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September/October 2001

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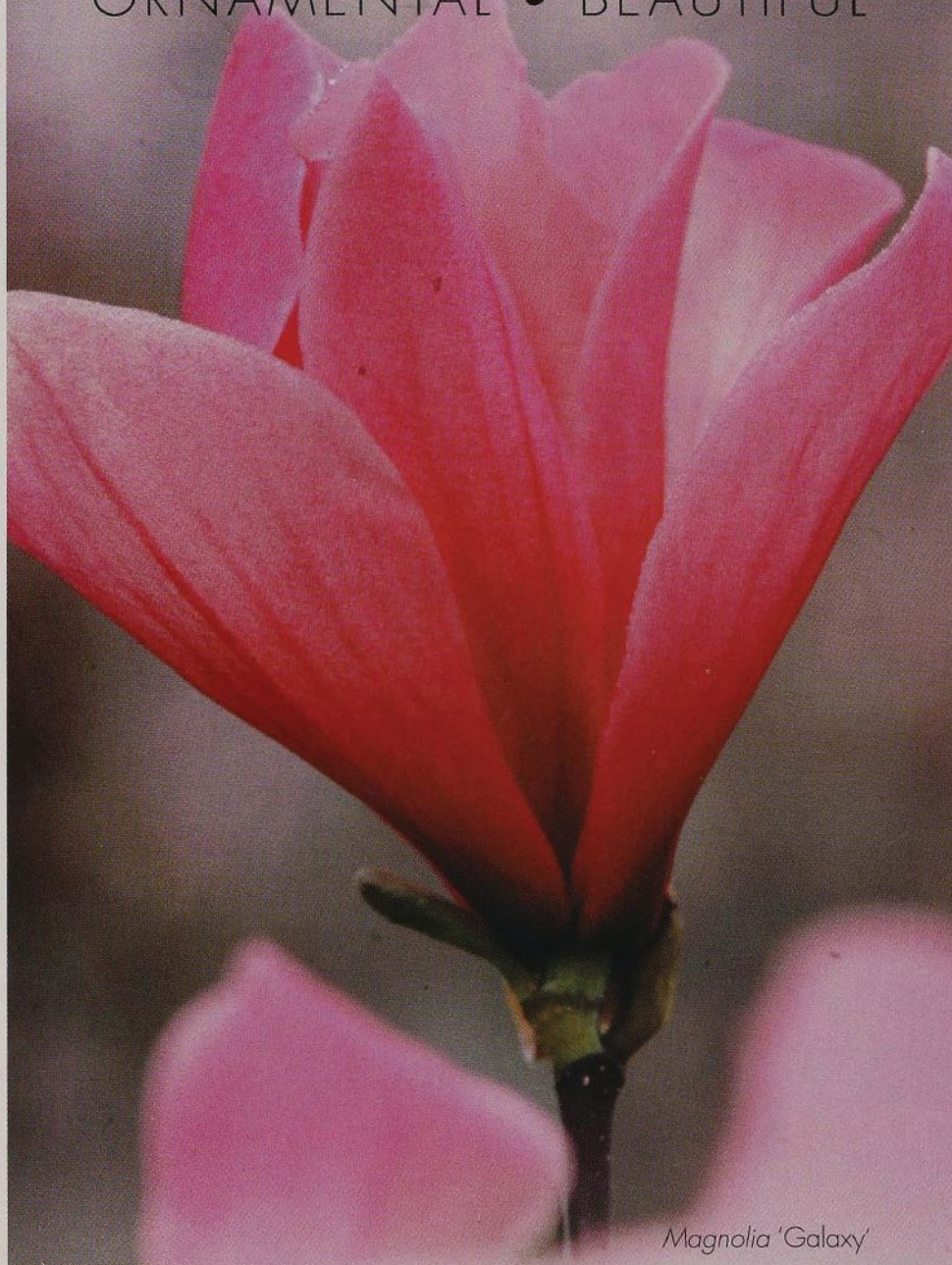
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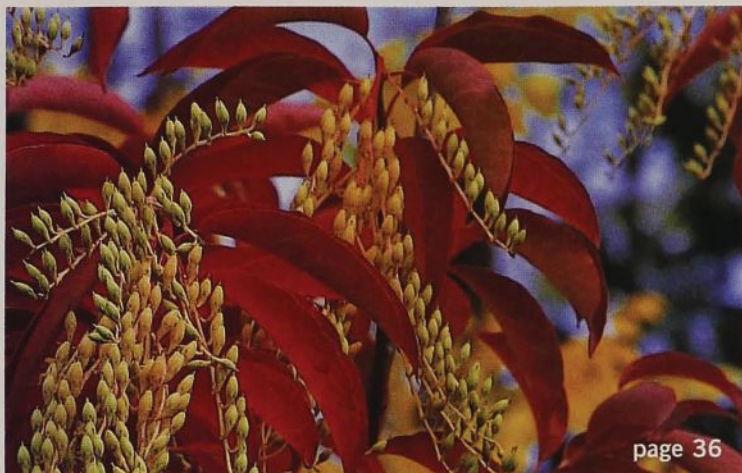
Magnolia 'Galaxy'

The Pennsylvania Horticultural Society — America's first Horticultural Society, formed in 1827 and producer of the world famous Philadelphia Flower Show — is a non-profit organization aimed to motivate people to improve the quality of life and create a sense of community through horticulture.

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ON THE COVER: Robust leeks stand out among sedums and radicchio in this fall garden. Like many gourmet onions, leeks are as ornamental in beds and borders as they are useful in cooking.

Photograph by David Cavagnaro.

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AMERICAN HORTICULTURAL SOCIETY

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INTERN PROGRAM

To receive an application for the Society's Intern Program, write to Janet Walker, director of horticulture, at the address above or e-mail her at jwalker@ahs.org. Intern application forms can be downloaded from the River Farm area of the Society's Web site at www.ahs.org.

RECIPROCAL ADMISSIONS PROGRAM

The AHS Reciprocal Admissions Program offers members free and discounted admission to flower shows and botanical gardens throughout North America. A list of participating shows and gardens can be found in this year's *Directory of Member Benefits* and also in the Membership area of our Web site.

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WEB SITE: WWW.AHS.ORG

The AHS Web site is a valuable source of information about the Society's programs and activities. It is also an important resource for getting the answers to gardening questions, finding out about gardening events in your area, and linking to other useful Web sites. AHS members can reach the members-only section of the Web site by typing in this year's password: *smartgarden*.

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The American GARDENER

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An Inside Look

EACH SUMMER I enjoy the opportunity to travel around the country, meeting gardeners and visiting a wide range of public and private gardens. Over the past few months, my schedule included stops at the Master Gardeners International symposium in Florida at the end of May and the Society's annual conference in Cleveland in June. I also attended the Ohio Florists Association Short Course in Columbus in July and then spoke at the Perennial Plant Association's annual conference in Crystal City, Virginia, in August.

Because of my years of attending these kinds of events, I often run into familiar faces, but I also meet many people who are relatively new to the gardening family. This summer, what impressed me most was the diversity of gardening styles and interests I encountered, as well as the number of people who are eager to expand their gardening horizons. The enthusiasm gardening inspires is truly amazing.

This issue of the magazine addresses the diversity of gardening interests with an array of articles that offer a little something for everyone. Our Associate Editor Carole Ottesen profiles 10 native trees that have colorful fall foliage and other ornamental attributes. Vegetable gardeners and cooks alike will enjoy Chris Blanchard's article on the simple joys of growing the gourmet relatives of the onion—leeks, shallots, chives, and others.

In anticipation of the Society's annual conference in Seattle next June, we offer Deborah Ferber's article about the garden of Mareen and Arthur Kruckeberg, innovative gardeners who over the last 40 years have created a masterful tapestry of native and exotic woodland plants on four acres in the coastal Pacific Northwest.

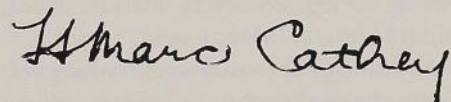
Fall is the time to plant spring-flowering bulbs, but few gardeners take advantage of this time of year to enjoy those bulbs that flower in autumn. If you're one of these gardeners, Nancy Goodwin—who keeps bulbs blooming year round in her North Carolina garden—will introduce you to some of the best fall-blooming bulbs and suggest ways to integrate them into your landscape.

For those of us with busy daytime schedules, the evening hours are often the only time we get to relax in our gardens. Contributing Editor Rita Pelczar explains how rewarding it can be to have a garden designed for enjoying the cool fall evenings.

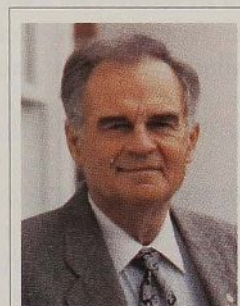
But fall is also a busy time in the garden, so if you have been caught up in the passion for planting exotic tropics and subtropics outdoors in summer, you will want to read Managing Editor and Designer Mary Yee's article on how to safely store these tender—and often expensive—plants over the winter.

We know our magazine helps you to grow as gardeners, but remember it is just one facet of our national gardening programming. We will continue to educate and inspire you through our newly redesigned Web site (www.ahs.org), our Great American Gardeners lecture series, our book series published by Dorling Kindersley, our Travel Study Program, and our toll-free Gardeners Information Service hotline.

Ever in green,



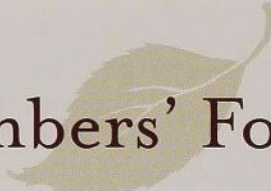
—H. Marc Cathey, AHS President Emeritus



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Members' Forum

CANADIAN SECRETS

Your recent "Secret Gardens" article (July/August 2001) was delightful, but may I mention two others?

The Reford Garden in Metis, Quebec, has extremely fine natural areas, formal plantings, and my favorite feature—an ancient millstone containing mosses and other tiny succulents and flowering plants.

The other is the Botanical Garden in Annapolis Royal, Nova Scotia. Located in a charming and historic town on the Bay of Fundy side of the province, some of its features are a reconstructed Acadian farmstead, an extensive collection of viburnums, and an excellent rose garden.

Ingrid Hetfield
Ocean View, Delaware

IN MY EXPERIENCE...

The article on hostas (July/August 2001) was interesting, but not quite accurate in some aspects. At our nursery, we grow about 400 different varieties of hostas and are always on the lookout for new, special, or interesting ones.

Hosta 'Yingeri', which you mention prominently, is not a new introduction. I have had it in my garden for about 10 years! It is the last *hosta* to bloom for me, and I have purposely hand-pollinated it for this reason. The seedlings resemble the parent to some degree, but none is exactly the same as the parent or each other!

While the small, variegated 'Pandora's Box', also mentioned in your article, is charming, it is not the smallest variegated *hosta*. There is 'Cat's Eyes', which has leaves that are easily half the size of 'Pandora's Box' and only a little longer. Other small, variegated *hostas* include 'Haku Chu Han' and 'Masquerade'.

Although not variegated, nothing yet beats the smallness of 'Tiny Tears', which has leaves about a half-inch long and is perfectly hardy in our area. In my opin-

ion, the strangest-shaped *hosta* is 'Uzo no Mai', which is flat, round, and a dwarf.

Dinah L. Foglia
Huntington, New York

EDITOR'S NOTE: *Thanks for sharing your knowledge of hostas. But we must point out that we didn't say Hosta yingeri was a new introduction, rather that it is the most recent hosta species to be discovered. According to our sources for nomenclature, it is still considered a species rather than a cultivar.*

NATIVE PRIDE

Applause to you for "No Place Like Home" (July/August 2001). Why try to re-create English gardens when our native species flourish because—over the centuries—local plants have adapted to the local climate? Americans should take pride in American plants and not try to imitate other nations.

Furthermore, plants from other continents contribute to a major environmental problem. The proliferation of non-native plants costs taxpayers millions of dollars each year as farms and natural areas become overrun with species that arrive from abroad without their native checks and balances and spread over the landscape. Also, native birds and butterflies are adapted to native plants and cannot thrive when plants from other continents take over. Filling North American spaces with plants from other continents is contributing to the extinction of our native North American creatures.

Correction

The telephone number for Weird Dude's Plant Zoo in Staunton, Virginia, cited as a source for *hostas* in our July/August issue, is (540) 886-6364.

Although I applaud your article touting native plants, I deplore the same issue's backing for flowers from South Africa ("Discover Diascias"). The American Horticultural Society should lead the way for Americans to celebrate their native flora. Americans should let "hot plants" from abroad remain in their native locations. They do not belong in American gardens.

Charlotte Adelman
Wilmette, Illinois

EDITOR'S NOTE: *The American Horticultural Society's stated mission is to educate and inspire people of all ages to become successful and environmentally responsible gardeners by advancing the art and science of horticulture.*

We believe our role is to inform our members about worthy garden plants and to inspire them to create gardens of beauty using environmentally friendly techniques and by selecting plants adapted to the cultural conditions within their landscape.

We are, of course, concerned about the health of America's natural areas, and as part of promoting environmentally responsible gardening, we do our best to alert gardeners to plants that have demonstrated a tendency to be invasive in certain areas of the country.

And although we endeavor to open people's eyes to the wealth of our native flora, there are thousands of non-native plants that have been adding color and zest to American gardens for decades without showing any invasive tendencies. The palette of cultivated plants available to American gardeners would be sadly diminished if all non-indigenous plants were arbitrarily excluded from our gardens.

WRITE US! Letters 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.

New Board Members Welcomed

FIVE NEW MEMBERS were welcomed to the AHS Board of Directors at the Society's annual business meeting, held in Cleveland on June 14. The new board members are: Joel Goldsmith, president and CEO of Goldsmith Seeds Inc., in Gilroy, California; Brian E. Holley, executive director of the Cleveland Botanical Garden; Seattle, Washington, resident Duane Kelly, who produces the Northwest and San Francisco flower and garden shows; Melissa R. Marshall, a landscape architect with Marshall•Tyler•Rausch in Pittsburgh, Pennsylvania; and Alexandria, Virginia, resident Peg Dunnigan, former chair of the AHS Friends of River Farm and retired from a 22-year career with the federal government.

On behalf of the Society's membership, President and CEO Linda Hallman extends thanks and appreciation to the exiting Board members who have so generously supported AHS over the past several years with their time and talents. Departing board members are Sherman Adler, John Alex Floyd Jr., Dorothy T. Ireland, William R. Marken, and Florence Rodale. Particular thanks are extended to Floyd, who in addition to being a retiring board member currently serves as chair of the Editorial Advisory Committee for *The American Gardener*.

Highlights from Cleveland

AHS'S 56TH annual conference, "Celebrating the American Gardener," was held June 14 to 16 in Cleveland, Ohio. Participants enjoyed three days of speakers, garden tours, good companionship, and the awards banquet.

Tres Fromme, planning and design specialist at Longwood Gardens in Kennett Square, Pennsylvania, led off the conference with a detailed and insightful discussion of French

garden design. "Using examples from various time periods and wildly different styles, Fromme showed us how to take portions of these designs and interpret them in our own gardens," says Mary Ann Patterson, AHS director of national programs and public relations.

Michael Pollan, a contributing writer for the *New York Times* magazine, captivated the audience with his intriguing interpretation of people/plant relationships, as illustrated by the history of the cultivation of the apple. "The presentation was really fascinating because Pollan challenges us to look at our relationships with plants from a different perspective," says Patterson. "What if plants were engineering agricultural changes rather than people?" Pollan, winner of the 2000 AHS Horticultural Writing Award, is the author of acclaimed nonfiction works such as *Second Nature* and, most recently, *The Botany of Desire* (see review, page 54).

In addition to touring some spectacular public gardens such as the Cleveland Botanical Garden, Holden Arboretum, and Stan Hywet Hall and Gardens, attendees had the privilege of visiting three beautiful private gardens in and around Cleveland. Among those was the garden of longtime AHS member Carol Smith, who arranged the private garden tours.

The conference concluded with a dinner and the presentation of the annual Great American Gardener Awards.

MARK YOUR CALENDAR

now for the 2002 AHS conference, which will be held June 6 to 8 at the Seattle Madison Hotel in Seattle, Washington. Look for more details about the conference in the January/February issue of *The American Gardener* and on the AHS Web site (www.ahs.org).



AHS President Emeritus H. Marc Cathey, right, presented Brent and Becky Heath of Brent and Becky's Bulbs with the Commercial Award in Cleveland at the conclusion of the AHS annual conference.

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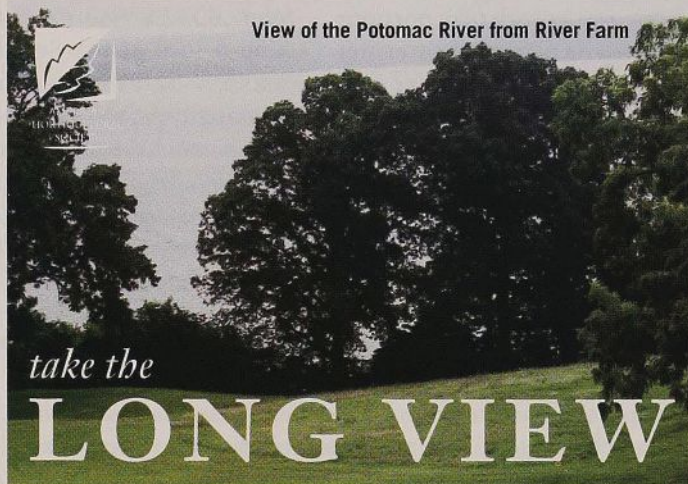


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View of the Potomac River from River Farm



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To learn more about how you can support AHS, contact Ashby Pamplin, Director of Development, at 7931 East Boulevard Drive, Alexandria, VA 22308-1300, (703) 768-5700, Ext. 128.

We urge you to consult with your legal and financial advisors to assist you in arranging the best method of contributing. The American Horticultural Society is tax-exempt under Section 501(c)(3) of the Internal Revenue Service Code. Contributions to AHS are tax-deductible to the fullest extent allowed by law. AHS is also a registered charitable organization under Section 57-49 of the Virginia Solicitation of Contributions Law; a financial statement is available upon written request from the State Division of Consumer Affairs.

Call for Papers

Presentations related to garden-based youth entrepreneurial programs are now being sought for "Ripe From Downtown," a national symposium to be held July 18 to 20, 2002, at the Cleveland Botanical Garden (CBG), in Ohio. The symposium is presented by CBG and co-sponsored by the American Horticultural Society.

The deadline for submission of papers to be presented at this symposium is November 1, 2001. For information, call Maureen Heffernan at (216) 721-1600 ext. 154, or visit the CBG Web site at www.cbgarten.org.

Lights, Camera, Action!

GARDEN TELEVISION CELEBRITY George "Bloomin'" Newman taped an episode of his show "In the Garden" at River Farm in early August. Janet Walker, AHS director of horticulture, and Mary Ann Patterson, director of national programs and public relations, accompanied Newman through the various gardens at River Farm, including the Children's Garden, as he and his crew taped segments highlighting the AHS SMARTGARDEN™ and internship programs.



Bloomin' Newman, left, and AHS's Mary Ann Patterson, center, converse during a taping of Newman's television show at River Farm.

Newman, who owns Bloomin' Newman's nursery in Potomac, Maryland, has hosted the cable show for six years. The River Farm episode was scheduled for broadcast in late August or early September on Comcast cable channel 8. "In the Garden" airs Saturdays and Sundays at 10:30 a.m. in the New York, New Jersey, Philadelphia, and Baltimore areas, and at other times and days in parts of Illinois, Missouri, and North Carolina.

Volunteer Conference

THIS FALL, AHS is co-sponsoring Volunteer Interaction 2001, to be held September 18 to 21 in Washington, D.C. This biennial conference is designed to help coordinators, managers, and volunteers who work in public horticultural settings enhance their programs and the experiences of their visitors.

Approximately 200 participants are scheduled to attend workshops at the Smithsonian Institution and tours of the U.S. National Arboretum in Washington, D.C., and Brookside Gardens in Wheaton, Maryland. Keynote speakers include Holly Shimizu, executive director of the U.S. Botanic Garden and Susan Ellis, president of Energize Inc., an international training,

Share Seeds!



If you haven't already started collecting seeds to submit for the Society's Annual Free Seed Exchange, now's the time to get out in the garden and see what's ripe for harvest. By participating in this annual program, you not only get to share seeds of your prized plants with other AHS members, but have an opportunity to choose from among hundreds of different kinds of seeds submitted by other gardeners and seed companies.

If you haven't taken advantage of this exciting membership benefit before, a brief explanation of the program—as well as instructions for how to collect and submit seeds—is included on a tear-out sheet located between pages 8 and 9. For more detailed information about seed collecting, revisit the article on page 46 of the July/August issue of *The American Gardener*.

consulting, and publishing firm specializing in volunteerism.

Janet Walker, AHS director of horticulture, and Marianne Polito, gardeners information service (GIS) manager and volunteer coordinator, are active members of the conference planning committee. AHS staff participation in the conference is part of an on-going emphasis on volunteer efforts at River Farm. Each month, approximately 50 volunteers contribute a total of 1,500 hours of their time in the gardens, with the GIS program, or with other Society departments and events.

For more information about the conference or volunteer opportunities at River Farm, call Polito at (703) 768-5700, ext.124, or e-mail mpolito@ahs.org.

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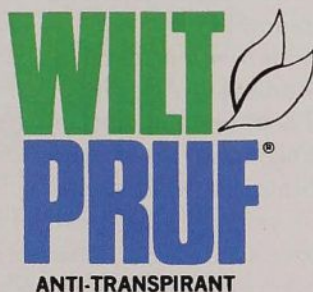
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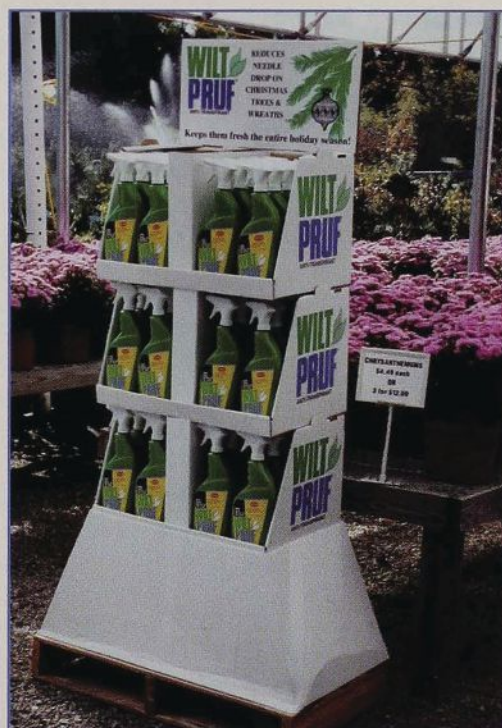


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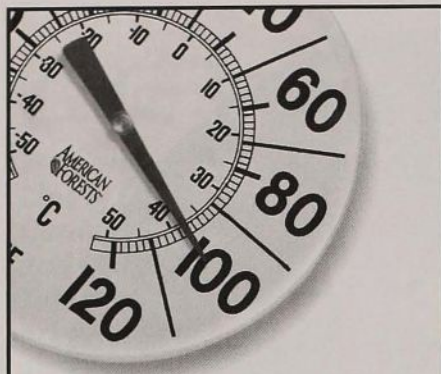


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ahs member IN FOCUS

Giving Back to Horticulture: Jane Steffey

by Carole Ottesen

"I GREW UP in a big old house with good garden space. That's where I learned what I wanted to do," recalls AHS member Jane Steffey, a former columnist for *American Horticulturist* magazine and garden editor for *The Washington Post*. A lifelong love of gardening and the science behind it, coupled with fond memories of her long association with AHS, prompted Steffey, who is now retired, to recently donate \$50,000 to the Society to be used for staff education.

Steffey grew up in Williamsport, Maryland, a town of 2,000 near Hagerstown. She attended Hood College in nearby Frederick, making the journey to and from school on a trolley that went over the mountain between Frederick and Hagerstown. After graduating from Hood in 1931, Steffey began a career as an economist with the U.S. Department of Agriculture. Because her job required frequent relocation, however, she had little opportunity to develop a garden at any one place.

After moving to Washington following World War II, she joined AHS and soon became a volunteer. She remembers getting to know John Creech, a former director of the U.S. National Arboretum and AHS board member, as "a kid, just home from the war." She enjoyed the chance to interact with horticulturists like Creech and other dedicated gardeners, and volunteering at River Farm finally gave her a chance to at least garden vicariously.

"I certainly have fond recollections of working at AHS," says Steffey. "There were a number of volunteers like me who lived in the area and helped out with the seed

exchange. I remember while I was still working, I stayed late into the night typing labels for envelopes. Other nights, when we had a group together to work on it, we went to the arboretum to do the labels. It was a lot of work, but it was wonderful."

In 1971, she retired from the government and soon began a second career as a garden writer. She became a columnist for *The Washington Post*, served as a horticultural advisor to AHS, and was an editor and columnist for *American Horticulturist*, as this magazine was then named. Her assignments on the magazine included answering members' gardening questions—a task that evolved into the Society's Gardeners Information Service—and a popular regular column titled "Strange Relatives" that explored the intriguing and often unexpected relationships within plant families. "Serious study of any family of plants affords a marvelous insight into the wonders and contrasts in the vegetable kingdom," she wrote in a December 1981 article on the cashew family.

"She loved research and noodling out facts about plants," recalls garden writer and editor Barbara W. Ellis, a former co-worker who was editor of *American Horticulturist* for several years. "I learned a lot from her about finding out the small and fascinating facts about plants. After reading her columns, you looked at your garden in a whole different way."

"It was a wonderful part of life," says Steffey of her work in horticulture. Her generous gift will enable others to advance their education in the field that brought her so much satisfaction.

"The redolence of a golden flower or a whiff of super-sweetness from a lavender tail of inflorescence leads us to explore the background of the givers of such sensual pleasures. Lo and behold! These flowering beauties have some skeletons in the family closet; some of their relatives are poisoners. The plot thickens as the golden trumpet itself is revealed to be a killer."

(from "Strange Relatives: The Logania Family," *American Horticulturist*, August 1981, pp. 4-7)

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Carole Ottesen is associate editor of *The American Gardener*.



SMARTGARDEN™—When to Use Pesticides

Prevention is best, but sometimes extra help is needed

Even gardeners who use preventive measures to reduce the risks of pest and disease problems with their plants occasionally experience infestations. Identifying the cause and assessing the potential for further damage are the first steps before deciding whether action needs to be taken and then selecting appropriate control measures.

DIAGNOSING THE PROBLEM

If you are unfamiliar with a plant malady, it's critical to pin down the culprit before attempting to control the problem. Numerous books and publications are out there to assist your diagnosis, as well as local cooperative Extension offices, botanical gardens, and plant societies—many reachable on the Internet. And of course AHS members can contact the Society's Gardeners Information Service (GIS) by calling (800) 777-7931 ext. 131 or by sending an e-mail to gis@ahs.org.

Many plant problems are easily identified. The fungal disease black spot is familiar to anyone who grows roses, and many azalea growers will recognize the thickened, distorted leaves and flowers characteristic of azalea leaf gall. The numerous light green caterpillars on your cabbage leaves are the likely cause of the large holes nearby. And the heavily pruned shoots of a tomato plant point a guilty finger toward the conspicuous horned caterpillar munching his way through the foliage.

DETERMINING CONTROL METHODS

Once you identify the cause of your problem the next step is to determine whether control measures are warranted and, if so, what type. Many pests and diseases can be controlled mechanically by handpicking the pest or pruning diseased stems or branches to prevent further spread.

For instance, azalea leaf gall does little damage to the shrub and the individual galls can be easily plucked off and destroyed. And though destructive, tomato horn worms usually invade a garden in small numbers, so if discovered early, they can be removed by hand. A hard spray of water is sometimes all that is needed to reduce the population of sucking insects such as aphids to a tolerable level.

On the other hand, if black spot is left untreated, it can devastate a susceptible rose. And an uncontrolled infestation of cabbage worms can render cole crops inedible. In such instances, the potential damage of a pest or disease may warrant considering more radical measures to control its further spread.

WHEN PESTICIDES BECOME NECESSARY

The goal when using a pesticide is to achieve control of the specific pest or disease with minimum impact on

the rest of the environment. Select the least-toxic effective pesticide, apply it at the optimal time for control, and use the correct dosage.

The synthetic chemical pesticides used in commercial horticulture and agriculture were once readily available to home gardeners, but with heightened safety concerns and tightening of environmental regulations in recent years, fewer synthetic pesticides are now on the retail market. This has led to a boom in the development and use of pesticides derived from natural sources such as plants or minerals. These include botanical insecticides, insecticidal soaps, horticultural oils, and mined minerals.

These pesticides generally break down quickly into safe by-products and thus are good choices for pest control. Like any pesticide, however, they can be toxic to humans or other non-target animals and should be applied with care in accordance with the manufacturers instructions.

