

September/October 2002

The American GARDENER

The Magazine of the American Horticultural Society

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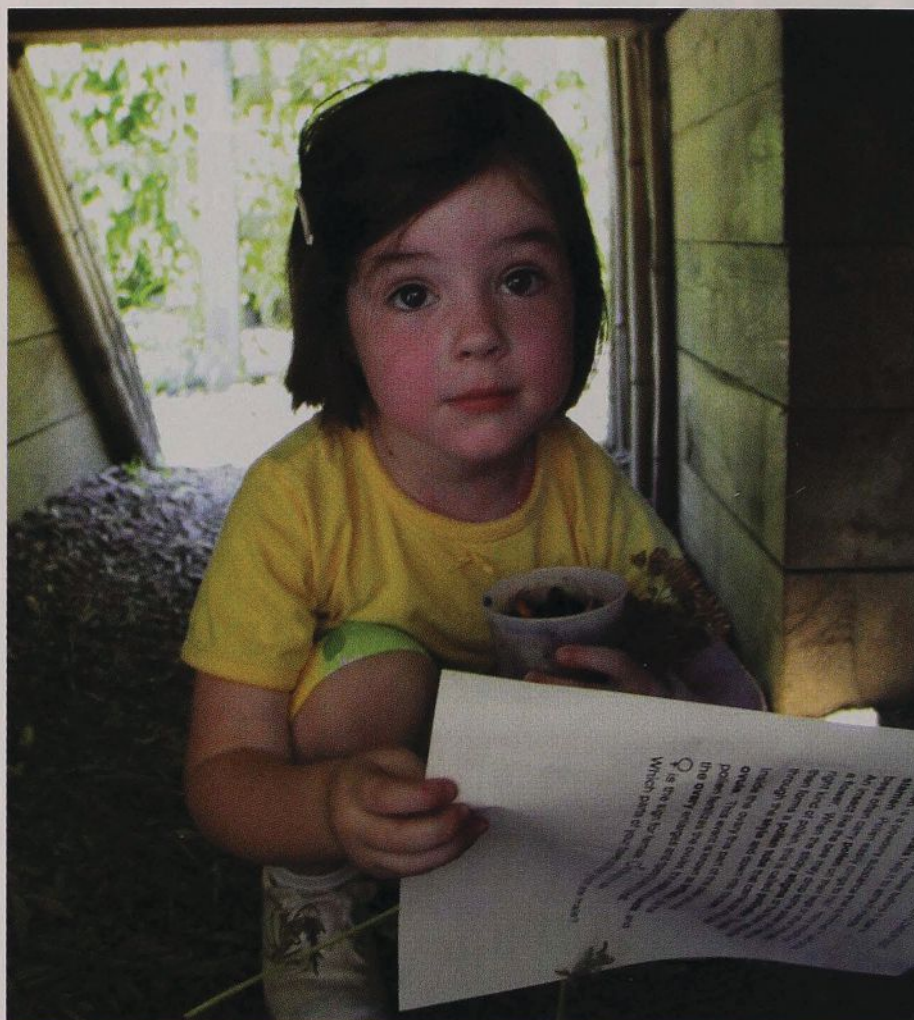
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Sarah Doesn't Care that AHS has been Inspiring and Educating Gardeners for 80 Years.



Sarah isn't all that interested in our 80th Anniversary celebration. Who can blame her? She just planted her first seed and found out that it will need water and sunshine to grow. She also learned that worms are very good for the soil—and a lot of fun to play with. **Sarah is one of many children whose introduction to the joys of gardening happened because of the caring people who have supported AHS for the past 80 years.** Living Lab programs at River Farm, like the one Sarah is involved in, are just a part of our larger mission to educate and inspire gardeners of all ages. We think that's pretty special and want to thank you on behalf of Sarah for being a part of that history. Take our word for it: Your support is very important to her.

She'd tell you herself, but she just spotted a butterfly on a nearby black-eyed Susan and is very busy watching it and wondering what it is doing. Thanks to you, she's about to find out.



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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 *AHS Member Guide* and also in the Membership area of our Web site. For more information, call (800) 777-7931 ext. 127.

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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: **perennial**.

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An Inside Look

THE FIRST TULIP cultivar I grew was a Parrot type named 'Fantasy'. Its combination of salmon, apple-green, and cream coloring matched everything—paint, china, clothes, etc.—in my mother's decor.

Tulips were also a major part of my doctoral thesis. Using chromatography, which was at the time a new technology, I was able to trace the process by which tulips metabolize nitrogen. We were looking for the chemicals which triggered flowering. Instead, we discovered an acid (gamma amino butyric acid) that works as a natural antibiotic and prevents crushed tulip bulbs from rotting. It is also the reason for "tulip fingers." The sap from the bulbs breaks down proteins and caused my fingerprints to temporarily disappear.

Although we still tend to think of them as "Dutch" bulbs, the bulbs that first inspired the Dutch came mostly from Central Europe and the Mediterranean region, but plant hunters have since introduced an incredible variety of bulbs from all over the world. Because they have been cultivated so long, spring-flowering bulbs are the finest, most productive, and consumer-friendly horticultural product in the world. And the spring bulbs available today extend well beyond the traditional tulips, daffodils, and crocuses that Dutch growers have been cultivating since the 16th century.

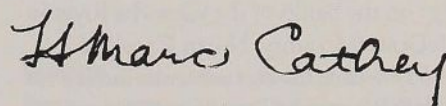
Thanks to the seasonal dormant stage bulbs go through, they have always been perfect for shipping to gardeners in the Northern Hemisphere. More recently, scientists have developed a perfectly timed regime of warming, chilling, and freezing that allows bulbs to also be marketed in the Southern Hemisphere.

Dutch growers and researchers have been sharing much of their specialized knowledge with us over the last couple of decades through a partnership with American scientists. This was initiated by August DeHertogh of North Carolina State University (recipient of the Society's 2002 H. Marc Cathey Award for achievements in horticultural research) and is now coordinated by William Miller of Cornell University in Ithaca, New York.

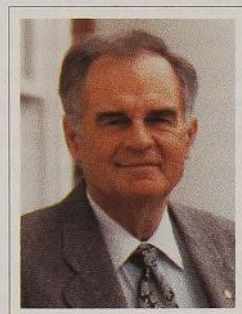
Lavish displays of spring bulbs will be just one part of the spectacle this spring, when the American Horticultural Society will hold its 58th Great American Gardeners Annual Conference in Washington, D.C., in partnership with the city's renowned National Cherry Blossom Festival. Fittingly, this year's conference, spread over nine days from March 29 to April 6, will celebrate early color in gardens from flowering bulbs and trees. All of the horticultural institutions in our nation's capital will be hosting special events, and of course there will be many activities here at George Washington's River Farm, including tours, lectures, workshops, and the Society's National Awards Banquet (see the box on page 11 for more information).

I hope you will plan now to join us in spring 2003. This will be an exciting opportunity to swap success stories and learn how to inspire all Americans with the beauty and importance of gardening.

Ever in green,



—H. Marc Cathey, AHS President Emeritus



Members' Forum

Our mailbox has been groaning under the weight of your letters over the last couple of months, and we would like to say THANK YOU! We love getting letters and hearing what you are concerned about or are doing in your gardens. Please continue to send us your thoughts about the magazine and the American Horticultural Society so we can better meet your interests and find ways to work together to make America a nation of gardeners, a land of gardens.

GARDENING WITH THE EARTH

I would like to thank you so much for several of the articles on "gardening with the earth and not against her" that you have published lately. I was very inspired by your articles in the January/February issue, including "Why Gardens Need Diversity" by Eric Grissell and "Embracing Nature on Florida's Gulf Coast" by Christie Craig. I just graduated from the University of Missouri-Columbia with a degree in Plant Science (emphasis in Horticulture) and those kinds of articles have been especially instrumental in shaping my thinking about horticulture and how it should be practiced. I would encourage you to publish as many of these types of articles as you can because you are truly helping to shape the next generation of horticulturists.

Anna Ramey
Kansas City, Missouri

SHORTIA OF THE TRUTH?

I have just read Carole Ottesen's inspiring article on Charles Sprague Sargent (May/June 2002), whose achievements in botany, horticulture, and conservation are incredible. However, I'm not sure that he can be credited with the rediscovery of Oconee bells (*Shortia galacifolia*).

Sargent apparently was the first to locate Michaux's original population of *Shortia* near Highlands, North Carolina, in 1886. But George Hyams, a 17-year-old youth, discovered a separate population in 1877 on the banks of the Catawba River in McDowell County, North Carolina.

My source for this information is *Protected Plants of Georgia* by Thomas S. Patrick et al, published by Georgia Department of Natural Resources in 1995. The same account is given in *Wildflow-*

ers of the Southeastern United States, by Wilbur H. Duncan and Leonard Foote, University of Georgia Press, 1975.

Carol Nourse
Athens, Georgia

UNUSUAL LIATRIS

I just received my July/August 2002 issue of *The American Gardener*. It is a great issue. I especially liked the article "The Magical World of Butterflies." However, I would have liked to have been given more information about the cover picture: "Monarch Butterflies on the plant *Liatris ligulistylis*." I say this because I do not think a lot of folks know about this particular plant, let alone how to locate the plant or seeds, or what type of cultural conditions it needs to thrive. I would really like to hear your thinking on this topic.

John Hoepfner
Appleton, Wisconsin

EDITOR'S RESPONSE: Commonly called *Rocky Mountain blazing star*, this species is native to wet prairies and the edges of marshes. It will grow best in moist, organic-rich soil in full sun. One source is *Prairie Moon Nursery* in Winona, Minnesota; (507) 452-1362; www.prairiemoonnursery.com.

GARDENING WITH KIDS

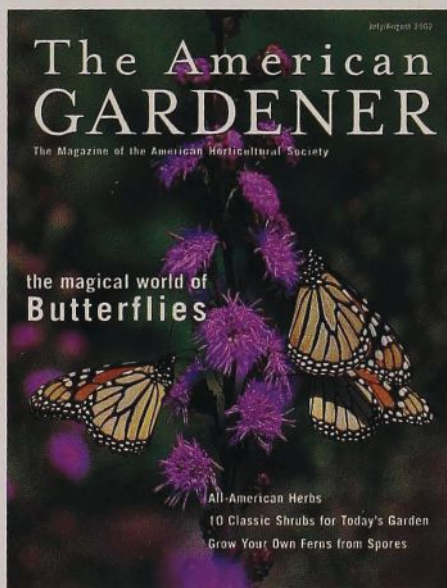
I find today's gardening magazines contain interesting ideas and ways to use plants in the landscape. There's also a certain amount published about teaching kids to garden. But increasingly, I see gardens being portrayed as plant museums with no place for kids or dogs to run and play. Further, I see a tendency to segregate adult humans from younger or older people and even from other mammals.

A garden should be a place where generations can mingle or, at least, be in the presence of one another. I do not believe in a play area separated from grownups. And ground covers have become so fashionable that the ultimate ground cover—grass—has no place in the back yard, if indeed a back yard still exists.

In my opinion, a patch of sturdy grass is a fine place for a plastic pool for hot days or for impromptu games of tag, baseball, or badminton. It's a great place for a tree where kids could build their own house-in-the-air. I think it's important to leave space for children to play, to make up their own games, to do some backyard camping.

At the same time, it's possible to surround this area with interesting plantings; never deprive a kid of beauty. It can be done. Why isn't it done more often?

Carol Howe
Boothbay Harbor, Maine



The plant in our July/August cover photo, taken by David Cavagnaro, is *Liatris ligulistylis*.

EDITOR'S RESPONSE: *Carol, your letter raises many interesting points and strikes home for me, because I have two young children and am constantly wrestling with the issue of how to maintain an interesting garden while at the same time allow my children unconstrained freedom to play. (But I am happy to admit I have a terribly garish plastic pool that gets dragged out into the back yard on hot summer days!).*

Let's throw the question out to the membership at large. How can you reconcile these seemingly conflicting goals within a standard suburban lot (less than an acre)? Send along brief descriptions of how you have accomplished this in your garden—with a photograph, if possible—and we will publish the most creative ideas in a future issue.

MULLEINS FOR THE BIRDS

I have always enjoyed reading *The American Gardener* and found the recent article on mulleins by Nancy McDonald particularly delightful. Thanks not only for the article but also for the wonderful photograph of the great mullein.

When I moved to Minnesota a few



Great mullein (*Verbascum thapsus*). Photo by Hugh and Carol Nourse.

years ago, I found in the flowerbeds some seedlings with large, flannel-soft leaves. Not recognizing them, I gave my curiosity free rein and left them to grow. The next spring, the seedlings ballooned into enormous, silvery rosettes of almost

baroque splendor. As summer wore on, stout flower stalks shot up to six feet, with a few yellow florets opening at a time. With the help of a wildflower book, I was able to identify the plants as the great mullein (*Verbascum thapsus*).

I am sure more than a few neighbors wondered why we were harboring such untamed creatures in the front yard, but we enjoyed the mulleins' flamboyance. The day came when the bedraggled plants looked ready for consignment to the compost pile. But just as I was approaching with a pruning saw, a downy woodpecker flew out of a nearby linden and applied itself to the seedstalk of our tallest plant. I put the saw away for another day.

Mary Yee (not your managing editor!)

Edina, Minnesota

MULLEIN CONCERN

After reading the article about mulleins, I felt the need to write to you and express my concern about recommending plants that have proven to be capable escapees and are known pests in certain parts of the United States. I think a disclaimer box should have been included with the article to inform the public that these plants *can* become a problem.

Our native flora is already under attack from so many directions (introduced insects, introduced plants, and introduced diseases) that we need to start weighing the costs of introducing additional ingredients to this continuing threat.

Maybe consider mentioning New World natives that can also take the place of these foreign plants as an appendix to an article such as this.

*Sandra Borgardt
Ithaca, New York*

EDITOR'S NOTE: *Some mulleins, especially great mullein, do tend to spread by seed and sometimes colonize roadsides and abandoned fields, but in general they are not considered major problems in natural areas. Still, this tendency should have been mentioned in the article.*

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.

American Patriotism in Flowers



THE WAVE OF patriotism that swept the country in the wake of last year's terrorist attacks led to many innovative red, white, and blue flower displays this past summer, but this 6.65 acre floral flag in full bloom by July 4 in Lompoc, California, may be one of the most impressive. Bodger Seeds, Ltd., used three different types of larkspur (*Delphinium consolida*) to plant its first flag in 50 years, only the fifth time this has ever been done. The cultivar 'Blue Spire' was used for blue, 'White Spire' for white, and the deep pink 'Carmine King' was used for red. Jack Bodger, CEO of Environmental Seed Producers, a sister company to Bodger Seeds, oversaw the project. "Historically, the flower flag has always been planted during a war effort," says Bodger. "People are very moved by seeing the flag in living form. It represents a symbol of hope and renewal of American spirit and values."

—Cheryl Ross, Editorial Intern

AHS 80th Anniversary: 1922–2002

≈ AHS Retrospective ≈

A HOME AT RIVER FARM (1973–1987)

AFTER 51 years of existing out of cramped second-floor offices and borrowed facilities, the American Horticultural Society finally secured a permanent national headquarters in 1973. Located just north of Mount Vernon on the George Washington Parkway in Virginia, River Farm was not only a storied property, having once been part of the holdings of George Washington, but a beautiful site, with formal gardens, mature trees, and a meadow sloping down to the Potomac River.

River Farm was secured through the generosity of philanthropist Enid A. Haupt, who provided \$1 million from her charitable trust to purchase the property for the Society. It also occurred as the result of an odd twist of fate. When the 25-acre estate, then owned by the Matheson family, came on the market in 1971, the Soviet Union offered to buy it for use as a retreat for its Embassy staff.

The prospect, during the height of the Cold War, of George Washington's farm becoming the possession of the Soviet Union led to a public outcry. Even though the U.S. State Department vetoed the sale to the Soviet Embassy, Haupt, who was at the time secretary of the AHS Board, decided that the property needed to be preserved from developers.

On a glorious first of May, 1974, some 500 guests attended the headquarters' formal opening ceremonies. Among the luminaries present was First Lady Patricia Nixon, as well as Haupt and AHS President David Leach. The presence of antique coach-and-fours, the Mount Vernon Guard dressed in colonial attire, and the U.S. Marine Corps Band gave a colorful and symbolic feel to the historic occasion.

A BOOST TO MEMBERSHIP

The acquisition of River Farm and the publicity it generated gave an immediate boost to AHS programs and membership. The Society's October 1974 Horticultural Congress in Washington, D.C., was its most successful ever, with more than 600 attendees. And membership doubled between 1972 and 1974, reaching 22,500.

