's River Farm, Alexandria, Virginia. (703) 768-5700.

## AHS Events

Events sponsored or co-sponsored by AHS are indicated by an **AHS** symbol. Expanded and updated Regional Happenings listings can be viewed on the Society's Web site at [www.ahs.org](http://www.ahs.org).

JULY 22. **Waterlily Festival.** Kenilworth Aquatic Gardens, Washington, D.C. (202) 426-6905.

JULY 25–27. **Native Plants in the Garden.** Short course. Co-sponsored by Penn State Cooperative Extension. Pittsburgh Garden Place, Pittsburgh, Pennsylvania. (412) 441-4442.

JULY 28. **The Future of Garden History.** Seminar. Gunston Hall Plantation, Mason Neck, Virginia. (800) 811-6966.

JULY 28. **Conference on Woody Plants.** Swarthmore College, Swarthmore, Pennsylvania. (610) 388-1000.

AUG. 10–12. **North American Fruit Explorers Annual Meeting.** Lectures, workshops, tours of orchards and fruit operations. Monticello, Charlottesville, Virginia. (804) 984-9822.

**AHS** AUG. 12. **Summer Youth Workshops: Dried, Pressed Flower Masterpieces.** Sponsored by Friends of River Farm. George Washington's River Farm, Alexandria, Virginia. (703) 768-5700.

AUG. 20. **The Great Salsa Festival.** Phipps Conservatory and Botanical Gardens, Pittsburgh, Pennsylvania. (412) 622-6914.

AUG. 25 & 26. **Historic Plant Hunting: Process and Discovery.** Symposium hosted by the Center for Historic Plants. Monticello, Charlottesville, Virginia. (804) 984-9822.

## SOUTHEAST

JULY 7–9. **25th Anniversary Celebration.** Marie Selby Botanical Gardens, Sarasota, Florida. (941) 366-5731.

JULY 19–22. **2000 Cullowhee Conference: Native Plants in the Landscape.** Western Carolina University, Cullowhee, North Carolina. (828) 227-7397.

## Plant Seminar and Sale in Maryland

NOW IN ITS ninth year, the Annual Native Plant Seminar and Sale at Irvine Nature Center in Stevenson, Maryland, will take place on August 26. Despite its relatively modest size, over the years the Center has consistently enlisted an impressive lineup of speakers for its largest summertime event, which regularly attracts more than 200 professional and home gardeners eager to learn more about planting natives from the experts.

This year's roster features Martha Simon Pindale, president of Bluemount Nurseries in Monkton, Maryland, who will address the topic, "Right Plant, Right Place"; Peggy Ollwell, senior endangered species biologist for the Bureau of Land Management and co-chair of the Federal Native Plant Conservation Committee, who will lecture on plant conservation efforts in her talk titled "Plants: The Invisible Kingdom?"; and Neil Diboll, co-founder of Prairie Nursery, a Westfield, Wisconsin, native plant nursery, who will both lecture and lead a workshop on developing wildlife meadow habitat. If you can't make the seminar, try to at least stop by the plant sale, which is one of the largest exclusively native plant sales in the region.

Located just north of Baltimore on the campus of St. Timothy's School, Irvine Nature Center is at 8400 Greenspring Avenue in Stevenson, Maryland. Seminar registration is \$50; admission to the Center is free. For more information or to register, call (410) 484-2413 or visit the Center's Web site at [www.explorenature.org](http://www.explorenature.org).

—Margaret T. Baird  
Communications Assistant



JULY 23–26. **American Society for Horticultural Science 97th International Conference.** Disney Coronado Springs Resort, Orlando, Florida. (703) 836-4606.

AUG. 11–13. **Hummingbird Happenings.** Daniel Stowe Botanical Garden, Belmont, North Carolina. (704) 825-4490.

## NORTH CENTRAL

JULY 1 THROUGH FIRST FROST. **Tobias Rehberger: Landscape Garden Sculpture.** Museum of Contemporary Art, Chicago, Illinois. (312) 280-2660.

JULY 11 & 12. **Summer Garden Tour.** Sponsored by the Minnesota Landscape Arboretum's Auxiliary. Chanhassen, Minnesota. (612) 443-2460.

JULY 12–AUG. 20. **Butterfly Bonanza.** Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4724.