■ **Botanical insecticides** are extracted from plants. Some of the more commonly available are: *pyrethrum*—an effective, broad-spectrum contact poison; *rotenone*—commonly applied as a dust for short-term control of many leaf-eating caterpillars and beetles; *sabadilla*—both a contact and stomach poison, effective against many true bugs, leaf-eating caterpillars, and thrips; and *neem*—which repels some pests and interrupts the life cycle of many plant-eating caterpillars and beetles.

■ **Insecticidal soaps** are derived from fatty acids and potassium salts and are applied as a dilute spray directly on pests; they damage cell membranes of soft-bodied pests such as aphids, leafhoppers, and spider mites.

■ **Horticultural oils** are refined petroleum products and are commonly used on dormant plants to smother overwintering insects and mites. Newer formulations are available that can be applied to many plants during the growing season for controlling scales, whiteflies, and certain diseases.

■ **Mined materials** used to control pests include *diatomaceous earth*—fossilized single-celled aquatic organisms—which is sprinkled around plants to provide a physical barrier against soft-bodied slugs and snails. *Copper- and sulfur-based sprays and dusts* have been used to control fungal diseases such as powdery mildew and botrytis.

When planning to use any pesticide, read the label and follow the directions carefully. Applying the right material at the wrong time, to the wrong plant, or at an inappropriate dilution can negate its effect—or, even worse—cause more damage than the pest itself.

Next issue: Biological Controls.

Rita Pelczar, Contributing Editor

Gardener's Notebook

Horticultural News and Research

TOAD LILY STUDY

A 10-YEAR STUDY of toad lilies (*Tricyrtis* spp.) by the Chicago Botanic Garden (CBG) rates these herbaceous perennials (profiled in the September/October 2000 issue of *The American Gardener*) as exceptionally garden-worthy. Uncommonly



Tricyrtis 'Tojen' displayed good foliage growth and resistance to fungal diseases.

beautiful late-season flowers that can last up to 10 weeks adorn stately, extremely hardy, shade-tolerant foliage. Native from the eastern Himalayas to China, Japan, Taiwan, and the Philippines, the toad lily has proven "no longer a botanical curiosity or specialty plant, but an outstanding perennial for late-season interest in shade and woodland gardens," says Richard Hawke, manager of the garden's plant evaluation programs.

In 1990, 24 *Tricyrtis* species and cultivars were planted in a test site where they were exposed to morning sun followed by dappled shade for the rest of the day. They were protected from wind by a wooden fence. The soil was a periodically droughty clay-loam with a pH of 7.5. The plants were watered as needed, but given no fertilizer and only minimal maintenance in order to simulate home garden culture. Under this regimen in the Midwest's challenging cli-

mate—CBG is in USDA Hardiness Zone 5 and AHS Heat Zone 5—only 16 of the tested plants survived for four or more years.

The survivors were rated for floral and habit display, winter hardiness, cultural adaptability, and disease and pest resistance. Top performers were *T. formosana* and *T. hirta* 'Miyazaki', which received overall marks of "excellent." Among those rated "good" were *T. latifolia*, *T.* 'Sinonome', and *T.* 'Tojen', which showed resistance to the fungal disease anthracnose and exhibited healthy, robust foliage.

To order a copy of Plant Evaluation Notes, Issue 16, on *Tricyrtis*, send a check for \$3 payable to Chicago Botanic Garden to: Plant Evaluation Notes, c/o Richard Hawke, Chicago Botanic Garden, 1000 Lake Cook Road, Glenview, IL 60022.

FLORIDA INVASIVES

THE FLORIDA Nurserymen and Growers Association (FNGA) is urging Florida's nursery and landscape professionals to phase out production, sale, and use of 34 plants that are invasive in natural areas.

In addition to such well-publicized invasives as melaleuca (*Melaleuca* spp.), the



Castor bean is on the unwanted list in Florida.

water weed hydrilla, and Australian pine (*Casuarina cunninghamiana*), the list of plants to be avoided includes popular ornamentals: night-blooming cereus (*Cereus undatus*), Chinese brake fern (*Pteris vittata*), and castor bean (*Ricinus communis*). These plants tend to escape gardens and establish colonies in natural areas. For a complete list of the 34 species, contact FNGA, 1533 Park Center Drive, Orlando, FL 32835, (407) 295-7994, or e-mail: infor@fnga.org.

DAYLILY RUST ALERT

FIRST IDENTIFIED in the summer of 2000 on daylilies in a Georgia nursery, daylily rust (*Puccinia hemerocallidis*) has



Daylily rust on the foliage of an affected plant.

subsequently been found on daylilies in Alabama, California, Florida, Louisiana, Minnesota, Mississippi, South Carolina, Tennessee, and Texas. Although the fungus that causes daylily rust initially was identified in Asia, it is believed to have entered the United States on plant material imported from Costa Rica.

The rust pathogen is heteroecious—often, but not necessarily, involving another host plant for a part of its reproductive cycle. One alternate host is *Patrinia* spp. Another plant suspected to

Grab Some Great Gardening Gear and Support Volunteers like Tobie

Tobie is a seventh-grade life science teacher—and one of more than 150 volunteers at the AHS headquarters at River Farm. Our volunteers help us maintain our gardens, answer gardening questions in our Gardeners Information Service, work with visiting children, and operate our annual Seed Exchange—they all play a vital role in AHS's daily work.

One way you can support volunteers like Tobie is to shop at the AHS Store. These items, suggested by members, are a great way to show your support of AHS programs. Proceeds from the sale of these items support our interns and volunteers and the many AHS programs in which they are involved.



A Tobie is wearing her green **AHS Polo Shirt**. Made of comfortable cotton, it's suitable for business casual, just plain casual, and—of course—working in the garden. The AHS logo is embroidered in white and will retain its good looks for years to come. Relaxed fit. Sizes: M, L, XL, XXL **\$38**

B The **Bucket Buddy™** is a Fiskars product that is very popular with the AHS horticultural staff—so we've added our logo and offer it at a special price. Wrap this adjustable, heavy-duty fabric "tool belt" around any five-gallon bucket and presto! you can carry all your frequently used gardening tools AND have a place to throw clippings and weeds. (Tools not included.) **\$23**



C Many of us can't do early morning watering and weeding without coffee, so the **AHS Coffee Mug** is an essential gardening tool. Sturdy stainless steel with a removable plastic lid and an extra-wide base to prevent spills. **\$18**

E The **AHS Kneeling Pad** will make planting and weeding a lot more comfortable. Lightweight foam, easy to tote. **\$13**



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be involved is *Hosta*. Early infection by this fungus may resemble the disease daylily streak. However, after two or three days, daylily rust produces raised spots (pustules). If a white tissue is rubbed over the infected leaves, the pustules will transfer orange powdery spores to the tissue, which won't occur with any other daylily leaf disorder.

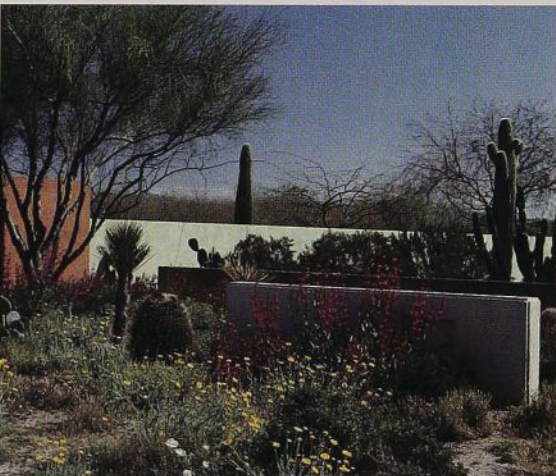
Because daylilies form a continuum of susceptible host tissue across the United States and the rust pustules develop quickly and are carried by wind, state and federal plant pathologists do not expect the disease to be contained by regulatory means.

Not all daylilies are equally susceptible. The worst hit is a cultivar named 'Pardon Me'. Also particularly prone to the disease so far are 'Attribution', 'Gertrude Condon', 'Crystal Tide', 'Colonel Scarborough', 'Starstruck', 'Joan Senior', 'Imperial Guard', 'Double Buttercup', and 'Stella de Oro'.

According to Tim Schubert of the Florida Department of Agriculture and Consumer Service, destroying all infected plants may be the safest course of action. Eliminating highly susceptible varieties may protect more resistant ones. Fungicides, applied after all infected foliage has been removed and destroyed, may help control the disease. If fungicide is applied, Schubert suggests neighboring plants should be treated as well.

TRADING TURF FOR CASH

SINCE 1998, the Southern Nevada Water Authority has been paying people to rip



Cacti and other drought-tolerant plants replace turf in this lawnless landscape in Arizona.

up all or part of their lawns. Homeowners receive 40 cents per square foot up to a maximum of \$1,000 if they replace their lawns with less water-dependent indigenous flora. Since the program's inception, about 3 million square feet of lawn has been converted to desert landscaping.

New Mexico, California, and Arizona are also offering homeowners similar financial incentives to reduce water use. But conserving water is not the only benefit of lawnless landscaping—it also reduces the use of synthetic fertilizers and pesticides, and lowers air and noise pollution associated with gas-powered mowers. And by increasing the number of indigenous plants in the landscape, homeowners are providing food and restoring habitat for regionally native insects, birds, and other animals.

SAVING MOUNT VERNON'S TREES

VISITORS TO Mount Vernon, George Washington's historic Virginia home-
stead and farm on the Potomac River, are treated to a grand vista: a beautiful mansion set on sweeping lawn under a canopy of stately trees. What is missing from this picture is not immediately evident, but absolutely crucial: Under those great shade trees are no seedlings or young trees. This startling absence of future forest growth is blamed principally on grazing by deer.

As the existing trees age, no seedlings are taking their places. In the past century, Mount Vernon has lost more than 70 trees, leaving only 13 remaining of those originally planted under Washington's direction. To halt this loss and provide for the future, the Mount Vernon Department of Horticulture has launched a reforestation initiative in partnership with the non-profit National Tree Trust and The Champion Tree Projects. The Arnold Arboretum at Harvard University in Cambridge, Massachusetts, is providing consulting expertise.

Through this initiative, new generations of Champion Trees—clones of the largest and often oldest specimens of a species—will be planted at Mount Vernon. In addition, a Mount Vernon Special Collection of Champion Trees, propagated directly from the 13 trees that date back to Washington's time, will be

developed. "It's really preserving living history," says Mount Vernon Director of Horticulture Dean Norton. "These are the only living witnesses to the life and times of George Washington."

CRAPE MYRTLE SOCIETY FORMED

ON JUNE 28, 200 people attended a formation meeting of the Crape Myrtle Society of America. Because crape myrtle (*Lagerstroemia indica*) is the state shrub of Texas, the meeting was held, fit-



Pink- and white-flowering crape myrtles.

tingly, at the Texas A & M Research and Extension Center in Dallas in partnership with the Crape Myrtle Trails of McKinney Foundation. These two organizations are partnering to establish "The World Collection" of crape myrtles at Texas A & M, at the Texas Agricultural Extension Center in Dallas, and in the city of McKinney, some 30 miles north-east of Dallas.

Currently, McKinney boasts a seven-mile span of the late summer-flowering shrubs and expects to add more than 50,000 more crape myrtles in the next decade. There are more than 300 varieties of crape myrtle in the nursery industry worldwide, with more being introduced each year.

Raul Cabrera, a horticultural researcher at the Experiment Station in Dallas, has developed a new Web site to provide information about the new society and crape myrtles: dallas.tamu.edu/woody/cmyrtle/index.html.

Offshoots

The Garden of Our Discontent

by Eugene E. Woodbury

SOON AFTER MY BROTHER Joseph was born, making our family six in size, we moved out of the little Cape Cod on Hoover Road in Schenectady, New York. Being practical people, my parents had decided that we would live either within walking distance of Dad's work or our church.

As it turned out, land for a new church had just been purchased in the suburban community of Indian Hills, in the town of Glenville. My parents bought the lot just northeast of the church's parking lot.

You can't argue with that kind of convenience. On the other hand, the church was built there because the land couldn't be zoned for anything else due to an impenetrable subterranean strata of shale and yellow clay. The church required a full two acres just for the French drains.

Single-residence households could squeak by with quarter-acre lots. But planting anything more substantial than grass was akin to drilling teeth. My parents had a three-foot trench dug along the property line to plant a hemlock and a 30-square-yard rectangle excavated in the back for the vegetable garden.

That long remained the extent of the garden, until I initiated an enterprise that would doom my brothers and me for years to come. Gazing upon the vacant lot next door, I envisioned a "Hogan's Heroes" grotto, complete with tunnels and trap doors. I enlisted a band of gullible siblings and friends, and we did a handsome job of it.

Then one day my mother realized, in a stunning flash of insight, that what we were doing was *moving earth*. Worse, in the confusion of our youths, we actually thought that what we were doing was *fun*.

I soon knew better.

The back-breaking digging of holes was hardly the end of it. Every square foot of dirt had to be replaced with topsoil and peat. Because the dump truck couldn't be driven to our yard, that meant endless trips to and from the church parking lot with the wheelbarrow.



That was miserable enough, until Dad decided we should sift the clay out of all the dirt we dug up, which had the consistency of cement.

The Virtues of Recycling

Winter is the season when gardeners are only supposed to *think* about gardening. But come the new year and several times a week after that, Dad would load the closest available child and four 200-gallon plastic garbage cans into the back of our 1972 Ford station wagon and head down to the municipal highway garage. There in the parking lot would be a mountain of wood chips, the shredded remains of Christmas trees free for the taking. The wood chips came with strands of tinsel and the odd forgotten ornament or candy cane. But when it came to free mulch, Dad wasn't picky.

He also felt that way about fallen leaves, after he decided they were the best raw material for the compost pile. Not content with our own leaves and the neighbor's leaves, Dad became a leaf hunter-gatherer.

He'd drive home, spot a bunch of leaf bags at the end of some guy's driveway, pull

over, pop open the back door, heave in as many as would fit, and drive off.

For Love of Rocks

I realized now that my parents had an additional motive in all this frenzied gardening besides having something nice to look at—namely, to get rid of the lawn by the time the last in-house lawnmower grew up and left home. Between my father's fruit and vegetable garden and my mother's flower gardens, they just about succeeded.

What couldn't be planted on, they covered with rocks. Of course, our own rocks were never good enough. So we'd go up to my sister's place on Galway Lake and haul back granite chunks the size of basketballs.

The whole gardening business finally went on hiatus when my father had triple-bypass surgery. But that was only a temporary setback. As soon as his sternum healed, he put in the blueberry and strawberry beds. Luckily, we had all escaped to college by that time.

The berry beds were my parents' last major project at the old house. Half the fun, after all, is getting there. The Indian Hills canvas was getting hard to improve upon, and there was still all of retirement left to start painting a new one.

I figured they'd sell the place, then pick an area of the country boasting the highest population of able-bodied grandchildren—currently Seattle—and start all over again.

But they fooled all of us. Instead, they moved to Peak's Island, Maine.

And there they started all over again. It's all those rocks, I think.

Eugene E. Woodbury is a free-lance writer living in Orem, Utah.



Gardeners Information Service

WINTER PROTECTION FOR STANDARD ROSES

What is the best way to overwinter standard roses in Michigan?

—D.S., GROSSE POINTE, MICHIGAN

Roses pruned into tree form need special attention in the winter since they are not as cold-hardy as other roses and because they have a graft union that needs protection. Prepare the rose for winter by pruning back all the branches to about one foot long. In late fall, dig up the plants after the first killing frost—but before the ground freezes—and lay them horizontally in a previously prepared trench. If your standard roses are in a pot, you can put the roses, pots and all, in the trench. If the pots are fragile or of special value, simply remove them. Bury the roses completely under soil. When the ground freezes, mulch over the trench.

Next spring, keep an eye on the hardy roses outdoors. When their buds start to swell, it's time to dig up your standard roses and replant them in the garden.

CARING FOR CALADIUMS

I'm having a difficult time keeping or even growing caladiums in my Midwest garden. Last spring I planted 100 bulbs, but they looked terrible and more than half of them rotted. What am I doing wrong?

—L.M., IVANHOE, ILLINOIS

Caladiums thrive in well-drained, organic-rich soil that is kept evenly moist during the growing season. They grow best at 75 degrees Fahrenheit or above and in a shady site that is protected from strong winds. If you put your tubers in the ground before the soil warmed up last year, that could have caused your problems with rot. It is also possible that you planted them too deep—no more than two inches is optimal.

To prepare caladiums for overwintering, begin to reduce any supplemental watering around the end of August. When the leaves die down, dig the tubers and let them "cure" or air-dry for a couple of days in a cool, dry spot. Then store them in a dry room where the temperature stays between 55 and 65 de-

grees over the winter, such as an unheated, attached garage or basement.

In February or March, pot individual tubers in new soil with lots of organic matter, water them, and move them to a warm, bright place. As the roots begin to fill the pots, transplant them into larger and larger containers. In May, or when the soil in your area has warmed up, plant them outside. If you don't ever let them get really dry, they should perform well.

OVERWINTERING A FIG INDOORS

I live in central Wisconsin (USDA Hardiness Zone 4, AHS Heat Zone 4). This spring I bought a young 'Brown Turkey' fig, which has spent the summer thriving in a large pot on my patio. How should I care for it during the winter? I would like to bring it inside and keep it in a sunroom that has radiant-heat floors, but I'm afraid it might not go dormant. Should it be moved before or after it loses its leaves?

—P.S., RUDOLPH, WISCONSIN

If you move your brown turkey fig (*Ficus carica* 'Brown Turkey') to its winter position before the leaves drop and can keep your sunroom at about 55 degrees Fahrenheit, you might succeed in the somewhat tricky process of keeping the fig alive through the winter.

However, most experts advise overwintering figs in a dormant state when they are grown in regions outside their hardiness zones (USDA Zones 7 to 9). Like many fruit trees, figs need a period of chilling in order to produce fruit the following season. As the growing season comes to a close, embryonic fruits that will mature next year are already developing close to the end of the shoots; these pea-size figs-to-be need to be protected from the cold.

Your best option is to wait until the plant goes dormant and then move it to a place that

is dimly lit and stays between 40 and 50 degrees—perhaps a friend or neighbor would be willing to let you store it in his or her garage. If you store it in this way, be sure to water the root ball once in a while during the winter months.

STEVIA

I am looking for information on the plant known as "honey leaf" or "sweet leaf" (*Stevia rebaudiana*). Do you have any information on its culture, history, and any known adverse affects from consuming it? I've started several plants from seed, and the plants are now ready for transplanting.

—G.R., VIA THE INTERNET

Native to Paraguay and Brazil, stevia (*Stevia rebaudiana*) is a shrubby herbaceous perennial that reaches a height of two or more feet when fully mature. It has an extensive root system and brittle stems and grows well in a wide range of soils given consistent moisture and good drainage. It must be grown as an annual or container plant in most of the United States.

Natives of various South American ethnic groups are said to have used the plant's leaves as a sweetener since pre-Columbian days. It was approved as a sweetener 25 years ago in Japan, and several companies produce a sweetening agent extracted from the plant that is sold worldwide.

In its natural form, the herb is reportedly 10 to 15 times as sweet as sugar and, according to some experts, does not affect blood sugar metabolism. Although there is no known health hazard associated with its use as a sweetener, laboratory research on animals has indicated that steviol, a byproduct of stevia, may cause birth defects. Women who are pregnant or trying to become pregnant should probably avoid using stevia until scientists have fully investigated its safety.

Stevia is currently sold in the United States as a dietary supplement, but not as a food additive.

WE'RE READY TO HELP:

For answers to your gardening questions, call Gardeners Information Service at (800) 777-7931, ext. 131, between 10 a.m. and 4 p.m. Eastern time, or e-mail us anytime at gis@ahs.org.

William May, Gardeners Information Service volunteer, and Marianne Polito, Gardeners Information Service manager.

Planting the Future

Growing Hope for Seattle's Homeless Youths

by Ann Marie Molnar

ON A SUNNY September day, a garden marked with a colorfully painted sign that reads "Seattle Youth Garden Works" is bright with colors of the harvest. Boxes filled with red-gold tomatoes, glossy eggplants, fat onions, and bags of fresh basil rest near a simple wooden shed.

This 3,600-square-foot garden is tucked into a corner of 55 acres of fields and wetlands that comprise the University of Washington's Center for Urban Horticulture. During the afternoon, a group of young people, aged 15 to 22, work in the garden growing organic vegetables, berries, herbs, and flowers. These gardeners are not, as you might expect, university students but rather constitute a tiny portion of the estimated 1,000 to 2,000 homeless youths who live on the streets of Seattle.

GROWING SELF-ESTEEM

The Seattle Youth Garden Works (SYGW) program focuses on providing employment skills to homeless and at-risk youths who have had little success within traditional work and learning environments. Many are high school dropouts. Gardening under the tutelage of four staff members and some 30 volunteers, these young people connect with the community, learn work and life skills, make money, and build self-esteem.

The program is active year round. The participants sell their produce from June to mid-October at the University District Farmer's Market. In fall, they go indoors to make wreaths for holiday sales, and in

January and February they prepare and present an exhibit in the annual Northwest Flower and Garden Show. One day a week is set aside for education on topics such as nutrition, business, economics, environmental issues, and life skills.

Margaret Hauptman, a graphic artist and single parent, started the program in 1995. "I was getting tired of sitting at a computer all day," says Hauptman. "I wanted to work in gardening. I wanted to



One of the payoffs of the youth garden program is being able to offer fresh produce for sale.

be a part of something community based and helpful. I thought it would be great to have city kids working in a garden where they could learn about nature and make money by reaping what they sow."

Hauptman started off by obtaining small grants and space at the University District P-Patch, one of many Seattle community gardens. With help from a steering committee that included young people from the U-District Youth Center, within six months her project metamorphosed into an employment program for homeless youths.

Hauptman says growing food is an activity that most street kids would never experience. "It's exciting seeing kids opening

up, trusting, and being productive," says Hauptman, "and that they stick with it."

Since its inception, more than 150 young people have participated in the program, which involves 16 to 22 hours of work per week for three months. Enrollment is open and continuous, employing as many as 10 workers at a given time. Of the youths who graduate from the program, about 54 percent stabilize their living situations, about 20 percent obtain regular jobs, and 46 percent continue high school, GED, or college studies.

POSITIVE REINFORCEMENT

If you ask participants what the most beneficial aspect of the project is for them, you'll hear about encouragement, validation, and respect.

"I felt protected, needed, and cared for," says Jalina, 21, a victim of child abuse and neglect, who was referred to the program at age 17 after living on the streets for four years. "After several months of the staff telling me what a good job I was doing, I started believing them. I found the confidence I needed to make my way in the world." Now employed as a day care worker, Jalina is living in her own apartment and attending community college.

Each year more kids come in and community involvement widens. The program reaches out by serving the public, helping to promote sustainable agriculture, and providing local access to fresh, affordable produce. "When you provide people with encouragement, respect, meaningful work, and education," says Hauptman, "you give them the chance to grow."

Ann Marie Molnar is a free-lance writer living in Seattle, Washington.

Habitat Gardening

Vanishing Oak Savannas

story and photographs by Maryalice Koehne

AS THE SUN SETS behind a grand, gnarled bur oak tree and native grasses blaze red and gold, it's fairly easy to envision what this oak savanna restoration at the Wehr Nature Center in Franklin, Wisconsin, might have looked like in presettlement times, before 1836. At that time oak savannas—also known as oak openings or oak barrens—covered as much as 5.5 million acres in Wisconsin.



Bur oak and sunflowers grow in this oak savanna restoration at a nature center near Milwaukee.

In the Midwest, they stretched in a loose arc from Minnesota east to Ohio, south to Texas, and west to Iowa and Missouri. Early pioneers who trekked laboriously through dense eastern hardwood forests on their way west were elated when they reached the relatively open oak savannas of the Midwest, and many decided to settle there.

Today, less than a tenth of one percent of presettlement-era oak savannas remain in Wisconsin, making them one of the least-understood and most endangered of North American plant communities.

That's why the 15-acre oak savanna at the Wehr Nature Center—a 220-acre facility in Milwaukee's Whitnall Park—is such a treasure. Still, like any restoration, it isn't perfect. "I call it a savanna in the making," said Daniel Spuhler, land manager for Milwaukee County's Department of Parks, Recreation and Culture, who provides recommendations on natural areas management and has been using historic plant records to reconstruct the plants typical of oak savannas.

Although Spuhler emphasizes that there is no clear-cut definition of the term "sa-

vanna," the Wehr trail map describes the oak savanna as "a community in which the trees are so scattered that grasses and herbaceous plants thrive as a ground cover."

"The complexity of the savanna plant community is just now being understood. It was described and dismissed as a transition between prairies and woods, whereas it was a really a stable system in relative terms," says Richard Henderson, a terrestrial ecologist with Wisconsin's Department of Natural Resources. "When prairie fires ceased, brush and large trees closed in, and many oak savannas were shaded out. In other instances, they were grazed over by farm animals."

The woody plant most common in oak savannas has been the bur or mossycup oak (*Quercus macrocarpus*), which has thick corky bark that offered protection from the periodic wildfires that killed most other woody plants. Other trees Spuhler has identified through his research as probably typical of oak savannas include black oaks, white oaks, walnuts, and hickories.

FORBS AND GRASSES

Although the distinctive bur oaks are the most visible aspect of an oak savanna, the herbaceous perennials—forbs—and grasses are the dominant component of the habitat, providing color and texture from spring through fall.

Many of the plants typical of oak savannas are also associated with prairies. Spring flowering plants include wild hyacinth (*Camassia scilloides*), golden alexander (*Zizia aurea*) and shooting star (*Dodecatheon meadia*). In summer, gray-headed coneflowers (*Ratibida pinnata*), and black-eyed Susan (*Rudbeckia hirta*) make a statement.

A Home-grown Savanna

Trying to replicate an authentic oak savanna in a home landscape is not likely to appeal to many gardeners, but elements of a savanna and its plant community can be easily integrated into a naturalistic garden or a meadow.

Because savannas share some of the features of conventional suburban landscapes—scattered trees surrounded by grasses and herbaceous perennials—loosely replicating one can be done so artfully that your neighbors won't even know they



This purple coneflower is native to the southern part of Milwaukee County.

are living next to a savanna. For instance, drifts of appropriate wildflowers and grasses can be planted in beds or meadows around small groves of trees or single "specimen" trees.

Bur oaks are slow growing but will reach 70 or 80 feet under ideal conditions, so they are not good choices for a small garden. In a small garden, substitute smaller, more ornamental, native trees or shrubs.

By relying heavily on regionally native plants, you will create a thematic link between your garden and what is left of

the natural plant communities in your region. You will also be providing traditional food sources and habitat for a variety of indigenous wildlife.

Prescribed burns won't be necessary in a cultivated savanna, but if you are interested in attempting a more realistic replica in a meadow or fallow field, you will need to prevent woody plants from taking over. In most cases, annual mowing in late winter and judicious removal of young tree seedlings will achieve the same results as prescribed burns, which are prohibited in many urban and suburban areas.

Daniel Spuhler, land manager for Milwaukee County's Department of Parks, says that anyone trying to establish an authentic re-creation of an oak savanna should make sure they procure seeds and plants native to their own region. "While the same species of oaks may be found in savannas in different regions, the genetic types vary," says Spuhler. "For example, seeds collected in Missouri and planted in Wisconsin may grow and mature, but often they're not able to produce viable seed themselves because of the shorter summers up here."

—M.K.

Particularly notable in late summer and early fall are the large fan-shaped leaves of prairie dock (*Silphium terebinthinaceum*) and compass plant (*Silphium laciniatum*), as well as white false indigo (*Baptisia lactea* or *B. leucantha*), which exhibits striking black seedpods. Several asters (*Aster azureus*, *A. laevis*, *A. novae-angliae*, and *A. ericoides*) complete the fall color. Among the grasses typical of oak savannas are big bluestem (*Andropogon gerardi*), switch grass (*Panicum virgatum*), and Indian grass (*Sorghastrum nutans*).

Because wildfires are now suppressed, Wehr uses prescribed burns every few years to keep the savanna and prairie restorations open. Otherwise, in as few as 25 years, these areas would return to woodland.

CONNECTION TO OUR PAST

There seems to be something about the savanna landscape that appeals to people on an elementary level. "Some scientists feel that the human species evolved on the African savanna, so we may be predisposed to feel comfortable in a savanna-style environment," notes Spuhler. "Look at suburbs across North America. We don't plant forests, we plant miniature savannas around our homes."

Our inclination to create manmade savannas around our homes may help explain why many mammals and birds associated with savanna habitats are still doing well today. Among these, Henderson cites the long-tailed weasel, cotton-

Resources

National Wildlife Federation. This organization's Backyard Wildlife Habitat Program offers a wealth of information. (703) 438-6434.

www.nwf.org/nwy/prog/habitats.