When Leach stepped down as president in 1974, H. Marc Cathey—then chief of the Ornamentals Laboratory at the USDA's



First Lady Patricia Nixon arrives at AHS headquarters opening ceremonies in a horse-drawn coach in May 1974.

Beltsville, Maryland, facility—took over as 23rd president. Cathey and succeeding presidents Gilbert Daniels, Edward Dane, and Everitt Miller continued work on AHS programs such as the Plant Sciences Data Center—which was collecting and publishing data on plants located at major botanical gardens and arboreta in North America—the annual Seed Exchange, a travel program, and national awards.

DESTRUCTION AND CREATION

As the 1970s came to a close, Hurricane David visited River Farm in September

AHS Presidents 1973–1987

David G. Leach (1970–1974)
H. Marc Cathey (1974–78)
Gilbert Daniels (1978–1982)
Edward Dane (1982–1986)
Everitt L. Miller (1986–87)

1979, downing 31 mature trees and damaging more than 50 others. In addition, many recently established garden areas were affected and plans for new gardens had to be temporarily put on hold.

Despite this setback, River Farm continued to bloom. In the summer of 1981, the Society created a children's garden based on an idea proposed and supported by Board member Julia Rappaport. This garden was the precursor to the more extensive children's gardens created in 1993.

PUBLICATIONS

In November 1980, the Society's bimonthly newsletter "News & Views" was renamed *American Horticulturist* to match the title of the bimonthly four-color magazine. The newsletter offered information about Society activities in horticultural research, while the magazine covered broader gardening topics of interest to an increasingly diverse membership. "We were trying to make the publication as accessible to a popular audience as possible," says former president Gilbert Daniels, now living in Indianapolis.

The Society also issued a new edition of its popular *North American Horticulture: A Reference Guide* in 1982, which listed all horticultural organizations and programs in North America.

In 1983, the Society launched its Horticultural Internship program, which debuted with four interns. The internships were funded, as they are today, by membership donations specifically pledged to the internship program.

Next issue: The election of AHS's first woman president sets the stage for the 1990s and beyond.

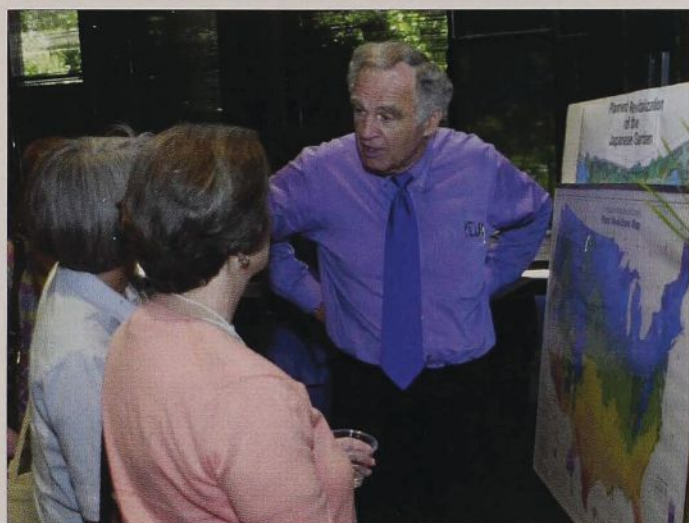


News

AHS Programs and Events

AHS Supports New Furman Symposium

THIS PAST JUNE, four AHS officials helped Furman University in Greenville, South Carolina, launch the university's first annual horticultural symposium, "Landscapes for Living and Learning." The goal was to promote horticulture, the SMART-GARDEN™ concept, and one of AHS President Emeritus **H. Marc Cathey's** signature phrases: "Green is the color of hope." In



AHS President Emeritus Dr. H. Marc Cathey fields questions about the AHS Plant Heat-Zone Map at the Furman University Symposium last June.

addition to Dr. Cathey, other AHS participants were AHS President **Katy Moss Warner**, AHS Board Chair **Kurt Bluemel**, and AHS Editorial Advisory Board Chair **John A. Floyd**.

Dr. Cathey played an instrumental part in developing the symposium by working closely with Furman University President **David Shi** over the course of two years. David's idea for the conference stemmed from his desire to build up the gardens on his campus. "For years, Furman has been widely recognized as having one of the most beautiful college campuses in the country," says David, "so it seemed appropriate that we should sponsor a major horticultural symposium."

With an estimated 180 people in attendance, it was clear that the symposium generated considerable interest from the gardening community. "The South knows how to entertain," says Dr. Cathey. **Gayle Warth**, public relations spokesperson for Furman University, described the symposium as a huge success, thanks in part to a lineup of speakers that included some of the biggest names in gardening.

Keynote speaker John A. Floyd, editor of *Southern Living* magazine, discussed southern gardens today. Children's gardens were the focus of Katy's presentation.

Kurt, owner of Kurt Bluemel Nursery, in Baldwin, Maryland, lectured on designing with perennials and ornamental grasses. The AHS SMARTGARDEN™ program was the subject of Marc's address. Other speakers included West Coast garden and food writer **Rosalind Creasy**, who discussed edible theme gardens, and **Richard Webel**, founder of PlantAmerica, who lectured on how technology is influencing the way gardening information is shared.

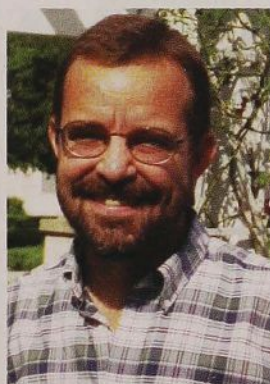
"This symposium was an opportunity to take another look at how gardening can play a prominent role in our lives and in the priorities of our nation," says Dr. Cathey.

ALL PARTICIPANTS at the Furman symposium received complimentary AHS memberships, so we would like to welcome those new members to the Society! For more information about the university and upcoming events, call (864) 294-2186 or visit www.furman.edu/news@fu/.

Underwood Joins AHS Team

AHS'S NEW Director and Curator of Gardens and Buildings has one goal: helping to make River Farm a model of gardening for everyone in America. **Tom Underwood**, an experienced horticulturist, joined the team on July 29 and is eager to make a difference with his work.

"I really enjoy making the connection between plants and people," says Tom, who is enthusiastic about making the vision of AHS become a reality. Tom believes he offers creative and strategic thought to achieve the society's goal of sharing the excitement of gardening with the nation.



Tom Underwood

Tom is particularly excited about this position because it combines three of his loves: horticulture, education, and communication. And the setting doesn't hurt. "River Farm is a beautiful property," he says.

As a 20-year employee of Walt Disney World in Lake Buena Vista, Florida, Tom spent 15 years managing horticultural services. His experience includes employee training,

running summer horticulture internships, coordinating guest programs, horticultural documentation, and developing and implementing the annual Epcot International Flower & Garden Festival. During that time he also worked closely with current AHS President **Katy Moss Warner**. "I think we make a great team," says Tom, who is pleased to work with Katy once again.

Tom grew up in southern California before moving to Florida to pursue his career at Disney. He holds a bachelor of science in ornamental horticulture from California Polytechnic State University and plans to complete his master of arts in science education this fall from the University of Central Florida.

AHS Gala 2002

AHS HORTICULTURE staff members have been hard at work this summer dressing up the grounds of the Society's River Farm headquarters in preparation for the 80th Anniversary Gala, "The Garden as Art," which will be held on Saturday, September 28 from six to 11 p.m.

"I'm looking forward to a glorious evening at River Farm,"

says AHS Gala Chair **Leslie Ariail**. "Celebrating the relationship between gardens and art is a perfect focus for a program like this, which is the Society's most important fundraising event of the year."

In keeping with the theme of art in the garden, the honorary chairman for this year's gala is **Earl A. "Rusty" Powell III**, director of the National Gallery of Art in Washington, D.C. "I am delighted to be the Honorary Chairman of the River Farm Gala 2002," says Rusty. "By supporting this event, members of the community and the Society are directly contributing to the American Horticultural Society's important preservation of the historic buildings and gardens at River Farm."

A variety of inspirational artwork will be on display for the gala, including a collection of botanical art by **Countess Clarissa Bonde** and sculptures by internationally known artists **Tomas Fernandez** and **Dorothy Gillespie**. After viewing the art and the River Farm gardens, guests will enjoy dinner under tents overlooking the Potomac River, light music for listening and dancing, and both a silent and live auction.

With the assistance of her gala committee, Leslie has se-

GARDEN CLASSES: The following Saturday educational programs are scheduled at River Farm this fall. For more information, call (703) 768-5700 ext. 124. **Sept. 21: Floral Designs from Your Garden.** H. Marc Cathey, AHS President Emeritus. **Oct. 5: Selecting Trees & Shrubs for Winter Interest.** Katie Burney, Landscape Architect and River Farm Volunteer. **Oct. 19: Attracting Birds to Your Garden.** Peggy Bowers, AHS Landscape Gardener. **Nov. 2: Pruning Shrubs and Trees.** Peter Deal, Certified Arborist, The Care of Trees.



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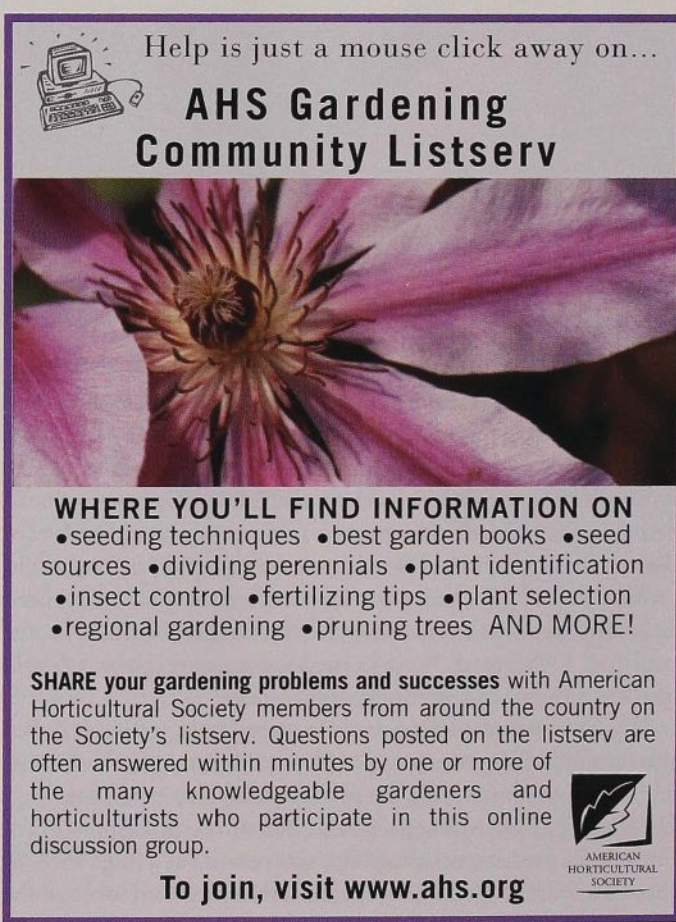
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AHS Gardening Community Listserv

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- insect control •fertilizing tips •plant selection
- regional gardening •pruning trees AND MORE!

SHARE your gardening problems and successes with American Horticultural Society members from around the country on the Society's listserv. Questions posted on the listserv are often answered within minutes by one or more of the many knowledgeable gardeners and horticulturists who participate in this online discussion group.

To join, visit www.ahs.org

AMERICAN HORTICULTURAL SOCIETY



CELEBRATE SPRING with AHS and CHERRY BLOSSOMS!

Next year, the Society will be holding its Great American Gardeners Annual Conference in Washington, D.C. The event, being held in participation with the city's renowned annual National Cherry Blossom Festival, will include a moveable feast of activities spread over nine days from March 29 through April 6.

River Farm will also be brilliant with displays of thousands of spring-blooming bulbs and trees throughout its gardens. So mark your calendars now and make plans to join us! Look for more details in the next issue of the magazine.

cured dozens of wonderful and truly one-of-a-kind auction items. Gardeners who enjoy traveling will find it hard to choose between an AHS Travel Study garden tour to Tahiti, a week's stay in Jackson Hole, Wyoming, and a three-night stay at the Athenaeum Hotel in London. In addition, one very special auction package includes a "garden walk-about" with University of Georgia horticulturist **Allan Armitage**—a member of the Society's Board of Directors—along with a signed copy of Allan's latest book and a collection of 50 perennial plants donated by AHS Board Chair **Kurt Bluemel**.

Kurt is also providing three additional collections of 50 mixed herbaceous perennials and grasses specially designed to provide spring, summer, and fall effect. And Monrovia nursery in Azusa, California, is donating a collection of 50 perennials, shrubs, and trees from its *Southern Living* Garden Collection.

Among the other auction items are a variety of sculptures and paintings, including a joyful abstract garden sculpture donated by Dorothy Gillespie.

For further information about the gala or to purchase tickets, please call (800) 777-7931 ext. 144.

Brookside Volunteer Appreciation Day

FIFTEEN RIVER FARM volunteers were among 250 garden volunteers from throughout the Washington, D.C., region who attended "Wings of Fancy," the Eighth Annual Volunteer Appreciation Day, held June 12 at Brookside Gardens in Wheaton, Maryland. The event was sponsored by the Horticultural Consortium of the Greater Washington Area—a group of public gar-

dens that includes the United States National Arboretum, the United States Botanic Garden, Hillwood Museum and Garden, Brookside Gardens, the Smithsonian, the National Cathedral, Randall Farm, and the American Horticultural Society.

The participants at this year's event were treated to a variety of special lectures and workshops throughout the day. A tour of Brookside Gardens' ongoing Wings of Fancy display—a summer-long special exhibit featuring hundreds of butterflies fluttering in a plant-filled conservatory—was also offered.

One of the featured lecturers was **Carole Ottesen**, an associate editor for *The American Gardener*, who discussed ways to lure butterflies into home gardens. She spoke about selecting native plants butterflies prefer, avoiding the use of harmful pesticides, and learning to accept caterpillars. "Gardeners have to understand, you need caterpillars to have butterflies," she says.

Marianne Polito, coordinator of volunteers for AHS, is an active member of the Consortium and has helped plan the event for three years. "Every year it gets better and more exciting," she says. "It's a wonderful way to thank these volunteers for their hard work and dedication."



AHS Associate Editor Carole Ottesen, also author of *The Herbal Epicure*, gave a lecture and book signing at Brookside Gardens.

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SMARTGARDEN™ —Dividing Perennials

Knowing how to manage plant growth is key to having a successful garden.

Herbaceous perennials provide a dynamic aspect to any border. These are plants that contribute a seasonal show—producing foliage and flowers, then dying to the ground at the end of the growing season. Their roots or storage organs survive underground to grow again the following year. They not only change a garden's appearance from one season to the next, but over the years, they can spread a considerable distance to cover large areas, filling in empty spaces, or increasing in size to become a major presence.

Perennials can impart a sense of fullness and maturity to a bed, but they can also create problems when they outgrow their space. When perennials spread beyond the area desired and encroach on other plants, the garden may appear unkempt. Overcrowded plantings are also more prone to disease problems. Unless additional space is provided, the size of the plant must be reduced. Also, some perennials thrive for a time, but after several years become crowded and lose vigor or fail to bloom. In either case, it is time to consider dividing the plant. Dividing perennials renews their vigor, limits their size, and provides additional plants to expand your gardens or share with friends. (To see the process and the results that renovating—digging, dividing, and replanting—perennials has on the appearance of a large-scale perennial planting, see “Renovating a Perennial Border,” page 40.)

AGGRESSIVE SPREADERS

Perennials with a spreading growth habit, like bee balm (*Monarda didyma*), lemon balm (*Melissa officinalis*), creeping phlox (*Phlox subulata*), and gooseneck loosestrife (*Lysimachia clethroides*) often colonize areas where less aggressive plants are growing. If the assertive spreader is not restrained, its shy neighbors may be overcome and lost. Controlling aggressive plants by occasionally cutting, pulling, or digging out errant shoots may be needed. When a spreading

perennial becomes more trouble than its maintenance warrants, consider removing it from the garden to a spot where its vigor is not a problem.

Another way to limit growth of a spreading perennial is to contain the roots: Cut the bottom out of a large plastic pot and sink it into the ground where you want the plant to grow. Allow the lip of the pot to extend to the soil line. Plant the perennial in soil in the pot. The spread of roots and underground shoots is largely limited by the sides of the pot. The occasional shoot that escapes is easily removed.

EVER-EXPANDING CLUMPS

Clump-forming perennials spread in a more controlled manner—the clump simply increases in size in an ever-expanding circle from one season to the next. Perennial salvia (*Salvia xsuperba*), Siberian iris (*Iris siberica*), blue oat grass (*Helictotrichon sempervirens*), and hosta (*Hosta* spp.) are examples of perennials that display this type of growth habit. Sometimes a plant may grow too large for its space, but even with adequate space, some clump-forming perennials eventually lose their vigor and begin to decline in the center. Usually the areas at the edges of the clump remain vigorous, forming a ring of growth around a dead core.