JULY 15 & 16. **Midwest Pond & Koi Society Pond Tour 2000.** Chicago, Illinois. (312) 409-2081.

JULY 19. **Twilight Garden Walk.** Purdue Cooperative Extension Service Display Gardens. Fort Wayne, Indiana. (219) 481-6826.

AUG. 4. **Garden Day at MSU.** Workshops and lectures. Michigan State University, East Lansing, Michigan. (517) 355-8362.

AUG. 5. **Backyard Composting.** Workshop with the Chicago Recycling Coalition. Garfield Park Conservatory, Chicago, Illinois. (773) 638-1766.

AUG. 9–13. **Carnation City Festival.** Alliance, Ohio. (330) 823-6260.

AUG. 18–20. **Midwest Bonsai Society Show and Sale.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

AUG. 19. **The Nose Knows.** Lecture on the the aromatic potential of gardens by Chad Franer. Indianapolis Museum of Art, Indianapolis, Indiana. (317) 920-2660.

AUG. 24–SEPT. 4. **Minnesota State Fair Flower Shows.** State Fair Grounds, St. Paul, Minnesota. (800) 676-6747.

AUG. 26 & 27. **Victorian Garden Walk.** Tour of historic gardens. General Crook House Museum and Fort Omaha, Omaha, Nebraska. (402) 455-9990.

## SOUTH CENTRAL

JULY 15. **Tour of Ponds 2000.** Hosted by the North Texas Water Garden Association. Dallas, Texas. (972) 994-1140.

## Butterfly Festival at Powell Gardens

VISITORS TO POWELL GARDENS in Kingsville, Missouri, from August 18 through 21 will be treated to a winged spectacle during Festival of Butterflies 2000,



Powell's Alan Branham leads a tour of a butterfly garden during the festival.

a salute to this most beautiful and beneficial of insects. Powell's glass-domed Starr Butterfly Conservatory will be aflutter with hundreds of butterflies representing some two dozen species, and Gary Noel Ross, a world-renowned lepidopterist and director of the North American Butterfly Association, will be on hand to lead educational multimedia presentations appropriate for all ages. This popular event promises to be even bigger and better this year—the staff have stepped up both the number of butterfly viewing areas around the gardens as well as the activities for families and seniors. Along with interpretive exhibits, giant topiaries, and up-close butterfly encounters in the free-flight areas, you can tag along on a wild butterfly expedition, participate in butterfly catching and releasing in the outdoor gardens, and learn how to develop your own butterfly garden with Powell's horticulture manager and resident butterfly expert, Alan Branham. Hands-on activities for children abound.

August 21 has been designated Seniors Day, featuring special programs for senior citizens. Although the festival runs just through the 21st, the Butterfly Conservatory will remain open to the public through the 25th. Powell Gardens is located 30 miles east of Kansas City, Missouri, at 1609 NW U.S. Highway 50. Festival admission is \$6.50 for adults, \$5.50 for seniors, and \$2.50 for children. For more information, call (816) 697-2600 or visit the Web site at [www.powellgardens.org](http://www.powellgardens.org).

—M.T.B.

JULY 16–19. **The Gardeners of America/Men's GCA Convention.** Overland Park Marriott, Overland Park, Kansas. (816) 761-9381.

JULY 17–21. **Family Herbal Odyssey.** Ozark Folk Center & State Park, Mountain View, Arkansas. (870) 269-3851.

JULY 28. **Organic Gardening Workshop.** Ozark Folk Center & State Park, Mountain View, Arkansas. (870) 269-3851.

AUG. 25–27. **Houston House Beautiful Show.** George R. Brown Convention Center, Houston, Texas. (800) 527-7469.

AUG. 26. **Bamboo Festival.** Zilker Botanical Gardens, Austin, Texas. (512) 477-8672.

SEPT. 2–4. **24th Annual Japanese Festival.** Missouri Botanical Garden, St. Louis, Missouri. (314) 577-9400.

## NORTHWEST

JULY 8 & 9. **Herb Fest Northwest & Unusual Plant Sale.** Washington County Fairplex, Hillsboro, Oregon. (503) 359-1705.

JULY 14. **5th Annual Benefit Garden Tour.** Hosted by Sawtooth Community Gardens. Sun Valley, Idaho. (208) 726-9358.