Wehr Nature Center, 9701 West College Avenue, Franklin, WI 53132. (414) 425-8550.

www.countyparks.com/horticulture.

The Wild Ones. Begun in Milwaukee in 1977, this non-profit natural landscaping organization now has chapters in many parts of the country. (877) 394-9453. www.for-wild.org.

Savannas, Barrens and Rock Outcrop Plant Communities of North America edited by Roger Anderson, James Fralish, and Jerry Baskin. Cambridge University Press, 1999.

tail rabbit, woodchuck, fox squirrel, red fox, and white-tailed deer as well as the American robin, American gold finch, indigo bunting, and brown thrasher.

Eastern bluebirds have not fared so well in our suburbs, but they are easy to spot throughout Wehr's oak savanna, inhabiting many of the nesting boxes scattered throughout the nature center. In the wild, bluebirds are a classic savanna bird, nesting in natural cavities in trees but craving access to open grassy areas for foraging.

RESTORATIONS ABOUND

Like prairies, oak savannas have benefited from the interest in preserving and restoring natural habitats that has gained headway in the last few decades. In addition to the savanna at Wehr, a 10-year-old savanna reconstruction can be viewed at the University of Wisconsin Arboretum in Madison, and another savanna restoration is underway at Old World Wisconsin, a historical theme park near Eagle. These restorations are perhaps the only way many people can see an intriguing part of our natural landscape that has nearly vanished. ☾

Maryalice Koehne is a free-lance writer living in Wauwatosa, Wisconsin.

The Bulbs of Autumn



FALL-BLOOMING bulbs provide a glorious display of floral fireworks to celebrate the end of the gardening year. And, as winter approaches, they offer temperate-zone gardeners a heartwarming final reminder of the anticipated glories of their spring-blooming cousins. Yet, surprisingly, they are one of the most underused components of many American gardens.

The reasons for this are not clear, although perhaps some gardeners are put off because fall-blooming bulbs tend to be more expensive than their more common spring-blooming cousins. But, given the right conditions, most proliferate rapidly so that a small initial invest-

ment yields a profitable return over several growing seasons.

It can also be tricky to find suitable companion plants for these autumn bulbs because many plants that experience peak growth in summer are too large and vigorous to allow the smaller bulbs to persist or to be seen. Most summer-active plants don't lose their foliage early enough for the fall bulbs to receive the necessary light for optimal growth or flowering. Yet these difficulties can be surmounted by careful placement in the garden.

Because bloom times can vary from region to region, just what constitutes a fall-blooming bulb depends in part on where you live. September 22 is the official first

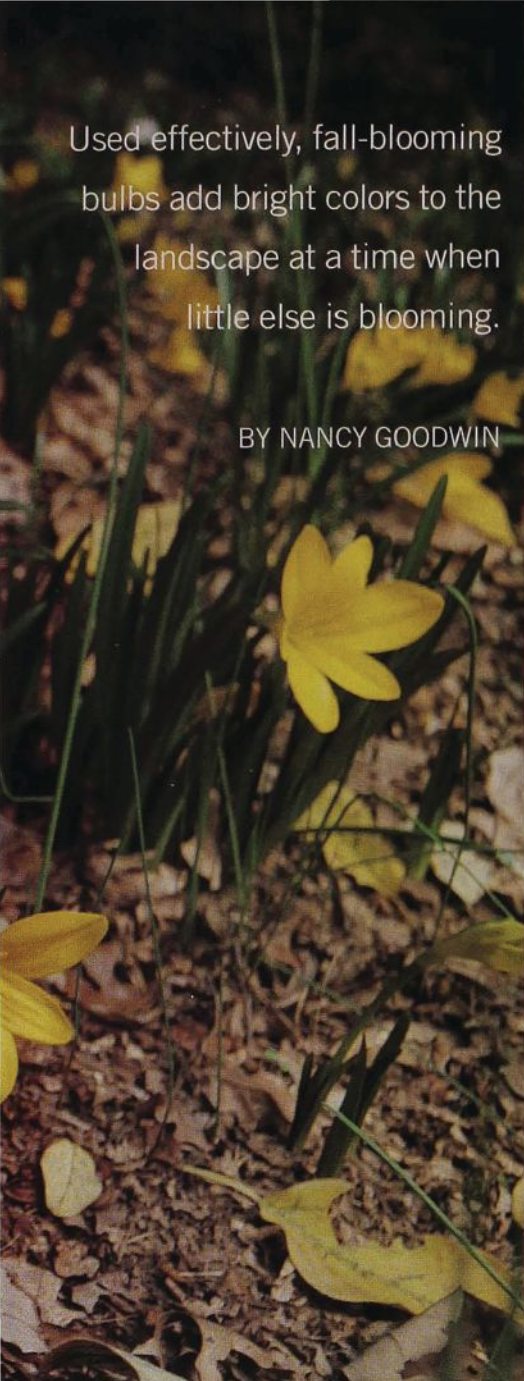
day of fall this year, but here in my North Carolina garden, located in USDA Plant Hardiness Zone 7 and AHS Plant Heat Zone 7, the cool nights of fall sometimes don't arrive until October. Yet the days are noticeably shorter by mid-August, and at that time many fall-flowering bulbs begin to bloom. The slanting light announces a change of season, and my garden becomes more exciting each day.

LATE-SUMMER INTERLOPERS

SEVERAL late summer-blooming rain lilies (*Zephyranthes* spp.) persist into fall for me, especially the pristine white-flowering *Z. candida* and pale yellow-flowering *Z.*

Used effectively, fall-blooming bulbs add bright colors to the landscape at a time when little else is blooming.

BY NANCY GOODWIN



Left: Native to the Mediterranean region, autumn daffodils (*Sternbergia lutea*) grow best in a sunny site that is fairly dry in summer. Top: White-flowered *Zephyranthes candida*, shown here with a larger pink-flowered rain lily, blooms from late summer into fall. Above: Bright pink autumn crocuses push up through the leaf litter on delicate naked stems.

smallii. *Z. flavissima*, which begins blooming in early summer, will also continue to produce its bright yellow, starlike blooms until well into fall. *Z. candida* is beautiful planted with pink colchicums, while *Z. flavissima* combines better with blue salvias or tan chrysanthemums. A site in full sun or light shade is the main requirement for these bulbs, which tolerate drought better than their common name suggests.

COLCHICUMS

THE LEAFLESS flowering stalks of colchicums—which sometimes go by the evocative sobriquet “naked boys”—can begin emerging as early as August. As

Louise Beebe Wilder notes in *Adventures With Hardy Bulbs*, “They come blowing out of the earth with all the verve and enthusiasm that we associate with spring’s manifestations, when most other plants are making their valedictory gestures.”

Deep pink *C. cilicicum* is usually the first bloomer in my garden, flowering in September and producing its leaves shortly thereafter. White- or pink-flowering *C. speciosum* and *C. autumnale* and the many hybrids of these two species bloom throughout September above a base of black mondo grass (*Ophiopogon planiscapus* ‘Nigrescens’). They also look wonderful paired with bright magenta-flowering ‘Wave’ petunias or pinkish

purple-flowered *Verbena canadensis*.

The grand finale comes in October with masses of the cultivar ‘Waterlily’, appropriately named for its many-petaled, pinkish mauve flowers, which are low and upward-facing like waterlilies. They grow near *Zephyranthes candida* and the late-flowering *Allium thunbergii* ‘Ozawa’, which has clusters of dark purple flowers atop six-inch stems. Another well-known colchicum cultivar is ‘The Giant’, whose pale purple flowers, marked with white at the base, tower eight inches or more.

Colchicums are easy bulbs to grow and—apparently because the bulbs are poisonous—don’t tend to be eaten by herbivores such as deer or voles that relish

other bulbous plants. The large, straplike, dark green leaves of most species appear in late winter only to die away in May, at which time they look rather messy. They grow well in full sun or in the woods at the base of deciduous trees, where the winter sun has a chance to ripen their foliage before the leaves return to the trees.

Harder-to-find colchicums worth seeking out through seed exchanges include: *C. lingulatum* (pinkish mauve flowers with yellow anthers), *C. kotschyi* (small, lilac pink, starry flowers), and *C. baytopi-orum* (purple-pink flowers).

AUTUMN DAFFODILS

ALONG WITH colchicums, autumn daffodils (*Sternbergia* spp.) are the work-horse bulbs of the fall garden. In my garden, the bright yellow stars of *S. sicula* emerge in September to usher in the long season of bloom for this brilliant genus. This first one has clear yellow flowers with pointed tepals that bloom on six- to eight-inch stalks. I grow them near hardy, purple-flowering verbenas and late-blooming *Allium senescens* subsp. *montanum*, which has flowers of a medium lilac shade that precede the sternbergias by a week or so.

Shortly after this small-flowering species appears, the larger and more widely available *S. lutea* begins blooming in my garden. The cupped flowers are bright yellow and open shortly before dark green leaves are visible. I brought three bulbs from my first garden when I moved to Montrose 24 years ago and now have hundreds throughout the gardens. I have planted some beneath two large dawn red-woods (*Metasequoia glyptostroboides*), where the winter sun is strong enough to produce flowering bulbs each year.

Those lightly shaded plants often bloom first, but autumn daffodils multiply most rapidly and grow best in full sun. In sunny spots, I combine them with *Geranium pratense* 'Reiter's Strain' because the dark purple foliage of the geranium enhances the bright yellow sternbergia flowers.

OXBLOOD LILIES

MOST OF THE fall-blooming bulbs I have described are native to southeastern Europe, the Mediterranean, or northern



Above: Paired here with a variegated hosta, *Scilla scilloides*, native to China and Japan, is slightly unusual among fall-blooming bulbs in that its linear leaves emerge just before the flowers. **Right:** The deep red flowers of oxblood lily are a striking sight in the fall landscape.



Africa, but oxblood lilies (*Rhodophiala* spp.) are from the Andes of South America. Members of the amaryllis family, they were formerly classified as *Hippeastrum* and then *Amaryllis* before finally being assigned to *Rhodophiala*. Though little known, they are among the most exciting bulbs of fall, sending up leafless stems bearing several dark red flowers in late August and early September.

The showiest oxblood lily is a sterile hybrid of *R. advena* that has been a pass-along plant in the American South. I

grow it in full sun at the corner of a greenhouse, where it benefits from the rain runoff. I also planted some bulbs at the edge of a bed near *Juniperus communis* 'Berkshire' and have been gratified by the pleasant contrast between the blood-red flowers and the silver to blue-gray

needles of the juniper. It also looks good with the dusky purple-leaved *Sedum* 'Mohrchen' or with the brighter, variegated *Sedum* 'Frosty Morn'.

I have also grown from seed and received bulbs of *Rhodophiala bifida*, which has smaller flowers that are a softer shade of red and bloom later than those of *R. ad-vena*. Both are worth acquiring and never fail to elicit comments from visitors to the garden. They thrive in a loamy, well-drained soil and, like other amaryllises, need a dryish, dormant period in summer.

FALL COUSINS

SEVERAL GENERA better known for their winter- and spring-flowering prowess also include species that bloom in fall. Among these are *Scilla*, *Leucojum*, *Galanthus*, and *Crocus*.

The first of these to bloom, autumn squill (*Scilla autumnalis*), can be counted on to begin flowering just as its foliage dies in July, but its main show is August and September, and flowers continue to open into October. Open clusters of many small, violet-blue flowers with indigo-blue anthers bloom on six- to eight-inch-tall stalks, followed shortly by slender, dark green leaf blades. This squill is beautiful in company with pink-flowered cyclamens such as *Cyclamen hederifolium*.

The larger *Scilla scilloides* appears in my garden in September and continues to flower for a month or more. Many fluffy pink flowers are borne on stalks to a foot tall; the foliage of this squill appears with the flowers and seems to make a second burst of growth in early spring.

Squills naturalize slowly, but the process can be speeded up by gathering the ripe seeds in late fall and sowing them in flats. They germinate readily, grow all winter in a protected greenhouse or under lights, and can be planted into the garden the following spring.

The fall snowflake (*Leucojum autumnale*) begins to bloom by August, producing small, white flowers that dangle from reedlike stems until the weather turns cold in December. Each flower consists of six petallike tepals, and each stem bears from one to four flowers. They grow equally well in full sun in my rock garden, in a woodland garden, and in shade beneath a Deodar cedar (*Cedrus deodara*). They tolerate

GROWING BULBS FROM SEED

One good way to increase your supply of fall-blooming bulbs—or propagate rare species that are hard to find except through seed exchanges—is to grow them from seed. Plant seeds from your own garden as soon as they ripen, usually in early spring—watch for the tips of the beige capsules to open. I usually just scuff up the soil around the parent plants and sow the seeds nearby to create a larger display.

If you want to propagate bulbs to move elsewhere or give away, fill a flat or pot with a free-draining soil mix. Sow seeds on the surface and cover them with a thin layer of coarse sand or soil mix. Bottom water and store them in a protected location where they will be exposed to natural temperature cycles. Keep the soil moist but not soggy.

Bulb seeds tend to germinate when the parent plants would normally come back into growth, so look for seedlings to appear in late summer or early fall. Keep the seedlings in a cold frame or cool greenhouse over the winter, continuing to keep the soil moist until late spring, when they should be ready to go dormant. At that time, gradually taper off and then water about once a month. In late summer, they can be transplanted outdoors. Because it's not always easy to see the tiny new bulbs, I often just gently transfer the contents of the flat into a shallow planting hole.

—N.G.

summer drought beautifully and have naturalized everywhere I have planted them. They are attractive growing with autumn-flowering *Cyclamen cilicium* because the contrast of the rounded, well-marked cyclamen leaves with the linear, dark green blades of the snowflake is beautiful from fall through spring before they both disappear for the summer.

Similar in appearance to their spring cousin *Galanthus nivalis*, fall snowdrops are not as easy to find, but are worth trying from seed.



Dainty autumn snowflake features bell-shaped white flowers on slender stems.

G. reginae-olgae sometimes blooms as early as September but can be counted on for its main display in October. The flowers, borne on four- to six-inch stalks, have a single green marking on the inner cup segments. Its green leaves, produced after the flowers, bear a lighter gray strip down the center of each leaf. It is increasing rapidly for me at the south end of my rock garden, where the bulbs have full sun all summer. I also grow it at the edge of the woods and continue to divide my clumps every third year or so, knowing I can never have enough of this delightful harbinger of winter.

Galanthus peshmenii also develops flowers before its leaves, but it blooms a little later than *G. reginae-olgae* and is not as vigorous for me. The leaves of this species are grayer and the flowers marked with an inverted V on each inner tepal.

Both these snowdrops are followed in late fall and early winter by *G. caucasicus* var. *hiemalis*, which has broad, gray-green leaves. Planted beneath a dawn redwood (*Metasequoia glyptostroboides*), this last snowdrop looks beautiful when lightly covered by the freshly fallen butterscotch-colored needles of the deciduous conifer.

AUTUMN CROCUSES

MOST GARDENERS think of crocuses as spring-blooming bulbs, but in fact

nearly as many crocuses bloom in fall as in spring, and by selecting several species with overlapping bloom times, you can have crocuses in flower from fall through spring. Most crocuses develop flowers and leaves at the same time, but a few send up their flower stalks before the leaves emerge.

One of the most common crocuses, *Crocus speciosus*, is also among the first to bloom in fall. The blue-purple or white flowers of this species appear in late September, but the leaves that follow wait until late winter. I grow them throughout my rock garden, in the woods, and even beneath a Deodar cedar. By the time of year the flowers appear, the sun is at a low enough angle that the buds receive enough direct sunlight to open. Rodents seldom bother these corms, so they have naturalized throughout the gardens, producing flowers in many shades and sizes. They blend well with fall cyclamen such as *Cyclamen hederifolium* and *C. graecum*.

Blooming a little later, delicate looking *Crocus goulimyi* bears its cup-shaped flowers at the top of tall perianth tubes. The flowers appear to be bicolor, with the three outer petals a different shade from the inner ones. Though the flowers are smaller than those of *C. speciosus*, the habit is superior because they don't collapse shortly after flowering.

Another delicate-looking crocus is *C. pulchellus*, which resembles *C. speciosus*

TIPS FOR FALL-BLOOMING BULBS

- Most fall-blooming bulbs grow best if planted in mid to late summer or early fall, just after their foliage goes dormant, so order them in spring or early summer for delivery at that time.
- Unfortunately, some bulbs, including sternbergias, are becoming endangered in their native habitats because they are being illegally collected. Ask your suppliers if they will guarantee they are not selling bulbs collected from wild sources.
- Plant bulbs in free-draining soil—a rock garden or raised bed is ideal if your soil tends toward clay—in a site where they will receive full sun or very brief periods of shade. Most are winter-active, so they grow successfully under deciduous trees.
- Follow the common rule of thumb for planting depth for most fall-blooming bulbs: Plant them so the top of the bulb is at a depth twice its height.
- Colchicums usually don't need protection from rodents because they are toxic, but if you have problems with voles or squirrels, you may want to protect sternbergias, oxblood lilies, and other bulbs by planting them in fine-mesh wire cages or surrounding them with gravel or sharp-edged soil additives such as Perma Bloc that are designed to deter rodents.
- Mulch lightly around the bulbs or grow them through non-aggressive, mat-forming ground covers such as creeping thyme or creeping phlox to reduce the chance of mud being splashed on their delicate blooms.
- Because most of these bulbs have small flowers and they don't always bloom at exactly the same time, plant them in large groupings for best effect. Crocuses, colchicums, and sternbergias are ideal for massing and naturalizing.
- Avoid planting fall-blooming bulbs where their spring foliage will shade or suffocate other small or delicate plants, or where they will be obscured by the summer growth of larger plants.
- Although some references advise dividing fall-blooming bulbs when their foliage starts to wither in early summer, I divide most of mine, especially colchicums and sternbergias, just as they are coming into bloom.

—N.G.

but is a better choice because it also remains upright after blooming. The flowers, which bloom in September and October for me, may be white or any shade of lilac-blue.

The saffron crocus (*C. sativus*) is dramatic because its scarlet stigma is too long to be

contained within the flower itself and peeks out above the petals. As with *C. speciosus*, its flowers sometimes flop soon after blooming, which has led some gardeners to consider it more of a culinary curiosity—the stigmas are harvested to produce the flavoring saffron. But for me, it is a wonderful part of the fall crocus spectacle.

The closely related *C. cartwrightianus* forma *albus* has white petals and a scarlet stigma surrounded by three yellow anthers. This crocus grows easily in the shade of deciduous trees and combines well in my garden with the small *Hosta venusta*.

Blooming in mid- to late October, *C. medius* is one of the most dramatic fall-flowering species, featuring red-violet flowers marked by vivid orange stigmas. The corms multiply slowly, however, so plant a large grouping.

There are many other lovely crocuses that can be acquired through friends or from seed exchanges. Some particularly worth pursuing, listed roughly in




Left: The elongate scarlet stigma of saffron crocus is the source of the valuable spice, saffron. Above: *Crocus cartwrightianus* 'Albus'.



Crocus medius unveils its royal purple flowers in the late autumn garden.

order of blooming, include: *C. niveus* (white with a yellow throat), *C. tournefortii* (pale violet-blue), *C. nudiflorus* (deep purple), *C. tomasii* (lilac with a white throat), and *C. veneris* (white striped with violet-blue).

Depending on where you live, the final crocus of fall might be considered the first winter one. For me this is *C. laevigatus*, which in late November bears lilac purple flowers with feathered, darker purple exteriors. When I weed near them, I can smell their delicate fragrance, which is akin to that of freesias.

These crocuses and the other bulbs described above are valuable for their ability to bridge the gap between summer and winter. I never think of bulbs only for their spring display because I know that I can have them blooming throughout the year. Those in fall are most welcome to me for they signal an end to the heat and humidity of summer and the beginning of a season I savor for its cool nights and perfect gardening conditions. 

Nancy Goodwin's most recent book is A Year in Our Gardens, co-authored with Allen Lacy. She lives at Montrose, her acclaimed garden in Hillsborough, North Carolina. Tours of the garden are available by appointment; for information, write to her at P.O. Box 957, Hillsborough, NC 27278.

Sources

Brent and Becky's Bulbs, 7463 Heath Trail, Gloucester, VA 23061.

(877) 661-2852. www.brentandbeckysbulbs.com. Catalog free.

Colchicum autumnale and cultivars 'Alboplenum', 'Album', 'Pleniflorum'; *C. cilicicum*; *C. speciosum*; *Colchicum* cultivars 'The Giant', 'Waterlily'; *Crocus cartwrightianus* forma *albus*; *C. goulımıy*; *C. medius*; *C. sativus*; *C. speciosus* and cultivars 'Albus', 'Conqueror', 'Oxonian'; *Rhodophiala bifida*; *Zephyranthes candida*.

Fieldstone Gardens Inc., 620 Quaker Lane, Vassalboro, ME 04989-9713.

(207) 923-3836. Catalog \$2.

Allium senescens subsp. *montanum*; *A. thunbergii* 'Ozawa'.

Fraser's Thimble Farms, 175 Arbutus Road, Salt Spring Island, BC V8K 1A3, Canada. (250) 537-5788. www.thimblefarms.com. Catalog free.

Colchicum autumnale; *C. speciosum*; *Colchicum* cultivars 'The Giant', 'Waterlily'; *Crocus pulchellus*; *C. sativus*; *C. speciosus* and cultivars 'Albus', 'Cassiope', 'Conqueror'; *Leucojum autumnale*; *Scilla autumnalis*; *Sternbergia lutea*.

McClure & Zimmerman, 108 W. Winnebago Street, P.O. Box 368, Friesland, WI 53935. (800) 883-6998. www.mzbulb.com. Catalog free.

Colchicum autumnale 'Alboplenum', 'Album', 'Plenum'; *C. cilicicum*; *C. speciosum*; *Colchicum* cultivars 'The Giant', 'Waterlily'; *Crocus cartwrightianus* forma *albus*; *C. goulımıy*; *C. medius*; *C. pulchellus*; *C. sativus*; *C. speciosus* and cultivars 'Cassiope', 'Conqueror', and 'Oxonian'; *Galanthus caucasicus*; *Sternbergia lutea*; *Zephyranthes candida*.

Park Seed, 1 Parkton Avenue, Greenwood, SC 29647-0001. (864) 223-7333.

www.parkseed.com. Catalog free.

Colchicum autumnale 'Alboplenum' and 'Majus'; *C. cilicicum*; *C. 'Waterlily'*; *Crocus sativus*; *C. speciosus*; *Sternbergia lutea*.

Roslyn Nursery, 211 Burrs Lane, Dix Hills, NY 11746. (516) 643-9347.

www.roslynnursery.com. Catalog \$3.

Allium thunbergii 'Ozawa'; *Scilla scilloides*.

Resources

Adventures with Hardy Bulbs by Louise Beebe Wilder. The Lyons Press, New York, New York, 1998. (Reprint of 1936 original.)

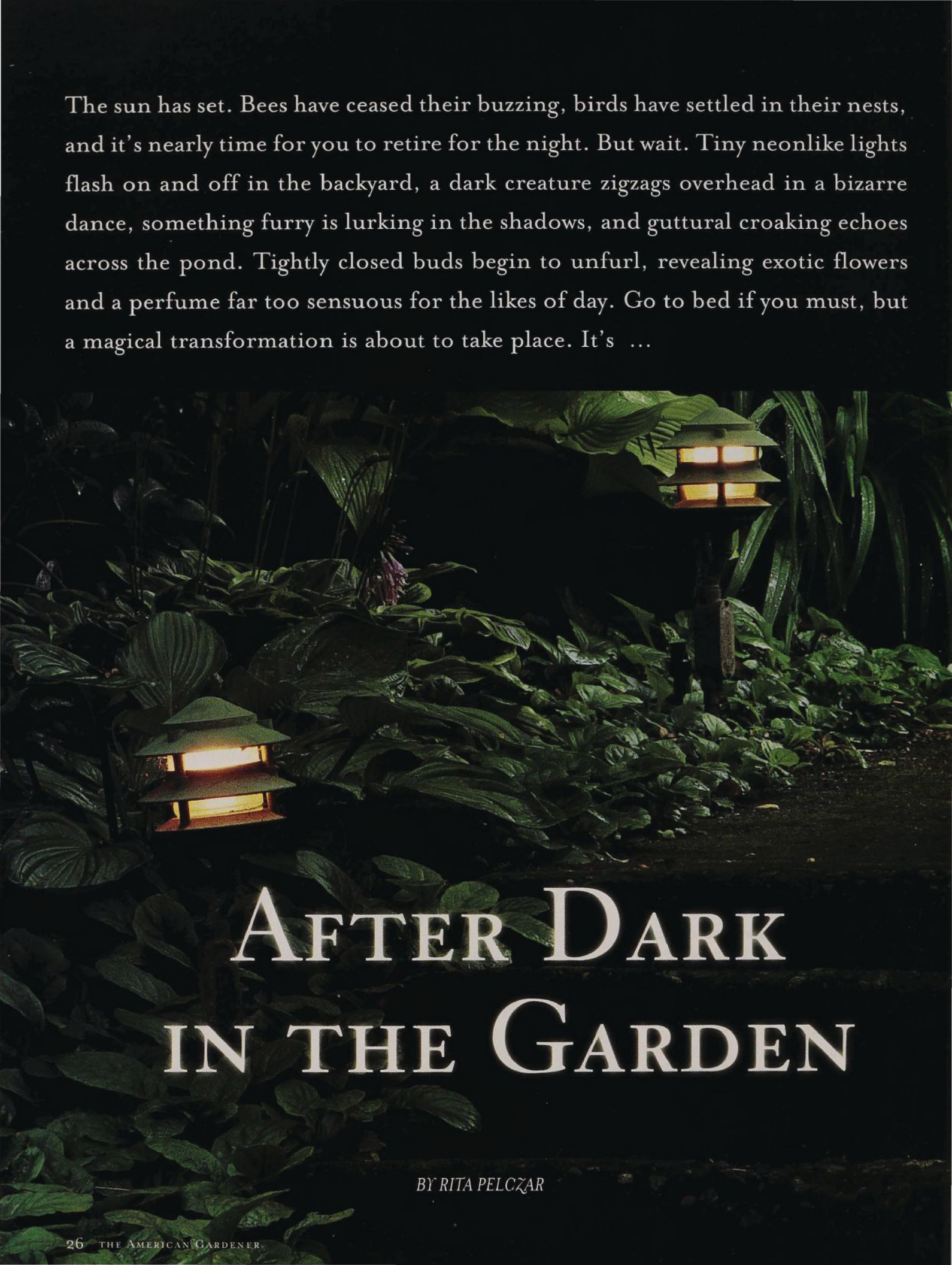
The American Gardener's World of Bulbs by Judy Glattstein. Little, Brown and Company, New York, New York, 1994.

Manual of Bulbs by John Bryan, consulting editor. Timber Press, Portland, Oregon, 1995.

Naturalizing Bulbs by Rob Proctor. Henry Holt and Company, New York, New York, 1997.

The Smaller Bulbs by Brian Mathew. B.T. Batsford, London, England, 1987.

The sun has set. Bees have ceased their buzzing, birds have settled in their nests, and it's nearly time for you to retire for the night. But wait. Tiny neonlike lights flash on and off in the backyard, a dark creature zigzags overhead in a bizarre dance, something furry is lurking in the shadows, and guttural croaking echoes across the pond. Tightly closed buds begin to unfurl, revealing exotic flowers and a perfume far too sensuous for the likes of day. Go to bed if you must, but a magical transformation is about to take place. It's ...

A photograph of a garden at night. The scene is filled with lush green foliage, including large-leafed plants and some purple flowers. Two glowing, tiered garden lanterns are visible, casting a warm light. The overall atmosphere is mysterious and magical.

AFTER DARK IN THE GARDEN

BY RITA PELCZAR

AT TWILIGHT, the garden takes on an entirely different character than its daytime counterpart. Deeply hued flowers seem to disappear, and white flowers that were all but lost to the sun's glare glow in the softer light of the moon. Leafy shrubs, easily distinguishable just a couple of hours ago, become looming, amorphous dark mounds. The reduction in visibility heightens your sense of smell as it minimizes your awareness of imperfections, including unfinished chores. Cool breezes begin to dissipate the heat built up during the day. For many, this is the best time to experience a garden: when your workday is done and you can finally relax.

It is easy to enhance a garden to maximize evening enjoyment. Plants that perform well at night are numerous; they include annuals, perennials, and bulbs (see "Moonlight Becomes Them," page 31). Some bear flowers that open only at night. Others produce white or pale-colored blooms that, though present all day, come into their own after dark. Many are fragrant or become fragrant at dusk. Silvery foliage and pale, textured bark or branches add further dimension to the darkness. All it takes is a few nocturnal beauties situated in key locations and you may be humming strains of "Moonlight Serenade."