When a clump has overgrown its space or has lost vigor, it needs to be divided. The exact timing depends primarily on the plant's season of bloom. Generally, spring- and summer-flowering perennials should be divided from late summer to fall; fall-flowering perennials in the spring. This provides the plant with a maximum amount of time to recover and grow vegetatively before it flowers again. Avoid dividing perennials in the heat of the summer, and if dividing in the fall, be sure to allow sufficient time for the roots to become reestablished before the ground freezes.



The first step in dividing a perennial is to dig out the entire clump with a spade. Lift the clump out of the hole and set it on its side.



Large, tangled roots need to be cut into several sections with a sharp knife or spade. Discard unhealthy or weak portions.



To reduce transplant stress, trim broken roots and cut back the stems of your new plants prior to planting the divisions.



Replant the divisions, setting them no deeper than they were growing. Firm the soil around the roots to remove air pockets and water well.

DIVIDING A CLUMP

Although there are a few exceptions, the procedure for dividing most perennials is the same. First, dig the entire clump and lift it out of the space where it is growing. Take this opportunity to loosen the soil in the growing area with a digging fork and amend it with organic matter such as compost, leaf mold, or well-rotted manure. It may be several years before you work the soil again.

How you divide the clump is largely determined by the size and strength of the root system. Fibrous, shallow-rooted plants such as primroses and catmint can usually be divided by using your fingers to ease the clump into three or four smaller pieces. Perennials with a tangled or massive root system like daylilies and hostas may require cutting with a sharp knife or spade, or pulling sections apart with a pair of spading forks.

If the center of the clump appears withered or dead, discard that portion, and plant only the more vigorous sections from the outside of the clump. Place each division into a prepared hole, gently spreading the roots. Fill the hole with amended soil, making sure the plant is growing at the same level it was growing before you dug it. Water thoroughly, and continue to water regularly until each new plant is established.

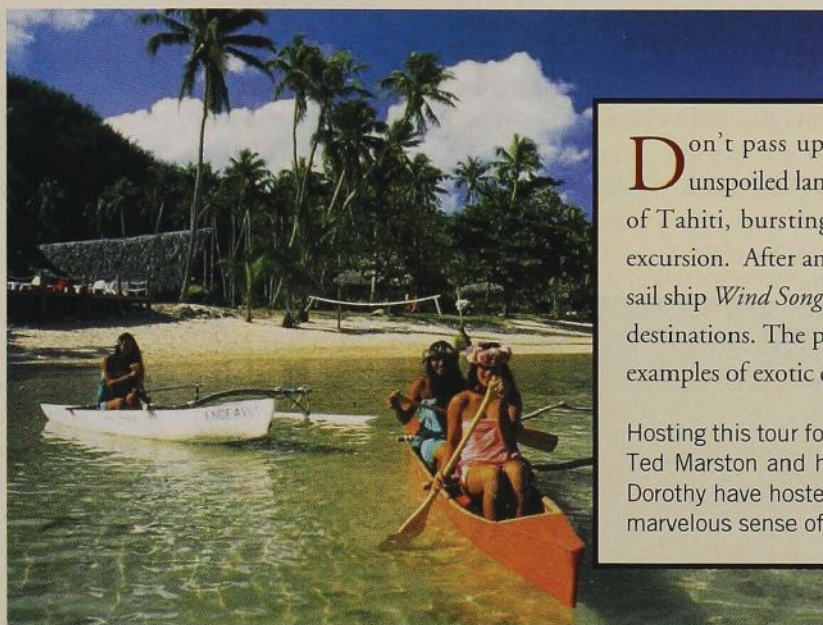
Rita Pelczar, Associate Editor



2002 American Horticultural Society **TRAVEL STUDY PROGRAM**

Gardens of French Polynesia

February 25–March 8, 2003



Don't pass up the rare opportunity to visit one of today's truly unspoiled landscapes—the gardens of French Polynesia. The island of Tahiti, bursting with color and fragrance, will launch this unique excursion. After an extended stay at Papeete, you will embark the elegant sail ship *Wind Song* for a seven-night voyage to several other Society Island destinations. The private gardens included on this tour offer unparalleled examples of exotic color and design.

Hosting this tour for the American Horticultural Society is Board Member Ted Marston and his wife, Dorothy, from Seattle, Washington. Ted and Dorothy have hosted a number of trips and are seasoned travelers with a marvelous sense of humor and adventure.

For complete details of the exciting 2003 schedule, visit the AHS Web site at www.ahs.org, or call the Leonard Haertter Travel Company at (800) 942-6666.

No member dues are used to support the Travel Study Program.

Gardener's Notebook

Horticultural News and Research Important to American Gardeners

Blue Star Shines in Trials in the Midwest

BLUE STAR (*Amsonia* spp.) has been called the "Lillian Gish of perennials" because the pale blue spring flowers have the same delicate beauty as the star from the silent movie era. Its popularity soared after native plant enthusiasts began seeking out American species such as *Amsonia hubrichtii* for their strong autumn personalities and designers began using these perennials en masse.

The Chicago Botanic Garden in Glencoe, Illinois, recently published the results of an evaluation of 11 taxa of *Amsonia*, conducted from 1994 to 1999. Evaluation specifics included bloom period and flower color, size, and coverage, as well as habit and disease and pest resistance. *Amsonia tabernaemontana* var. *salicifolia* and *A. illustris*, the highest rated species with scores of five stars ("excellent"), produced exceptional floral displays, covering 80 to 100 percent of the plants. Close seconds were *A. hubrichtii* and *A. tabernaemontana*, which were rated "good to excellent."



Amsonia illustris ranked tops in floral display.

All the varieties in the trials exhibited clean, healthy foliage and some degree of yellow to gold fall color in October and November. All were disease free and unaffected by insects or animals (the stems contain a milky latex sap that is unappealing to deer). Fall foliage color and flower production improved as plants matured.

The bluestars in the trials proved to be sturdy, low-maintenance perennials with three seasons of interest: spring flowers, attractive, willowy summer foliage, and bright autumn color. All proved hardy in USDA Zone 5 during the trial period.

To request a copy of Issue 18, "An Evaluation Study of Hardy Amsonia," send \$3, payable to Chicago Botanic Garden, to: Plant Evaluation Notes, c/o Richard Hawke, Chicago Botanic Garden, 1000 Lake Cook Road, Glencoe, IL 60022.

QUARANTINE IMPOSED FOR SUDDEN OAK DEATH

HORTICULTURISTS ON the West Coast are still greatly concerned about sudden oak death, a fatal fungal disease that was first detected in tanoaks (*Lithocarpus densiflorus*) in Marin County, California, in 1999. The disease has since spread to other California counties and into Curry County, Oregon. It also spread to other native oak species: coast live oak (*Quercus agrifolia*), black oak (*Q. kelloggii*), and Shreve's oak (*Q. parvula* var. *shrevei*); several California bay laurels (*Umbellularia californica*) have also been found to be infected.

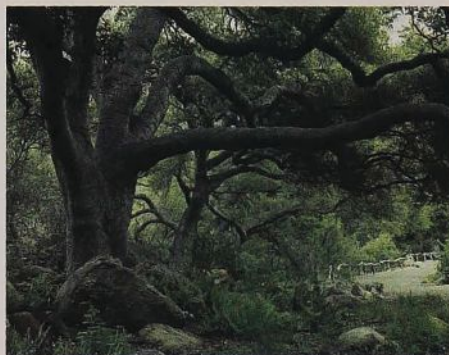
On February 14, 2002, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service announced an interim quarantine of plants susceptible to *Phytophthora ramorum*, the fungus responsible for sudden oak death. This ruling allows nurseries in affected counties to ship species known to host *P. ramorum* interstate only if the shipment is accompanied by a certificate indicating that the plants have been inspected and that they originate from a nursery that is

free of the fungus. The quarantine applies to part of Curry County and all 12 counties of California.

The quarantine may not be enough. "We do know the disease is present in the soil," says Katie Facino, information officer for the California Oak Mortality Task Force. "It can be spread by bikes, cars, shoes, dogs, and in many other ways, so public education is a big part of our strategy for controlling it."

In addition to the species listed above, the quarantine applies to the following plants known to host the disease: bigleaf maple (*Acer macrophyllum*), California buckeye (*Aesculus californica*), California coffeeberry (*Rhamnus californicus*), California honeysuckle (*Lonicera hispidula*), huckleberry (*Vaccinium ovatum*), madrone (*Arbutus menziesii*), manzanita (*Arctostaphylos manzanita*), rhododendrons and azaleas (*Rhododendron* spp.), toyon (*Heteromeles arbutifolia*), and *Viburnum x bodnantense*.

To report a diseased plant, log on to <http://hilda.espm.berkeley.edu>.



Coast live oak, above, is an affected species.

American Horticultural Society's 80th Anniversary Gala

The Garden as Art

September 28, 2002 6:00 p.m. – 11:00 p.m.

George Washington's River Farm

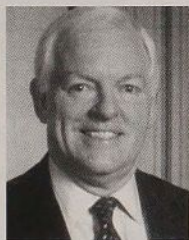
Headquarters of the American Horticultural Society
Alexandria, Virginia



River Farm main house by Donna Sturm

Join Honorary Chairman, Earl A. "Rusty" Powell III, Director of the National Gallery of Art, Washington, D.C., the AHS Board of Directors, and the Friends of River Farm for hors d'oeuvres in the gardens and dinner under tents with a spectacular view of the Potomac River. Spend an exciting evening bidding on fabulous silent and live auction items and kicking up your heels with friends in our ballroom!

Funds raised in this event will be used to preserve and maintain the historical beauty of River Farm and to increase our ability to develop River Farm as a national showplace of environmentally responsible horticulture and gardening.



Rusty Powell has been the director of the National Gallery of Art since 1992. Prior to this he was the director for the Los Angeles County Museum of Art for 12 years. *"I am delighted to be the Honorary Chairman of the River Farm Gala 2002. The preservation of River Farm and its gardens through the support of the American Horticultural Society will help ensure the perpetuation of this important property."*

Tickets: \$200 per person

To purchase tickets or to make a donation, please call (800) 777-7931 ext. 144.



Music in the gardens provided by the JG Jazz Trio. Dance music in the ballroom by the JG Variety Dance Band, represented by MSE Productions. Catering by Capitol Catering, Alexandria, Virginia

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LADY BIRD JOHNSON RECEIVES ARBORETUM GOLD

FORMER FIRST LADY Lady Bird Johnson and her Committee for a More Beautiful Capital are the first recipients of the Gold Medal Award from the U.S. National Arboretum in Washington, D.C. The medal, provided by the Friends of the National Arboretum (FONA), will be presented along with a



Lady Bird Johnson in a 1995 photograph.

certificate of appreciation at a formal dinner to be held at the arboretum on October 3 this year. Citing Johnson's long involvement with environmental improvements and beautification efforts nationally, Arboretum Director Thomas Elias stated that Johnson's efforts "epitomize the arboretum's mission."

Johnson put together the committee in 1965, when her husband, Lyndon B. Johnson, was president. After she returned to Texas, Johnson worked with the Texas Highway Department, preserving wildflowers along the state's interstates and freeways. Then, in 1982, she founded the Lady Bird Johnson Wildflower Center in Austin, Texas, dedicated to promoting and preserving native plants. Johnson has received numerous other awards, including the Liberty Hyde Bailey Award from the American Horticultural Society in 1993.

GRAND CHAMPION DOWNED

ON JUNE 6, 2002, the Wye oak—some 31 tons of it—toppled in the wild winds of a thunderstorm in the village of Wye in Talbot County on the Eastern Shore of Maryland. The majestic white oak (*Quercus alba*)—96 feet tall, 32 feet in circumference, and estimated to be 460 years old—fell as nobly as it lived, without damaging property or power lines.

In 1919, it was the very first tree nominated in *American Forests* magazine's national Hall of Fame for trees. Thereafter, its title as the grandest-white-oak-of-them-all and one of the finest trees in the country was undisputed. It was named Maryland's State Tree in 1941 and eventually soared over a third of an acre in the park named in its honor: Wye Oak State Park.

In April, 2002, two clones of the Wye oak—part of a cloning project initiated in 2000—were planted at Mount Vernon. Now, buds of the downed oak will also be used for cloning. "All of the



The Wye oak, estimated to be over 400 years old, toppled in June 2002.

branches have been shipped to a nursery where they are being kept in cold storage," says John Ohler, park manager of Wye Oak State Park. For more information on the Wye oak, visit www.dnr.state.md.us/forests/trees/giant.html.

VINEGAR IS TOUGH ON WEEDS

IT MAY NOT yet rival Jerry Baker as a proponent of homemade pesticides, but the USDA's Agricultural Research Service (ARS) is moving into the kitchen. Researchers Jay Radhakrishnan, John T. Teasdale, and Ben Coffman of the ARS's Beltsville, Maryland, facility, scientifically tested vinegar for herbicidal qualities and found it an efficacious control for many weeds. A 5 percent solution—the strength of a standard bottle of household vinegar—had a 100 percent kill rate on the top growth of such tough customers as Canada thistle (*Cirsium arvense*). [Editor's note: Personal use has shown it also kills burdock (*Arctium lappa*)].



Vinegar has been shown to kill a number of common weeds.

By hand-spraying leaves to coat them uniformly, the researchers found that 5- and 10-percent solutions killed weeds such as lamb's-quarters (*Chenopodium album*), giant foxtail (*Setaria faberi*), velvetleaf (*Abutilon theophrasti*), and smooth pigweed (*Amaranthus hybridus*) in the first two weeks of life. Older plants required higher concentrations of vinegar to kill them.

The vinegar used by the researchers was made from fruits or grains, thus conforming to organic farming standards. The experiments confirm what many gardeners already knew: Vinegar is a potent, inexpensive, and environmentally-safe weed killer—and it's not bad on tossed salads, either.

ORGANIC SEAL

BEGINNING OCTOBER 21, 2002, organic food that originates in the United States or abroad may display a USDA seal to signify that it comes from a certified farm. To gain "organic" certification, farmers must have their farms inspected by government-approved certifiers and meet USDA organic standards requiring that food contain no synthetic fertilizers, pesticides, herbicides, or growth hormones, and are not genetically modified. In addition, the use of additives and processing aids is highly restricted. Companies that process organic food must be certified as well.

While the USDA makes no claims that organically produced food is safer or more nutritious than conventionally produced food, in a 2002 survey of 1,029 adults released by the National Center for Public Policy Research, a majority of consumers interpreted the proposed USDA seal as an indication that certified organic foods "are better in some way; safer; more healthy; and better for the environment." —Carole Ottesen, Associate Editor



Offshoots

Gardening on the Wild Side

by Mary Louise Boldan

AT ONE TIME, I was a defender of emerald-green lawns and manicured gardens. I deadheaded flowers to promote further blooms and used pesticides to destroy unsightly bugs. Then I began reevaluating the worth and beauty of my garden from a different perspective. Despite the alarming rate at which acres of wildlife habitat have been lost to development for human needs and the millions of dollars Americans spend to control “nuisance” wildlife, animals have continued to assert their birthrights to the land. Their ancestors lived and roamed in our backyards long before the building of houses and

fences. While the norm for most American gardeners is to improve their gardens for themselves, I began to regard my backyard as nature’s home.

Today, instead of coddling exotic plants into bloom, I garden on the wild side. Contrary to what you might think, my garden is not a showcase of neglect. In the spring, the delicate woodland jewels of Jack-in-the-pulpit, columbine, and trillium awaken. From early summer until fall blaze masses of radiant yellow, flaming red, brilliant orange, and deep purple. As fall comes to a close, I let butterfly weed, purple coneflowers, cardinal flowers, goldenrod, and cup-plants go to seed. During the winter months, birds descend upon the plants and devour the seeds.

I enjoy creating niches where my wild friends can thrive, as well as providing them with the basic needs of life—food, water, and nesting sites. Lawn grass that needed weekly grooming has been replaced by native grasses that provide birds with nesting sites and the material to build nests. The dense foliage of grape vines, blackberries, and raspberries intertwine with elderberries, dogwoods, and serviceberries to create a living fence that provides year-round food and shelter.

Each winter I prop the used Christmas tree in the back corner of the yard to provide shelter for birds and small mammals. In the summer, the tree’s needles drop, nourishing the soil for acid-loving shrubs such as holly, winterberry, and azalea. The tree’s skeleton provides the perfect trellis

for morning glories and trumpet vines, which hummingbirds probe for nectar.