JULY 15 & 16. **Pond Tour 2000.** Hosted by Pond Supplies of America. Portland, Oregon. (503) 624-1652.

JULY 22. **Whidbey Island Garden Tour.** Freeland, Washington. (360) 678-6105.

JULY 29 & 30. **Pruning Ornamental Shrubs, Trees & Fruiting Plants.** Lakewold Gardens, Lakewood, Washington. (253) 584-4106.

AUG. 5 & 6. **Anchorage Garden Club's 57th Annual Flower Show.** Alaska Botanical Herb Garden, Anchorage, Alaska. (907) 770-3692.

AUG. 12. **Missoula's Native Plant Gardens.** Tour. Missoula, Montana. (406) 258-5439.

AUG. 24. **Missoula's Created Grasslands and Lawn Alternatives.** Tour. Missoula, Montana. (406) 721-4095.



## SOUTHWEST

JULY 18 & 25 AND AUG. 1 & 8. **Behind Adobe Walls Garden Tours.** Hosted by Recursos de Santa Fe. Santa Fe, New Mexico. (800) 732-6881.

AUG. 12. **4th Annual Hummingbird and Butterfly Day.** Tours, lectures, sales. Santa Fe Greenhouses, Santa Fe, New Mexico. (505) 473-2700.

AUG. 12. **Fort Collins Gardenfest.** Garden tour. Fort Collins, Colorado. (970) 498-4074.

## WEST

FIRST SUNDAY OF THE MONTH, THROUGH OCTOBER. **Guided garden tours** at 2 pm. Rancho Los Cerritos, Long Beach, California. (310) 570-1755.

JULY 13. **Garden Talk & Plant Sale: Propagating Cacti and Succulents.** Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

JULY 15. **Bulletproof Plants Plus a Lesson in Composting.** Seminar. Descanso Gardens, La Canada, California. (818) 952-4400.

AUG. 10. **Gardening in a Mediterranean Climate.** Garden talk and plant sale. Huntington Botanical Gardens, San Marino, California. (626) 405-2141.

AUG. 12. **Art in the Gardens.** Art, music, food, and local wines. Mendocino Coast Botanical Gardens, Fort Bragg, California. (707) 965-4352.

AUG. 18-20. **Heather Garden Tour.** Hosted by the National Heather Society. Fort Bragg, California. (707) 961-1881.

AUG. 19-27. **Southern California Home & Garden Show.** Anaheim Convention Center, Anaheim, California. (800) 442-7469.

## CANADA

JULY 15. **2000 Garden Walk.** Tour hosted by the Niagara Falls Horticultural Society. Niagara Falls, Ontario. (905) 357-3325.

JULY 18-21. **Herbs 2000.** 15th conference of the International Herb Association. Saskatoon, Saskatchewan. (540) 368-0590.

JULY 30-AUG. 5. **18th Annual Perennial Plant Symposium.** Toronto, Ontario. (614) 771-8431.

AUG. 8-12. **Designing for the Senses, Mind and Spirit.** Association of Professional Landscape Designers 11th Summer Conference. Courtyard by Marriott, Toronto, Ontario. (630) 579-3268.

## Evanston's Earthen Art

YOU WON'T FIND the newest art installation at Illinois' Evanston Art Center tucked away in a cozy indoor gallery. Not that you'll have any trouble locating it: Exhibited squarely on the Center's front lawn, you'll be hard-pressed to overlook Herb Parker's towering sculpture—despite the camouflage. Not only is *Grosse Pointe Passage* located right on the grounds, it's made of the stuff as well.

Titled in deference to the Center's famous neighbor along the Lake Michigan shoreline, the Grosse Pointe Lighthouse, Parker's massive work is composed entirely of sod and rammed earth—a spiraling, colonnaded, 65-foot-long walkway attached to an 18-foot-tall earthen tower. The South Carolina artist's sculpture was painstakingly constructed over a three-week period in May, with the help of two assistants and a team of local volunteers. "As the seasons change, the sculpture will also change, reflecting nature's cycles of birth, growth, and decay," says Patricia Battaglia, public relations coordinator for the Center. Parker counts transcendentalists such as Emerson and Thoreau among his influences in his approach to landscape and art, particularly in the sense of "becoming one with nature, creating an environment that has a feeling of completeness, self-sufficiency, and the passage of time," he says. *Grosse Pointe Passage* will remain on exhibit through March 2001.