SOME ENCHANTED EVENING

A GOOD STARTING point if you are planning a separate moonlight garden or just adding nocturnal interest to your existing garden is to consider where you like to spend time in the hours after sunset. Garden designer Lucy Hardiman of Portland, Oregon, suggests that an evening garden is best situated "near or adjacent to areas where people gather to eat or visit from twilight to dark." Patios, terraces, porches, and decks can accommodate both furniture for relaxing and plants for interest, functioning as a transition between indoors and outside as well as between day and night.

AHS member Marian Peacock of

Athens, Georgia, views her gardens in the evening from her front porch or back deck. She suggests integrating light-colored statuary and containers among the plants. "From our front porch, we can see an off-white maiden statue against the dark green foliage of azaleas. She is the last thing to fade at dusk and the first thing I see at dawn."

Nocturnal activities and fragrances draw the attention of many gardeners, influencing where they wander after the sun sets. Lynn Behrens of Durkee, Oregon, spends evenings in her rock garden, where she enjoys an assortment of fragrant flowers.

"I like to go out to sit under the apple tree by our gate to watch the white flowers with the evening moths going to pollinate them," says Billee Howard of Silverton, Idaho. "There is white sweet woodruff around the apple tree, white petunias in nail keg barrels, and white violas around the bird bath in the center of the lawn." Near her gate, she has planted fragrant white *Nicotiana glauca* and *N. sylvestris* for the enjoyment "of those who come in and out."

Kimberly Sies of Paris, Kentucky, follows a stone path to her favorite spot for evening garden enjoyment. "I like to relax on my hammock sipping a cold beverage beside my homemade table built of

logs/firewood for the legs and a glass top showing the flowers I planted underneath." Sound is an important element in the night garden, and a pond—even if it is too far away to see clearly—can add just the right background music. Such a pond provides the trickling sound of water for Sies's serene garden retreat, and the adjacent rose garden contributes fragrance. "All this works very well after a stressful day of work, children, etc.," says Sies.

"My wife and I happily give over our garden to the night," admits John E. Rogers Jr. of Newville, Pennsylvania. "When the sun finally drops behind the wall of arborvitae that runs along the western border of our garden, we pour ourselves a drink and take refuge in our favorite nook, surrounded by hollyhocks, spirea, and Joe Pye weed."

NIGHT MOVES

ON A RECENT evening stroll along the path to their fish pond, Rogers and his wife noticed "the frogs arranged in a semicircle along the edge of the pond." The frogs were temporarily silenced by the humans' approach, and as Rogers observed, "they seemed to be conferring among themselves as to whether or not we posed enough of a threat to force them back into the water." Such quiet observations reflect the slower pace and tranquil attitude that seem to prevail in most evening gardens. Another spot that draws the Rogerses into the night is the rose garden, where "lamb's ears and lavender-cotton mark our path."

If strolling in the evening is an activity you enjoy, special attention should be paid to your paths. Walkways should be well defined and free of obstructions, such as protruding roots. Using silver and white low-growing plants to reflect the moonlight, as Rogers does, is an effective way of guiding sure-footed visitors, but if your walkways include abrupt turns or steps, you should consider installing artificial lighting for safety.

When discreet lights are placed along pathways that are used at night, the going



Above: A moonflower's huge blossom unfurls at dusk. Opposite: Artificial lighting along a garden path allows for safe evening strolls.



A white garden, left, planted with pale-colored varieties of foxgloves, roses, hydrangeas, and marguerites, gains visual prominence as nighttime approaches. Below: *Nicotianas* and sweet alyssum provide fragrance for evening enjoyment.

is definitely easier and safer. Possible hazards such as steps, rock outcrops, tree roots, uneven paving, or pools are revealed and can be avoided. “Discreet” is the important consideration here. Bright lights along paths create a landing-strip effect that tends to draw attention away from other elements of the evening landscape.

Lighting provides a sense of security that may prompt visitors to venture into parts of the garden that would otherwise seem forbiddingly dark. And lighting can create drama and a sense of place in parts of the garden that are unexpected when the sun is high.

BY THE LIGHT OF THE SILVERY MOON

THE TOPIC OF lighting evokes some strong opinions among gardeners; like many aspects of gardening, it is a matter of personal taste. Some gardeners are thrilled by the possibilities afforded by artificial light, including spotlighting, uplighting, and silhouetting or backlighting (see “Garden Lighting,” opposite page). “We like to align our lights to make soft shadows and focus on a special planting,” says Behrens. Artificial light can effectively highlight distant areas of the landscape, both to capture attention and to safely guide the way.

But other gardeners find the addition



of lights unnatural, unnecessary, and in some cases, detrimental. “Lighting can disrupt the natural cycle of all plants,” warns AHS member Joseph Poranski of Burke, Virginia. High-intensity lights that are left on for long periods can throw off the flowering schedules of daylength-sensitive plants by interrupting the important dark period. And some woody plants may not harden for winter—a process that is often stimulated by shortening days—when artificial lights mimic the long days and short nights of summer.

“We praise the darkness for both the relief it gives us from the day and for its mysteries,” says Rogers, who finds it hard to conceive that “anyone would want to

light a garden and deprive himself of the rich beauty that comes with the night.”

HEAVEN SCENT

FRAGRANCE IS ONE of our most powerful senses, and evening gardens tend to be fragrant ones. As darkness falls, color becomes a less important aspect of flowers both for humans and pollinating creatures. Night-blooming flowers rely more on their scent than their color to lure pollinators. This works out well for the resident gardener who generally reaps the benefits of the fragrant lure as it is carried on the cool night breeze. But there are exceptions. Flowers that are pollinated by bats, such as those of the giant saguaro cactus, tend to smell more like rotting flesh or old socks—odors that are apparently held in esteem by the bats but that few humans find appealing.

But most often the fragrances of the night are part of its magic. There is “nothing better than a large stand of *Lilium* ‘Casa Blanca’ planted near a terrace—the white flowers luminous in the dark—perfuming the garden,” relates Hardiman.

For those with limited space, many night-scented plants can be easily grown in containers. Lynda Heavrin, an AHS member from Hometown, Indiana, recalls, “For years I lived in an apartment, working two jobs and going to school for my horticulture degree. I usually got home late at night from my second job. For an olfactory treat every evening, I planted a white *nicotiana* in a pot right next to the front door. I was using aromatherapy long before it became popular!”

THE NIGHT HAS A THOUSAND EYES

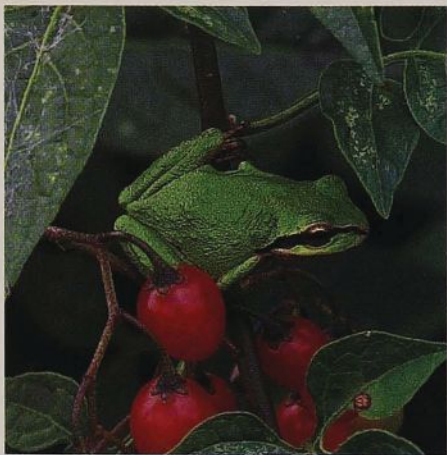
DEPENDING ON what part of the country you live in and whether you live in an urban or rural area, a variety of critters may visit your garden under the cover of darkness. Their presence often

goes unnoticed, unless you are watching for them—moths soundlessly pollinate night-blooming plants, leaving no visible trace of their activity; bats utilize their silent sonar system to sweep the night air for flying insects. But other nocturnal beasts sound off—owls screech, crickets chirp, and frogs croak—or sing, depending on your musical ear. Some visitors leave behind evidence of their evening activities. Slugs take great chomps out of hostas and other tender plants, female toads leave gelatinous strings of eggs on the surface of pools and ponds, and raccoons can shuck the kernels right off the cobs of the sweet corn ripening in your garden.

Night Fliers. Most moths are nocturnal. The hundred or so species of hawk-moths, also known as sphinx moths, found in the United States are common night pollinators

These night fliers resemble hummingbirds in several ways: They are large, they fly at high speeds, and they feed in flight. Like hummers, their high energy output requires frequent refueling with nectar. The long, thin, flexible proboscis, which is coiled when the moth is not feeding, efficiently extends deep into the blossoms of preferred nectar sources, inadvertently pollinating the flowers.

Flowers preferred by hawkmoths typically have long corolla tubes, are white or pale in color, and are most fragrant in the evening. Examples include flowering tobacco (*Nicotiana* spp.), four o'clocks (*Mirabilis jalapa*), and most honeysuckles (*Lonicera* spp.).



A Pacific tree frog perches on a fruiting branch of climbing nightshade.

Garden Lighting

Adding lighting can make a garden more inviting for evening enjoyment, create intriguing moods, highlight particular plants or features, and make movement through the garden after dark safer. There are numerous options for supplementing moonlight, ranging from simple candles to high-tech, fiber-optic systems (see "Seasonal Garden Goods," page 57, for profiles of several garden lighting options).

Candles help create a romantic or mysterious ambiance outdoors just as they do inside, and citronella candles help keep bugs at bay. Luminarias are votive candles anchored in an inch or two of sand inside a small paper bag. The bag prevents the wind from blowing out the candle and gently mutes its glow. These glittering low-tech fixtures are perfect for evening parties, bestowing a festive atmosphere and directing foot traffic through the landscape. Oil lamps and torches add a similar glow to gardens and are versatile and effective for outdoor entertaining.



Many landscape lighting systems are powered by electricity. Standard 120-volt household current was used almost exclusively until fairly recently, when systems were developed that use a transformer to "step down" the voltage to a safer-to-use 12-volt system. Unlike 120-volt lighting systems—which require installation by a licensed electrician and lines buried at least 12 inches deep—low-voltage landscaping light lines are generally buried only six inches below ground and, depending on local regulations, can usually be installed by the homeowner. Low-voltage lighting kits are available from hardware and garden supply stores, and although they are not as powerful as a system run on household current, they satisfy most home landscape needs.

Solar lights for gardens are appealing because they don't require any wiring and they conserve energy. They are more easily moved from one spot to another and can be placed in areas where electricity is not readily available. Although in recent years improvements have been made with solar lights, their power does have limitations—the lights may be dimmer than desired, may not last as long as you like, and can only be sited in full sun.

Newest on the landscape lighting scene are fiber-optic systems. These versatile lights are powered from an electric lamp located in a lightbox that is placed in a dry, inconspicuous location. The power is piped through optical fibers that carry no electricity or heat. Because no electricity is generated at the site of the light fixture, they can be safely placed anywhere in the garden—within 200 feet of the lightbox. Do-it-yourself fiber-optic kits are available for gardeners, but more extensive systems require professional installation.

—R.P.

Resources

The Art of Outdoor Lighting: Landscapes With the Beauty of Lighting by Randall Whitehead. Rockport Publishers, Gloucester, Massachusetts, 1999.

The Evening Garden: Flowers and Fragrance from Dusk till Dawn by Peter Loewer. Macmillan Publishing Company, New York, New York, 1993.

Evening Gardens: Planning & Planting a Landscape to Dazzle the Senses After Sundown by Cathy Wilkinson Barash. Chapters Publishing, Shelburne, Vermont, 1993.

Lighting Sources

■ Fiber-optics:

Fiberstars, 2883 Bayview Drive, Fremont, CA 94538.
www.fiberstars.com.

Mica Lighting, 717 S. State College Boulevard, Fullerton, CA (877) 761-7777.
www.micalighting.com.

■ Low-voltage Electric:

HI-TECH Landscape Lighting, 6018 Benjamin Road, Tampa, FL 33634. (800) 511-2099.
www.landscape-lighting.net.

■ Solar:

Creative Energy Technologies, 10 Main Street, Summit, NY 12175. (888) 305-0278.
www.cetsolar.com.

Gardener's Supply Company, 128 Intervale Road, Burlington, VT 05401. (800) 427-3363.
www.gardeners.com.

Solutions, P.O. Box 6878, Portland, OR 97228. (800) 342-9988.
www.SolutionsCatalog.com.

Adult moths are usually welcome garden visitors, but the larvae of certain sphinx moths can be troublesome. For instance, tomato hornworms can wreak havoc on tomato and potato plants. Fortunately, predaceous wasps help keep these hungry larvae under control.

Another welcome sight in the evening garden is the warm glow of lightning bugs or fireflies. Some 200 species of these insects, which are technically beetles, inhabit the United States. The flashing light they emit, which fascinates children and adults alike on warm summer evenings, is part of a mating ritual. Each species emits a slightly different pattern or color of light to locate and attract a likely mate.



Looking much like a hummingbird, a white-lined sphinx moth emerges at dusk to collect nectar from larkspur blossoms.

The night sky provides a sumptuous smorgasbord for several species of bats throughout the United States. Using their built-in sonar, these winged mammals locate and home in on flying insects, especially during the first hour or so after sunset and the hour just before dawn, providing helpful control of mosquitoes and other flying insect pests.

And while most bats feast on bugs, there are some species—mostly tropical in occurrence—that feed on pollen and nectar. A few migrate from Mexico into the southwestern states during the summer where they are effective pollinators. These bats are commonly attracted to large, bell-shaped, white or pale-colored flowers that produce musty, rancid odors. Flowers of the century plant (*Agave* spp.), the giant saguaro cactus (*Carnegiea gigantea*), and

several banana species (*Musa* spp.) are among their favorite food sources. Some bats suspend themselves from the petals of the flowers while they feed, and others hover like hummingbirds as they insert their long, thin tongues into the flower. While feeding, the bat usually receives a dusting of pollen, which is often transferred to the next flower it visits.

Four-Legged Foragers. Some night visitors are not always so welcome in a formal garden. Armadillos are nocturnal garden visitors in Texas, Oklahoma, Louisiana, Arkansas, Mississippi, and parts of Florida and Alabama, where they feed on insects, worms, and carrion, and there's no telling where they'll

dig for their supper. "Armadillos frequent my flower beds and lawn, undoing much of the work I have done," says AHS member Crystal Rogers of Waverly, Alabama. "Unfortunately, I rarely actually see them."

Other common four-legged night-time foragers include raccoons and opossums. Raccoons, which primarily feed on vegetables and aquatic animals, can be a nuisance if you raise fish in a garden

pond. Opossums are shy creatures and generally prefer a diet of insects and carrion. In some areas, red or gray foxes conduct evening hunts for rabbits, mice, voles, and other small garden inhabitants.

START TONIGHT

IT'S EASY TO get hooked on evening gardens. There are many plants that are at their best after the sun sets, and since most of us are too busy during the day to enjoy our gardens, an evening garden just makes sense. And fall is a great time to enjoy the evening garden because nights are cooler and there are fewer bothersome insects such as mosquitoes.

So what are you waiting for? The sooner you plant your moonlight garden, the sooner you, too, will be "Dancing in the Dark"!

Rita Pelczar is contributing editor of *The American Gardener*.

MOONLIGHT BECOMES THEM: AN EVENING GARDEN SAMPLER

Many plants that are merely attractive in the garden during the day virtually glow at night. Some bear flowers that open as evening approaches and fade with the morning light. The same colors that attract night pollinators—white, pale yellow and pale pink—reflect the soft light of the moon. Many are fragrant, capturing our attention as we stroll by. Light gray and silver foliage often appears iridescent in the evening light. The following list of annuals, herbaceous perennials, and bulbs is just a sampling of the many plants that can make your garden as intriguing at night as it is during the day.



Four o'clocks



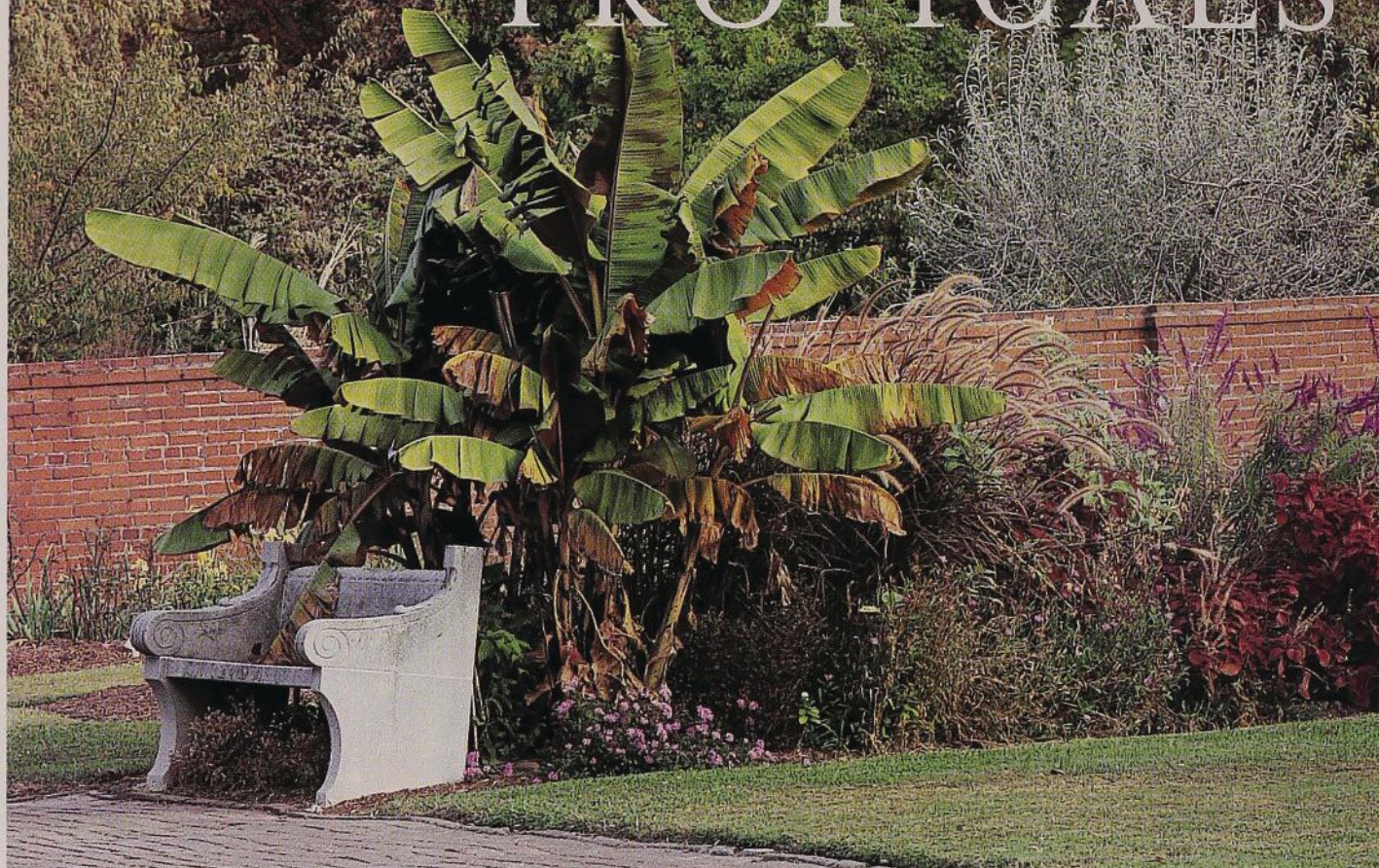
Evening primrose



Horn of plenty

PLANT NAME	NOCTURNAL ATTRIBUTES	USDA HARDINESS/AHS HEAT ZONES
Annuals		
Evening stock (<i>Matthiola longipetala</i>)	Very fragrant pink or purple flowers	(0, 10–1)
Flowering tobacco (<i>Nicotiana</i> spp.)	Fragrant tubular flowers, some open at night	(0, 12–1)
Four o'clocks (<i>Mirabilis jalapa</i>)	Fragrant flowers in many colors open in late afternoon	(10–11, 12–1)
Moonflower (<i>Ipomoea alba</i>)	Tropical vine grown as an annual; large, fragrant, white flowers open at dusk	(10–11, 12–1)
Snow on the mountain (<i>Euphorbia marginata</i>)	Showy white-edged leaves gleam	(0, 12–1)
Sweet alyssum (<i>Lobularia maritima</i>)	Low-growing mounds of tiny white or pale flowers bloom all summer	(0, 9–1)
Perennials		
Angel's trumpet (<i>Brugmansia</i> hybrids)	Large fragrant flowers hang from branches; tropical shrub good for containers	(11, 12–10)
Cardoon (<i>Cynara cardunculus</i>)	Coarse, deeply lobed, spiny, silver foliage adds drama	(8–11, 12–1)
Evening primrose (<i>Oenothera</i> spp.)	White or pink night-opening flowers; low spreading plants	(4/5–9, 12–1)
Goatsbeard (<i>Aruncus dioicus</i>)	Tall, creamy, long-lasting spires above fernlike foliage	(3–9, 10–1)
Horn of plenty (<i>Datura metel</i>)	Large, fragrant pure white to purple flowers open at sunset	(9–11, 12–1)
Lamb's ears (<i>Stachys byzantina</i>)	Soft, silver gray foliage	(4–9, 9–1)
Night-blooming daylilies (<i>Hemerocallis citrina</i> and hybrids)	Fragrant lilylike flowers open at night	(3–9, 12–1)
Night-blooming water lilies (<i>Nymphaea</i> hybrids)	Tender, tropical varieties in many colors; very fragrant flowers open at night	(3–11, 12–1)
Bulbs (and bulblike plants)		
Kahili ginger (<i>Hedychium gardnerianum</i>)	Tall tropical with spikes of fragrant lemon yellow blooms; good for containers	(11, 12–9)
Madonna lily (<i>Lilium candidum</i>)	Large white fragrant flowers on tall stems	(3–9, 8–4)
Spider lily (<i>Crinum americanum</i>)	Long-blooming, evening-fragrant white flowers in umbels	(8–11, 12–8)
Summer hyacinth (<i>Galtonia candicans</i>)	Fragrant white bell-shaped flowers in loose clusters on tall stems; summer blooming	(7–10, 10–7)
Tuberose (<i>Polianthes tuberosa</i>)	Very fragrant white waxy flowers in short clusters; late-summer blooming	(11–12, 12–7)

OVERWINTERING TROPICALS



The bold leaves of bananas, elephant's ears, New Zealand flax, and other tropical plants provided season-long drama in the summer garden, but now it's time to bring them indoors.

BY MARY YEE

PHOTOGRAPHS BY ROGER FOLEY

PLANT FADS come and go, but after several years the fascination with colorful and exotic tropicals and subtropicals is still going as strong as ever.

At the American Horticultural Society's headquarters at George Washington's River Farm, tropical plants are incorporated into the display gardens to provide boldness and intriguing colors or textures. The large heart-shaped leaves of taro or elephant's ear (*Colocasia esculenta*), the stature and oarlike leaves of red-leaf bananas (*Musa acuminata* 'Zebrinus'), and the swordlike foliage of New Zealand flax (*Phormium tenax*) enliven the summer borders of annuals and perennials. These tender perennials will thrive in many North American gardens—at least until the first cold snap in fall.

At River Farm, Director of Horticulture Janet Walker and her staff dig up many of these large tropicals each fall and

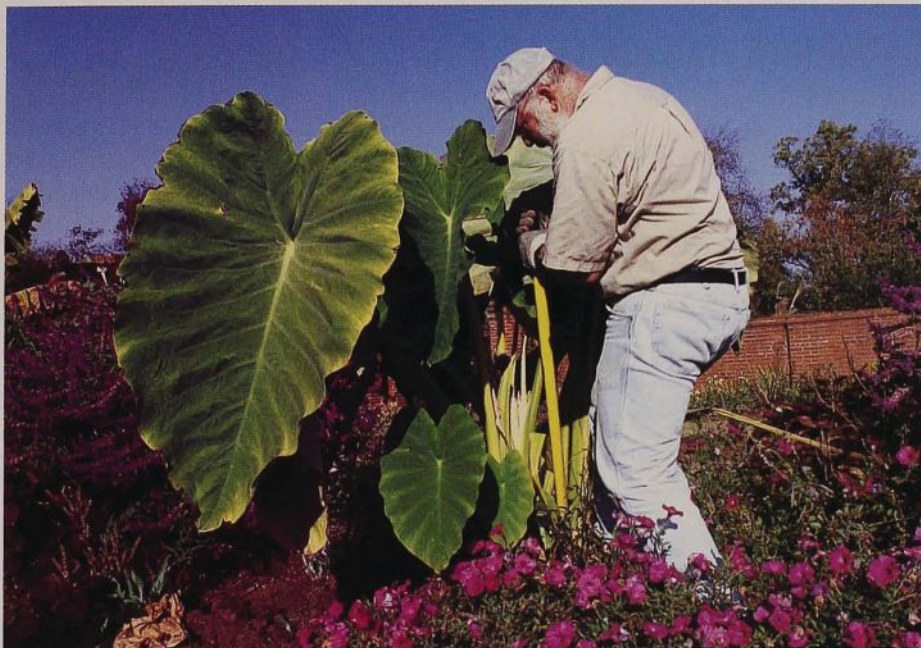
bring them indoors, where they spend the winter either growing lazily in a greenhouse or hibernating in cool storage. Each spring after the ground has warmed up, they are replanted in the garden, where they flourish all summer.

Even if you don't have as big a collection of plants as we have at River Farm, you can enjoy the same degree of success with your prized tropicals. You don't need a greenhouse, a lot of extra equipment, or a lot of time.

OUTDOORS AND INDOORS

THERE'S MORE elbow room at River Farm than there is in many homes, but space is still at a premium when it comes

The onset of crisp, dry fall weather signals that it's time to move this banana plant from the perennial border at River Farm indoors.



AHS Garden Manager Barry Stahl has his hands full excavating a huge specimen of elephant's ear (*Colocasia esculenta*) from one of the beds in River Farm's display gardens.

to which plants get to spend winter indoors. Plants of tropical origin that are relatively inexpensive, widely available, or easily grown from seed and cuttings—including certain geraniums (*Pelargonium* spp.), impatiens, coleus, and castor bean (*Ricinus communis*)—are not saved. It's the bananas, elephant's ears, and other costlier or harder-to-propagate tropicals that get special treatment.

Plants can be overwintered a number of ways (see "Methods of Overwintering Common Tropicals" on page 34). Successfully saving them as house plants is probably trickiest; if you plan to do this, be sure to bring plants inside well before the first frost to prevent the onset of dormancy. "Ideally," says Walker, "you should bring them indoors a month before you turn the heat on." (See "Overwintering a Banana in a Container as a House Plant" on page 35 for how to remove a large tropical from the garden for growing inside during the cold winter months.)

Because of diminished levels of light and the increased dryness of the air due to heating, the indoor environment of our homes in winter is often very difficult for plants used to growing outdoors. If you want your plants to continue growing indoors in winter and don't have a room with a warm, naturally sunny exposure, plan to provide plenty of supplemental lighting. And compen-

sate for the dry air by misting regularly with a spray bottle and setting plants on top of pebble-lined trays filled with water, or—better yet—using a humidifier. An electric fan is also useful to improve air circulation and reduce the risk of fungal diseases. Because growth indoors will not be nearly as vigorous as outdoors, reduce fertilizing. Some plants will fare better as house plants than others; experimentation is the key.

A LONG WINTER'S SNOOZE

A LOWER-MAINTENANCE method of overwintering plants is to retain them in a dormant state until spring—which involves potting them up and keeping them in a dark, cool, frost-free area, such



Ornamental sweet potato tubers can be stored indoors in ventilated bags over winter.

Resources

Bananas You Can Grow by James W. Waddick and Glenn M. Stokes. Stokes Tropicals Publishing Co., New Iberia, Louisiana, 2000. \$19.95. To order, write to Stokes Tropicals, P.O. Box 9868, New Iberia, LA 70562-9868, or visit the Web site www.stokestropicals.com.

The Exotic Garden: Designing with Tropical Plants in Almost Any Climate by Richard H. Iversen. The Taunton Press, Newton, Connecticut, 1999.

Hot Plants for Cool Climates by Susan A. Roth and Dennis Schrader. Houghton Mifflin Co., Boston, Massachusetts, 2000.

Sources

A mail-order source for sulfur is **Gardens Alive!** 5100 Schenley Place, Lawrenceburg, IN 47025. (812) 537-8650. www.gardens-alive.com.

as an unheated basement or garage. "We wait until after frost has killed some of the leaves before we bring our plants indoors," says Walker. "This allows time for the plants to have started going into dormancy—and we want to keep them dormant throughout the winter. It also allows the plants to store as much food as possible before dormancy."

Once indoors, the lack of light and water and lower temperatures will eventually kill the remaining top growth on plants, so cut it off before storage, leaving a short section of the stem above the soil line. The roots will stay viable if they are protected from freezing and not allowed to completely dry out. At River Farm, some overwintering plants are stored in a large garage that is kept just above freezing, using portable heaters when necessary.

A more space-saving method of overwintering tuberous plants such as cannas, caladiums, taros, and elephant's ears is to

METHODS OF OVERWINTERING COMMON TROPICALS

Angel's Trumpet (*Brugmansia* spp.)