Brush piles and dead trees—often deemed eyesores—are magnets for attracting birds and small mammals. Small piles of rotting logs and fallen leaves inconspicuously situated throughout my yard provide the perfect environment for insects to lay their eggs, which, in turn, become food for chickadees and ground-feeding birds.



I’m disturbed when people claim they garden because they love nature—but then turn around and snuff out the first unwanted plant or animal that intrudes their sanctuary. Insecticides and herbicides are outlawed in my wildlife haven. I am always saddened when I spot a tiny bird in my garden struggling with the aftermath of chemical poisoning from a neighboring yard. The amount of pleasure I get from observing wildlife overrides any “human inconveniences” it might cause, such as animals feasting on the elderberries and raspberries. A garden that boasts a few

“unwanted flowers” is one that teems with birds and butterflies. Each flower has a place in the ecosystem. For instance, the common violet—often considered a lawn weed—is a vital link in the life cycle of the fritillary butterfly. In the fall, the female butterfly lays her eggs on or near the violets; the violet’s leaves and flowers become the primary food of the orange-and-black-striped caterpillars when they begin feeding in the spring.

While my backyard oasis provides the necessities for wildlife, it has also allowed me to see life’s wonders in seemingly small events such as watching the flight of a cardinal—or a crow devotedly tending her young. It is here that my day breaks with the sweet melody of song sparrows, chickadees, goldfinches, and robins. It is here that my day ends with the clear song of the cardinal and the late-night serenading of the whippoorwill.

Witnessing such grand acts of nature have turned my way of thinking: Things that once seemed important are now mere trifles. As I close my eyes for the night, I feel at peace and less alone knowing that these living beings are sleeping or stirring close by.

Marjorie Kinnan Rawlings, author of *The Yearling*, wrote, “I do not understand how anyone can live without one small place of enchantment to turn to.” Luckily, the peace and rejuvenation I desire is found by gardening on the wild side. 🌿

Mary Louise Boldan is a free-lance writer living in Arlington Heights, Illinois.

Conservationist's Notebook

Dim Future for a Blazing Star

article and photographs by Kenny Clarke

IN THE SLANTING light of the afternoon sun, I scan the windswept rocks one last time. And then I see it: Standing upright in a tiny pothole of soil, nestled in the barren rocks, is the rare flower that I have been seeking. Gently blooming in deep fuchsia, it seems too beautiful to live in such a harsh environment.

FITTED FOR EXTREME CONDITIONS

Federally listed as a threatened species in 1987, Heller's blazing star (*Liatris helleri*) occurs in a very limited natural range—a small section of the Blue Ridge Mountains of North Carolina. Growing in thin, parched soil, this plant clings to windswept cliffs atop high mountain balds, an environment that is inhospitable to many plants.

Unlike several other *Liatris* species that have a bold, showy presence, such as the popular garden perennial spiked gayfeather (*Liatris spicata*), Heller's blazing star is quite small. Its fuzzy spike of lavender to deep fuchsia flowers tops a rather short, erect stem that reaches only three to nine inches in height. The flower stems arise from a tuft of narrow, pale green basal leaves, blooming between July and September and creating a colorful spectacle when the plants grow, as they often do, in clusters.

Extreme conditions aside, Heller's blazing star is a resilient plant that has undoubtedly graced these mountains for thousands of years. So, why is its future threatened now? Although tolerant of a very rugged environment, there is one thing that this plant cannot withstand, and that is being trampled.

PROBLEMS ALONG THE TRAIL

Each year, millions of visitors travel long distances to witness the serenity of the Blue Ridge Mountains. Hikers and adventurers alike spend much time seeking out the beautiful panoramas of the



The flowers of Heller's blazing star bloom in loose spikes, unlike the dense drumsticks of its more popular garden relative and florist's favorite, spiked gayfeather.

mountain balds, and incidentally tread where this rare plant grows. Affording visitors access to these scenic areas, the Blue Ridge Parkway transects the habitat of the Heller's blazing star. With millions of people seeking adventure on the trails of "America's most popular drive" each year, the fragile mountain ecosystems have suffered. One such footpath has been particularly detrimental to one of the remaining eight genetically distinct populations of the Heller's blazing star.

During the early 1980s, National Park Service landscape architects set out to design a trail that would provide beautiful mountain scenery to the visitors of the parkway. Amidst an early transition of Na-

tional Park Service personnel, a key section of this new trail was overlooked and left unmonitored—a tract that passed directly through one of the eight known populations of the Heller's blazing star.

But habits, once established, are hard to break. People became accustomed to using this segment of the trail and as public knowledge of the trail system spread, its use continued, putting the population of this rare plant at risk. Because it is one of the most scenic pathways in the area, the trail received very heavy traffic. "During the first year of usage, 30 percent of the vegetation on the trail disappeared," estimates Nora Murdock, a former biologist with the U.S. Fish and

Wildlife Service who now works as an ecologist for the National Park Service. Realizing that this rare plant community was in danger, the Park Service constructed a boardwalk through the most fragile and susceptible section of the Heller's blazing star habitat.

But trampling continued since hikers wandered off the boardwalk to get closer to the scenic cliffs. According to Bambi Teague, a biologist with the National Park Service, "Ninety-five percent of the people are staying on the trail, but the five percent who think that their footsteps won't make a difference are doing the real damage."

PROTECTING FOR THE FUTURE

Although this trail continues to receive heavy traffic, things may be looking up for the Heller's blazing star. Recently, the United States Forest Service closed to all foot traffic an area known to contain Heller's blazing star, protecting the other half of the two federally administered populations of the flower. The Nature Conservancy has secured conservation easements on privately owned Grand-



Heller's blazing star can grow in inhospitable environments but can't tolerate foot traffic.

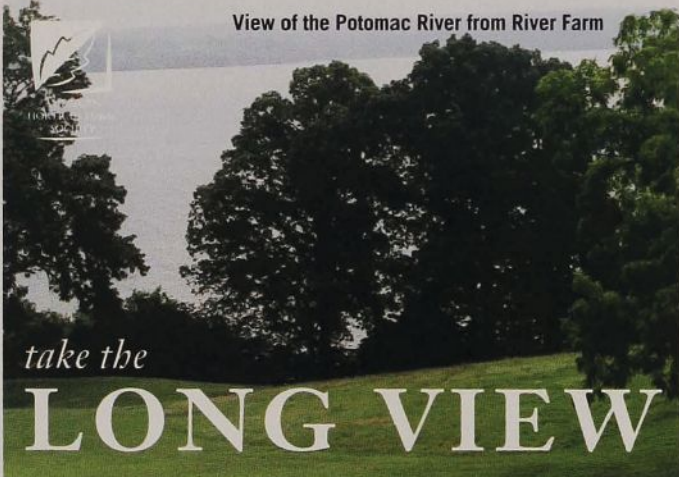
father Mountain, one of North Carolina's most biologically diverse areas and a heavily visited recreational spot. But since all of the remaining populations of Heller's blazing star are quite small—some contain only a handful of plants—the

future of this rare plant remains in doubt.

The story of the Heller's blazing star is indeed sobering. The notion that the rugged Blue Ridge Mountains are home to such fragile plants and ecosystems does not occur to many of the millions of visitors who flock there each year. Most will never behold the beauty of the Heller's blazing star, Blue Ridge goldenrod, Roan Mountain bluets, or the other rare plants that these mountains support, but each one is an essential part of the scenery and is deserving of our protection.

We must all be aware that each and every footstep can have a profound affect on fragile vegetation. When hikers continually leave the confines of a trail system, the earth is slowly worn away, setting the stage for erosion. Only when we are aware of our actions and their environmental repercussions can we protect the precious resources that have been bestowed upon us.

A free-lance nature photographer and writer, Kenny Clarke is currently working on a book that focuses on the wild lands of America. He lives in Page, Arizona.



View of the Potomac River from River Farm

take the
LONG VIEW


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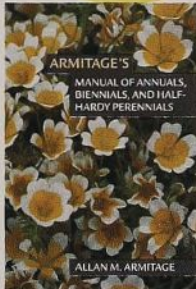
To learn more about how you can support AHS, contact Joe Lamoglia at 7931 East Boulevard Drive, Alexandria, VA 22308-1300, (703) 768-5700, Ext. 115.

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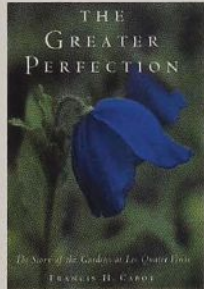
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Gardener's Information Service

PROPAGATING AZALEAS

My mother-in-law has a beautiful azalea that I would like to propagate. What are the best ways to accomplish this?

—J.K., LEHIGH, PENNSYLVANIA

There are two easy methods for propagating azaleas vegetatively, both of which should be done in late summer or very early fall: You can take semi-ripe stem cuttings or you can layer the plant.

Cuttings—of growth still green at the base, but beginning to harden—must be taken at the right time. “I check to see if it has the correct degree of ‘bendiness,’” says John Brown of the Vaseyi chapter of the Azalea Society of America. “You want it to bend about 90 degrees and then snap.” Brown adds that if you can twist the stem

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all the way around your finger, try again in a week or two. Cuttings should be about two to five inches long. Dip the cut ends in rooting hormone and insert them an inch or so deep in pots containing a mix of sharp sand and sphagnum peat or coir. Keep them relatively moist (but not wet) in a cool, protected location over winter. Move the pots to their permanent locations the following spring, but wait until fall to plant them.

AHS Gardening Community Listserv

The AHS Gardening Community Listserv allows for around-the-clock garden consultation with a friendly community of fellow gardeners from throughout North America. Join and get advice for your gardening problems or share your triumphs with other avid gardeners. Simply go to the AHS Web site (www.ahs.org), click on the “Community” subhead on the left side of the Home Page, then click on “Listserv” on the Community page. Scroll down the page to find the link to send e-mail to the listserv address (AHS_GARDENING-SUBSCRIBE-REQUEST@home.ease.lsoft.com) and follow the directions in the return e-mail. The ongoing discussions will come to you as e-mail. Here's a snippet from a recent exchange:

I have a three-year-old camellia loaded with flowers. However, many of them are light brown around the edges and seem to rot before they open. Somebody recently told me this is a disease and I should pick discolored flowers off the plants before they infect the other flowers. Does anybody know what this is and what I can do to prevent it?

—D.F., SANTA ROSA, CALIFORNIA

I just saw a video that described the problem your camellia has as a fungal disease called “petal blight.” It recommended picking off and disposing of all infected flowers from the bush as well as any petals or other flower parts that fall to the ground. Otherwise, the disease may spread from the infected flowers to others as they open. Once flowering is over for the season, you should also remove and discard any mulch underneath your camellia and replace it with two to four inches of fresh mulch to help keep any residual spores from sprouting. And keep an eye out for small, tan mushrooms emerging from the soil or mulch near your camellia—they are the fruiting bodies of the petal blight fungus and should be removed immediately.

—A.B., GULFPORT, MISSISSIPPI

To propagate by layering, bend a long, low-growing branch of the mother plant until it breaks (but does not completely separate). Lay the branch in a shallow trench, secure it with a wire staple, cover it with soil, and keep it moist. In spring, cut the branch from the main plant and carefully dig out the rooted section and transplant it. Native azaleas, says University of North Carolina horticulturist Dick Bir, “are tougher to root and keep alive” than non-native species. Bir adds that if you want to propagate a prized native azalea, layering is possible, but is much easier to achieve success with stoloniferous species—ones that spread by underground roots—such as the coast azalea (*Rhododendron atlanticum*).

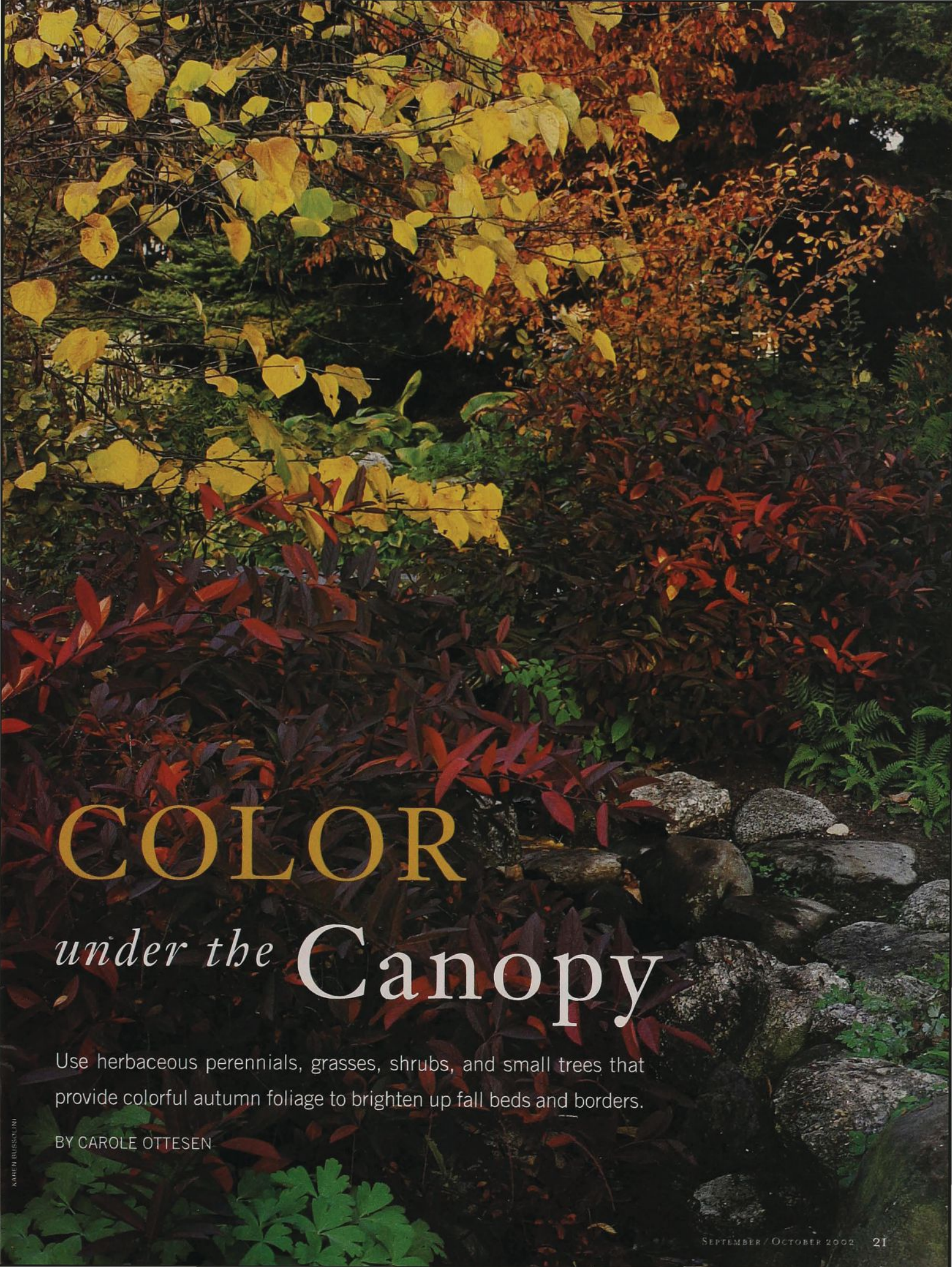
A STICKY ORANGE

My blood orange tree is about four years old, still looks beautiful, flowered profusely this past winter, and set small fruits, but the leaves are covered in a clear sticky substance. I have washed off the leaves twice but the stickiness returns quickly. Is this normal?

—D.Z., HOUSTON, TEXAS

This is most likely caused by the presence of scale, aphids, or some other soft-bodied insects that are excreting a sticky substance called honeydew. The problem is not uncommon in houseplants exposed to warm, dry conditions indoors, which encourages these pests. If it is scale, you should be able to see the small, hard covers attached to the leaves and stems of the plant. Otherwise, look on the bottom of the leaves and tips of new growth for tiny insects. Fortunately, the treatment for all is similar. Use horticultural oil or insecticidal soap per label instructions, taking care to get the substance on the creatures involved. Increasing the humidity around the plant will help prevent future infestations.

William May, Gardener's Information Service Volunteer, and Marianne Polito, Gardener's Information Service Manager.



COLOR

under the Canopy

Use herbaceous perennials, grasses, shrubs, and small trees that provide colorful autumn foliage to brighten up fall beds and borders.