The latest addition to the Center's innovative "Sculpture on the Grounds" program, the sculpture is one of 12 artworks the Center has featured on its front lawn since 1994, including several nature-themed installations. Evanston Art Center is located just north of Chicago at 2603 Sheridan Road in Evanston, Illinois. For more information, call (847) 475-5300 or visit its Web site at [www.evanstonartcenter.org](http://www.evanstonartcenter.org).

## Mango Madness in Miami

IF IT'S JULY, then that must be the sweet smell of mangos wafting above the heat in South Florida, where the International Mango Festival takes place on July 8 and 9 at Miami's Fairchild Tropical Garden. The annual celebration of the king of fruits begins with Saturday's Mango Morning, featuring mango tastings and displays of

more than 150 cultivars grown locally, but with origins around the world. Local tropical fruit experts will be on hand to answer questions, and guests are encouraged to bring in cuttings or fruit from their own trees for a diagnosis of mango problems. The day continues with afternoon workshops and demonstrations on mango tree management, along with an eye-popping variety of mango trees, fruit, baked

goods, and art for sale. Sunday's Mango Brunch will feature an array of gourmet mango dishes created by area chefs, and mango madness reaches a fever pitch with the auction that evening, where hard-to-find varieties will be up for grabs.

Now in its seventh year, the festival has become one of the city's most popular summer events. A word to the wise: If you're planning to buy trees, arrive early. Last year, more than 1,000 mango trees were purchased in the festival's first 90 minutes. Fairchild Tropical Garden is located at 10901 Old Cutler Road in Coral Gables, just south of Miami. For more information, call (305) 667-1651 or check the garden's Web site at [www.ftg.org](http://www.ftg.org).

—M.T.B.



Mango fans young and old enjoy this display of fruit.



# New Products

## TetraPond Liners

Pond enthusiasts can enjoy beautiful, lower-maintenance water gardens with these new pond liners from Tetra, a company that specializes in ornamental fish keeping and supplies. Made from Xavan, a super-strong synthetic rubber material that's only one third of the weight of comparable pond lining materials, these liners mold like a second skin to ground contours and maintain their flexibility in temperatures as low as 70 degrees below zero Fahrenheit. Available in six pre-cut sizes with a retail price range of \$115 to \$600, or purchase in bulk at about \$1 per square foot. Tetra offers a 25-year warranty on this product.



**Tetra**, 3001 Commerce Street, Blacksburg, VA 24060.  
(540) 951-5400. [www.tetra-fish.com](http://www.tetra-fish.com).

## rapitest® Electronic Soil Tester

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anywhere you grow plants, it determines both the soil's pH and fertility levels in about a minute. Includes complete instructions for pH adjustment and fertilization, as well as listings of the pH preferences of more than 350 plants. Requires one AA battery. Retail price is \$29.

**Luster Leaf Products, Inc.**, 2220 Tech Court, Woodstock, IL 60098. (815) 337-5560. E-mail: [lusterleaf@stans.com](mailto:lusterleaf@stans.com).

## Spruce Creek Rainsaver

Be prepared for summer drought with this 54-gallon capacity rain barrel from Spruce Creek. Chestnut-green in color with a solid brass spigot, the Rainsaver is attractive enough that you won't feel the urge to hide it behind foliage. The one-piece polyethylene construction prevents potential accidents with children, pets, and wildlife, and the fully-screened intake keeps insects out of the water as well. Retail price is \$129.99 plus \$16 shipping.



**The Spruce Creek Company**, P.O. Box 106, Warriors Mark, PA 16877. (800) 940-0187.  
[www.sprucecreekrainsaver.com](http://www.sprucecreekrainsaver.com).

## AdzsumPlus™

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**Earth Plus Products**, P.O. Box 128, 17645 Nessen City Road, Copemish, MI 49625. (231) 378-4726.  
[www.earthplusproducts.com](http://www.earthplusproducts.com).