Place dormant potted plant indoors in a cool, dark location.

Caladium (*Caladium bicolor*)

Store tubers in ventilated bags with sphagnum moss, sawdust, vermiculite, perlite, or sand.

Canna (*Canna* cultivars)

Store tubers in ventilated bags with sphagnum moss, sawdust, vermiculite, perlite, or sand.

Coleus (*Coleus* or *Solenostemon* cultivars)

Grow as house plant or take stem cuttings.

Banana (*Musa* spp.)

Place dormant potted plant in cool, dark indoor location.

Elephant's Ear or Taro

(*Alocasia* and *Colocasia* spp.)

Store tubers in ventilated bags with sphagnum moss, sawdust, vermiculite, perlite, or sand.

Ginger Lily (*Hedychium* spp.)

In USDA Zone 6 and north, save rhizomes in ventilated bags with sphagnum moss or sawdust. South of Zone 6, ginger lilies can often be well mulched for winter and treated as hardy perennials.

Hibiscus (*Hibiscus rosa-sinensis*)

Grow as house plant or place dormant potted plant in cool, dark location.

Mandevilla (*Mandevilla* spp.)

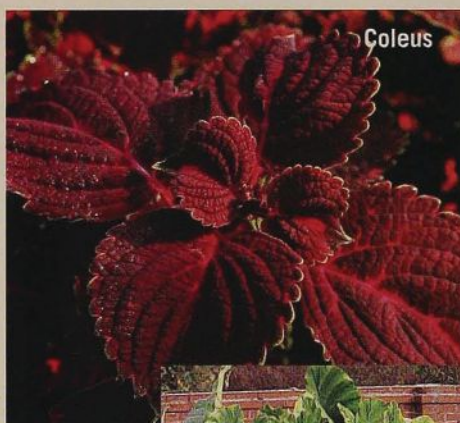
Grow as a house plant or place dormant potted plant in a cool, dark location.

Sweet Potato Vine (*Ipomoea batatas*)

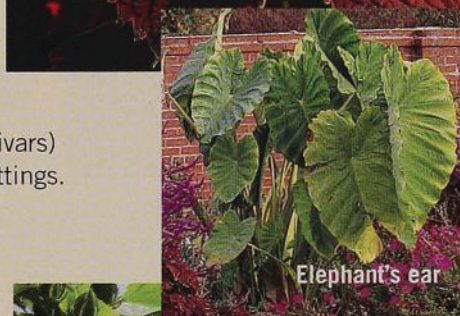
Store tubers in ventilated bags with sphagnum moss or sawdust, or take stem cuttings.

New Zealand Flax (*Phormium tenax*)

Grow as a house plant or place dormant potted plant in a dark, cool location.



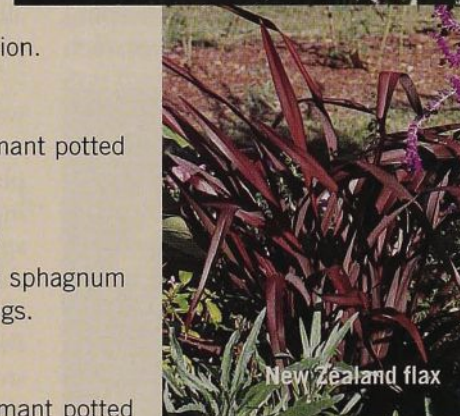
Coleus



Elephant's ear



Hibiscus



New Zealand flax

simply store the fleshy roots of the plants in bags of sphagnum moss, sawdust, vermiculite, perlite, or sand after cleaning them of soil and removing the top growth. "Be sure the bags are not air tight," Walker advises. "The tubers have to be able to breathe. You can use paper, mesh, or burlap bags—but avoid plastic. Onion bags and nylon stockings are other options. You can also store the tubers spread out on trays or in old picnic coolers."

Both tubers and stored potted specimens should be checked periodically during the winter to ensure they do not dry out or succumb to rot. With potted plants, keep the soil just moist enough so the roots don't shrivel up. Poke a finger into the soil every few weeks to check and don't let the soil get too dry before gently watering.

To help prevent rot in tubers, make sure they are well air-dried and dust them with sulfur powder—a natural fungicide—before storing them (see "Sources," page 33). If the tubers look a little parched when you check on them, they can be refreshed by spritzing them with water. It is essential, however, that the temperature at which these plants are stored remains cool—from 40 to 55 degrees—but does not dip below freezing.

HAPPY DAYS ARE HERE AGAIN

AS WINTER WANES and the days lengthen, you can start bringing your dormant plants out of their torpid state by gradually moving them to a location with more light and providing more water. After new growth emerges, you can resume feeding the plants with a dilute fertilizer.

Whether your plants were dormant in winter or survived as house plants, resist the urge to rush them outdoors on the first warm day in spring. Acclimate them to outdoor conditions by moving them out to protected areas for short periods of time until they have adjusted to the much higher levels of light outdoors. Once they have adjusted and the days and nights have warmed up for good, set your tropics out in the garden for another season.

Mary Yee is managing editor and designer of *The American Gardener*.

OVERWINTERING A BANANA IN A CONTAINER AS A HOUSE PLANT

Among the AHS horticultural staff's many fall tasks is getting the large tropicals out of the garden before winter. An extra pair of hands is helpful when working with an unwieldy plant such as a banana or elephant's ear. Here, Garden Manager Barry Stahl and Landscape Gardener Peggy Bowers prepare to move one of River Farm's ornamental bananas from the garden to a greenhouse before the first frost. The technique shown here can be used with other plants that are brought indoors to overwinter as house plants. If possible, choose a day or time of day when it's not too sunny or windy.

If you want to bring your plant through winter in a dormant state, wait until after a mild frost and cut off the top growth of the plant several inches above the soil line before digging and potting it up. Then, instead of locating the plant indoors in a sunny location, keep it in a cool, dark place where you can check on it periodically throughout the winter.

What you'll need:

- Shovel ■ Large container ■ Pruners ■ Gardening gloves (optional)
- Tarp (optional, to keep ground clean and save soil to return to the bed)
- Garden cart (to move heavy container indoors)



1. Use a shovel to mark the size of the root ball to be excavated. Sink the shovel straight down all around the plant, four to six inches away from the crown.



2. When the root ball is free, lift the plant carefully out of the ground. Be sure to keep as much soil as possible around the mass of fleshy roots.



3. Place the plant into a container, adding soil to the bottom if necessary until the top of the root ball sits an inch or two below the rim of the container.



4. Fill around the root ball with additional soil. Tamp down the soil to remove air pockets. Water well.



5. Prune away dead and dying foliage. Also, trim off foliage that was broken or torn in digging the plant from the ground.



6. Bring the plant indoors into a humid, warm, sunny location to ensure continued growth throughout the winter.

When it comes to providing glorious autumnal hues in the garden or the wild, America's trees are second to none.

BY CAROLE OTTESEN

falling for Native Trees

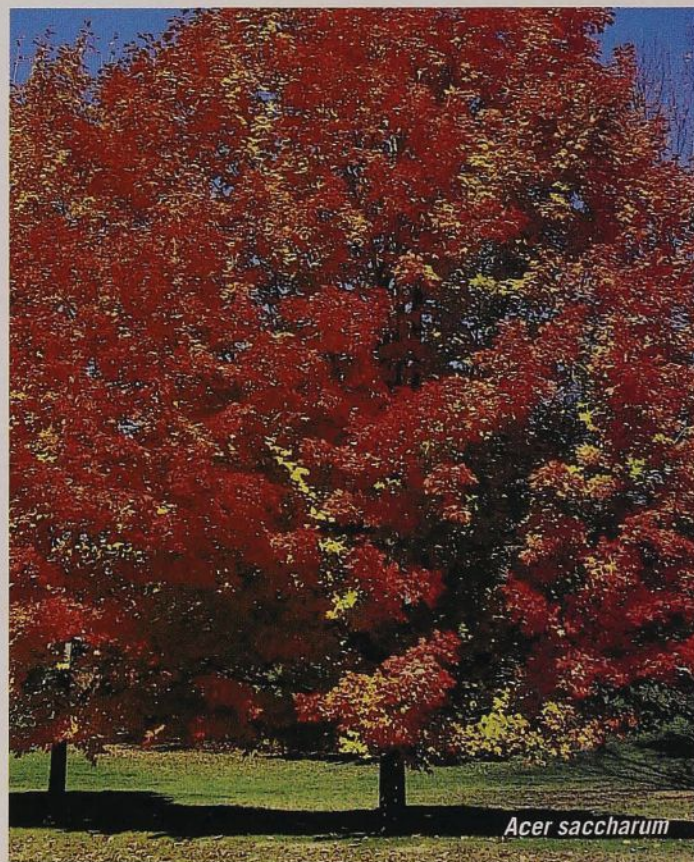
WHERE THE green world succumbs to winter cold, nature's compensation is especially generous. In those places, the darkness of the dormant season is preceded by a celebration of bright color and light as the trees take on a kaleidoscope of autumn colors. The turning of the trees coincides fortuitously with the year's clearest, deepest-colored skies, so shades of gold, orange, red, and purple appear even more intensely colored silhouetted against the intense, interplanetary blue of autumn sky.

Here in North America, we are particularly blessed with trees that have outstanding fall leaf color. As nature writer and botanist Donald Culross Peattie wrote in *A Natural History of Trees of Eastern and Central North America*, "The most magnificent display of color in all the kingdom of plants is the autumnal foliage of the trees of North America. Over them all, over the clear light of the Aspens and Mountain Ash, over the leaping flames of Sumac and the hell-fire flickerings of poison ivy, over the war paint of the many Oaks, rise the colors of one tree—the Sugar Maple—in the shout of a great army."

Here we offer tribute to 10 American trees that have excellent fall color as well as other ornamental attributes that make them outstanding garden specimens.

As Peattie so eloquently stated, the archetype of autumn splendor is the **SUGAR MAPLE** (*Acer saccharum*). Native from eastern Canada south to Georgia and along the Gulf Coast, it's the tree you see in shots of New England in the fall, its fiery, red-orange crown soaring over a neat, white church spire.

A house-dwarfing giant that can attain 75 feet or more, the sugar maple will spread two-thirds of its height and, sited carefully, cast enough shade on a house to lower the ambient temperature in summer by at least a few degrees. Most often, it's the kind of tree



Acer saccharum

JOSEPH G. STRAUCH, JR.



Acer circinatum

one doesn't buy but happily inherits along with a house and garden. It does not withstand pollution. Growth is slow—perhaps 23 feet in 28 years. For those who would plant for posterity, there are good cultivars. 'Crescendo' from the Morton Arboretum in Lisle, Illinois, colors orange-red. 'Legacy' is a good choice for the South. Closely related species such as southern sugar maple (*A. barbatum*) and chalkbark maple (*A. leucoderme*) also provide fall color for the South. Big-tooth maple (*A. grandidentatum*), which some botanists believe may be a subspecies of sugar maple, is a western relative. USDA Zones 4–8, AHS Zones 8–1.

Native from British Columbia south to northern California, **VINE MAPLE** (*Acer circinatum*) is one of the few deciduous trees found on the Pacific coast, where it is often seen in association with coast redwoods, Douglas firs, and bigleaf maples (*A. macrophyllum*). "When you see it, it's like little fires in the woods," says Guy Sternberg, an arborist and co-author with Jim Wilson of *Landscaping with Native Trees*.

Although it tends to be sprawling and shrubby as an understory plant in the wild—its supple, vinelike stems gave rise to its common name—it develops into a small, fairly symmetrical tree if grown in the open. The combination of its fiery red fall foliage and relatively small size—up to 35 feet tall—have made it popular recently in gardens in California and the Pacific Northwest. Irregular branching and angular, multistemmed trunks give it a unique character that is enhanced by its almost-round leaves—bright green in spring—which are sharply cut into seven or nine lobes. Zones 5–8, 7–1.

The foliage of **PAWPAW** (*Asimina triloba*) is particularly striking in summer, when the large, drooping leaves fan out in pendent layers, lending the tree a lush tropical aspect. "Everything about [the pawpaw] is odd and unforgettable," wrote Peattie. "The leaves are among the largest in our sylvia, and in autumn, when they turn a butter yellow they are among the mellowest of the season's tones."



Asimina triloba

In spring, deep maroon flowers open face downwards on the bare limbs. From these develop fruits, which mature in late summer in “hands,” much like bananas. These are irregularly oval in shape with green skin and yellowish or cream-colored flesh surrounding big brown seeds. The ripe fruit has a creamy consistency and an exotic, tropical flavor that is an acquired taste.

Pawpaws are self-incompatible, so for best fruiting, plant at least two different selections—‘Davis’ and ‘Sunflower’ are popular cultivars. Native from New York to Florida and west to Nebraska, pawpaws usually reach about 20 feet, but may grow taller in rich soil

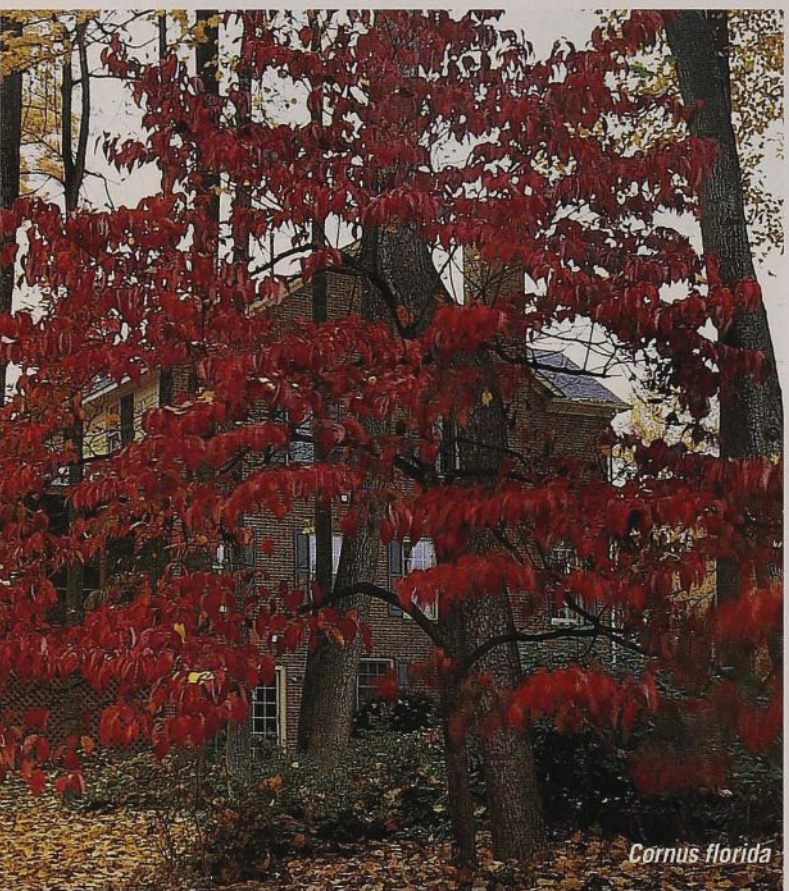
with plentiful moisture. In the wild, pawpaws are often found in moist, shady sites along riverbanks—they often form colonies connected by underground roots—but in gardens they grow best in full sun if given protective shade for the first two years. Zones 4–8, 9–5.

DOGWOOD (*Cornus florida*), native from Ontario and New England south to northern Florida, launches its foliar spectacle at summer’s end. Beginning a unique salmon-pink that is instantaneously identifiable, the foliage deepens to a coppery crimson that glows ruby red in the autumn sunshine. At the same time, the nutlike fruits, beloved of birds and squirrels, turn bright red, an effect that renders this tree as showy in fall as it is when its cream-colored flowers bloom in spring. University of Georgia horticulturist Michael Dirr calls it “the aristocrat of native flowering trees... a plant with four-season character.”

In the wild, dogwood is an understory tree of relatively small stature—about 30 feet at maturity—with a graceful crown that layers wider than the tree is tall.

The only downside is the tree’s susceptibility to dogwood anthracnose, a fungal disease associated with environmental stress. Keeping trees healthy from the start—especially by watering during periods of drought and choosing sunny, airy sites for them in the garden—will help sidestep this problem. Disease-tolerant crosses with Kousa dogwood (*C. kousa*)—the Stellar series, including ‘Rutlan’ and ‘Rutfan’—have been developed by a Rutgers University researcher. Zones 5–8, 8–3.

AMERICAN SMOKE TREE (*Cotinus obovatus*), claimed by Texans as the “Texas smoke tree,” is not as frequently seen as its Asian coun-



Cornus florida



Cotinus obovatus

The Hows of Autumn Hues



Multicolored fall foliage of sassafras

On weekends in October, a steady stream of cars winds its way along mountain roads and through neat, white villages in New England. They've come for the show, the annual turning of the leaves of deciduous trees.

What they'll see is determined by four variables: temperature, day length, light intensity, and the natural chemicals already present in the leaves. No two seasons are alike. Some years scarlet and orange dominate, while in others, the major hues are gold and yellow. Not only does the production differ each year, the performance varies from tree to tree and from branch to branch.

When the days grow shorter and night temperatures drop, leaves begin to manufacture a layer of corklike cells at the base of the stem, sealing themselves off from the tree and stopping the production of chlorophyll. Two underlying pigments in the leaf, carotene and xanthophyll, reveal their yellow presence as the green chlorophyll fades away. Additional sugars and tannins in leaves may turn the foliage red, but only if conditions are right. The shortening days have to be warm and sunny, and the nights cool (below 45 degrees Fahrenheit). Thus, fall colors are most vibrant in the North and in the mountains, where such conditions are common.

When conditions encourage the early formation of the corklike layer, trapping sugars and tannins in the leaf, these substances combine with others to produce anthocyanin, the pigment responsible for red. —C.O.

terpart, *C. coggygia*, but it ought to be. "Of the two, the North American native," wrote Sternberg and Wilson in *Landscaping with Native Trees*, "is certainly the superior plant." Like *C. coggygia*, American smoke tree produces "smoke"—wispy panicles of greenish white flowers. These are showier in male plants of American smoke tree, but more subtle than those of *C. coggygia*.

Not at all subtle is its autumn coloration. The bluish green leaves may turn yellow, amber, red, purple, or orange, but often and happily, they take on the color of southwestern landforms, a deep, rich red-orange. "It may be the best of all American shrub/trees for intensity of color," wrote Dirr in *Manual of Woody Landscape Plants*.

Native to limestone soils in scattered locations in Tennessee, Alabama, and Texas, the American smoke tree reaches 30 feet or more and spreads wider than it is tall. It will grow best in neutral to slightly alkaline soil and, once established, is trouble-free. Zones 5–8, 8–1.

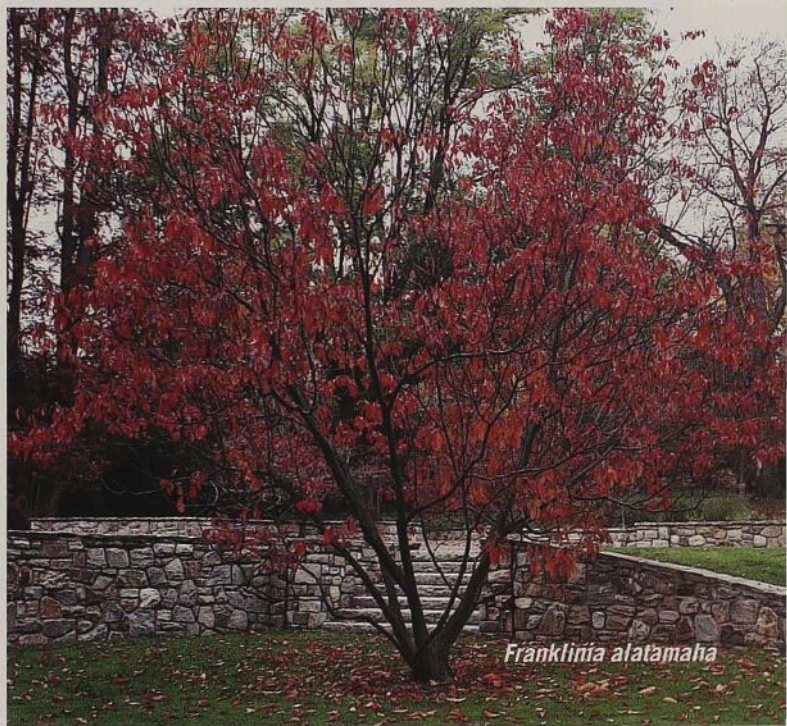
FRANKLIN TREE (*Franklinia alatamaha*) was discovered on the banks of Georgia's Altamaha River in 1765 by John and William Bartram of Philadelphia and named for Benjamin Franklin. The Bartams' propagation of the plant was fortuitous because it hasn't been seen in the wild since 1803.

According to a census undertaken by staff at Historic Bartram's Garden in Philadelphia to celebrate John Bartram's 300th birthday in 1999, all of the 2,046 Franklin trees that grow in 38 states and eight countries are descended from those propagated by the Bartrams. Were it not for their efforts, this tree would be extinct—a terrible loss. Not only does this elegant native bear large, single, white flowers with yellow centers in mid- to late summer, but its glossy green leaves sometimes begin turning scarlet and deep maroon while the tree is still in flower and may remain on the tree into November.

"When the large white flowers are viewed against the background of the plant's fall foliage, the Franklin tree provides a sight

unlike any other shrub or tree cultivated in New England," wrote Stephen A. Spongberg in *A Reunion of Trees*. Often multitrunked, the Franklin tree is moderate in growth, eventually reaching up to 30 feet at its northern limit and as much as 15 feet in diameter. A striking, small specimen tree, it grows best in a rich, moist but well-drained, slightly acidic soil in full sun. Zones 6–9, 9–4.

SWEET GUM'S (*Liquidambar styraciflua*) glossy, star-shaped leaves give a lacy texture to this stately tree. Dark green all summer long, the leaves combine in a lofty, pyramidal crown that



Franklinia alatamaha

casts deep shade. In fall, a cocktail of chemicals contained in the leaves turns them shades of yellow, red, and purple. "The range of tints is amazing, from light yellow to dark purple, with every shade of red in between," wrote Louisiana native-plant expert Caroline Dorman in *Natives Preferred*. A single leaf often colors variously, bearing in contrasting color the photo image of the leaf that shaded it.

Native from Connecticut to Florida and west to Indiana and Texas, it is found in the wild along riverbanks and in bottomlands. Its growth rate corresponds to the amount of moisture available, and given plentiful moisture, it achieves height quickly—reaching about 70 feet or even more in the South—and it spreads to more than half its height.

Prickly sweet gum fruits, green before they turn brown and fall, are a hazard to bare feet, but gold in the hands of the right craftsman. 'Rotundiloba', a male—and therefore non-fruited—selection with rounded rather than pointed leaves, is a good choice for those who don't want to deal with the fruits. Zones 5–9, 9–1.

Of **BLACK GUM OR BLACK TUPELO** (*Nyssa sylvatica*), James Underwood Crockett, beloved former host of public television's "The Victory Garden" and author of *Trees*, wrote "[It is] one of the few deciduous trees that have autumn color in mild climates." The cleanly cut, shiny green leaves turn in fall to an absolutely brilliant, usually homogenous, screaming red-orange.

You'd never predict it in spring, when the black gum, also called black tupelo or pepperidge, bears tiny, subtle greenish yellow flowers on separate-sexed trees. If fertilized, female flowers bear attractive blue-black fruits that are quickly taken by birds.



Nyssa sylvatica

Pest-free, tolerant of wet, swampy soil, and useful in seaside gardens with wind protection, black gum can reach between 30 and 50 feet and two-thirds as wide. Its habit is rather narrowly conical with horizontal branches that turn down at the tips. It is native from eastern Canada and New England west to Michigan and south to Florida and Texas. A weeping cultivar, 'Autumn Cascades', has recently been introduced. Zones 5–9, 9–1.

"Second only to the dogwood in its flowering beauty" is the way Crockett describes the **SOURWOOD** (*Oxydendrum arboreum*), also called sorrel. From midsummer, when sourwood produces its dangling sprays of fragrant, white, bell-shaped flowers, through fall, when its foliage literally glows a fiery red-orange, this tree is spectacular. "Sourwood has been prized for its landscape value as well as its utility since colonial days," says University of North Carolina horticulturist Richard Bir. "I suggest planting them where they can be seen from a distance. They are naturally interesting architectural trees."

The flowers, which resemble those of lily of the valley, hang on and are effective even after they fade because gray seed pods develop and contrast nicely with the glossy, leathery foliage.

Native from the Mid-Atlantic west to Indiana and south through the Appalachians to western Florida and the Gulf Coast, sourwood grows to perfection in the Great Smoky Mountains of Tennessee and North Carolina, where trees can reach a height of 75 feet.

In gardens, it grows best in moist but well-drained, organic-rich soils in full sun and will reach only about 25 to 30 feet with a nearly equal spread. It does not tolerate pollution, however, so it is not a good choice in urban areas. Zones 5–9, 9–3.



Liquidambar styraciflua

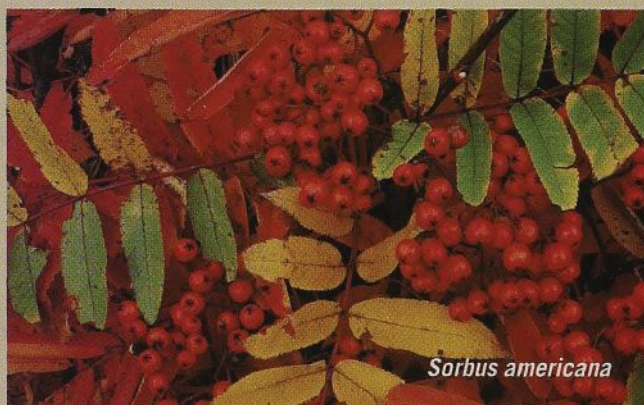
More Native Trees to Fall for

Here are some additional native trees worth considering for their colorful fall foliage and other ornamental attributes. The list is divided into two parts, with the lower section focusing primarily on trees native to western North America. Remember that fall color is not always consistent; it can vary from year to year and from one site or tree to another.