BY CAROLE OTTESEN



ALL THROUGH the growing season, as we weed, water, and deadhead, we fret and fuss over the garden's details, making mental lists for next year's infinitely superior garden (what summer-blooming bulbs to add and where, which annuals to fill in the holes, something spiky for the mid-border—preferably blue or purple...). In the midst of our little efforts, Mother Nature sweeps in bringing autumn with her. Working briskly and on a grand scale, she ignites the trees with her wand of fire. And, in what seems inverse proportion to their quiet summertime greens, they explode into fiery hues. Then, just for effect, she positions their flaming crowns against the deep, atmospheric blue of an endless sky.

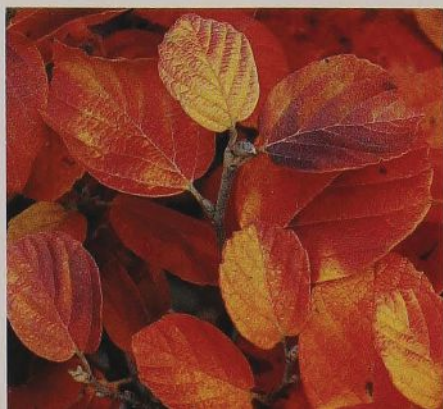
Top: Flame grass (*Miscanthus purpurascens*, USDA Zones 4–9, AHS Zones 9–1) provides a contrast of texture and color with the flowers of *Sedum* 'Autumn Joy'. **Previous page:** Virginia sweetspire (*Itea virginica* 'Henry's Garnet', Zones 5–9, 10–7) turns striking carmine under the drooping yellow foliage of eastern redbud (*Cercis canadensis*, Zones 4–9, 9–2) and the orange leaves of showy camellia (*Stewartia psuedocamellia*, Zones 5–8, 8–4) in this scene at the New York Botanical Garden.



Suddenly, we are jolted beyond our myopic focus on minute details by the realization that the whole world is a garden.

One by one, leaves flutter down, arranging themselves in kaleidoscopic mosaics of gold, orange, and crimson on the ground. As the patterns grow, the tree canopy thins out, allowing the sun through to set the garden aglow.

Cast in this golden light, the garden is simply splendid. By contrast, those earlier nitpicking plans for the perennial border now seem inconsequential, the fretting over clashing colors a teapot tempest. And, in spite of it all—or perhaps because of it?—there is perfect color harmony. There are no mistakes. And it all happened with little effort on our part.



Top: The blooms of native witchhazel (*Hamamelis virginiana*, Zones 3–8, 8–1) overlap and harmonize with the leaves' pale yellow fall color. **Left:** Fothergilla's (*F. major*, Zones 4–8, 9–2) quilted foliage, quietly green in summer, ignites to flaming orange in fall.



In autumn, bloodtwig dogwood (*Cornus sanguinea* 'Winter Beauty', Zones 4–7, 7–1), center, flanked here by the evergreen *Pinus strobus* 'Con-torta' (Zones 4–9, 9–1), and the deep red leaves of a Japanese maple (*Acer palmatum* 'Higaseyana', Zones 5–8, 8–2) turn golden yellow.

And few of us can even take credit for those trees blazing crimson and gold because their presence is largely serendipity or the forethought of others. Planted long ago by other hands, they came with the house.

The one place where we do have a real oppor-

tunity to collaborate with Nature in fall is in the understory. There, among the small trees, shrubs, grasses, and herbaceous perennials, the array of ornamental candidates that fire up in fall is dizzying and dazzling. We have only to choose wisely, plant, and stand back. Nature will do the rest. 🍁

Carole Ottesen is an associate editor of The American Gardener.



Above: Arkansas amsonias (*Amsonia hubrichtii*, Zones 5–9, 9–3)—here with the wheatlike sheaves of feather reed grass (*Calamagrostis* \times *acutiflora*, Zones 5–9, 9–5) and winterberry (*Ilex verticillata*, Zones 5–8, 8–2)—take on bright yellows and golds.



Left: Pale almond fountain grass (*Pennisetum alopecuroides*, Zones 5–9, 9–2) joins mahogany-colored oakleaf hydrangea (*Hydrangea quercifolia*, Zones 5–8, 8–1) in a colorful autumn vignette.

The American Horticultural Society's 2002 Great American Gardeners annual conference in Seattle this past June offered participants a chance to experience first hand an emerging new American garden style.

Contemporary Garden Design

in the Pacific Northwest

BY DEBORAH FERBER

HISTORICALLY, gardeners in the Northwest have looked outside their region—especially to Japan, England, and Southern California—for design inspiration. Yet within the last 10 or 15 years something entirely original has evolved in this mild, maritime climate. In gardens bordering the temperate rainforest of North America, bamboo, banana, eucalyptus, and English yew are now forging bold, new alliances among the towering native conifers. The emergence of a contemporary garden style in the Pacific Northwest was explored through lectures and tours during the American Horticultural Society's (AHS) Great American Gardeners annual conference in Seattle, Washington, this past June.

Horticultural historian Ron Rule, director of programs for the University of British Columbia's design school, spoke about the specific elements that signal the birth of a new gar-

den aesthetic in the Pacific Northwest. He points out that the Northwest fusion of several different garden styles has resulted in unique gardens with a strong connection with the surrounding ecosystem, a blurred boundary between the indoor and outdoor living space, a relaxed and simplified romanticism, or else a modernism that emphasizes simplicity in both the plant palette and in the use of bold shapes in the plantings themselves. Garden art, sculptures, arbors, and pavilions are prevalent, as is the use of water in the landscape. Native plants play a big part in the local garden scene—both for ease of maintenance and for connecting to the surrounding landscape. The subtropical theme is also becoming more widely accepted, as recent introductions of hardier plants enable homeowners to overwinter more varieties of plants such as cannas, eucalyptus, and bananas.

A WILLINGNESS TO EXPERIMENT

RULE, WHO HAS worked at the Great Dixter and Barnsley estate gardens in England and regularly gives garden tours overseas, brings a European perspective to the design trends he sees in cities such as Seattle and Vancouver. "In England," he says, "they rarely see the need to bring in outside speakers to their horticultural events. In the Northwest, we were not afraid to go to the eastern United States or Europe for ideas. Now that we have developed a greater knowledge base, there's quite a bit of experimentation going on." As the public becomes better educated about horticulture, they become more demanding of their nurseries, while in response the burgeoning of specialty

Left: In this Seattle private garden, palm trees, rhododendrons, and Japanese maples mingle comfortably.



nurseries helps to further educate those willing to experiment with more sophisticated plant choices.

Duane Kelly, organizer of the Northwest and San Francisco flower and garden shows and a member of the AHS Board of Directors, also sees a definite trend toward individuality of expression in Northwest garden design. "At first, gardens exhibited at the Northwest Flower and Garden Show were more derivative, especially of English cottage gardens," he says. "Later, there are more gardens that are pushing the envelope."

GARDEN TOURS

CONFERENCE ATTENDEES were treated to an intimate look at contemporary gardens in the Northwest during tours of some of the best private gardens in the Seattle area. Woven among the towering conifers were regionally native shrubs blended with tropical sculptures, geometric planting designs, vine-covered arbors, pavilions, and spacious lawns. Garden beds were mostly relaxed and informal, and often were tied to the house and surrounding forest by a meandering flow. A good ex-



The brick path in Nancy Davidson Short's garden, above, zigzags playfully from the patio past colorful beds and to lawn.

ample was the path that zigzags down from Nancy Davidson Short's back patio through colorful garden beds to the expansive lawn and lake views below, reminding one of a hike down a mountain meadow.

Another private garden housed a landscape-sized Richard Serra sculpture on a lawn-covered hill. Visitors walk between two giant, metal walls that curve back and forth, slowly narrow, and grow higher as one continues through them. Behind the house, in the tropical border, a dynamic mix of cannas, fuchsias, and giant tree ferns mingles beneath California redwoods and Douglas firs. On the back patio terraces, opulent container plantings contribute to the blurring of the indoor-outdoor boundary in this artistic garden.

Geometric design and the masterful use of arbors and boxwood lend a regal simplicity to Diana Bowman-Neely's private



The geometric garden of Diana Bowman-Neely, above, is designed by Robert Chittock, who received AHS's 2002 Local Horticulture Award for his contributions to Seattle's landscape.

garden. Designed by Robert Chittock—a landscape designer who received the 2002 AHS Local Horticulture Award for his contributions to the landscape of the host city for the AHS conference. Here the plant selection is more refined: a weeping columnar grey pear (*Pyrus salicifolia* 'Pendula'), a Japanese tree lilac (*Syringa japonica* 'Ivory Silk') and other white-flowering trees create unity as they line the boxwoods surrounding a pool. Yet the garden also conveys a sense of whimsy and magic to balance the formal beauty. A forest path passes a rustic log table with chairs beneath a candelabrum of cedar boughs, and concludes with a realistic topiary of a life-sized stag.

MARK YOUR CALENDARS NOW for the 2003 AHS Annual Conference, to be held March 29 to April 6 in Washington, D.C.

GETTING CLOSER TO NATURE

PUBLIC LANDSCAPES also reflect the artistic and social values of a region, and Becca Hanson, founding principal of The Portico Group and a designer of public gardens for 20 years, describes trends in the Pacific Northwest as part of a national movement toward a more holistic outdoor experience. The new emphasis in zoos, botanical gardens, and parks, she says, is for people to interact with their surroundings rather than "stay off the grass." She feels that public gardens and parks are trying to answer the question, "How do we live well in a living world?" This question becomes all the more relevant, says Hanson, as both public and private gardens are challenged to adapt to issues such as global warming and water shortages.

As they look to the future, Northwest gardeners are seeking solutions through their connection to the natural environment and local history. "People are coming to realize that an understanding of the natural history of the region is crucial for the design of a garden that is more pleasing—both ecologically and aesthetically," says Kelly. As chair of the host committee for the AHS conference, Kelly hopes that was one of the many messages from the conference that participants could take home and apply in their own regions.

Deborah Ferber is a free-lance writer based in Seattle, Washington.

Early Color *from* Bulbs

As the garden transitions from winter to spring, early-blooming bulbs add cheery color to the awakening landscape.

BY BECKY HEATH

PHOTOGRAPHS BY
BRENT AND BECKY HEATH

EXCEPT FOR those dependable evergreens, late winter can be a dreary, colorless time of the year in the garden. But a brown lawn and gray sky is a perfect neutral canvas for displaying the dazzling hues of early flowering bulbs. With some advance planning, you can have vivid colors to replace the melting snow six weeks before the peak spring blooming season begins.

Most of us don't venture far into the garden when cold winds are gusting and temperatures are low. So plant precocious bloomers where you'll most likely see and enjoy them—near the entrance of your house, flanking a path, or where they can be seen from a window inside the house.

A BLOOMING LAWN

MY HUSBAND BRENT and I grow about 100 different kinds of very early-blooming bulbs on our farm in Gloucester, Virginia, and one of our favorite places to plant them is in the lawn. Because the lawn is well drained and there is little or no root competition from nearby trees and shrubs, tiny early-blooming bulbs thrive here with little effort. It's also an area where the dreaded vole—that underground bulb monster—seems to be less active than in our flower gardens (see “Outfoxing the Bulb Monsters,” page 31).



Top: One of the author's favorite bulb combinations is white-and-yellow *Tulipa biflora* with *Crocus ancyrensis* 'Golden Bunch'. **Above:** A spectacular springtime carpet of *Chionodoxa forbesii* and *Narcissus pseudonarcissus* at Winterthur Museum's gardens in Delaware.

Plan and size your “lawn art” to be seen from a distance, and order your bulbs early, before what you really want is sold out. Figure on needing about 15 bulbs per square foot of space. Select similar types of bulbs—all *Crocus vernus*; all *Crocus chrysanthus*, etc.—since there is a better chance that they will bloom together or at least overlap.

Once your bulbs have arrived and your “composition” is in your mind or, better yet, down on paper, stake the pattern. You can line it out using flags, a garden hose, rope, string, lime, or landscape paint to delineate the shape, designating the areas for each different type of bulb.

A LEAFY DILEMMA

ALTHOUGH IT'S EASY to appreciate bulbs planted in the lawn while in bloom, after the flowers fade, you are left with leaves that need time to produce food for the development of the next year's bloom. Leaving bulb foliage to mature, however, can be at odds with the urge to mow.

To avoid this dilemma, choose the very earliest-blooming bulbs. Their foliage usually matures before the lawn-cutting season gets very far underway. And if you choose bulbs that have narrow, grasslike foliage, even lingering leaves will be largely camouflaged in the lawn.

When grass-cutting time arrives, set your lawn mower blade at its highest possible setting. Even if you “nip” the tips of the bulb foliage, you will leave the majority of it intact, which is crucial for next year's bloom. Avoid using herbicides on lawns where bulbs are planted.

LAWN ART

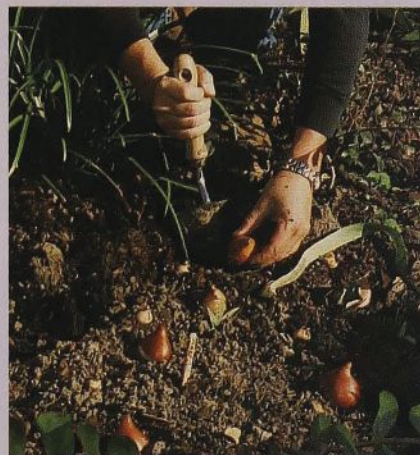
CROCUSES BLOOM early and have grasslike foliage, so they are perfect for lawn plantings. Even *Crocus vernus* (USDA Zones 3–8, AHS Zones 8–1), which blooms a bit later than most species crocuses, normally finishes doing its “thing” before the grass needs cutting.

One of our favorite species crocuses, *C. ancyrensis* ‘Golden Bunch’ (Zones 5–8, 8–5), is just right for outlining the happy face in our lawn, or combining with other early-flowering

Easy Planting Techniques

There are several ways to go about actually planting bulbs in a lawn. If your planting isn't too large but the design is intricate enough that every bulb needs to be placed with extreme precision, you may want to lift the sod, place the bulbs in the soil at a depth equal to twice the bulb's height and *carefully* replace the sod over them. It's normally not difficult to tell tops from bottoms of these tiny bulbs but, when in doubt, plant them on their side or edge.

We actually prefer to be on our hands and knees using a stainless steel hand trowel to plant small bulbs in the lawn. A trowel with a blade about the same width as the bulb works best. We use the trowel as a dagger, stabbing it into the ground about three to four inches deep. By pulling the handle towards us, it makes a perfect slot for a small bulb. Once we place the bulb in the slot, we stab the trowel in the ground again about two inches away from the first bulb and pull towards us again; this motion covers the first bulb. We call this the ‘stab-pull-drop’ method of planting. A lot of small bulbs can be planted this way in a very short time, with very little effort. —B.H.



Pull the soil towards yourself with the trowel and drop the bulb in the resulting slot.

bulbs like *Tulipa biflora* (sometimes listed as *T. polychroma*, Zones 3–8, 8–1).

Crocus tommasinianus (Zones 3–8, 8–1) is said to be squirrel resistant because squirrels don't seem to be as tempted by it as by other crocuses. In the right climate, it often re-seeds, increasing the flower production year after year. We've seen a hundred crocuses become thousands over the course of several years. One of our favorite selections is the dark purple-flowered ‘Ruby Giant’.

Many selections of *C. chrysanthus*

(Zones 3–8, 10–1) display one color on the inside of the flower as it opens on sunny days, and another color on the exterior of the petals when the flower remains closed on overcast days. It's like having two flowers in one! We use ‘Blue Bird’ to contrast with dark colors because it offers an ivory-white interior contrasted with bright orange stamens and a violet-blue exterior. If you like yellow and blue/violet together, ‘Advance’ is a great choice. Its petals are rounded and overlapping and it has a lot of substance to help the flowers last.

For a big punch with a few flowers, *C. sieberi* forma *tricolor* (Zones 3–8, 8–1) is a real eye-catcher. The lilac-blue, white, and golden-yellow colors are so bright that it often receives a “double-take” from many of our visitors.

Another plant that brightens our spring lawn is the dwarf iris. Early flowering, with foliage that is narrow enough to blend in with lawn grass, they bloom in many colors, including true blues. Because of the unique shape of their flowers, dwarf irises provide a different texture to our “picture.”



A “happy face” picture on the author's lawn created by yellow and lavender crocuses.

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www.brentandbeckysbulbs.com. Catalog free.

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Top: Sunny drops of winter aconite (*Eranthis cilicica*) steal the show from neighboring crocuses.
Above: Masses of spring snowflakes (*Leucojum vernum*) cover a hillside at Winterthur.