# Classifieds

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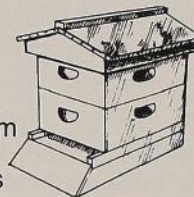
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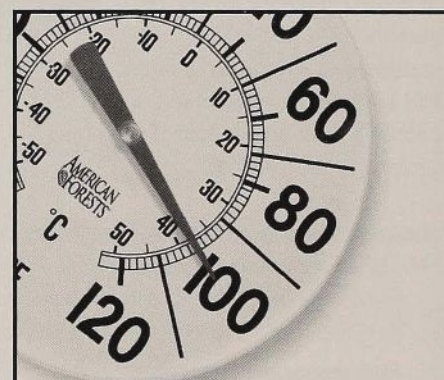
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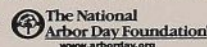
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# Pronunciations and Planting Zones

Most of the cultivated plants in this issue are listed here with their pronunciations and USDA Plant Hardiness and AHS Plant Heat Zones. If 0 is listed in place of USDA hardiness zones, it means that plant is a true annual—it completes its life cycle and dies in a year or less. Tropical plants that are hardy only in USDA Zone 11 are listed by minimum average temperature. To purchase an AHS Plant Heat Zone Map, call (800) 777-7931 ext. 0.

## A-C

**Agastache foeniculum** ah-guh-STAH-she fee-NICK-yoo-lum (USDA 4-11, AHS 12-5)  
**Allium sativum** AL-ee-um sah-TY-vum (2-9, 12-1)  
**A. schoenoprasum** A. show-no-PRAY-sum (5-11, 12-1)  
**A. tuberosum** A. too-bur-O-sum (4-8, 8-1)  
**Amaranthus caudatus** am-uh-RAN-thus kaw-DAY-tuss (0, 12-1)  
**A. hypochondriacus** A. hy-po-kon-dree-AY-kuss (0, 12-1)  
**A. tricolor** A. TRY-kul-ur (0, 12-5)  
**Amelanchier alnifolia** am-eh-LANG-kee-er al-nih-FO-lee-uh (4-9, 8-3)  
**A. arborea** A. ar-BOR-ee-uh (4-9, 9-4)  
**A. laevis** A. LEE-vis (5-9, 9-3)  
**A. stolonifera** A. sto-lon-IF-ur-uh (4-8, 8-1)  
**Anethum graveolens** uh-NEE-thum gruh-VEE-o-lenz (0, 12-1)  
**Armoracia rusticana 'Variegata'** ar-muh-RAY-see-uh rus-tih-KAN-uh (3-10, 12-1)  
**Aronia melanocarpa** uh-RO-nee-uh mel-an-o-KAR-puh (5-9, 9-4)  
**Asimina triloba** uh-SIH-mih-nuh try-LO-buh (4-8, 9-5)  
**Basella alba** buh-SEL-uh AL-buh (11, 12-5)  
**Beta vulgaris** BEH-tuh vul-GAIR-iss (0, 12-1)  
**Brassica juncea** BRASS-ih-kuh JOON-see-uh (0, 12-1)  
**B. napus** B. NAP-us (0, 12-1)  
**B. oleracea** B. o-luh-RAY-see-uh (11-12, 8-1)  
**B. rapa** B. RAP-uh (8-11, 12-1)  
**Capsicum annuum** KAP-sih-kum AN-yew-um (0, 12-3)  
**C. frutescens** C. froo-TES-enz (0, 12-1)  
**Cardiocrinum giganteum** kar-dee-o-KRY-num jy-GAN-tee-um (7-9, 9-7)

**Celtis occidentalis** SEL-tiss ahk-sih-den-TAL-iss (2-9, 9-1)  
**Corylus cornuta** KOR-ih-lus kol-UR-nuh (5-7, 8-3)  
**Crinum americanum** KRY-num uh-mair-ih-KAN-um (8-11, 12-8)  
**C. 'Ellen Bosanquet'** (7-11, 12-8)  
**C. moorei** C. MOOR-ee-eye (7-11, 12-7)  
**C. x powellii** C. x pow-WEL-ee-eye (7-11, 12-8)