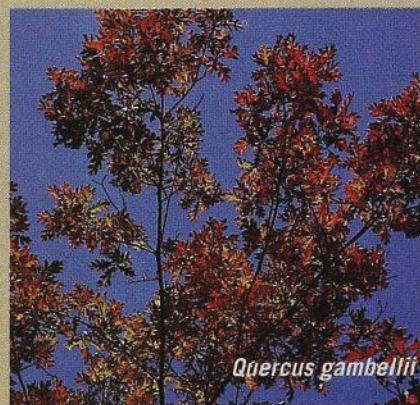
BOTANICAL NAME	HEIGHT/HABIT (FEET)	FALL LEAF COLOR	OTHER ORNAMENTAL ATTRIBUTES	ZONES (USDA, AHS)
<i>Acer pensylvanicum</i>	15–20/open	soft yellow	striped bark; understory tree	3–7, 7–2
<i>Acer rubrum</i>	40–60/rounded	round habit; bright red	'October Glory' is blazing scarlet	3–9, 9–1
<i>Amelanchier arborea</i>	15–25/multistemmed	yellow to orange to red fall color	edible fruits	4–9, 9–4
<i>A. xgrandiflora</i> 'Autumn Brilliance' and 'Princess Diana'	20–25/multistemmed	red	outstanding, reliable color; edible fruits	5–8, 8–4
<i>Carpinus caroliniana</i>	20–30/tapering	yellow to orange or scarlet	handsome, muscled bark	3–9, 9–1
<i>Cladrastis kentukea</i>	30–50/vase shaped	yellow to gold	white pealike flowers	4–8, 9–3
<i>Diospyros virginiana</i>	30–70/picturesque branching	variable orange to purple	edible, ornamental fruits	5–9, 9–5
<i>Euonymus atropurpureus</i>	10–20/thicket-forming	red	showy red fruits; suckers	3–8, 9–2
<i>Gleditsia triacanthos</i>	40–60/broad-spreading	yellow	finely divided foliage	5–9, 9–4
<i>Hamamelis virginiana</i>	20–30/vase-shaped	yellow	fall flowers	3–8, 8–1
<i>Sassafras albidum</i>	30–60/thicket-forming	yellow, red, purple	variably shaped leaves	4–8, 8–3
<i>Sorbus americana</i>	10–30/shrubby	orange-yellow to reddish purple	showy, red fruit	3–8, 8–1
<i>Stewartia ovata</i>	10–15/broad-spreading	orange to scarlet	colors in shade; "camellia" flowers	3–9, 8–1

WESTERN TREES

<i>Acer glabrum</i>	5–30/multistemmed	yellow	deeply lobed leaves	5–7, 7–5
<i>Acer grandidentatum</i>	20–30/rounded	yellow to red	drooping flower clusters	4–8, 7–3
<i>Aesculus californica</i>	15–20/broad-spreading	yellow	showy pink flowers	6–8, 8–5
<i>Alnus tenuifolia</i>	15–20/shrubby	yellow	catkins resemble pine cones	4–6, 5–3
<i>Celtis reticulata</i>	25–30/rounded with age	yellow	orange fruit; distinctive warty bark	4–8, 7–3
<i>Cercis occidentalis</i>	15–25/broad-spreading	pale yellow to red	magenta flowers	8–10, 12–9
<i>Cornus nuttallii</i>	20–40/broad-spreading	yellow to red	showy bracts	7–9, 7–3
<i>Fraxinus texensis</i>	30–40/broad with age	red, orange, purple	pale undersurface to leaves	6–9, 9–1
<i>Quercus gambellii</i>	15–30/thicket-forming	yellow to red	sculptural trunks	4–6, 7–4
<i>Rhus lanceolata</i>	12–25/thicket-forming	brilliant red	showy fruit	5–9, 10–7



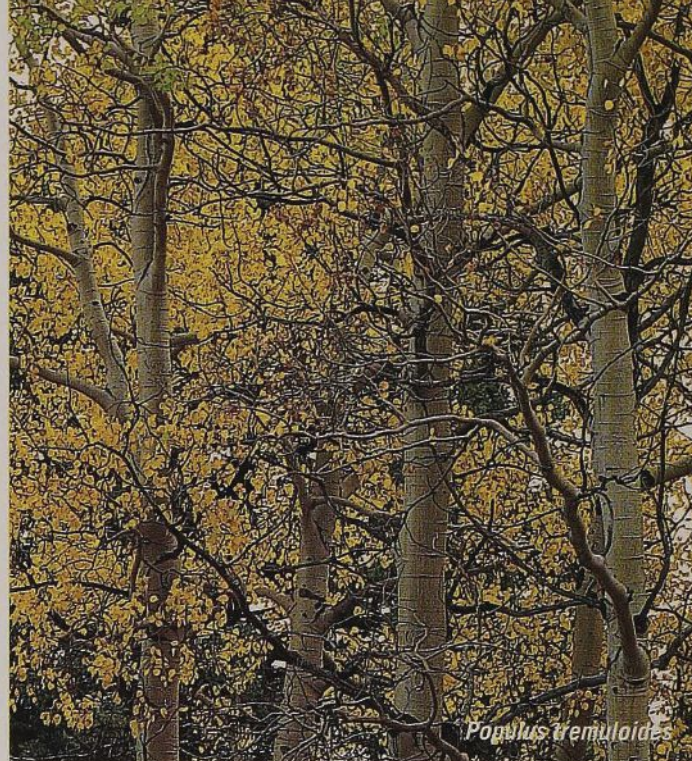
Sorbus americana



Quercus gambellii



Oxydendrum arboreum



Populus tremuloides

When the small, round leaves of **QUAKING ASPEN** (*Populus tremuloides*) turn to pale gold in the fall, they glitter in the breeze like dangling golden coins, a phenomenon that has set off another gold rush. "Western mountainsides are glowing with the gold of Aspen...which grows in such pure stands that tree lovers travel many miles to view the display," wrote Dorman.

Graceful and slender with small, neat heart-shaped leaves and a white bark that is washed with the palest of greens, quaking aspens are gregarious trees, growing in nature in spreading colonies where

their distinctive trunks create beautiful patterns in the landscape.

The most widely distributed tree in North America, they are native throughout much of the western and northern United States and into Canada. Cool-climate trees, they succumb to a range of insect and disease problems in warmer regions. In a garden setting, these fast-growing but relatively short-lived trees reach 40 feet or more with a pyramidal shape. Zones 1-7, 8-1.

Carole Ottesen is associate editor of The American Gardener.

Sources

Arbortillage Farm Nursery, Holt, MO. (816) 264-3911. Catalog \$1.

Acer circinatum; *A. saccharum*; *Asimina triloba*; *Cotinus obovatus*; *Franklinia alataamaha*; *Liquidambar styraciflua* 'Rotundiloba'; *Nyssa sylvatica*; *Oxydendrum arboreum*.

Fairweather Gardens, Greenwich, NJ. (856) 451-6261. www.fairweathergardens.com. Catalog \$4.

Asimina triloba 'Sunflower'; *Cotinus obovatus*; *Franklinia alataamaha*; *Oxydendrum arboreum*.

Forestfarm, Williams, OR. (541) 846-7269. www.forestfarm.com. Catalog \$5. Free if ordered online.

Acer circinatum; *A. saccharum*; *Asimina triloba*; *Cornus florida*; *Liquidambar styraciflua* and cultivar 'Rotundiloba'; *Nyssa sylvatica*; *Populus tremuloides*.

Mellinger's Inc., North Lima, OH 44452-9731. (330) 549-9861. www.mellingers.com. Catalog free.

Acer saccharum; *Asimina triloba*; *Cornus florida*; *Cotinus obovatus*; *Franklinia alataamaha*; *Liquidambar styraciflua*; *Oxydendrum arboreum*; *Populus tremuloides*.

We-Du Nurseries, Marion, NC 28752-7349.

(828) 738-8300. www.we-du.com. Catalog \$3.

Asimina triloba; *Franklinia alataamaha*; *Nyssa sylvatica*.

Resources

Landscaping with Native Trees by Guy Sternberg and Jim Wilson. Chapters Publishing Ltd., Shelburne, Vermont, 1995.

Manual of Woody Landscape Plants, 5th edition, by Michael Dirr. Stipes Publishing, Champaign, Illinois, 1998.

Natives Preferred by Caroline Dorman. Claitor's Book Store, Baton Rouge, Louisiana, 1965.

Native Texas Plants by Sally Wasowski with Andy Wasowski. Texas Monthly Press, Austin, Texas, 1988.

A Natural History of Trees of Eastern and Central North America by Donald Culross Peattie. Houghton Mifflin Company, Boston, 1950.



IT'S AUGUST, and in the shade of majestic Douglas firs, the billowing white trusses of four huge *Rhododendron auriculatum* spill their fragrance on the heads of passersby. For anyone who can't imagine growing a garden from seed, standing beneath these rhododendrons and looking up is a lesson in the virtues of patience and vision.

Almost every plant in Arthur and Mareen Kruckeberg's garden has been propa-

gated on site—from the diminutive pink fawn lilies (*Erythronium revolutum*) that carpet the ground in early spring to a massive redwood, many species of oaks, and even the *Rhododendron auriculatum*, which took 30 years to bloom.

Once you learn a little about the Kruckeberg's horticultural pedigrees—Arthur was a botany professor at the University of Washington for nearly 40 years and has authored several books on native

With patience and foresight, Arthur and Mareen Kruckeberg have woven a masterful tapestry of native and adapted exotic plants in their Pacific Northwest garden.

PRESERVING A VANISHING LANDSCAPE

IN 1958, WHEN the Kruckeberts purchased a 1903 farmhouse on a one-acre lot in a rural area north of Seattle, Washington, large tracts of mature Douglas fir forest and farmland surrounded their home. Soon afterwards, they acquired three more acres of adjoining land. Today, as the Puget Sound area enters its third decade of rapid growth, the Kruckeberts' property has become an oasis among multistory townhouses. Their land preserves the essential character of the original Puget Sound lowland forests while incorporating thousands of well-adapted plants from all over the world. The result is an enchanting and harmonious blend of exotic and Pacific Northwest flora that demonstrates what can be achieved over several decades when working within the bounds of local climate, soils, and topography.

Because of the uniqueness of the garden and the threat posed by surrounding development, a move is afoot in the Seattle area to preserve it as a regional treasure.

Northwest Paradise Preserved

BY DEBORAH FERBER

Cultivating Conservation in the Pacific Northwest

Married now for 44 years, the Kruckebergs have together collected seed and propagated unusual species from around the world while preserving the native habitat on their four-acre property north of Seattle. Both gardeners are well-respected in the horticultural community; they each have their own, distinct style that complements the other.



Mareen and Arthur Kruckeberg in a rare moment of repose in their garden.

Working mainly behind the scenes, Mareen S. Kruckeberg is a self-taught botanist and artist whose extensive knowledge of propagation and cultural techniques has been gleaned from direct experience in her Pacific Northwest garden. Mareen's interest in plants was stimulat-

ed while on a summer-long field trip in 1952 with the late legendary botanist C. Leo Hitchcock. "Hitchy," the warmly remembered professor who co-authored the five-volume *Flora of the Pacific Northwest*, became a lifelong friend and mentor to Mareen, and they often exchanged plants from their gardens.

In response to the many requests from people who toured her garden and asked for the unusual plants she grows, Mareen started up MsK Rare Plant Nursery in 1970. Mareen is also an illustrator—her detailed pen-and-ink drawings have been pub-

lished in several botanical journals and embellish her own line of stationery (an example can be seen on page 43).

Arthur R. Kruckeberg, on the other hand, is a master of language, a man with wide-ranging interests who enchants audiences from the lectern and the printed page. Two of his books, *Gardening with Native Plants of the Pacific Northwest* and *The Natural History of Puget Sound Country*, are regional classics, and the former was named one of the American Horticultural Society's 75 Great American Garden Books in 1997.

A professor emeritus of botany at the University of Washington, Arthur was also a friend and colleague of Hitchcock. Arthur was involved in the early stages of nominating plants for protection under the federal Endangered Species Act of 1973. He brought a list of rare plants compiled by Hitchcock to a workshop sponsored by the Smithsonian Institution, and many of these plants were included in the first list of candidates for federal protection.

In addition to a long and distinguished career as a horticultural researcher, he has taken an active role in the preservation of natural areas in the Northern Cascades in Washington and the Siskiyou Mountains in Oregon. He is the co-founder of the Washington Native Plant Society and has served on an advisory council for the Washington State Natural Heritage Program and the national Center for Plant Conservation.

Together, Arthur and Mareen have helped preserve the natural history of their region while experimenting with the adaptability of non-native, garden-worthy plants. Their garden and writings are an enduring legacy and inspiration for future gardeners of the Pacific Northwest.

—D.F.

Friends and supporters formed the non-profit Kruckeberg Botanic Garden Foundation in 1999 in an effort to buy and preserve the land and plant collections as a garden and horticultural learning center. Under the current plan, Art and Mareen, now in their 70s, would continue to live in their home as long as they wanted to.

ROOTED IN NATIVES

EVEN FROM THE road, stately groves of evergreen spires proclaim the Kruckebergs'

Previous page: A Douglas fir towers above a tapestry of shade-loving plants in the Kruckebergs' garden. The illustration of *Asplenium trichomanes* is by Mareen Kruckeberg. Right: *Kirengeshoma palmata*, *Adiantum venustum*, and *Vancouveria planipetala*, left to right, are among the native and exotic plants in the woodland garden.

alliance with the native landscape. As soon as a visitor enters the wooden gate, features typical of the western hemlock forest ecosystem are apparent in the lush understory of shrubs and ground covers that thrive in the shade of magnificent conifers.

Native ground covers—vanilla leaf (*Achlys triphylla*), maidenhair fern (*Adiantum pedatum*), leatherleaf fern (*Polypodium scolopendri*), false lily-of-the valley (*Maianthemum dilatatum*), and wild ginger (*Asarum caudatum*)—form a continuous



blanket beneath fuchsia bushes and native fruit-bearing shrubs such as white-flowering currant (*Ribes sanguineum* 'White Icicle'), Oregon grape (*Mahonia aquifolium*), and salal (*Gaultheria shallon*). Ferns are one of Mareen's signature plants, and they form a theme with many variations throughout the garden.

The multilevel canopy, also characteristic of the original forests, provides food and shelter for the birds, small mammals, and insects that have co-evolved with the native flora since the retreat of the last glaciers some 11,000 years ago. The Kruckeborgs further encourage wildlife to colonize the garden through judicious naturalizing. For instance, in one section of the garden, a 40-foot tree stump—one of several "snags" the Kruckeborgs have intentionally left on their property—rises above the lower canopy. "We would never top a healthy tree," says Mareen, "but when a tree gets diseased or wind-broken, we have the tree-cutters leave most of the trunk for the woodpeckers."

The soil that Mareen and Arthur work with is a rocky glacial till that provides excellent drainage. But because this soil is nutrient poor, the Kruckeborgs continually amend and mulch it with rich organic matter. Mareen says they started composting the week they moved in and have kept it going ever since. This practice emulates the natural working of the western hemlock ecosystem, which is famous for its tremendous biomass—the volume of organic matter and nutrients that is recycled through the endless process of growth, death, and decomposition.

Winters in the maritime Northwest are mild, but the annual period of summer drought tests the limit of some species. Like most gardeners in this region, Mareen waters the non-native rhododendrons during the summer. Otherwise, established plants don't receive much supplemental watering and no synthetic fertilizers. Ferns, Mareen was initially surprised to discover, handle drought quite well. Conifers, of course, are adapted to summer drought, which is one reason they thrive in the Pacific Northwest.

WORKING WITH A FULL PALETTE

ALTHOUGH THE Kruckeborg name is synonymous with native gardening in

the Pacific Northwest, Mareen and Arthur are quick to point out that they are by no means purists. "It would be a shame to limit oneself to such a restricted palette," as only natives, says Mareen. Therefore, the Japanese or Korean *Kirengeshoma palmata*, a rounded, four-foot plant with maplelike leaves and pale yellow autumn flowers, is bordered by inside-out flower (*Vancouveria planipetala*), a ground cover native to coastal Northern California and southern Oregon related to epimediums; evergreen maidenhair fern (*Adiantum venustum*) from the mountains of central Asia; Braun's sword fern (*Polystichum braunii*) from Alaska; and other shade-loving plants that are adapted to regions with moderate temperature ranges and ample winter rainfall.

"We are fortunate to live in a zone where we can grow many, many things," says Mareen of their USDA Hardiness Zone 8, AHS Heat Zone 2 garden. In her experience, imported species that do particularly well here come from China, Japan, New Zealand (specifically the south island), South Africa, and Chile. One such well-adjusted non-native is *Azara microphylla* from Chile. Two healthy, 20-foot specimens—with their narrow profiles, pale bark, and tiny, evergreen leaves—frame the door to a greenhouse. Last summer, for the first time in 12 years, the azaras' stiffly arching branches were draped with clusters of berries that resemble speckled coffee



Grown from seed by Mareen, *Eucryphia glutinosa* is a semi-evergreen tree native to Chile that has adapted to the Puget Sound region.

TO LEARN MORE about preserving the Kruckeborg garden, and for information on group tours by appointment, contact:

Kruckeborg Botanic Garden Foundation, 20312 15th Avenue N.W., Shoreline, WA 98177.

(206) 542-4777. www.kruckeborg.org.

MsK Rare Plant Nursery at the same address is open by appointment only for on-site sales. (206) 546-1281.

beans—and Mareen has already germinated a flat of seedlings.

Another Chilean plant that has proven successful is *Eucryphia glutinosa*, a semi-evergreen tree or shrub that bears glossy leaves with finely toothed edges and creamy white flowers that resemble those of hellebores. The specimen Mareen nurtured from seed—a rare form with flowers highlighted by red stamens—is now 30 feet tall and blooms profusely in August.

Depending on the time of year, one of three species of hardy cyclamen—*Cyclamen hederifolium*, *C. coum*, and *C. repandum*—bloom in shades of white or pink, contrasting with the dark green, serrated fronds of the native deer fern (*Blechnum spicant*) and showy, big-leaved *Rodgersia podophylla*.

Over time, the cyclamen have become naturalized in various areas of the garden; large drifts appear here and there like pools of light. Mareen says that the ants accomplished this magic by carrying off the seeds, which have an outer coating of fatty tissue—known as an elaiosome—that ants feed on. In the course of discussing the successful elements of the garden, Mareen frequently suggests that nature did the work; she merely paid attention.

MSK'S NURSERY

NEAR THE Kruckeborgs' farmhouse are the greenhouse and nursery, where Mareen has run MsK Rare Plant Nursery since 1970. The nursery, which is for on-site sales only, allows Mareen to indulge in her love for propagating rare plants—both native and exotic—including black



Above: *Cyclamen coum* and *Hacquetia epipactis* thrive on the woodland floor. **Right:** Winter hazel blooms in spring above assorted ferns and other ground covers.

twinberry (*Lonicera involucrata*) and a shapely form of native chokecherry (*Prunus virginiana* var. *melanocarpa*) with bigger berries that is found only in the Siskiyou Mountains and eastern Washington. She also propagates *Azara microphylla*, *Eucryphia glutinosa*, *Rhododendron auriculatum*, four species of oaks, and many interesting and under-used native plants such as *Vancouveria hexandra*, a deciduous version of inside-out flower, and miterwort (*Mitella pentandra*), which kids love because each seed sits in a little cup. Because ferns are particular favorites, she propagates a great variety from collected spores.

She also creates and sells container gardens in cement, tufa, or homemade wooden troughs. Naturally, these miniature scenes incorporate rare plants, such as a Siskiyou spruce (*Picea breweriana*) and a mountain ash (*Sorbus reducta*) that grows only a foot-and-a half tall yet still bears attractive carmine berries.

A MsK trough garden exclusive is a mutant, dwarf form of the native paper birch (*Betula papyrifera*) that has deeply dissected leaves. Mareen discovered this sport growing in a raised bed she was using to propagate cuttings. "It was situated beneath a paper birch," she notes, "so

Right: Trough gardens containing unusual and rare species are highlighted against the golden backdrop of a Japanese maple.



these special ones didn't get lost, as they would if just scattered underfoot."

AN EYE FOR OAKS

IN ADDITION TO having a good eye for home-grown seedlings, the Kruckeberts' access to seeds from around the world has allowed them to experiment with many of the unusual plants they grow. Arthur's work as a botanist has put him in touch with many botanical institutions, while Mareen is a member of

several regional and national plant societies that have seed exchanges, such as the New England Wild Flower Society and the North American Rock Garden Society. Until recently, the couple went on annual seed-collecting trips.

Both Mareen and Arthur have long had a particular interest in oaks, which they began collecting as wild seeds from around the western United States in the 1950s. They have also exchanged acorns with botanical institutions around the world, including the University Ar-



boretum at the University of California at Davis.

Perhaps the rarest tree on their property is a 40-foot, mutant form of the evergreen tanbark oak (*Lithocarpus densiflorus* forma *attenuata-dentatus*), which grows in front of the Kruckebergs' residence. Grown from cuttings gathered in Northern California, this unusual native has narrow, deeply saw-toothed leaves edged with spines.

The bulk of the Kruckebergs oak collection is located on a meadow just downhill from the forested section surrounding their house and greenhouse. According to Mareen, when the land was first settled in the early 1900s, this lower-lying area was cleared and used to grow strawberries. At the time the Kruckebergs purchased the property, it was basically a bog, and Mareen remembers going to sleep to the sound of tree frogs at night.

Fifteen years after the Kruckebergs moved in, however, developers drained the adjacent land in order to build 300 houses. When that happened, the bog dried up and the frogs disappeared. Although Art and Mareen weren't happy



A meadow houses a sunny rockery and most of the Kruckebergs' collection of oaks.

about the change, they found the new conditions perfect for expanding their oak collection. The meadow now houses an arboretum of some two dozen species of oaks from California, Oregon, Turkey, Israel, and the eastern United States.

One of their most prized oaks is the turkey oak (*Quercus pontica*), which is rarely grown in the United States and requires a male and female for successful pollination (they now have an acorn-producing pair). They also grow Israel

Resources

Flora of the Pacific Northwest by C. Leo Hitchcock and Arthur Cronquist. University of Washington Press, Seattle, 1973. This comprehensive, 730-page botanical field guide is the condensed version of the original five-volume set that is now out of print.

Gardening with Native Plants of the Pacific Northwest, 2nd edition, by Arthur R. Kruckeberg. University of Washington Press, Seattle, Washington, 1996.

Landscaping for Wildlife in the Pacific Northwest by Russell Link. University of Washington Press, Seattle, Washington, 1999.

The Natural History of Puget Sound Country by Arthur R. Kruckeberg. University of Washington Press, Seattle, Washington, 1991.

Plants of the Pacific Northwest Coast, compiled and edited by Jim Pojar and Andy MacKinnon. Lone Pine Publishing, Vancouver, British Columbia, 1994.

Washington Native Plant Society, 7400 Sandpoint Way N.E., Building. 30, Seattle, WA. 98115. (206) 527-3210. www.wnps.org.

The Water and Land Resources Division of King County, Washington, provides an up-to-date listing of nurseries that sell plants and seeds native to the Pacific Northwest. dnr.metrokc.gov/wlr/pi/npnursry.htm.

oak (*Q. calliprinos*), and English oak (*Q. robur*), which is native from Great Britain down to the Mediterranean. A California black oak (*Q. kelloggii*), propagated by Arthur in the 1970s, is now 30 feet tall and spreading. In contrast, a diminutive dwarf form of the only oak native to western Washington, Oregon white oak (*Q. garryana* var. *bewerri*), grows among native penstemons, lewisias, and bear grass (*Xerophyllum tenax*) in a rockery the Kruckebergs created in a hot, sunny part of the meadow.

The meadow is also home to trident maples (*Acer buergerianum*), ponderosa pines (*Pinus ponderosa*), and a fragrant patch of ceanothus native to eastern Washington. This open, grassy area surrounded by trees provides the kind of habitat that birds, including hummingbirds, use to forage for food while raising their broods, and Mareen and Arthur do their best to encourage such residents. A bushy mossy nest hangs from the upper branches of a young oak, and nearby a junco has woven a bowl of straw just a few feet off the ground.

Also visible from the meadow are the new homes that over the past two

decades have sprung up all around the Kruckebergs' property. As in most new developments, few trees were left standing during construction, and the contrast with the Kruckebergs' richly forested lot is striking.

Through the Kruckeberg Botanic Garden Foundation, friends and supporters of the garden are taking steps to preserve the property. The board of the KBGF expects a realistic appraisal and conservation easement to be in place by the end of this year so fund-raising can begin in 2002. As a public garden, the rich tapestry the Kruckebergs nurtured can continue to evolve, offering lessons to a new generation of gardeners about the virtues of patience and the potential of a seed. After dedicating their lives to the preservation of natural areas and rare species, it seems appropriate that the Kruckebergs should receive the same support for their life's work.

A resident of Seattle, Washington, Deborah Ferber is a free-lance writer and avid gardener and naturalist. Her husband, Garth, a free-lance photographer, contributed some of the photographs for this article.

Gourmet Alliums

Fall is the perfect time to start easy-to-grow gourmet onions such as chives, leeks, and shallots.

BY CHRIS BLANCHARD

IN CASE you haven't noticed, culinary gardens are back in vogue. Even gardeners who don't have room for a dedicated vegetable garden are finding ways to grow at least a few essential kitchen standbys in their ornamental plots. Now that fall is here, consider trying some of the gourmet cousins of the onion, such as shallots, leeks, chives, and bunching onions. These mainstays of classical French cuisine are as easy to grow as standard onions and garlic, and they stock the kitchen larder with a full range of flavors—from the pungency of the bunching onion to the sweet subtlety of shallots and the melt-in-the-mouth mildness of leeks.

Gourmet onions are more than flavorful; they share the allium family's health-benefiting compounds. Eating onions and garlic is a gentle, natural, and delicious way to promote heart health—studies indicate they may help lower blood pressure and cholesterol levels. And edible alliums can be attractive in their own right, whether grown in a traditional vegetable garden or cleverly integrated into ornamental borders.

HOW TO GROW ALLIUMS

ALL ALLIUMS grow best in full sun and a weed-free environment. At the farm my



In this garden in Washington state, leeks are being harvested in December for a holiday meal. Exposure to a hard frost enhances the flavor of many varieties of leeks.

family and I run in Spring Grove, Minnesota, we try to plant them on the south side of any taller crops. If you can fit them in a spot where weed control has been excellent in the prior season, you will save yourself loads of work. Most vegetable crops offer a period to get the weeds under control either before they are planted or after they are harvested,

but many of the culinary alliums offer neither because of their long growing season. They are typically in the ground from the beginning of the growing season through August at least, and occasionally well into winter.

For all the alliums, vigorous growth seems to be a key to organic pest control and the best keeping qualities. A rich soil

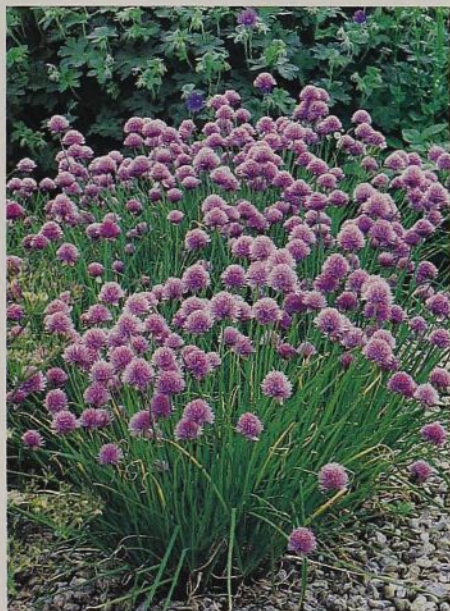
amended annually with compost will yield the best results. Add lime, if necessary, to bring the pH up to an optimal 6 to 7.

Alliums have fairly shallow roots, so regular watering is important if rainfall is inadequate. Consistent moisture while the crop is growing will boost yields and quality, but with one important caveat: Air circulation is critical to reducing the incidences of the fungal diseases that afflict the onion family. The fleshy, rot-prone storage organs of many of the alliums typically form right at ground level, so for most, mulching is not advisable.

Unlike garlic and most standard onions, most gourmet alliums are consumed in their fresh state. The exception is the shallot, which requires curing.

VERSATILE CHIVES

THE EARLIEST of the gourmet alliums to appear in the spring, chives (*Allium schoenoprasum*) are also the smallest and most tender. Chives excel in dishes where other onions would be unpleasantly crunchy and overwhelmingly strong. Chopped finely, the mild-tasting green leaves—as well as the small, purplish pink, globe-shaped flowers—are delicious sprinkled raw over salads and baked potatoes, or cooked in omelets and sauces. Whole flowers make a decorative, edible garnish. The tidy, clump-forming plants, which grow up to two feet tall,



In addition to their culinary attributes, chives have tremendous ornamental appeal.

make an attractive front border for a vegetable or ornamental bed, and they also look great in containers.

✿ Tips for growing chives. Chives don't compete well with weeds, so take the time to clean up any weed problems before planting. They are more tolerant of poor drainage and wet soils than other alliums, however, and withstand neglect better.

Larger plants should be divided into smaller clumps every two to three years because they become weak if they get crowded. Trim the roots and most of the leaves (reserving the latter for the kitchen), then cut clumps into several sections with a knife and replant. The best time to do this is in fall, but chives are tough enough to handle division at almost any point in the growing season.

Many of the readily available chive varieties have thick leaves better suited to commercial processing than to home kitchen use. If you want to select a finer-leaved variety, it is well worth seeking out your own seeds—'Fine Leaf', 'Forescate', and 'Profusion' are good choices. To start chives from seed, sow about 10 seeds to a cell in a cell pack in early spring, then transplant seedlings into the garden six to eight weeks after germination.

If you choose not to eat the blossoms, be sure to remove them once they fade to prevent reseeding, which they do with utter abandon. The resulting plants will not only choke out the existing crop, they are also likely to lack the quality of the original planting.

Garlic chives (*A. tuberosum*) are cultivated in a similar manner to standard chives, but they have flat leaves, white flowers, and a stronger, more garlicky flavor. American gardeners and cooks are beginning to take more notice of these alliums, which have long been popular in Asian cuisine. Divide and deadhead garlic chives rigorously to prevent overcrowding.

BUNCHING ONIONS

OVERWINTERED BUNCHING onions (*A. fistulosum*) are often among the first vegetables of the summer and are prized more for their earliness than for any delicacy of flavor. Also known as Welsh onions or poor man's leek, they are stronger and more flavorful than leeks



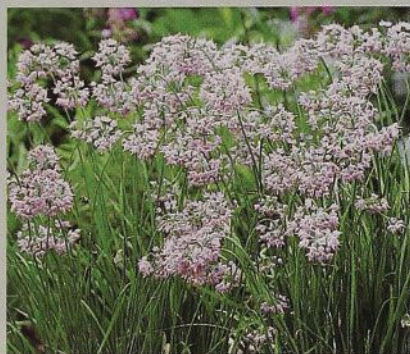
Top: Garlic chives have a more pronounced flavor than common chives. Above: Bunching onions add vertical interest to a flower border.

and far easier to use than onions because they don't require peeling.