MADE FOR THE SHADE

IF YOUR GARDEN is shady and you're in USDA Hardiness Zone 5 or warmer, consider growing *Arum italicum* (Zones 7–9, 9–3). Its lush green, arrow-shaped, and often-variegated leaves are decorative all winter. Left undisturbed, clumps increase in size each year. Provide some winter protection, either by site choice or by placing light mulch like pine needles or hay around it, to avoid damage from harsh winter weather. In spring, *arum* sends up a chartreuse jack-in-the-pulpit type flower, and in the summer, it garnishes the garden with a stalk of bright red berries. This is truly a three-season plant.

Another bulb that performs best in shady areas with humus-rich soil is winter aconite (*Eranthis cilicica* and *E. hyemalis*, Zones 4–9, 9–1). Its yellow flowers, which resemble buttercups, are encircled by lupinelike foliage. Given the right conditions and a little time, these bulbs will create a charming woodland carpet.

Scillas are shade lovers that flower very early and—if they like where they're growing—will bloom reliably year after year. *Scilla siberica* and its cultivar 'Spring Beauty' (Zones 5–8, 8–5) are probably the most popular selections because their true blue color is hard to come by in a flower. Not poisonous but generally unappealing to foraging critters, scilla's little "blue bells" intermingle with and complement almost any flower requiring similar conditions.

Chionodoxa forbesii (Zones 3–9, 9–1) produces precious blue flowers that

often naturalize in woodland situations. Both the species and the selection 'Pink Giant' are adaptable, performing well in sun or shade.

Early bulbs with white flowers that thrive in shady spots include snowdrops (*Galanthus nivalis*, Zones 3–8, 8–1), a brilliant, three-lobed beauty, and spring snowflake (*Leucojum vernum*, Zones 3–9, 9–1), which has hanging bell-shaped flowers and a tendency to re-seed itself, creating a lovely late winter carpet.

BASKING IN THE SUN

IN A SUNNY garden, try *Muscari armeniacum* 'Christmas Pearl' (Zones 4–8, 8–1), with four- to eight-inch spikes of grapelike clusters of blue flowers. These tough bulbs are great for creating a late-



winter river of color, and they often last well into the peak, spring-blooming season. We use them as "shoes-and-socks" plants—short bulbs that fill in around the naked ankles of larger plants so the whole planting looks so much better.

Outfoxing the Bulb Monsters

Your first line of defense against critters that feed on bulbs is to plant bulbs they don't like to eat, advises Roger Swain, Science Editor of *Horticulture* magazine, "And nobody eats daffodils." Swain's fondness for daffodils "is predicated on the fact that they are so resistant to the forces of evil...they are dreamily self sufficient."

RODENTS. There are a handful of other bulbs that just don't seem to appeal to rodents such as squirrels, voles, and gophers, at least as long as there are more attractive alternative meals nearby. These include scillas, snowdrops, and spring snowflake.

Another strategy is to plant a lot of bulbs—particularly those that are inexpensive like crocuses and scillas—and to be willing to accept a certain amount of loss. "If you plant a thousand bulbs, they won't all be eaten, so scatter thy crocuses as you will," suggests Swain.

Spraying bulbs with repellents before planting (a number of products are available for this express purpose) may deter animals from eating bulbs for a while, but the active ingredients in the repellents eventually break down, leaving the bulb susceptible. Because squirrels prefer digging in freshly prepared beds where the soil is light and fluffy, Swain suggests protecting new bulb plantings with hardware cloth as a temporary barrier until the soil settles and firms.

But the most effective protection against tunneling and digging animals, according to Swain, is to plant the bulbs inside a cage. This is done by building a shallow box made of 1/3- to 1/2-inch mesh hardware cloth or wire, digging out the soil, and placing the box in the ground. Place a little soil in the box and plant your bulbs, covering them with soil to the proper depth. The bulb foliage and flowers grow through the hardware cloth without a problem.

DEER. Fortunately daffodils don't taste any better to deer than they do to voles or squirrels, but deer love the foliage and flowers of tulips and some other bulbs. Deer fencing is the only truly effective way to keep deer away from your garden, but commercial or homemade deer repellents may help. Because bulb flowers and foliage are only around for a couple of months, two or three applications may be sufficient to carry your protection through the season.

—Rita Pelczar, Associate Editor

If you're looking for intensely blue flowers, try easy-to-grow *Scilla siberica*.

There are some fantastic, very early blooming daffodils that are perfect for sunny gardens. *Narcissus* 'Rijnveld's Early Sensation' (Zones 3–8, 8–1) is a yellow trumpet that blooms when the rest of the world is brown. In our USDA Zone 7 garden, this 12- to 14-inch flower has bloomed as early as December 5th; but usually we see it open in early January.

Blooming a bit later but just as effectively is 'February Gold', a yellow cyclamineus daffodil, and 'Little Beauty', a white-and-yellow miniature trumpet daffodil.

These pest-proof plants flourish in full sun and create an overture to spring. They truly catch your eye, especially



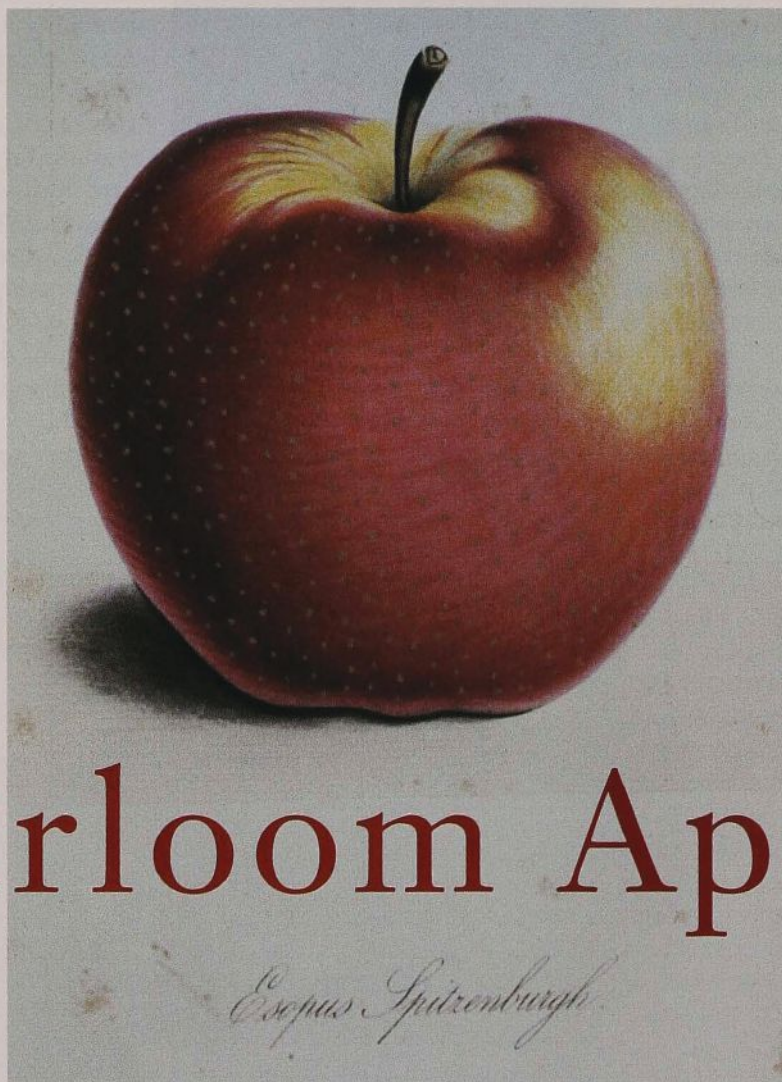
'Rijnveld's Early Sensation' daffodil lives up to its name, blooming as early as December in the author's southern Virginia garden.

when planted in front of winter berried trees and shrubs.

We fully enjoy our gardens in the spring, summer, and fall. But in late winter, the thrill of the very first signs of early color in our gardens is difficult to top. These cheerful blooms bridge the gap between fall and spring flower borders, brighten our winter days, and keep us smiling!

Becky Heath and her husband, Brent, are co-owners of Brent and Becky's Bulbs nursery in Gloucester, Virginia. They are garden writers, lecturers, and consultants specializing in bulbous plants.

A Taste of the Past



Heirloom Apples

Heirloom apples are delicious alternatives to modern varieties that have been bred for their perfect appearance and durability, often at the expense of flavor.

BY RITA PELCZAR

AS AN undergraduate studying horticulture, I was required to take two semesters of tree fruit production. In the fall of my junior year, I spent Monday afternoons identifying—by taste, among other characteristics—60 or so varieties of apples. Never was studying so appealing! The flavors, textures, and aromas were complex, varied, and oh so delicious.

By comparison, most of the apples that fill today's grocery shelves are bland, and

there is little variation in flavor from one to another. Sure, they are a sight to behold: big, shiny, unblemished, and abundant. But why are only a handful of the varieties I tasted back in school available at the grocery store? And why don't they taste like the apples of my memory?

THE NEEDS OF THE MANY...

THE ANSWER is that flavor and variety have been subsumed by the needs of mass production and year-round sale. "Most

modern-day producers are not growing apples to meet local demand, but are raising apples to be shipped across the country and worldwide," explains Ron Joyner, who owns Big Horse Creek Farm, an heirloom fruit nursery in Ashe County, North Carolina. Modern apples have been bred and selected for a flawless appearance, ability to withstand long-range shipping, prolific production, and an extended shelf life. "Breeders produce fruit capable of meeting these criteria," says Joyner, "but

Opposite page: A watercolor rendering of 'Esopus Spitzenberg' from *Fruits and Fruit Trees of America* by A.J. Downing (1850).

there is something lost by sacrificing flavor and freshness for an attractive apple that can be sold in December."

Many antique varieties of apples, however, are simply not suited to mass production and long-range distribution. Some are easily bruised or don't hold up well after they are picked. Others are simply ugly by today's standards. But oh, the flavor!

Apples grown in your backyard needn't possess the same qualities as commercial varieties. You can let them ripen on the tree. Shipping, handling, and storage concerns are moot when you can eat the fruit the day it's picked.

Heirloom varieties of apples afford home gardeners an opportunity to savor the diverse flavors of the past. And if you are interested in growing apples for specific purposes—such as baking, cooking, drying, or drinking—there are varieties with the perfect blend of qualities to accommodate.

THE APPLESEED CONNECTION

IN THE LATE 1700s and early 1800s, when Johnny Appleseed (see box, page 35) was collecting seeds from cider makers to plant his orchards for settlers on the American frontier, it was understood that each seed-grown tree in an orchard would have different characteristics. Each tree had to be grown for several years until fruit was produced before its merits could be determined. It's no wonder that pioneers typically cultivated large numbers of fruit trees—some eventually fed the family, others the hogs.

Because apples are insect pollinated and often require pollen from a different variety for fertilization to be accomplished, each apple seed represents a unique set of genes. Specific varieties must be vegetatively propagated—typically by grafting a cutting (scion) of the desired tree onto a new rootstock—to preserve their particular traits.

Trees that displayed particularly favorable qualities were named, frequently after the grower or the region. But few apple trees survive more than 50 years, and if a tree with superior fruit was not propagated vegetatively before it died,

TRACKING THE APPLES OF YESTERYEAR

by Creighton Lee Calhoun Jr.

A small band of apple hunters is striving to find and save the remaining heirloom apples in the South. This task can be quite difficult; most of the remaining trees exist as dying old snags in remote places.

The owner of an old tree usually has no idea of its identity, and it joins the legion of unknown or unidentified apple trees. Rarely—but often enough to keep apple hunters on the trail—the owner will know the name of the apple tree. It may be a duplicate of one already found, but occasionally a tree is identified as an old cultivar thought to be extinct or perhaps, an old local cultivar never described in pomological literature. This is the pot of gold at the end of the rainbow.

The most direct method of locating old apple trees is simply to drive along back roads looking for trees in pastures, behind farm outbuildings or in farmyards. In 1982, when I started my search for heirloom southern apples, I crisscrossed my county and then adjacent counties. I made some great "finds" including 'Bevan's Favorite', 'Horse Apple', and 'Magnum Bonum'. Conversations at country stores and "filling stations" often divulged directions to old trees. Talking to elderly rural men and women who remember the old apples and know the locations of remaining trees is like turning back a page in the history book, and is one of the great pleasures of hunting old apples.

I widened the apple search by writing letters to the editors of small weekly newspapers serving rural areas and articles for two electrical co-op magazines. I received feedback leading to the rediscovery of more than 10 old apple cultivars in both North Carolina and Georgia.

Of course, serendipity has a role to play. Idle conversation while waiting for a haircut led me to the 'Sally Gray' apple.

And while picking "U-Pick" strawberries, I spotted an old apple tree that was identified by the owners as 'Summer Orange'.

Trying to identify unknown apples can be a lesson in frustration. There were so many apple cultivars in the old days—over 1,600 in the South alone—the possibilities are daunting. Confusion results because many old apple trees are seedlings, rather than named cultivars; also, many different apples look quite similar. This problem is compounded by a lack of good or consistent historical descriptions.

An apple name, provided by the owner of an old tree, is very useful even though it may be garbled. For example, the old southern apple 'Magnum Bonum' is often called "Maggie Bowman." With a name, one can search the pomological literature and often find enough information to confirm the identity.

One of my purposes in writing *Old Southern Apples* was to point out the loss of so many heirloom cultivars as the South rushes into urbanization. Our search continues and old apple varieties are still being found.

—Apple expert Creighton Lee Calhoun Jr. is author of *Old Southern Apples*



'Magnum Bonum', which dates back to the 1850s, is considered one of the greatest southern apples.

Sources

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that unique set of characteristics was lost.

As settlers pushed farther west and people began to take root and create stable communities, regionally successful apple varieties began to be selected, named, and perpetuated. The mid- to late 1800s were the golden age of apple diversity, with apple growers from regional hotbeds of tree fruit production such as the Pacific Northwest, New York State, and Virginia, championing their favorites in publications such as *The Orchardist's Companion*, published in Philadelphia.

WHERE HAVE ALL THE APPLES GONE?

A HUNDRED years ago, there were some 7,000 to 8,000 named apple varieties available in the United States; today the number is closer to 200. Many have been lost forever; others still exist but are growing old and are in danger of joining the list of extinct varieties.

Fortunately, there are a few dedicated researchers who seek and collect antique varieties of apples from old homesteads and historic sites, rescuing and propagating them so that future generations can sample the same diversity enjoyed by our forebears. Following leads, they locate, identify, and obtain bud wood so that these trees can be propagated for another generation (see "Tracking the Apples of Yesterday," page 33).

Assuring that existing varieties are preserved for the future is also the important mission of a few dedicated facilities. The Plant Genetics Resources Unit (PGRU) at Cornell University's Agricultural Experiment Station in Geneva, New York, contains the world's largest collection of apple varieties. This "living library" includes more than 3,000 accessions of apples, some dating back to ancient Rome. The goal of the PGRU is to preserve genetic diversity; included in the collection are wild species and both current and antique cultivars.

A similar organization in England, the Brogdale Horticultural Trust, is the repository of over 2,300 apple varieties.

A VARIETY FOR EVERY USE

"Why do we need so many kinds of apples? Because there are so many folks."

—Liberty Hyde Bailey

ASK GROWERS of heirloom apples to name their favorite varieties, and get ready to listen for a while. Part of the difficulty in identifying a favorite is that it depends on how you intend to use the apple. The peculiar qualities that mark a variety as superior for eating fresh (dessert), baking, frying, drying, making applesauce, apple butter, or jelly, or fermenting cider or brandy (applejack) distinguish one variety from another, not to mention setting them worlds apart from varieties found in today's grocery stores.



An 'Albemarle Pippin' (also known as 'Newtown Pippin') tree laden with fruit in the gardens at Thomas Jefferson's Monticello.

Thomas Jefferson, who grew 18 varieties of apples at Monticello, had no difficulty identifying his favorite cider apple as 'Taliaferro'—pronounced Tolliver—named for Colonel Richard Taliaferro, who discovered it growing near Williamsburg. Jefferson considered it "the best cyder apple existing."

'Taliaferro' has been dubbed "the mystery apple of Monticello" by Peter Hatch, director of gardens at Monticello. Not only is it a lost variety, but descriptions of this premium cider apple are inconsistent. "From the beginning, the few descriptions of 'Taliaferro' were contradictory and sparse," says heirloom apple expert Tom Burford. Despite confusion about its appearance, it is consistently cited for "its production of cider of the highest quality

THE LEGEND OF JOHNNY APPLESEED

The apple looms large in human lore, legend, and literature, serving as a foil in stories about characters as diverse as Adam and Eve, Isaac Newton, William Tell, and that peculiarly American icon, Johnny Appleseed, whose plantings of apple trees helped support the pioneers who braved the American frontier in the early 1800s.