## D-N

**Dierama pendulum** die-uh-RAH-muh pen-DYEW-lum (8-11, 12-1)  
**D. pulcherrimum** D. pul-KER-rih-mum (7-10, 10-8)  
**Diospyros virginiana** dy-OS-pih-ros vir-jin-ee-AN-uh (4-9, 9-1)  
**Eucommia ulmoides** yoo-KOM-ee-uh ul-MOY-deez (4-7, 7-1)  
**Foeniculum vulgare var. dulce** fee-NICK-yoo-lum vul-GAY-ree var. DUL-see (0, 12-1)  
**Galtonia candicans** gal-TOH-nee-uh KAN-dih-kanz (7-10, 10-7)  
**Gaultheria shallon** gawl-THEER-ee-uh SHAL-lon (6-8, 8-3)  
**Gloriosa superba** glor-ee-O-suh soo-PUR-buh (10-11, 12-7)  
**Helianthus annuus** hee-lee-AN-thus AN-yoo-us (0, 12-1)  
**H. tuberosus** H. too-bur-O-sus (4-9, 9-1)  
**Ixia viridiflora** IK-see-uh vir-ih-dih-FLOR-uh (10-11, 12-7)

**Lablab purpureus** LAB-lab per-PER-ee-us (10-11, 12-1)  
**Lactuca sativa** lak-TOO-kuh sah-TEE-vuh (0, 12-1)  
**Lycopersicon esculentum var. cerasiforme** ly-ko-PER-sih-kon es-kyew-LEN-tum var. seh-ras-sih-FOR-mee (0, 12-3)  
**L. pimpinellifolium** L. pim-pih-nel-lih-FO-lee-um (0, 12-3)  
**Nicotiana glauca 'White Perfume'** nih-ko-shee-AN-uh ah-LAY-tuh (11, 12-1)

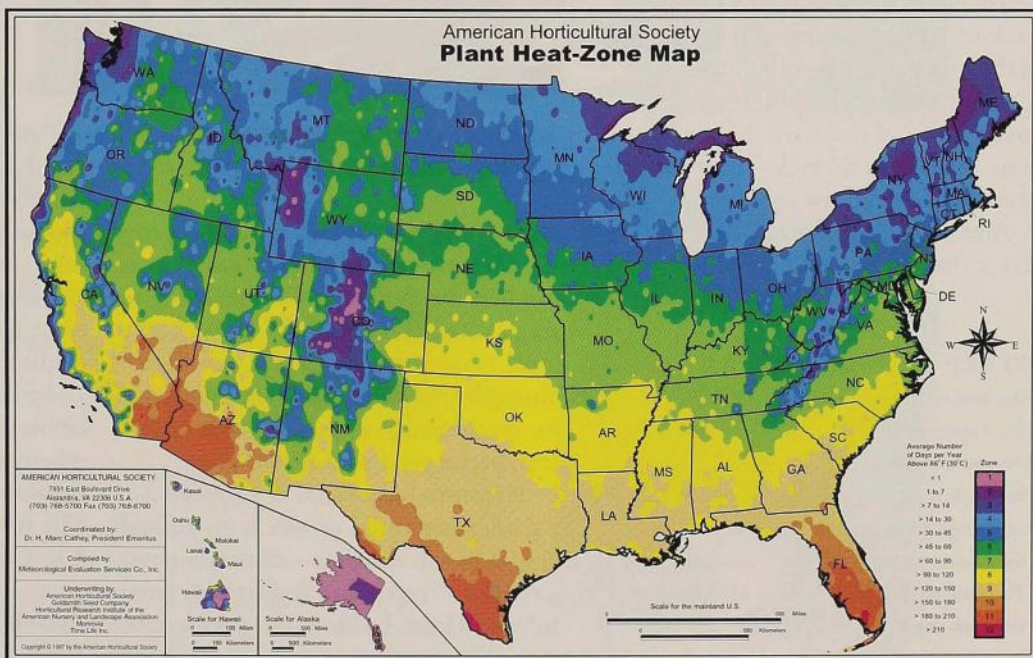
## O-S

**Ocimum basilicum** AH-sih-mum buh-SIL-ih-kum (0, 12-1)  
**Origanum laevigatum** o-RIG-uh-num lee-vih-GAY-tum (7-11, 12-7)  
**Ostrya virginiana** OSS-tree-uh vir-jin-ee-AN-uh (5-9, 9-1)  
**Passiflora incarnata** pass-ih-FLOR-uh in-kar-NAY-tuh (5-10, 12-1)  
**Petroselinum crispum** pet-ro-seh-LY-num KRIS-pum (5-9, 9-1)  
**Phaseolus vulgaris var. humilis** fas-see-O-luss vul-GAIR-iss var. HEW-mih-liss (0, 12-1)  
**Rheum x cultorum** REE-um x kul-TOR-um (3-9, 9-1)  
**Ribes odoratum** RYE-beez o-doh-RAY-tum (4-8, 8-5)  
**R. sanguineum** R. san-GWIN-ee-um (6-8, 8-6)  
**Sambucus caerulea** sam-BOO-kus see-ROO-lee-uh (4-9, 9-3)