✿ Tips for growing bunching onions. Sow seeds for bunching onions thickly in earliest spring or during July or August for an early spring harvest the following year. A weed-free planting bed is critical to success: Work the bed three to four weeks before planting, then cultivate lightly right before planting to destroy the first flush of weeds. Soils that show a tendency to form a hard crust

FAMILY HISTORY

Many botanists consider alliums a subgroup in the large lily family (Liliaceae), but some list alliums as a distinct family (Alliaceae) that includes 30 genera and some 800 species. Alliums make up the bulk of



Allium cernuum in full flower.

the family, but it also includes ornamentals such as African lilies (*Agapanthus* spp.) and false garlic (*Nothoscordum* spp.).

Alliums and their close relatives are distinguished by umbellate inflorescences—flat or rounded flower clusters composed of multiple flowers borne on individual stalks—and the characteristic sulfury aroma they give off when cut or crushed.

The genus *Allium* contains nearly 700 species native principally to dry and mountainous regions of the Northern Hemisphere. Many species are edible, but only a handful are still cultivated for their culinary qualities. And while Europe is credited for fostering the development of culinary alliums, it is interesting to note that a variety of alliums native to North America formed part of the diet of various Native American groups. Among these were nodding wild onion (*A. cernuum*), wild garlic (*A. canadense*), ramps (*A. tricoccum*), and *A. stellatum*. Early explorers and settlers of America learned the value of these wild alliums, and in some areas, ramps are still considered an important part of a spring “tonic” of wild greens.

—C.B.

should be watered frequently to keep the surface soft enough for the tender seedlings to grow through. After the plants are up, weed carefully to avoid disturbing the roots.

Certain varieties, such as ‘Evergreen Hardy White’, overwinter even in our USDA Zone 4 climate. After the first year, treat bunching onions as a perennial by dividing in a fashion similar to chives. Bunching onions can be lightly mulched in the fall, but be sure to remove the mulch first thing in the spring. Harvesting is best accomplished by lifting the onions with a fork, then trimming the roots to clear away the clinging soil.

SOPHISTICATED SHALLOTS

SHALLOTS (*A. cepa* Aggregatum group) are versatile alliums used extensively in European and Asian cuisines. We have enjoyed the ‘French Red’ or ‘Brittany Red’ shallots in our garden for many years. They are the milder and sweeter cousin of the onion and are frequently used in dishes where the flavor of an onion would overpower. ‘Gray’ shallots, too, have a unique mild flavor preferred in French cooking, although they are difficult to peel.

🔪 **Tips for growing shallots.** A short-lived perennial, shallots have a bulbing habit similar to that of garlic. Shallots are most commonly available and grown from sets—small bulblets—but seeds of certain varieties are also available. When you buy sets, be certain that you are purchasing true French shallots and not simply potato or bunching onions. In some parts of the country, shallot tops are harvested as green onions. This has resulted in all green bunching onions being called shallots in some locations. To ensure you get the correct variety, I recommend purchasing shallots through a reputable seed company rather than at local nurseries.

If you are growing shallots from sets, plant them just after the first fall frost where they are hardy (USDA Zone 6 or anywhere that standard onions overwinter reliably). Where they are not hardy, they should be planted as early as possible in spring. Plant individual shallot sets in the ground with the tips up, just under the surface of the soil. Space the sets six to eight inches apart all around.

Because they rot easily, plant shallots where drainage is excellent. Adequate soil moisture is a boon, but too much can be a disaster. Raised beds can be a real advantage with shallots, and adequate compost and other organic matter will contribute to a well-drained soil, even in difficult conditions.

As the shallots grow, the cloves will multiply and migrate to the top of the soil. Do not cover them with mulch or soil, and keep the plot free of weeds. It is worth spacing them far enough apart that you can hoe between them easily when weeds begin to appear.

Because we plant nearly 10,000 shallots each year for market, we appreciate the varieties that grow true from seed. We sow eight to 10 seeds per cell in late winter and set out transplants on a 10-by-12-inch spacing in early spring. The spacing will determine how large shallots grow; wide spacing will result in larger specimens better suited to recipes where the shallots are served whole, such as roasted or caramelized shallots. Of the few shallot varieties available as seeds, ‘Ambition’ has consistently proven to be our favorite for its purple skin and delicious flavor.

Shallots are ready for harvest when the necks dry down and fall to the ground, three or four months after planting. Harvest promptly at this point because a spell of wet weather will cause the shallots to rot where they sit.



Freshly harvested ‘French Red’ shallots.

COMPARING GOURMET ALLIUMS

CROP/SPECIES	HARVEST TIMING	RECOMMENDED CULTIVARS	ANNUAL/ PERENNIAL	ORNAMENTAL POTENTIAL	USDA HARDINESS/ AHS HEAT ZONES
Bunching onions (<i>A. fistulosum</i>)	Early spring	'Evergreen Hardy White'	perennial		5-9, 9-5
Chives (<i>A. schoenoprasum</i>)	All season	'Fine Leaf' 'Forescate' 'Profusion'	perennial	decorative border; containers	5-11, 12-1
Garlic chives (<i>A. tuberosum</i>)	Spring and summer		perennial		4-9, 9-1
Leeks (<i>A. porrum</i> syn. <i>A. ampeloprasum</i>)	Mid-August into the winter	'King Richard' 'Laura' 'Tadorna'	biennial	color accent; flowers in second year	7-10, 10-1
Shallots (<i>A. cepa</i> Aggregatum group)	Mid-June	'Ambition' 'French Red' 'Gray' 'Red Sun'	short-lived perennial		6-10, 12-1

To store shallots, shake or trim the dirt from the roots and place them in a warm, dry, well-ventilated place to cure. After the shallots have dried, place them in paper bags and store them in a cool, dry place such as an unheated spare bedroom or garage. The paper bag helps safely away any excess moisture.

If you plan to replant your set-grown shallots, save one shallot for every six you would like to harvest next year. The biggest, healthiest cloves will yield the best results. Mark them and store them carefully—especially if someone else does the cooking in your household!

LUSCIOUS LEEKS

LEEKs (*A. porrum*, syn. *A. ampeloprasum*) have the appearance of a flat-leaved scallion on steroids. They are a different species altogether, however, with a milder and more delicate flavor than onions. Indispensable in stews and soups—along with potatoes, they are an essential ingredient in the French delicacy vichyssoise. They are also delicious on their own braised gently in stock or wine.

🌱 **Tips for growing leeks.** Leeks can be direct-seeded, although they are weak as seedlings and easily overcome by weeds. Large, healthy transplants with well-developed roots will give you a jump on the competition, as well as extend the growing season. In northern climates, set

them out in early spring, about two weeks after the first peas are planted; too many cold nights can make leeks think they have gone through a Mediterranean winter, and they will flower and run to seed.

Although the globular flowers are worthy ornamentals, their development is accompanied by a hardening of the stalks that makes them inedible.

In the garden, leeks provide a visual feast of broad, flat, ribbonlike leaves arranged in a delightful chevron pattern. The deeper blue color of the more winter hardy varieties, such as 'Laura' con-



Just harvested, these well-blanched 'Baby Albistar' leeks are ready for culinary use.

trasts nicely with the rich greens of late summer. As the rest of the garden begins to fade, leeks stand tall and proud atop bicolor white-and-green stalks.

The white portion of the stalk nearest the root has the most tender and mild flavor, so many gardeners try to maximize this portion of the stem by blanching. This technique involves mounding soil around the lower portion of the plant or planting leeks in a shallow trench and gradually filling in around the stems with soil.

We avoid this altogether by starting five leeks in each cell of a cell pack and transplanting each set of five leeks together. This makes transplanting much easier and contributes to blanching the stalks. By planting the cells more deeply than we would other crops, we achieve a good six inches of blanched stalk.

We space the bunches 16 inches apart in rows 10 inches apart to allow for easy weeding. While many gardeners space leek rows widely, we have found that four rows on a 42-inch bed provides a much better yield.

Leeks are ready to harvest as soon as you are ready to eat them. By planting both early and late varieties, we can begin harvesting full-sized leeks in mid-August and continue through the fall. Relatively close spacing prevents the development of thick, tough stalks, even when the plants are left in the ground for a long period of time.

Leeks come into full flavor after a hard frost, although some of the earlier vari-

Sources

In general, alliums are provided in the form of sets, but entries marked by an asterisk indicate seeds.

Johnny's Selected Seeds, Albion, ME. (207) 437-4301.
www.johnnyseeds.com. Catalog free.

Allium cepa 'Ambition'*; 'Red Sun'; *A. fistulosum* 'Evergreen Hardy White'; *A. porrum* 'King Richard', 'Laura', 'Tadorna'; *A. schoenoprasum* 'Fine Leaf'; *A. tuberosum**.

Nichols Garden Nursery, Albany, OR. (541) 928-9280.
www.nicholsgardennursery.com. Catalog free.
Allium fistulosum 'Evergreen Hardy White'*; *A. schoenoprasum**, *A. schoenoprasum* 'Forescate'; *A. tuberosum**.

Richters, Ontario, Canada. (905) 640-6677.
www.richters.com. Catalog free.
*Allium cepa**; *A. fistulosum*; *A. schoenoprasum* (seeds, plants, or plugs), *A. schoenoprasum* 'Profusion'; *A. tuberosum* (seeds, plants, or plugs).

Shepherd's Garden Seeds, Torrington, CT. (860) 482-3638.

www.shepherdseeds.com. Catalog free.

Allium cepa 'Dutch Yellow', 'Holland Red'; *A. porrum* 'Baby Albinstar', 'King Richard'; *A. schoenoprasum*.

Territorial Seed Company, Cottage Grove, OR.
(541) 942-9547. www.territorial-seed.com. Catalog free.
Allium cepa 'Ambition'*; 'Dutch Yellow', 'French Red', 'Gray'; *A. porrum* 'King Richard', 'Laura'*; 'Tadorna'*; *A. schoenoprasum**; *A. tuberosum**.

Resources

Culinary Gardens: From Design to Palate by Susan McClure. Fulcrum Publishing, Golden, Colorado. 1997.

Exotic Herbs: A Compendium of Exceptional Culinary Herbs by Carole Saville. Henry Holt, New York, New York, 1997.

Growing Herbs and Vegetables from Seed to Harvest by Terry and Mark Silber. Alfred A. Knopf, New York, New York, 1999.

eties such as 'King Richard' are best harvested before the worst of the winter weather sets in. Later varieties, such as 'Laura' and 'Tadorna', can survive much colder temperatures, holding their own down to 20 degrees or colder. Eating quality actually improves as the winter goes on, as long as the plants don't succumb to rot.

As with many crops, the ability to withstand the full depths of winter depends on gradual acclimatization rather

than sudden freezing; it is well worth covering leeks with row covers, milk jugs, or whatever is handy during an early, sudden hard frost. From USDA Hardiness Zone 7 south, leeks can simply be left in the ground through the winter and harvested whenever the weather is above freezing.

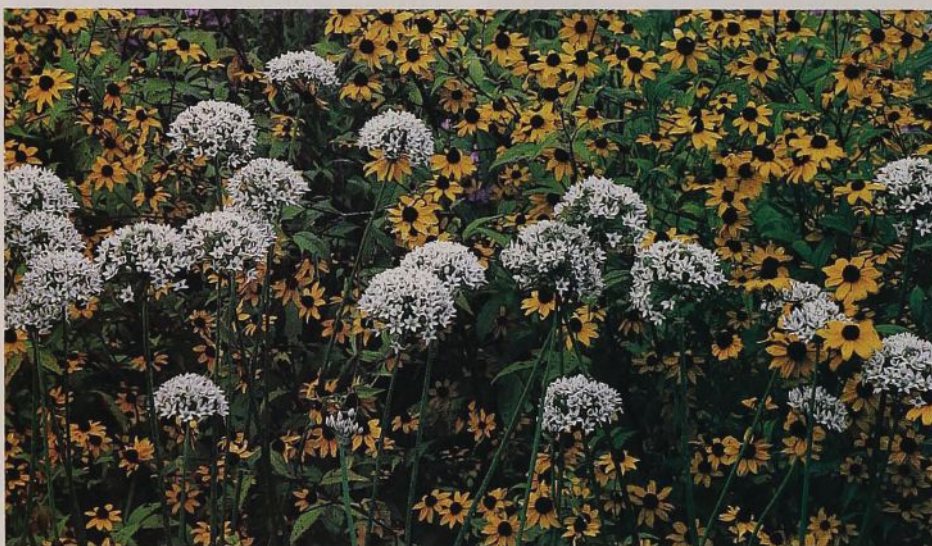
Use a digging fork to loosen leeks rather than just pulling them up; the soil-covered roots can be trimmed off with a knife right there in the garden.

Because leeks are normally very dirty, with hilled-up soil caught between the leaves along the stalk, wash them carefully and thoroughly air dry them before storing them in a refrigerator crisper drawer or root cellar. To store them, trim the roots and all but about three inches of the greens. Before cooking, clean them again by halving lengthwise, then soaking for about 15 minutes before rinsing under gently running water.

HOOKED ON ALLIUMS

ONCE YOU'VE acquired a taste for fresh gourmet alliums, you won't want to settle for the limp or dried-out supermarket versions. Try growing some this fall and you may find yourself setting aside a larger plot for them next year. With shallots going for \$3 a pound and up, it's probably a wise investment.

Even if you don't have space in your landscape for a dedicated vegetable garden, it's well worth integrating some of these delicious and beautiful vegetables into an ornamental border.



The ornamental value of gourmet alliums—garlic chives here—should not be overlooked.

Chris Blanchard grows alliums and many other vegetables on his farm near Highlandville, Iowa.

Much more than a great magazine,

"It's hard to imagine any part of my life that hasn't been touched by my passion for plants—food, friends, work, and weekends puttering in the garden. *AHS is all about creating this passion in children and supporting it in adults.* I give to AHS because it shares my values."

—Brian E. Holley, Director, Cleveland Botanical Garden

"Members tell me that '*giving something back*' to the gardening world is just as important as receiving *The American Gardener*."

—Linda D. Hallman, President and CEO, AHS

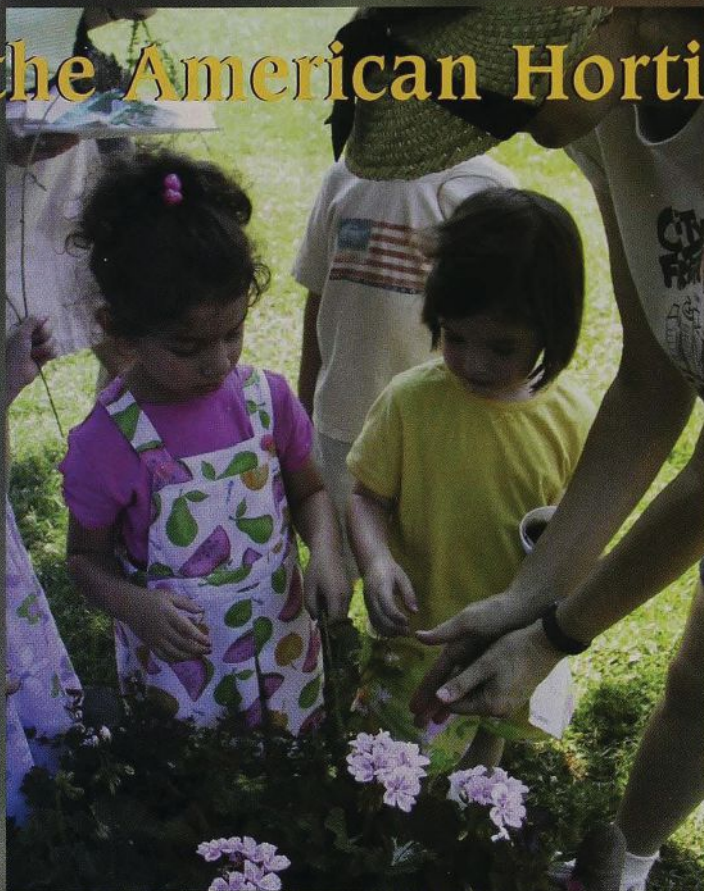


Garden Calm at River Farm

the American Horticultural Society

"I believe there is a moral dimension to horticulture: *Gardening makes us better people, and gardens make our communities better places to live.* That's why I and all gardeners should be supporting AHS."

—Duane Kelly, Producer of the Northwest and San Francisco Flower & Garden Shows



connects people to gardens.



The American Horticultural Society relies on the generous gifts of donors to fulfill its mission *to educate and inspire people of all ages to become successful and environmentally responsible gardeners by advancing the art and science of horticulture.* AHS fosters the human connection with plants, the environmental value of SMARTGARDEN™ practices, and an appreciation of beauty in the environments we create.

Contact Ashby Pamplin, Director of Development, at (800) 777-7931 to find out how you can help.

Book Reviews

Stone in the Garden: Inspiring Designs and Practical Projects.

Gordon Hayward. W.W.Norton, New York, 2001. Publisher's price, hardcover: \$39.95.

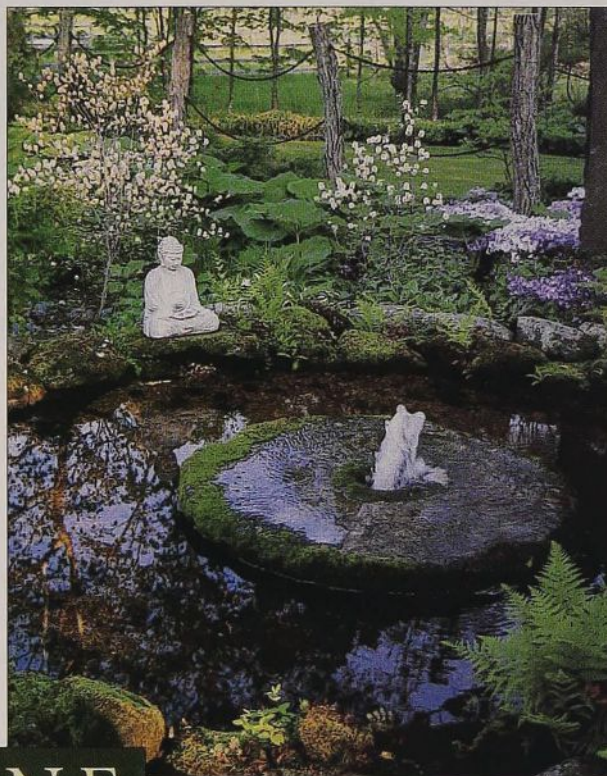
READING GORDON Hayward's *Stone in the Garden* has entirely changed my perception of stone walls, walkways, patios, and boulder placement. I feel like I need a bumper sticker that reads "I Brake for Stonework," because now I do.

The book is divided into two discrete yet complementary sections, one broadly aesthetic and the other more practical, although the practical interweaves with the aesthetic throughout.

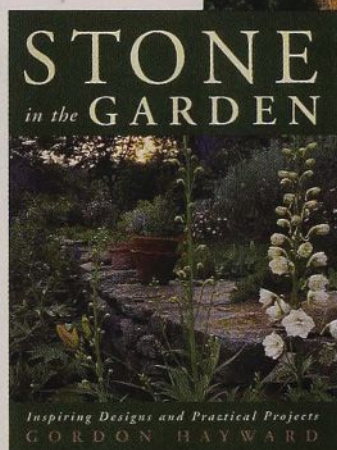
In the first section, which spans five chapters, Hayward's objective is to present the reader with useful and inspiring ideas for using stone in the garden. Lavish use of color photographs, diagrams, and plans helps illustrate the author's pragmatic points in this section.

For those who have been inspired into action, the second section includes hands-on projects that are described step-by-step from design to completion. The chapters correspond to the order of topics in the first section and include a very generous number of helpful drawings and diagrams of the project under discussion.

The "inspirational" chapter on walls contains a plethora of practical advice interspersed with dreamy photos of stone walls that look like they date to medieval times. The author's stated bias is for dry-laid walls, but he deals evenly with mortared walls too. A full-page chart on what to look for in stone walls and how to tell a good one from a bad one is almost worth the price of the book. The "practical" section on walls is even more



Left: Gordon Hayward's garden in Vermont features the base of an old barn silo that is now a pool, with an old marble well head as a fountain. Photograph by Gordon Hayward from *Stone in the Garden*.



down-to-earth, dealing with a variety of how-to's—from soil types to plantings to where a load of stone should be dumped (uphill from where you need them).

Appendices contain color photographs of types of North American stone for different purposes, sources of

stones, pool liners, and ornamental sculptures and benches. Also included is a small bibliography and a reasonably detailed index.

The only reservations I have about *Stone in the Garden* are that some photographs are out of focus and the insertion of several small pictures at various places on a page sometimes serves as more of a distraction than a help. Additionally, the text occasionally refers to a photograph that is located several chap-

ters back or ahead, a cumbersome practice in a book of this size.

Despite its size and abundance of beautiful photographs, this is by no means a coffee table book. It is a manual for gardeners who might want to install a stone feature themselves. It is also for those who want to know the basics of constructing stonework before hiring someone else to build it.

Finally, it is a book for anyone who slams on the brakes to admire a well-built stone wall.

—Barbara Schlein

Horticulturist and writer Barbara Schlein operates Fountain Gardening Service in Woodbridge, Connecticut, which specializes in autumn and winter gardens.

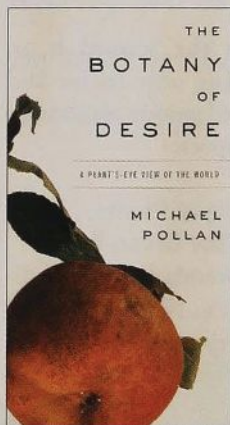
The Botany of Desire: A Plant's-Eye View of the World.

Michael Pollan. Random House, New York, 2001. Publisher's price, hardcover: \$24.95.

A CONTRIBUTING writer to the *New York Times* magazine, Michael Pollan is also an observant, contemplative gardener. While planting potatoes, he notices bees pollinating the nearby apple tree and muses, rather conventionally, on how the bee and the apple have evolved together in a symbiotic relationship. But what of the gardener planting potatoes? What is his relationship to the potato? "Did I

choose to plant these potatoes, or did the potato make me do it?" he asks in a moment of inspiration.

In witty prose, Pollan lays out a subtle argument that plants entice us to help them reproduce by tying into some of our most basic desires. He explores this



proposition by focusing on four plants—apples, tulips, cannabis, and potatoes—that are representative of our desires for sweetness, beauty, intoxication, and control. These desires, he suggests, are woven into the very genes of selected

plants, not through any direct human intervention, but because the plants have found us to be perfect allies in the evolutionary battle being waged against competing species.

Exploring many interesting byways and suggesting some paradigms for thinking about nature, Pollan argues that after 10,000 years of co-evolution, domesticated plants are rich archives of human nature and culture. For example, he sees our relationship to nature as a constant battle between the Dionysian and the Apollonian, the tension between a desire for wilderness and orderly rows of lettuce, between the uncontrolled diversity of the species and bio-engineered potatoes. What makes the book so valuable is that Pollan never opts for the simple answer, the standard argument. Instead, he presents a nuanced examination of the complex issues facing gardeners, farmers and consumers.

While *The Botany of Desire* opens new ways of thinking about nature, it keeps tripping over the notion of intention. How can plants entice us or use us if we don't allow them to have intention? Pollan, of course, realizes that plants do not really scheme to win our attention any more than evolution has a grand plan. The problem seems to be simply a semantic one; we have no words to convey intention or desire without consciousness.

The chapter on apples centers on the life of Johnny Appleseed, and Pollan sketches a very different life from the one most of us learned from children's books. His discussion of tulips is perhaps the least interesting since it covers the same ground as Anna Pavord's *The Tulip*. However his chapter on cannabis, while somewhat speculative, was particularly interesting. The history of the drug war and its influence on cannabis-growing is instructive without being a polemic. Similarly, his discussion of Monsanto's NewLeaf potatoes strives to see both sides of the bio-engineering issue, and, as such, is a sober warning about the choices we face.

The book will give you something interesting to think about as you whack away at your weeds. Are you acting as an independent agent or are you in the thrall of your tulips?

—Norma Prendergast

An art historian and writer, Norma Prendergast gardens in Ithaca, New York.

The Cactus Family.

Edward F. Anderson. Timber Press, Portland, Oregon, 2001. Publisher's price, hardcover: \$99.95.

THE REAL MEAT of this large, scholarly work is contained in its encyclopedic treatment of the 125 genera of cacti. This section describes the different genera and selected species within each genus and illustrates the major species with color photographs that include a nice mix of cultivated plants and plants in the wild. It is also a technical reference for nomenclature and botanic descriptions, as well as an excellent guide to refer to when looking up individual species.

Five chapters cover background information: ethnobotany, morphology, conservation, cultivation, and classification. As a professional grower of cacti and succulents, I found the chapter on cultivation—contributed by Roger Brown—to generally be both informative and practical. A beginning grower would do well to follow the advice relating to pots, pot-

ting media, and watering practices. However, I found the information relating to using fertilizers and how to re-pot cacti vague and incomplete. The section on control of diseases and insect pests was better but might cause inexperienced gardeners to be more concerned with these problems than they need to be.

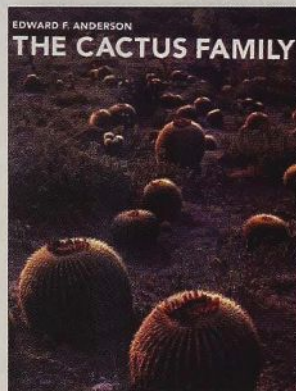
Anderson began his study of cacti at the invitation of Lyman D. Benson, one of this century's foremost authorities on the cacti of North America and author of the seminal *The Cacti of the United States and Canada*, published in 1983 by Stanford University Press. Anderson's first botanic fellowship involved an ethnobotanical study of the peyote cactus, and his knowledge of and continued interest in ethnobotanical uses of cacti affords valuable insights. I found the chapter on human use of cacti throughout the Americas the most interesting one in the book.

While Benson's book remains the classic text on cacti native north of the Mexican border, this new work provides comprehensive coverage of the cacti of Mexico and South America that I have not seen elsewhere. The photographs of some of the rarest and most sought-after species of Mexican and South American cacti in habitat are superb and will entice many avid collectors who view them.

The locations where cacti species and subspecies are found are consistently listed throughout, but I found information on the details of their habitats a little skimpy. The inclusion of more information about preferences for unusual soil types, the range of altitudes each species inhabits and other specialized habitat requirements would improve future editions. For those of us who live in regions

that experience freezing winter temperatures, information on the altitudes where a species is found imparts invaluable clues to its cold hardiness.

—David Salman



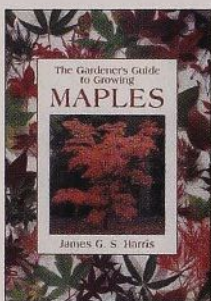
David Salman is proprietor of High Country Gardens, a mail-order nursery in Santa Fe, New Mexico. He specializes in introducing hardy, drought-tolerant plants.

Gardeners' Books

There are many more new books on the market than we have time or space to review, but here are a few that recently caught our eye. Through a partnership with amazon.com, AHS members can order these and other books at a discount by linking to amazon.com through the Society's Web site at www.ahs.org.

The Gardener's Guide to Growing Maples.

James G.S. Harris. Timber Press, Portland, Oregon, 2000. 160 pages. Publisher's price, hardcover: \$29.95.



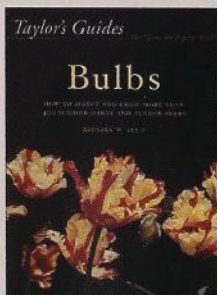
ILLUSTRATED throughout with color photographs, this book offers a thorough overview of the genus *Acer*. The bulk of the book is composed of an A-to-Z encyclopedia of species

and cultivars. There are also chapters on cultivation, propagation, and using maples in the garden.

Taylor's Guide to Bulbs.

Barbara W. Ellis. Houghton Mifflin, Boston, Massachusetts, 2001. 438 pages. Publisher's price, softcover: \$23.

THE SUBTITLE of this revised guide says it all: "How to Select and Grow More than 400 Summer-Hardy and Tender Bulbs." A gallery section includes color photographs of all the bulbs, and an encyclopedia section covers plant descriptions and information on how to care for bulbs.



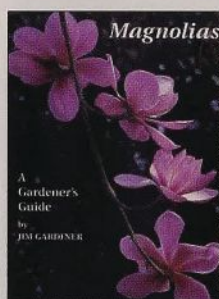
Cultivating Delight : A Natural History of My Garden.

Diane Ackerman. HarperCollins Publishers, New York, 2001. 272 pages. Publisher's price, softcover: \$25.

THE EVENTS of the passing seasons as they unfold in the author's garden are recorded in essays that read like the pages of a journal. Observations become stream-of-consciousness connections to myriad other topics, including poetry, literature, history, and scientific principles.

Magnolias: A Gardener's Guide.

Jim Gardiner. Timber Press, Portland, Oregon, 2000. 329 pages. Publisher's price, hardcover: \$39.95.



MAGNOLIA growers, particularly those living in cooler climates, will find this revised and expanded volume, originally published in 1989, a valuable reference.