Born John Chapman in Loemister, Massachusetts, in 1774, he was the oldest son in a family of 12 children. Chapman moved to western Pennsylvania around 1797, where he planted the first of his many apple orchards using seed collected from cider mills.

During this time of westward expansion, settlers who established homesteads on the frontier were required by the government to satisfy certain criteria—in the Ohio region, for example, homesteaders had to plant at least 50 apple or pear trees within three years to hold their homestead. This might seem extravagant by today's standards, but apples were a mainstay of the pioneer diet.

With an uncanny sense of timing, Chapman established his apple nurseries along the frontier in Pennsylvania, Ohio, and Indiana, just ahead of the westward migration. His goal was to plant seeds and tend the seedlings so they would be ready for sale when the settlers arrived. But to those who had no money, Chapman gave his trees without charge.

He tended his nurseries, traveling back and forth among them, often over a considerable distance. As he traveled, he was welcomed into the homes of settlers and Native Americans alike. In addition to distributing apple trees, he shared his religious beliefs—he subscribed to a Christian sect known as the Swedenborgians.

His gentle nature and his rather eccentric, nomadic style—he traveled barefoot except during the most severe weather—inspired many of the legends that sprang up around him. One story claims a rattlesnake attempted to bite Chapman on his foot, but the fangs couldn't penetrate his thick skin. And he was often depicted wearing a cooking pot on his head. But his nickname is apt; he described himself simply as “a gatherer and planter of apple seeds.”

Chapman didn't believe in grafting, preferring to leave the fruit's quality to God, so his apples were a variable lot. Among his favorites, so stories go, were offspring of ‘Rambo’—a tart, green variety used both in cooking and for eating out of hand.

On a farm in Nova, Ohio, just west of Akron, stands the decaying trunk of what is believed to be the last surviving tree planted by Chapman. As part of its Famous and Historic Tree program, American Forests, a conservation group that promotes planting trees for environmental restoration, has propagated this lone survivor—dubbed ‘Johnny Appleseed Rambo’—and made it available for purchase. For more information on this and other historic trees, see www.historictrees.org or call (800) 320-TREE. —R.P.

and one endorsed by Mr. Jefferson in glowing terms.”

Burford, whose family has been growing apples in Virginia since the 1700s, says both his father and grandfather

talked of finding ‘Taliaferro’ and returning it to cultivation. He has located two trees in Virginia that each possess some characteristics ascribed to ‘Taliaferro’, and both make excellent cider. He has in-

cluded them in a cider orchard, but whether either is truly the elusive ‘Taliaferro’ will probably never be known.

According to Neil Collins, co-owner of Trees of Antiquity Nursery in Paso Robles, California, hard cider apples—used for making cider with alcohol content—are a hot item in today's fruit market. “We currently cannot grow enough hard cider varieties,” says Collins. “There is a growing resurgence with hard ciders, something to keep an eye on in the next few years.”

So diverse are the flavors and uses of antique apples, it is easy to understand how people get hooked on growing them. When selecting apples for your garden, choose varieties that are locally adapted. Susceptibility to diseases that are troublesome in your region is a major consideration, and climate can affect quality. But wherever you live, there are antique varieties of apples that will thrive and thrill you with flavors from our past.

Some things are definitely worth remembering. 🍏



Heirloom apple expert Tom Burford examines a young apple tree similar to Thomas Jefferson's elusive ‘Taliaferro’. Like “the mystery apple of Monticello,” it also makes a high-quality cider.

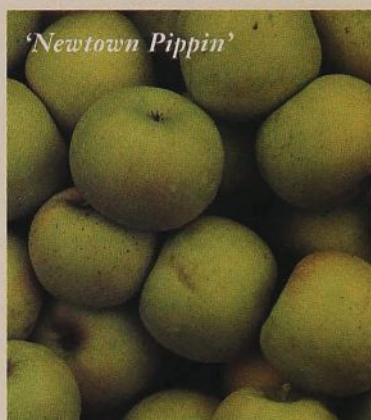
Rita Pelczar is an associate editor of *The American Gardener*.

Apples Worth Preserving

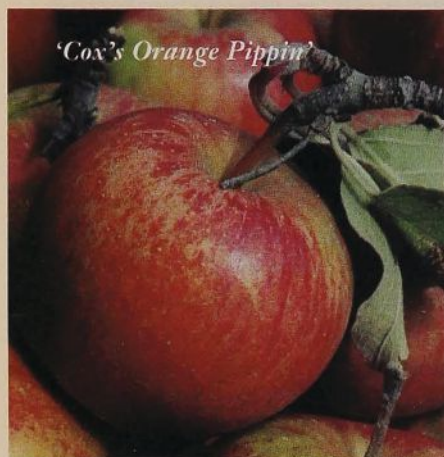
I CANVASSED a number of “heirloomers” for their personal preferences in antique apples. Here are some of their top choices, along with a few of particular historic interest. All the apples are hardy in USDA Zones 5 to 8 and heat tolerant in AHS Zones 8 to 1.

The dessert apple Thomas Jefferson favored was **‘Esopus Spitzenburg’**, shown in the watercolor illustration on page 32. Discovered growing along the Hudson River near Esopus, New York, it was introduced in 1790. The fruit is medium to large and rounded, the skin is red-orange with inconspicuous stripes, and the yellowish flesh is fine-grained. This variety—sometimes shortened to ‘Spitzenburg’—was mentioned as a perennial favorite with unexcelled flavor by several growers. Though tasty right off the tree when it ripens in September, its flavor improves in storage, and is considered at its best around Christmas.

Another Jefferson favorite—also grown by Benjamin Franklin—was **‘Newtown Pippin’**, sometimes called ‘Albermarle Pippin’. Introduced in 1759, the fruit is medium to large with a rather squat shape. It ripens from green to yellow and has a creamy yellow flesh that is crisp and very aromatic. In addition to its superior flavor for eating fresh, it processes well—it makes excellent cider. And it’s a superb keeper; with proper storage, it will last until February or later. Because it was capable of maintaining its high quality over the long voyage across the ocean, American colonists exported large quantities of the ‘Newtown Pippin’ to England.



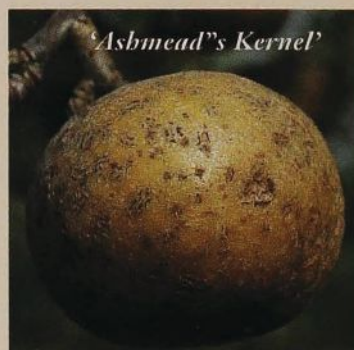
‘Newtown Pippin’



‘Cox's Orange Pippin’

Introduced in 1850, **‘Cox's Orange Pippin’** originated in England, where it is considered to be the finest dessert apple available. It is a tough skinned, medium-sized orange apple with red stripes. Its firm, juicy, creamy flesh has a sweet, distinctive flavor that is honeylike, nutty, or spicy depending on the taster, although all agree it is extremely aromatic. It is a fa-

vorite for pies and other desserts as well as cider. It suffers from susceptibility to several diseases including apple scab, and does best in cooler regions with low humidity. It is an excellent subject for espalier.



‘Ashmead's Kernel’

Another English variety grown as a dessert apple for its intense flavor is **‘Ashmead's Kernel’**. The fruit isn't pretty—medium-sized, flat, greenish yellow, and heavily russeted—but its flavor has won it many a taste test; it is intense, both sweet and tart. Its firm,

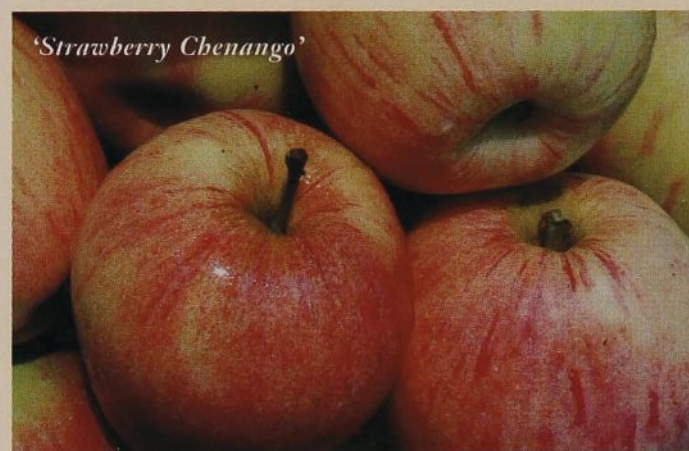
juicy flesh is yellow-white. Ripening in October, the fruit keeps well for three to four months and makes excellent cider.

‘Fameuse’ or **‘Snow’** was brought to America by French settlers in the 1700s. The fruit is small to medium, with a deep red skin and lighter red striping. Its white flesh may show red streaks near the skin. It is very juicy and tender with a spicy flavor that is wonderful for eating fresh. It is a fair keeper.



‘Fameuse’

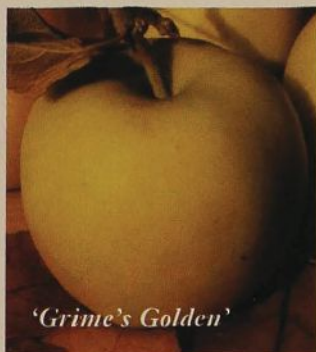
There is a bit of confusion about the name of the apple known variously as **‘Strawberry Chenango’**, ‘Chenango Strawberry’, ‘Buckley’, ‘Sherwood's Favorite’, ‘Smyrna’, and ‘Frank’; but by whatever name it is identified, it is a favorite



‘Strawberry Chenango’

among heirloom apple growers. Unlike many heirloom varieties that display a biennial bearing habit—producing a significant crop every other year—‘Strawberry Chenango’ comes into production quite young and bears a crop annually. The

attractive fruit, which ripens over several weeks in late summer, is fairly large, conical, has a yellowish skin with crimson stripes, and tender white flesh. Descriptions frequently mention that its flavor hints of strawberries, and its aroma of roses. It is recommended for eating fresh or for baking, but the fruit must be picked when it first ripens—when the skin first takes on a milky cast. It loses its flavor and becomes dry if left too long on the tree and does not store well.

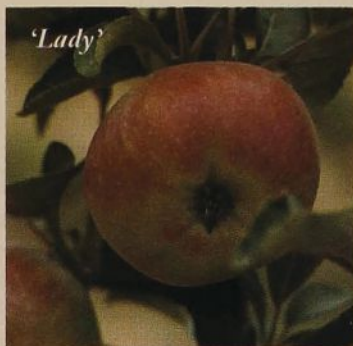


'Grimes' Golden'

Brooks County, West Virginia, where **'Grimes Golden'** originated in 1790, is so proud of this exceptional apple that a granite monument was erected in its honor. Considered to be one of the finest American apples, it is a parent of the original 'Golden Delicious.'

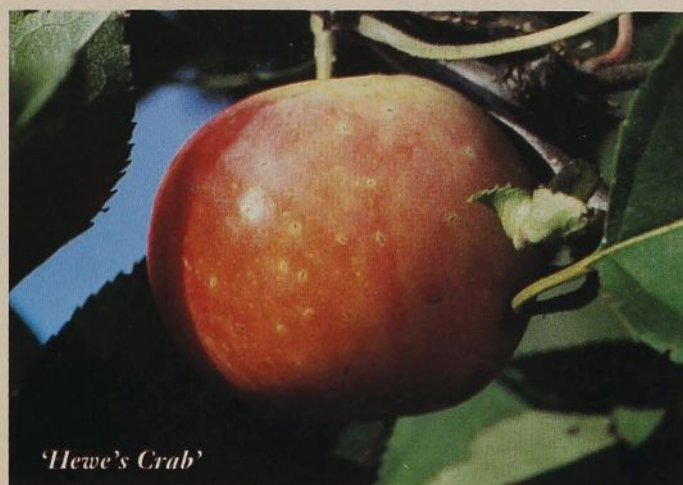
The fruit is round or slightly oblong, pale yellow, and fairly large. The spicy-sweet, juicy, yellow flesh makes wonderful applesauce and cider. It ripens from September to October.

Dating back at least 400 years to gardens in France, one of the oldest apple varieties still grown is **'Lady'**. This apple's small size has not detracted from its popularity. It is rounded or slightly flattened, red on the sunny side and creamy yellow where shaded. The fruit is commonly born in clusters. It is sometimes referred to as the "Christmas Apple" because it has been used for decorating Christmas wreaths, garlands, and trees as well as for filling stockings. Its fruity flavor and fragrance is mainly in the skin, so don't peel it before eating. The flesh is juicy, crisp, and white. It will keep for months in a refrigerator or fruit cellar, and it is highly recommended for cider.



'Lady'

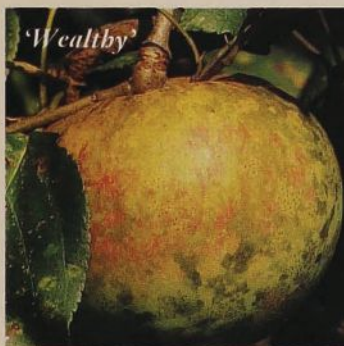
According to Creighton Lee Calhoun Jr. in his book *Old Southern Apples*, **'Magnum Bonum'**, shown on page 33, would appear on everyone's list of the 10 greatest southern apples. It dates back to the 1850s, when it caught the attention of a grower in North Carolina. Although the American Pomological Society has officially shortened the name to 'Bonum', Calhoun says the two-part name is used almost universally in the South, where the tree is grown mainly as a dessert apple. It ripens early, in late August in warmer regions, and from early September through mid October in the mountains. Such high quality and productivity in an early apple are valuable traits, but it must be harvested as soon as it is ripe because its quality



'Hewe's Crab'

declines quickly if it's left on the tree too long. The fruit is medium in size, with yellow skin covered by a red blush and faint red stripes. Its flesh is juicy, fine grained, and tender.

The most popular cider apple during Colonial times was probably **'Hewes Crab'**, and it is still one of the finest cider apples available today. Most likely a cross between a traditional apple and the native crab apple (*Malus angustifolia*), the trees produce abundant, small—about an inch and a half in diameter—light green fruit that matures in most areas in September and October. It was widely grown in Virginia and North Carolina, and was included in the cider orchard at Monticello. The apples are hard even when ripe, but they are extremely juicy. Cider made from 'Hewes Crab' is clear and dry and is delicious by itself or blended with other ciders. It is an excellent keeper.



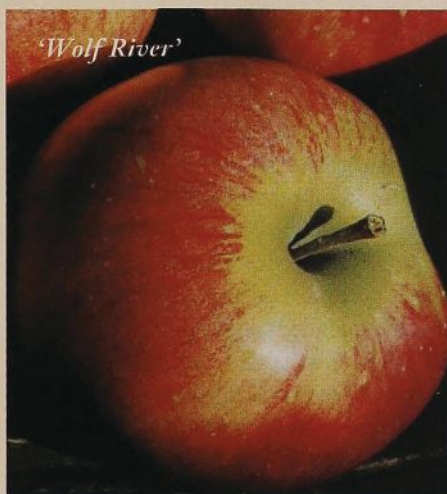
'Wealthy'

A very hardy variety that originated in Excelsior, Minnesota in the 1860s, **'Wealthy'** is a good choice for northern gardeners. The trees are small, compact, and begin to bear fruit quite early. The moderately large, rounded fruit is pale yellow with a red overcolor and red stripes. The skin is tough, but the juicy white flesh is

sweet with a hint of strawberry. It is recommended for eating fresh, cooking, and baking, but does not store very well.

For apple butter and applesauce, **'Wolf River'** is hard to top. It is also a fine choice for baking and drying. Discovered growing on the shores of the Wolf River in Wisconsin in 1875, the apple is huge—sometimes weighing more than a pound—and irregularly shaped. Its greenish yellow skin is splashed and striped with red, and the creamy white flesh is coarsely grained and somewhat mealy. A strong producer, it is very hardy, long-lived, and resistant to several troublesome diseases. It ripens from mid-September to early October.

—R.P.



'Wolf River'



Fall Lawn Care

Want a greener and healthier lawn next spring?

A lawn care expert offers tips on what you need to do right now to get your grass in shape.

BY MARY YEE

THE DAYS ARE getting cooler, the nights are getting longer, and another summer is almost history. But don't store the mower and water sprinkler in the shed just yet. While your lawn is preparing now for a winter sleep, the care you give it before and during its dormancy will pay dividends when it reawakens in spring.

Fall lawn care will vary somewhat depending on where you live and what type of grass you have. There are two types of turfgrass, categorized by the climate in which they actively grow: Cool-season and warm-season. The cool-season grasses, such as Kentucky bluegrass, fescue, and bentgrass, are greenest in the cooler weather of spring and fall. These grasses usually sulk in the heat of summer, the time of the year when the warm-season species such as Bermudagrass, St. Augustine, and zoysia hit their stride. But conversely, the warm-season grasses turn completely

brown when the temperature begins to drop. Warm-season lawns, because of their earlier onset of dormancy, don't need a lot of autumn care.