**S. canadensis** S. kan-uh-DEN-siss (4-9, 9-3)  
**Sandersonia aurantiaca** san-dur-SO-nee-uh aw-ran-tee-AY-kuh (9-10, 10-7)  
**Scilla peruviana** SIL-luh pur-roo-vee-AN-uh (8-9, 10-8)  
**Shepherdia argentea** shep-HURD-ee-uh ar-JEN-tee-uh (3-7, 7-1)  
**Sparganium angustifolium** spah-RAK-siss TRY-kul-ur (9-11, 12-1)

## T-Z

**Tropaeolum majus** tro-PEE-o-lum MAY-juss (0, 12-1)  
**Tulbaghia simmleri** tull-BAY-gee-uh (9-10, 9-7)  
**T. violacea** T. vy-o-LAY-see-uh (9-11, 12-4)  
**Vaccinium angustifolium** vak-SIN-ee-um ang-gus-tih-FO-lee-um (2-8, 8-1)  
**V. ashei** V. ASH-ee-eye (7-10, 10-7)  
**V. corymbosum** V. kor-im-BO-sum (4-8, 8-1)  
**V. vitis-idaea var. minus** V. VY-tis-eye-DEE-uh var. MY-nus (2-6, 6-1)  
**Viburnum lentago** vy-BER-num len-TAY-go (2-8, 8-1)  
**V. prunifolium** V. proo-nih-FO-lee-um (3-9, 9-1)  
**V. trilobum** V. try-LO-bum (2-7, 7-1)  
**Vicia faba** VIK-ee-uh FAB-uh (0, 6-1)







# Notes from River Farm

## Tasteful Displays

by Janet Walker

HERE AT RIVER FARM, PART OF OUR JOB is to express the spirit of *you*, the membership, by having fun with plants. Our grounds can be a showcase for cultivars and combinations that the average gardener doesn't have room to accommodate. At the same time, we'll be creating a living encyclopedia of plants and hands-on experience that will help the staff of our Gardeners Information Service answer member questions. And this handy reference volume will provide more than just food for thought.

You undoubtedly have already noticed the "ornamental edibles" theme in this issue of the magazine. This summer, for your delectation and our own, we're bringing this idea to life at River Farm by featuring edible plants in a number of key and supporting roles in our various gardens.

Among the plants we are trying out is orach (*Atriplex hortensis*), a vigorous annual also known as mountain spinach. Growing to three feet tall, the glowing purple-red variety (*A. hortensis* var. *rubra*) is good at the back of borders and works well with pink or purple color schemes. Culinarily, the tender young leaves of orach can be used in the same manner as spinach—they are delicious steamed, or raw in salads.

Amaranths—including various cultivars of *Amaranthus caudatus*, *A. hypochon-*



*Amaranthus tricolor* 'Illumination', top, and 'Joseph's Coat', bottom, are both edible.

*driacus*, and *A. tricolor*—are fine choices for unimproved soil. Many amaranths can become quite massive—reaching to six or seven feet tall—and their shaggy look makes them real showstoppers. Young leaves and sliced stems are great for brightening salads, and seeds of several species yield a nutritious grain.

Hyacinth bean (*Lablab purpureus*)—a tender perennial grown as an annual vine in North America—can easily cover a trellis or teepee and is gorgeous from July until frost. Its immature pods can be eaten like sugar snaps; also tasty are the

young leaves and the white, lavender, or pink flowers.

Swiss chard (*Beta vulgaris* var. *flavescens*) is another tasty vegetable with ornamental virtues. Its remarkable puckered leaves and midribs of white, yellow, pink, or red make it an ideal choice where bold foliage and a splash of color are needed.

Florence fennel (*Foeniculum vulgare* var. *azoricum*)—a standard in many fish recipes and a delightful surprise in salads—is wispy and airy in the garden and makes an attractive visual foil for stockier plants. The selection 'Rubrum' has striking reddish to bronze foliage.