Gardiner offers detailed advice and information on cultivation, disease and pest control, propagation, and use of species and hybrids.

Muenschers Keys to Woody Plants.

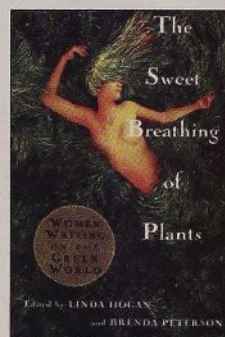
Edward A. Cope. Cornell University Press, Ithaca, New York, 2001. 337 pages. Publisher's price, hardcover: \$50; softcover: \$22.95.

ORIGINALLY PUBLISHED in 1922 and last revised in 1950, the newest edition of Walter C. Muenschers venerable reference work for northeastern America covers more than 300 genera and more than 1,000 species. The guide is divided into three sections: The first covers keys for identifying cultivated, naturalized, and na-

tive woody plants; the second is an abridged key covering only native and commonly naturalized woody plants; and the third is a key by species.

The Sweet Breathing of Plants: Women Writing on the Green World.

Linda Hogan and Brenda Peterson, editors. North Point Press, New York, 2001. 288 pages. Publisher's price, hardcover: \$24.



THIS anthology offers an eclectic mixture of previously published works by women writers—including Rachel Carson, Alice Walker, Diane Ackerman, Susan Orlean, Jane Goodall, and

Jeanne Achterberg—that touches on some aspect of plants and the natural world. There is a mix of poetry, reminiscences, an historical account of women herbalists in medieval Europe, and even a biography of Nobel Prize-winning plant geneticist Barbara McClintock.

In the Company of Stone: The Art of the Stone Wall.

Dan Snow. Photographs by Peter Mauss. Artisan, New York, New York, 2001. 128 pages. Publisher's price, hardcover: \$35; softcover: \$22.50.

RELYING ON understanding the characteristics of each stone and the force of gravity—rather than mortar—to hold his works together, Snow, an experienced "waller" and artist, builds stone walls, terraces, and other architectural landscape features in the old way. He also offers his thoughts, practical and philosophical, on the art of working with stone. Includes quadratone and full-color photographs.

Seasonal Garden Goods

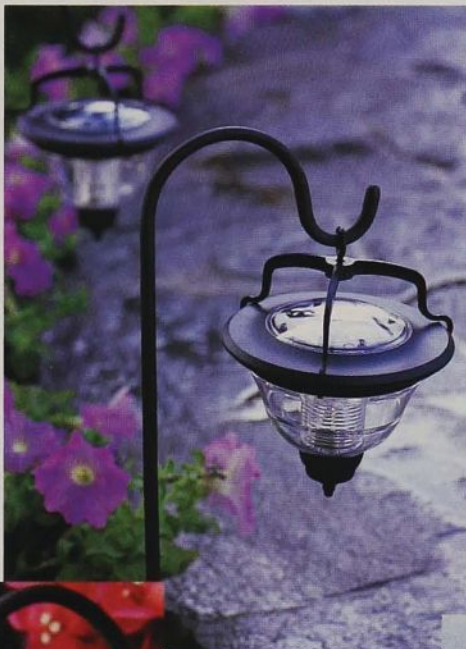
Who says you have to leave the garden after dark? You can extend your enjoyment of the outdoors into nighttime by illuminating it with candles, solar power, electricity, or oil—it's up to you. Here we offer a selection of garden lights to get you started.



You don't need to have a Japanese garden to enjoy the subtle illumination provided by these **Pagoda Lanterns**.

Each hand-painted lantern is made of cast iron and has an interior ring to secure a tea-light candle. They are weather- and rust-resistant. A set of two costs \$19.98. Lillian Vernon, 100 Lillian Vernon Drive, Virginia Beach, VA 23479-0004. (800) 545-5426.

www.lillianvernon.com.



No electricity is needed for these **Solar Accent Lights**. Just push them into the ground; a solar panel on the top of each light converts sunshine into evening lighting beginning at dusk. Stake length is adjustable between 18 inches and 29 inches. Available in a set of four for \$129.50. Solutions, P.O. Box 6878, Portland, OR 97228. (800) 342-9988. www.SolutionsCatalog.com.

Designed to blend into your garden, the **English Cottage Lantern** is handcrafted from heavy-gauge copper that weathers to a green patina and is guaranteed against rust or composition breakdown. Lanterns include a 12- or 18-watt bulb and a stake and are compatible with 12-volt systems. The span is 12 to 16 inches. The cost is \$160. Stone Manor Lighting, 6219 Porterdales Road, Malibu, CA 90265. (888) 534-0544. www.stonemanorlighting.com.



Light a garden pathway and deter mosquitos at the same time with this copper **Dished Oil Lamp**.

It has a concave shape to protect the flame from wind. It can be filled with liquid paraffin or, for mosquito control, citronella oil. Each lamp measures 8 inches across and 4 inches tall. A single lamp retails for \$22; a set of three is \$59. Smith and Hawken, P.O. Box 431, Milwaukee, WI 53201-0431. (800) 776-3336.

www.SmithandHawken.com





Regional Happenings

NORTHEAST

SEPT. 15 & 16. **American Dahlia Society's 35th National Show and Mid-Island Dahlia Society's Annual Show.** Planting Fields Arboretum State Historic Park, Oyster Bay, Long Island, New York. (516) 922-9201.

SEPT. 15 & 16. **Cultivating the Self and Nurturing the Heart.** Symposium about classical Chinese gardens held at Columbia University and the New York Chinese Scholar's Garden, Staten Island, New York. (718) 273-8200.

SEPT. 29 & 30. **Early 19th Century Agricultural Fair.** Old Sturbridge Village, Sturbridge, Massachusetts. (508) 347-3362.

OCT. 1, 15, 22, & 29. **Landscape Design Lecture Series.** New York Botanical Garden, Bronx, New York. (718) 817-8747.

OCT. 5. **Momijigari: Japanese Autumn Garden Exhibition.** The New York Botanical Garden, Bronx, New York. (718) 817-8616.

OCT. 6-28. **Festival of Scarecrows.** Warrensburg, New York. (518) 623-2161.

OCT. 13. **Gardening with the Experts Day.** Tours and talks. The New York Botanical Garden, Bronx, New York. (718) 817-8616.

OCT. 20 & 21. **Harvest Weekend.** Old Sturbridge Village, Sturbridge, Massachusetts. (508) 347-3362.

MID-ATLANTIC

THROUGH OCT. 30. WEDNESDAYS. **Guided tours of the Bishops Garden.** National Cathedral, Washington, D.C., (202) 637-2037.

SEPT. 8-30. **GardenFest.** Various demonstrations. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

SEPT. 22. **75 Years of Colonial Gardens.** Seminar. Williamsburg Institute at Colonial Williamsburg. DeWitt Wallace Decorative Arts Museum, Williamsburg, Virginia. (757) 220-7171.

SEPT. 29 & 30. **66th Annual Dahlia Show.** National Capital Dahlia Society. Brookside Gardens, Wheaton, Maryland.

OCT. 6 & 7. **Bonsai and Ikebana Exhibitions.** Philadelphia Chapter of Ikebana International

and the Brandywine Valley Bonsai Society. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

OCT. 6-9. **Taking Back the Food System: Strategies for Healthy Food, Farms, and Communities.** Conference. Community Food Security Coalition. Washington Plaza Hotel, Washington, D.C. (310) 822-5410.

OCT. 13. **Gardening: A Tool for Education.** Workshops and seminars. Rodale Institute, Kutztown, Pennsylvania. (610) 683-1400.

OCT. 13-NOV. 4. **2001 Fall Flower Show: A Floral Fantasy.** Phipps Conservatory and Botanical Gardens, Pittsburgh, Pennsylvania. (412) 622-7363.

OCT. 13-FEB. 24. **Garden Railroad.** Exhibit. Phipps Conservatory and Botanical Gardens, Pittsburgh, Pennsylvania. (412) 622-7363.

OCT. 20. **A Garden Writers Symposium: Cultivating the Written Word.** Green Spring Gardens Park, Alexandria, Virginia. (703) 642-5173.

OCT. 20-NOV. 18. **2001 Chrysanthemum Festival.** Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000.

OCT. 27. **Rites of Fall.** Workshops. Adams County Master Gardeners. Agriculture and Natural Resources Building, Gettysburg, Pennsylvania. (717) 334-6271.

SOUTHEAST

SEPT. 19. **Hostas.** Class. Atlanta Botanical Garden, Atlanta, Georgia. (404) 876-5859.

SEPT. 27-29. **Cultivating History: Exploring Horticultural Practices of the Southern Gardener.** Conference. Old Salem, Winston-Salem, North Carolina. (336) 721-7378.

SEPT. 28 & 29. **2001: A Plant Odyssey.** Symposium. J. C. Raulston Arboretum, Raleigh, North Carolina. (919) 515-3132.

OCT. 6. **What's New and Hot in Perennials.** Plant Delights Nursery, Raleigh, North Carolina. (919) 772-4794.

OCT. 12 & 13. **Central South Native Plant Conference.** Birmingham Botanical Gardens, Birmingham, Alabama. (205) 414-3950.

OCT. 25. **Fusion Gardening: West Comes East.** Wing Haven Symposium 2001. Wing Haven Garden and Bird Sanctuary, Charlotte, North Carolina. (704) 331-0664.

NOV. 16 & 17. **Kentucky 2001 Urban and Community Forestry Conference.** Kentucky Arborists Association, Erlanger, Kentucky. (859) 277-9633.

NORTH CENTRAL

SEPT. 15. **2001 Plant Odyssey: Great Plant Explorers.** Symposium. Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4550.

SEPT. 15-OCT. 28. **Great American Scarecrow Festival.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

SEPT. 23. **Bug Bash.** Folsom Children's Zoo and Botanical Gardens, Lincoln, Nebraska. (402) 475-6741.

SEPT. 27 & 28. **New Ornamental Crops Research Symposium.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

SEPT. 29 & 30. **11th Annual Mum Fest.** Lake Anna Park, Barborton, Ohio. (330) 848-6653.

NOV. 2-4. **Wild Bird, Wildlife, and Backyard Expo.** National Wildlife Federation. Washington County Fair Park, West Bend, Wisconsin. (800) 324-3337.

SOUTH CENTRAL

SEPT. 22. **Fall Plant Sale.** Crosby Arboretum, Picayune, Mississippi. (601) 799-2311.

SEPT. 28. **Alabama Orchid Society/Mid-America Orchid Show.** Birmingham Botanical Gardens, Birmingham, Alabama. (205) 933-8688.

OCT. 5. **Herb Harvest Fall Festival.** Ozark Folk Center State Park, Mountain View, Arkansas. (870) 269-3851.

OCT. 6. **Fabulous Fall Festival.** SFA Mast Arboretum, Nacogdoches, Texas. (936) 468-4404.

OCT. 13. **Plant Swap Meet.** Bring plants to share with others. Crosby Arboretum, Picayune, Mississippi. (601) 799-2311.

NORTHWEST

SEPT. 1–OCT. 28. **Vanishing Pollinators: Photography by Carll Goodpasture.** Smithsonian Traveling Exhibit. Douglas County Museum of History and Natural History, Roseburg, Oregon. (202) 357-2700.

OCT. 4–7. **Fall Home & Garden Show.** Portland Expo Center, Portland, Oregon. (503) 246-8291.

OCT. 7. **Fall Bulb and Plant Sale.** Washington Park Arboretum, Seattle, Washington. (206) 726-1954.

WEST

SEPT. 7–23. **Home and Gardens.** L.A. County Fair. Pomona, California. (909) 623-3111.

OCT. 11–14. **Fall Plant Sale.** The Huntington, San Marino, California. (626) 405-2100.

OCT. 13. **San Diego International Orchid Fair.** Quail Botanical Gardens. Del Mar Fairground's Activity Center, San Diego, California. (619) 286-1976.

OCT. 13 & 14. **Arborfest and Fall Plant Sale.** Fullerton Arboretum, Fullerton, California. (714) 278-3579.

OCT. 19–21. **15th Annual East West Orchid Show.** New Otani Hotel, Los Angeles, California. (619) 296-4287.

NOV. 2–4. **Grow Biointensive.** Sustainable mini-farming workshop. Ecology Action, Willits, California. (707) 459-0150.

SOUTHWEST

SEPT. 28–30. **The Beautiful Home and Landscape Show.** Arizona State Fairgrounds, Phoenix, Arizona. (800) 995-1295.

OCT. 5. **Home Show of the Rockies.** Denver Merchandise Mart, Denver, Colorado. (303) 932-8100.

OCT. 12–28. **Fall Landscaping Festival and Plant Sale.** Boyce Thompson Arboretum, Superior, Arizona. (520) 689-2723.

OCT. 27 & 28. **La Fiesta de los Chiles.** The Tucson Botanical Gardens, Tucson, Arizona. (520) 326-9686.

CANADA

OCT. 13 & 14. **Apple Festival.** University of British Columbia Botanical Gardens, Vancouver, British Columbia. (604) 822-9666.

OCT. 27–NOV. 11. **Floral Exhibition.** Les Jardins du Domaine Howard, Sherbrook, Quebec. (819) 821-1919.

Oregon Garden Opens in Silverton

THE OREGON Association of Nurserymen's 50-year-old dream of creating a world-class public display garden has come true with the opening of the Oregon Garden in Silverton, Oregon, located south of Portland. The garden is a partnership between the association and the city of Silverton. The association was looking for a location for the garden at the same time as the city faced a mandate to establish wetlands. An agreement was made and the garden's first feature was a wetlands area that receives between 500 and 800 gallons of treated waste water a day from May through October, according to Oregon Garden Marketing Director Jim Browne.



The Upper Water Fall Garden at the new Oregon Garden.

In addition to the wetlands, the 60 acres of the garden's first phase includes formal floral displays, a conifer garden, a children's garden, the Northwest Garden, and natural meadows. A unique feature of the garden is the Gordon House, a Frank Lloyd Wright-designed home from another location that was disassembled and moved to the garden. The house, which will be fully reassembled in October, is the only Wright building built in Oregon. It was originally scheduled for demolition before it was donated to the Frank Lloyd Wright Building Conservancy and the Portland Chapter of the American Institute of Architects. The Oregon Garden purchased the home from the Conservancy and transported it 26 miles over a three-day period to its new site.

Although a new attraction, the garden has already been well received. "We are thrilled by the public's overwhelming acceptance of the Oregon Garden," says Diane Hannan, director of guest services. During the grand opening June 29 through July 3, nearly 50,000 people visited the garden.

Admission to the Oregon Garden is \$6 for adults. For more information call (877) 674-2733 or visit www.oregongarden.org.

Cheekwood Perennial Plant Conference

WELL-KNOWN gardening authors and experts will be dispensing their advice on perennial plants to enthusiasts at the Cheekwood Botanical Garden and Perennial Plant Society of Middle Tennessee's annual perennial conference to be held October 5 and 6 at Cheekwood Botanical Garden and Museum of Art near Nashville.

The conference opens with a reception and tours of the gardens on Friday afternoon. Presentations by the five featured speakers begin on Saturday morning and run until 3 p.m. Award-winning author and garden designer C. Colston Burrell will speak about "The Art of Perennial Combinations"; Brent Heath, co-owner of Brent and Becky's Bulbs and a 2001 AHS award winner will discuss "Using Bulbs in Your Perennial Garden"; Wolfgang Oehme, author and landscape designer will present "The New American Garden"; William Welch, author and Extension landscape horticulturist at Texas A&M University will lecture on "The Bountiful Flower Garden"; and landscape designer Carolyn Hoyne will present "Dear Deer, Please Don't Eat Here."

The cost of the conference is \$65 for Cheekwood members and Perennial Plant Society members, \$75 for non-members. An optional \$7 boxed lunch is available for Saturday. Call (615) 353-2148 for more information or to register.

—Sarah Schroeder, Editorial Assistant

Garden Market

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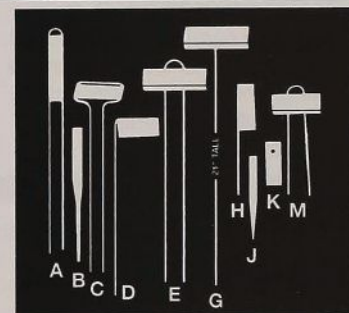
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Pronunciations and Planting Zones

Most of the cultivated plants described in this issue are listed here with their pronunciations, USDA Plant-Hardiness Zones, and AHS Plant Heat Zones. These zones suggest a range of locations where temperatures are appropriate—both in winter and summer—for growing each plant. While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The zones tend to be conservative; plants may grow outside the ranges indicated. A USDA zone rating of 0 means that the plant is a true annual and completes its life cycle in a year or less. Many plants that are perennial in warm climates are grown as annuals in cooler zones. To purchase an AHS Plant Heat-Zone Map for \$9.95, call (800) 777-7931.

A-E

- Acer barbatum** AY-ser bar-BAY-tum (7-10, 10-6)
A. buergerianum A. bur-jeh-ree-AN-um (5-9, 9-3)
A. circinatum A. sir-sih-NAY-tum (5-8, 7-1)
A. grandidentatum A. gran-dih-den-TAY-tum (4-8, 8-1)
A. leucoderme A. loo-ko-DUR-mee (4-8, 8-3)
Achlys triphylla AK-liss try-FIL-luh (7-9, 9-7)
Adiantum pedatum ad-dee-AN-tum peh-DAY-tum (3-8, 8-1)
Allium canadense AL-ee-um kan-uh-DEN-see (5-9, 9-4)
A. stellatum A. stel-LAY-tum (5-9, 9-5)
A. thunbergii 'Ozawa' A. thun-BER-jee-eye (5-9, 9-5)
A. tricoccum A. tri-KOK-um (5-9, 9-5)
Asimina triloba uh-SIH-mih-nuh try-LO-buh (4-8, 9-5)
Azara microphylla uh-ZAR-uh my-kro-FIL-luh (8-10, 10-8)
Blechnum spicant BLEK-num spih-KANT (5-8, 8-5)
Colchicum autumnale KOAL-chih-kum aw-tum-NAL-ee (4-9, 9-1)
C. baytopiorum C. bay-toh-pee-OR-um (4-9, 9-1)
C. cilicicum C. sih-LISS-ih-kum (4-9, 9-1)
C. kotschyi C. KOT-skee-eye (4-9, 9-1)
C. lingulatum C. ling-yew-LAY-tum (4-9, 9-1)
C. speciosum C. spee-see-O-sum (4-9, 9-1)
Cotinus obovatus KO-tin-us ahh-o-VAY-tus (5-8, 8-1)
Crocus cartwrightianus forma albus CROW-kus kart-ry-tee-AN-us forma AL-bus (6-8, 8-6)
C. goulmii C. goo-LEE-me-eye (3-8, 8-1)
C. laevigatus C. lee-vih-GAY-tus (5-8, 8-3)
C. medius C. MEE-dee-us (3-8, 8-1)
C. niveus C. NIV-ee-us (5-8, 8-1)
C. nudiflorus C. noo-dih-FLOR-us (3-8, 8-1)
C. pulchellus C. pul-KEL-us (3-8, 8-1)
C. sativus C. sah-TY-vus (5-8, 8-1)
C. speciosus C. spee-see-O-sus (3-8, 8-1)

- C. tomasii** C. toh-MAH-see-eye (3-8, 8-1)
C. tournefortii C. tor-nih-FORT-ee-eye (3-8, 8-1)
C. veneris C. ven-AIR-iss (3-8, 8-1)
Erythronium revolutum air-ih-THROW-nee-um reh-vo-LOO-tum (5-9, 9-5)
Eucryphia glutinosa yoo-KRY-fee-uh gloo-tih-NO-suh (8-10, 10-8)

F-M

- Franklinia alatamaha** frank-LIN-ee-uh ah-la-ta-MAH-hah (6-9, 9-4)
Galanthus caucasicus var. hiemalis guh-LAN-thus kaw-KASZ-ih-kus var. hy-ee-MAL-iss (3-9, 9-1)
G. peshmenii G. pesh-MEN-ee-eye (3-9, 9-1)
G. reginae-olgae G. REJ-in-ee-OL-gee (3-9, 9-1)
Gaultheria shallon gawl-THEER-ee-uh SHAL-lon (6-8, 8-3)
Kirengeshoma palmata kir-en-geh-SHOW-muh pal-MAY-tuh (4-8, 8-1)
Leucojum autumnale lew-KO-jum aw-tum-NAL-ee (5-9, 9-1)
Liquidambar styraciflua lik-wid-AM-bur sty-rass-ih-FLEW-uh (5-9, 9-1)
Lonicera involucrata lah-NISS-er-uh in-vol-yew-KRAY-tuh (6-8, 8-5)
Maianthemum dilatatum my-AN-theh-mum dih-luh-TAY-tum (4-7, 7-1)
Mitella pentandra my-TEL-uh pen-TAN-druh (4-8, 8-1)

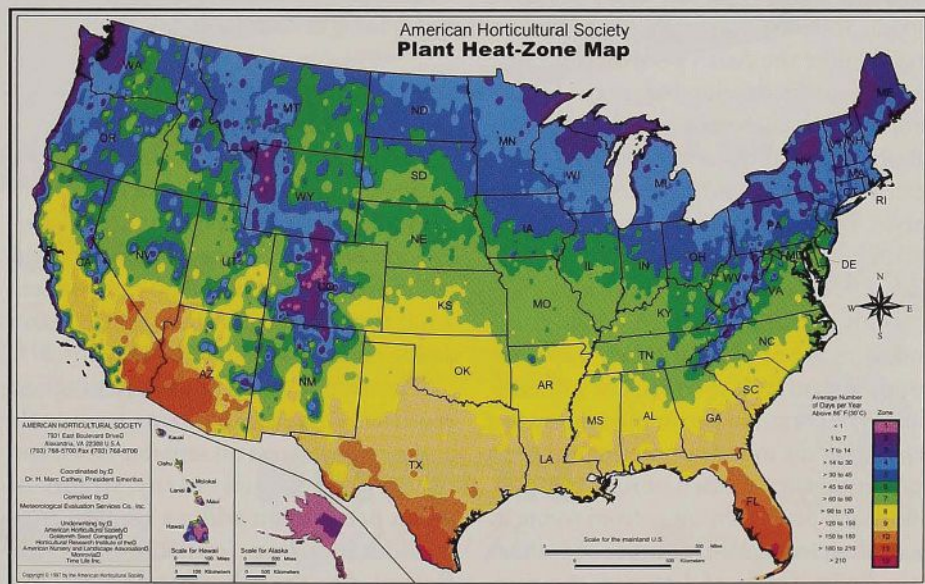
N-R

- Nyssa sylvatica** NIS-suh sil-VAT-ih-kuh (5-9, 9-2)
Oxydendrum arboreum ok-sih-DEN-drum ar-BOR-ee-um (5-9, 9-3)
Picea breweriana PIE-see-uh brew-ur-ee-AN-nuh (6-8, 8-6)
Pinus ponderosa PIE-nus pon-deh-RO-suh (6-8, 8-6)

- Polypodium scolieri** pawl-ee-PO-dee-um SKOO-lur-eye (9-11, 12-9)
Polystichum braunii pah-LIS-tih-kum BROW-nee-eye (3-8, 8-1)
Quercus calliprinos KWER-kus kal-ih-PREE-nos (6-8, 8-6)
Q. garryana var. bewerrii Q. gah-ree-AN-uh var. BYEW-ur-eye (7-9, 9-7)
Q. kelloggii Q. keh-LOG-ee-eye (7-9, 9-7)
Q. pontica Q. PON-tih-kuh (5-8, 8-5)
Q. robur Q. RO-bur (5-8, 8-3)
Rhododendron auriculatum ro-doh-DEN-dron aw-rik-yew-LAY-tum (5-9, 9-5)
Rhodophiala advena ro-doh-FEE-ah-luh ad-VEEN-uh (9-11, 12-9)
R. bifida R. BIF-ih-duh (9-11, 12-9)
Ribes sanguineum 'White Icicle' RY-beez san-GWIN-ee-um (6-8, 8-6)
Rodgersia podophylla rah-JERZ-ee-uh pah-doh-FIL-luh (5-8, 8-4)

S-Z

- Scilla autumnalis** SKIL-luh aw-tum-NAL-is (4-8, 8-1)
S. scilloides S. skil-OY-deez (4-8, 8-1)
Sorbus reducta SOR-bus reh-DUCK-tuh (5-8, 8-4)
Sternbergia lutea stirn-BUR-jee-uh LEW-tee-uh (7-9, 9-6)
S. sicula S. SIK-yoo-luh (7-9, 9-6)
Vancouveria hexandra van-koo-VEER-ee-uh heks-AN-druh (5-8, 8-5)
Verbena canadensis ver-BEE-nuh kan-uh-DEN-siss (4-7, 7-1)
Xerophyllum tenax zeh-rah-FIL-lum TEN-aks (5-9, 9-5)
Zephyranthes candida zef-ih-RAN-theez KAN-dih-duh (7-9, 9-6)
Z. flavissima Z. fluh-VISS-ih-muh (10-11, 12-10)
Z. smallii Z. SMAW-lee-eye (10-11, 12-10)





Notes from River Farm

An Autumn Windfall of Persimmons

by David J. Ellis

OF ALL THE wonderful plants that grow here at River Farm, perhaps the one that regularly draws the most attention from visitors is the Asian persimmon (*Diospyros kaki*, USDA Hardiness Zone 7–9, AHS Heat Zone 10–7), which from late September into November puts on a dramatic show of day-glo orange fruits. These orblike fruits, which reach three or four inches in diameter and have a filmy white

sheen or bloom on their skins, hang dramatically from the tree's bare stems for several weeks until they are harvested or ripen enough to become windfalls.

The two Asian persimmons on the grounds grow in company with apple trees in a small orchard planted on a hill in the middle of a circular driveway. This prominent location means anyone arriving at River Farm is treated to this colorful spectacle.

Much more subtle in appearance are the fruits of the common persimmon (*D. virginiana*, Zones 4–9, 9–1), native throughout the East Coast and westward to the Great Plains and Texas. Common persimmon has smaller fruits than its Asian counterpart, but they also turn an attractive yellow to orange as they ripen in the fall.

There are several native persimmons scattered around River Farm, mostly in woodlands along the periphery of the property. Unlike the Asian persimmon, their fruits begin to develop before the foliage drops, which sometimes yields a pleasing combination of the orange fruits and attractive yellow- to purple-colored autumn leaves. In winter, common persimmon is distinguished by its handsome, fissured bark, often likened to alligator hide.

Both persimmons have edible fruits and, contrary to popular belief, they don't require a hard frost to ripen, just sufficient time. The common persimmon has such a reputation for mouth-puckering sourness and astringency if eaten unripe, however, that many people shy away from trying it. According to Lee Reich, author of *Uncommon Fruits Worthy of Attention*, common



Janet Walker, AHS director of horticulture, harvests ripe fruits from an Asian persimmon tree growing at River Farm.

persimmons "must be as soft as an over-ripe tomato before they are fit to eat."

Some cultivars of Asian persimmon are astringent until they ripen, but non-astringent cultivars such as 'Fuyu' and 'Ichikikeijiro' are available. These varieties have the additional benefit that they can be eaten while they are still quite firm, which makes eating them out of hand less messy.

Persimmons vary in their pollination requirements; some strains have male and female flowers on separate trees, and others are bisexual. Many strains of Asian persimmon will set seedless fruit without needing fertilization of the flowers. On the other hand, most, but

Sources

Edible Landscaping, Afton, VA.
(800) 524-4156. EL@cstone.net.
Catalog free. *D. kaki* 'Ichikikeijiro';
D. virginiana and cultivars.

Sonoma Antique Apple Nursery, Healdsburg, CA. (707) 433-6420.
www.applenursery.com. Catalog free.
D. kaki 'Fuyu' and other cultivars;
D. virginiana and cultivars.

Resources

Uncommon Fruits Worthy of Attention
by Lee Reich is out of print, but a CD-ROM version is available for \$17 through the following Web site:
www.woodstocktimes.com/books.htm

not all, common persimmons require cross pollination. For most reliable fruit set, especially with American persimmons, it is best to plant two or three trees together, including at least one male and one female tree.

If you've never tried persimmons before, look for Asian varieties at your grocery store or farmer's market this fall. When ripe, they are sweet as honey with a delicious flavor that makes you understand why the botanical name for the genus, *diospyros*, translates to "food of the gods."

David J. Ellis is editor of *The American Gardener*

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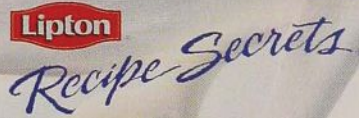
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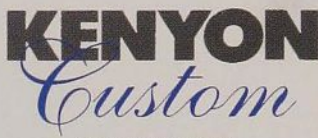


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