And then there's that herb garden escapee, parsley (*Petroselinum crispum*), whose attractive true green color and mounding habit make it perfect for edging—not to mention eating! Parsley is also a favored food source for some butterfly larvae, so it's a valuable addition to a butterfly garden as well.

So if all you've read about integrating edible plants into ornamental gardens has whetted your appetite, stop by River Farm this summer for further inspiration. The house and grounds are open from 8:30 a.m. to 5 p.m. on weekdays.

Janet Walker is director of horticulture at River Farm.

**START SAVING SEEDS NOW:** As the end of summer approaches, it's time once again to begin saving seeds for the AHS Annual Seed Exchange. Look for more information about participating in our seed exchange program—along with a donor form—in the September/October issue of *The American Gardener* and on the AHS Web site ([www.ahs.org](http://www.ahs.org)).



The American Horticultural Society's Friends of River Farm  
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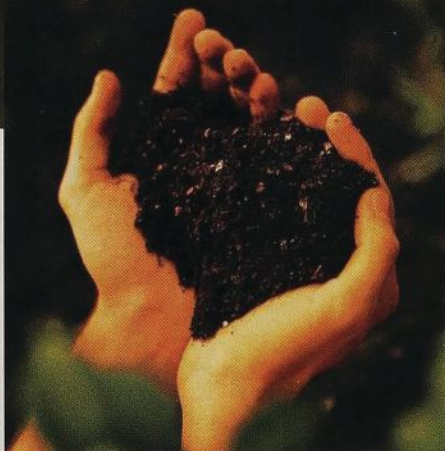
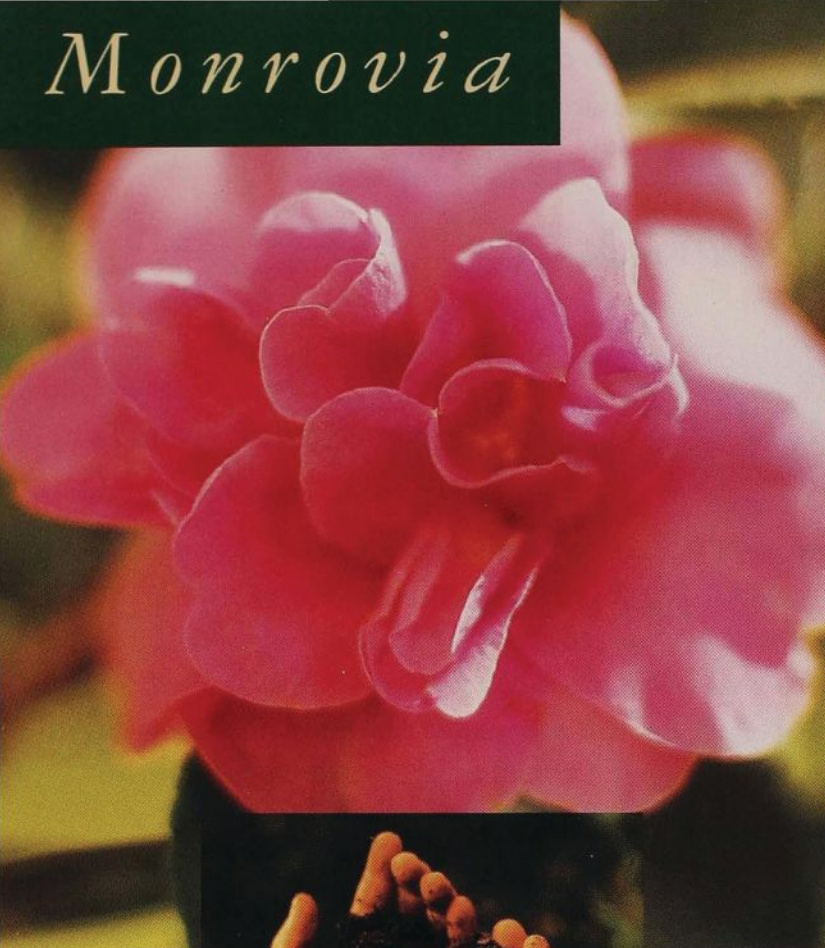
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