But no matter where you live and what type of grass you have, the grass is alive even when the top growth is dormant, so maintenance doesn't end when the grass stops growing.

TEST THE SOIL

BEFORE DOING anything to your lawn, you should have your soil tested to establish existing levels of nutrients, its pH, and other factors that affect plant growth. The results will determine the type of fertilizer or lawn treatment your grass really needs. The cooperative Extension service of state universities will usually perform soil testing for homeowners for a modest fee. Contact your local service for instructions on how to collect samples and where to send them.

FERTILIZE TO BUILD STRENGTH

ACCORDING TO John Steiner, central regional manager of Naturalawn of America, a national organic-based lawn care company headquartered in Frederick, Maryland, the average homeowner has many misconceptions about fall lawn care. The most common is: "I don't need to feed my lawn now because I did it in the spring and summer." In fact, says Steiner, "The last application of fertilizer in the fall is *the* most important of the year. You're not feeding the grass for the growth above-ground now—you're building up food reserves so the grass will go into the winter strong and green up faster in the spring." The store of nutrients will also enable the roots of cool-season grasses, which develop in the spring, to get off to a good start.

Above: In autumn, fallen leaves must be removed from the lawn before they form a layer thick enough to smother the grass.

But don't use the slow-release fertilizer you did in the spring and summer. "In the fall," says Steiner, "it's important to use a quick-release fertilizer. At this time of the year, the soil is cooler and consequently there's a lower level of microbial activity in the soil to break down the fertilizer to enable plants to take in the nutrients. You want to make the nutrients available to the grass right away."

Steiner recommends a fertilizer that will provide one pound of nitrogen per 1,000 square feet. Quick-release fertilizers are usually applied at higher rates per square foot of lawn than slow-release fertilizers; follow instructions on the product label for proper rates.

When you apply the fertilizer is determined by when the grass goes dormant. Time the application so the grass gets its nutrient boost *just before* it stops growing aboveground. For cool-season grasses in the Mid-Atlantic, that's generally from October to mid-November but may be earlier farther north and as late as December in the south.

WATER FOR WINTER THIRST

NEXT TO NOT fertilizing, the most neglected aspect of fall lawn care is not watering the grass after the end of summer. "Watering is vital in the winter months when there isn't adequate rainfall," emphasizes Steiner. During periods of prolonged winter drought, "if the air temperature is above freezing and the soil isn't frozen," says Steiner, "you should water every two or three weeks for 15 to 20 minutes—just enough to provide moisture to the crown and roots of the plants and



During dry winters, water the lawn every two or three weeks if the ground is not frozen.

MORE FALL LAWN MAINTENANCE

If your lawn has bare patches that need seeding, or you're creating new lawn space, NaturaLawn's John Steiner says autumn is the best time to do both with cool-season grasses. "It's hard to put in new seeds in the spring," he says, "because the soil heats up too fast and even with watering, the roots usually dry up before they get a chance to develop." Warm-season grasses, however, are best sown in late spring or early summer.

Two other important lawn care tasks that should be considered each fall are aeration and overseeding.

Aeration is done by a machine called an aerator that pulls plugs of soil from the lawn, leaving a pattern of holes that permit freer movement of air, nutrients, beneficial microorganisms, and water—as well as creating more growing room—for the grass roots. Die-hard do-it-yourselfers can rent an aerator, but Steiner says, "For the money and time you'd spend renting the machine, transporting it home, doing the work, and transporting it back, you're probably better off having it done professionally."

After a lawn has been aerated is the best time to overseed—broadcast lawn seed into the established lawn to rejuvenate it. Select a grass blend suited to your regional climate and the exposure—sun or shade—of your lawn. A cooperative Extension agent or local botanical garden is a good source of advice for this. —M.Y.



An aerator, like the one shown here, is a hefty piece of equipment that pulls plugs of soil from the lawn.

counteract the drying effects of winter winds." Supplemental watering is usually necessary in all regions of the country where winters are mild, but not so much in areas where there is plenty of winter rainfall or snowcover.

MOW LOWER

MOWING AT THE highest setting on your lawn mower should continue until the grass aboveground enters dormancy in order to preserve as much of the nutrient-producing green blades. Once dormant, the grass no longer needs as much aboveground growth. For the final mowing of the season, lower the cutting height to about two inches for cool-season grasses and one inch for warm-season grasses. Why? "The last thing you want in winter is for the grass to be long enough to lay over on itself under extra wetness or snow," explains Steiner. "This causes mat-

ting and sets up conditions favorable for diseases to develop into the next season."

LAST BUT NOT LEAST...

BE SURE TO remove those leaves from your lawn on a regular basis. A heavy layer of leaves can mat on the lawn, especially when wet, and smother the grass. But once the bulk of the fallen leaves have been raked off and composted, the final scattered leaves can be shredded with a mulching mower. Left on the lawn with the finely chopped grass clippings, the leaves will slowly decompose and add organic matter to the soil.

By following the good fall lawn care practices outlined here, your lawn should be well prepared for winter and reward you with a quick green-up come spring.

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

Renovating a Perennial



The renowned perennial border at the JC Raulston Arboretum at North Carolina State University was recently given a complete facelift—and offers lessons for our own gardens.

BY MARY YEE

PHOTOGRAPHS BY ROBERT E. LYONS

HOW DO YOU overhaul a 300-foot-long and 18-foot-wide English-style perennial border overflowing with nearly 1,000 different plants in order to make room for an entirely new border the next season?

That's not a problem most of us have to contend with in our gardens, but that was the daunting task facing the staff and volunteers at the JC Raulston Arboretum (JCRA) in Raleigh, North Carolina, several years ago when its enormous and renowned perennial border was slated for renovation.

The perennial border is one of several display gardens at the eight-acre arboretum created in 1976 by horticulturist J.C. Raulston. Originally known as the North Carolina State Uni-

versity (NCSU) Arboretum, it was renamed in 1997 in honor of Raulston, who died in an automobile accident in 1996. Planted with mixed perennials in the spirit of Gertrude Jekyll's long border at Munstead Wood in Surrey, England, the border has been lauded by noted English landscape architect Sir Geoffrey Jellicoe, who toured the arboretum in 1989, as "an epic in world horticulture...a heroic border...it is beyond Jekyll."

The border, first designed and planted in the early to mid-1980s by an NCSU horticulture student and now a nationally known landscape designer, Edith Eddleman, has helped influence the way southerners garden. At a time when growing herbaceous perennials was generally considered suitable only in

Border



Right: Part of the JCRA's 300-foot-long overgrown perennial border in October 1999, shortly before its renovation. **Above:** The new border in early July 2001, after only two seasons of growth.



northern regions, the original perennial border demonstrated to southern gardeners that this was also possible in warmer climates. Today, the JCRA's border continues to inspire visitors. Filled with an exuberant mélange of ornamental grasses such as *Miscanthus*, *Pennisetum*, and *Stipa*, and a wide-ranging palette of perennials from *Aster* to *Zephyranthes*, it is a southern American interpretation of the traditional English border.

But even the most well-designed border needs an overhaul from time to time. "All perennial borders are more or less dynamic," says Robert E. Lyons, JC Raulston Distinguished Professor of Horticultural Science, director of the JCRA, and an herbaceous perennials expert, "but there comes a time when the

shape, form, color intentions, species selections, and overall appearance become too unbalanced. That's when a border needs renovation." Since its creation, the JCRA border has undergone several renovations—the most recent in 1999 and 2000, when Edleman and garden designer Douglas Ruhren revised the design to reflect new tastes in plants as well as to eliminate overcrowding.

The scale of the JCRA border is obviously much grander than would be found in a typical home garden, but tracking the process of its renovation—as shown on the following pages—offers home gardeners insight into what we can do in our own backyards, whether we're revamping an existing bed or creating an entirely new one.



Above left: Students, volunteers, and NCSU horticulture staff members remove selected plants from the border in October 1999 prior to clearing and preparing the bed. **Above right:** Planting began in spring 2000 after hardscape elements, such as this flagstone walkway, were set in place.

PLANNING AHEAD FOR SUCCESS

TO MAINTAIN the display in its gardens as long as possible, the JCRA border renovation began at the end of the growing season in Raleigh—late October—allowing for time during the winter to design the new border and acquire plants. For home gardeners, Lyons suggests timing a renovation or creation of a new border in fall far enough in advance of the ground freezing to allow the new plants to establish before winter. This will allow for a stronger display in the spring. In Raleigh and many parts of the South, late summer and early fall are the best times to undertake a garden makeover, but in regions where the growing season is short, spring planting may be the only option. Check with your local Extension service for optimum planting times in your region.

Although a complete renovation of the JCRA perennial border might seem a Herculean task, Lyons says—thanks to organization and the help of about 25 students and volunteers—the border was dismantled in about a day in October 1999. Before the start of the project, Eddleman and Ruhren marked the plants they wanted to retain for the new border, and another part of the JCRA garden was prepared to receive these plants until they could be reinstalled the following season. The marked plants were dug up in about five hours and heeled into the temporary location; the remaining plants were either given away or tilled under. The backbone of the border—a hedge of holly (*Ilex* ‘Nellie R. Stevens’, USDA Zones 7–9, AHS Zones 9–4)—was retained but given a much-needed pruning.

Visiting the JCRA

The JC Raulston Arboretum is located on 4415 Beryl Road in Raleigh, North Carolina. It is open daily year round from 8:00 a.m. to 8:00 p.m. Admission is free. Free guided tours for groups are available each Sunday at 2:00 p.m. from April through October. In addition to the perennial border, the JCRA also features collections of boxwoods, magnolias, red-buds, conifers, the Klein-Pringle White Garden, a Japanese garden, a winter garden, and an extensive annual trials area. For more information, call (919) 515-3132 or visit the JCRA Web site at www.ncsu.edu/jcraulstonarboretum.

PREPARING THE SOIL

AFTER THE BED was cleared, it was rototilled several times, incorporating organic matter and PermaTill—a porous non-organic material that improves soil drainage—and any remaining debris was removed.

“Take advantage of the ‘down time’ between plant removal and reinstallation to improve your soil,” says Lyons. “Work in organic and other appropriate matter to improve soil structure, water-holding capacity, and drainage.”



Plants in the new border were given plenty of room to grow. **Above:** The border in its first season, August 2000. **Opposite:** The border in late November the following year, already looking well established.

Ensuring that the bed was entirely clean was the next step. “Don’t underestimate the resilience of old perennials that you’ve removed,” says Lyons. “Many invariably leave behind old crowns, stolons, rhizomes, and seeds that will come back to haunt the new garden if not thoroughly removed or killed.” To do this, the JCRA border was professionally fumigated with a broad-spectrum herbicide; debris was removed a week later.

Home gardeners, Lyons suggests, will achieve good results by spot-treating with a glyphosate-based herbicide. Gardeners who wish to avoid the use of herbicides can try solarization—laying down black plastic over the ground and letting the sun bake the

Design Tips from the JCRA

Here are additional ideas from the JCRA to help you make the best of your perennial border. Your local arboreta and public gardens will also have tips that are especially pertinent to your region—visit them!

- In the first year or two of a perennial border, while plants are getting established, use lots of annuals and tender perennials to provide color and to hold spaces for other perennials you plan to include later. But don't crowd the plants; give them room to grow.
- Use small shrubs in the border to provide form and winter interest. Among those designers Edith Eddleman and Doug Ruhren have included in the JCRA border are barberry (*Berberis xottawensis* 'Silver Mile', Zones 4–8, 8–3), crape myrtle (*Lagerstroemia* 'Cedar Lane Red', Zones 7–9, 9–7), and weigela (*Weigela florida*, Zones 4–8, 8–1).
- Container plantings are not just for porch steps and patios; put them into the border. Eddleman uses huge containers filled with assorted annuals and perennials.
- Add elements of surprise. According to Nancy Doubrava, the JCRA's interpretive specialist, objects that have appeared in the JCRA border include colorful bowling balls, mirrored gazing balls, and even plastic flamingos!
- Ornamental grasses provide interest in a perennial border throughout the growing season and are invaluable in winter, when their dried forms take on a variety of muted colors that give the border an entirely new look.

—M.Y.



Giant planters filled with assorted perennials and annuals are part of the JCRA border's design. The container shown above features cigar flower (*Cuphea ignea*, Zones 10–11, 12–1) surrounded by plectranthus, coleus, and other plants.



soil—but Lyons has found many weeds survive solarization. If you use this method, keep your eyes open for vagrant growth.

INSTALLING HARDSCAPE

PRIOR TO THE start of the new growing season in 2000, the JCRA border's hardscape features were installed. Stones for pathways within the border were set in place, and a number of heavy oversized planters for perennials and annuals were positioned. The containers add interest by raising plants a level in the border.

PLANTING THE NEW BED

THE PLANTING OF about 1,000 plants from 360 taxa began in February and continued through the summer of 2000. At the same time, the border was thoroughly mapped by students under the guidance of the JCRA's plant recorder, Valerie Tyson.

Although you probably don't need a plant database in a home garden, mapping your border as you're planting will be useful, especially in the winter when herbaceous plants have died back and you're deciding just where you have room to squeeze in that new perennial you want to order in January. At the very least, says Lyons, "put an indelible label at the base of each plant for identification. The bigger the garden, the greater the likelihood that you will *not* remember any of the plants you just installed." Water all new plants thoroughly and apply a layer of mulch to the bed.

Mulching of the JCRA border signified the end of its renovation. Three seasons later, it is well on its way to looking once again like "the heroic border" that so captivated Geoffrey Jellicoe. 🌿

Mary Yee is managing editor and designer of *The American Gardener*. Nancy Doubrava of the JCRA assisted with this article.



All in the Family

A love of plants and a knack for business have kept the Klehm family nurseries growing for 150 years.

BY BOB HILL



Above: Peony 'Lois E. Klehm', named for Roy Klehm's mother. **Top:** Kit, Sarah, and Roy Klehm. **Top background:** Rows of shrubs stretch to the horizon at Beaver Creek Nursery.

THERE IS A gentle rise in the land near the Illinois–Wisconsin border northwest of Chicago that suggests there is something grand just over the hill; a broad stretch of fertile farmland that lays flat, well-drained, and accessible. This is the home of several nurseries owned and operated by members of the Klehm family, who this year celebrate their 150th anniversary in the nursery business.

A FAMILY AFFAIR

ROY KLEHM represents the fourth generation of his family to work as a nurseryman in northern Illinois and southern Wisconsin. He usually starts his day—which often includes an almost 100-mile circuit to visit the family's various horti-

cultural holdings—at their carefully-landscaped family home just across the road from the Charles Klehm & Sons Nursery near South Barrington, Illinois. It is a bustling wholesale, re-wholesale, and distribution center in which his wife Sarah, their son Kit, and other family members are actively involved.

One of Roy's first stops is at his Song Sparrow Perennial Farm in southern Wisconsin. This mail-order nursery covers 175 acres where hundreds of thousands of daylilies and peonies happily grow in soil first tilled to perfection by glaciers perhaps 25,000 years ago. From there, Roy often carries on to Beaver Creek Nursery, a 620-acre nursery and container operation just south of the Wisconsin border near Poplar Grove, Illinois.

The two nurseries serve complementary functions. Smaller size plants are propagated and grown at Song Sparrow for mail-order sale and for shipment to Beaver Creek. At Beaver Creek, the plants are primarily grown on as larger specimens for the landscaping market.

According to Roy, the family's goal has always been "to push the envelope, to put together a good horticulture program and business and promotional effort to try to stretch everybody's world." With the recent addition to the firm of John Elsley (see box, right), who was vice president and horticulture director of Wayside Gardens and the Park Seed Company for many years, the family is also focusing on expanding their offerings of rare and unique plants through Song Sparrow's retail and wholesale specialty catalogs.

As befits a family-run business, everyone pitches in where needed. Roy is a hands-on manager of the various nurseries, driving the long rows, giving advice and help, and at all times keeping an eye out for an unusual seedling or leaf, a distinct shape or color. Keeping track of business details is largely the responsibility of Sarah Klehm. Like Roy, Sarah often works 60 to 70 hours a week, managing the offices, setting up computer systems, facilitating the paper flow, and fact-checking information about the products in the company catalogs. "Roy understands business," says Sarah, "but he really doesn't want to be inside."

Their son Kit—the fifth generation to work full-time in the nursery business—has a diverse focus. His official title is manager of the South Barrington Nursery, but his father calls him "The Chairman of Innovation." In the family tradition, he is involved in several other garden and plant related businesses.

FAMILY HISTORY

ALTHOUGH THE Klehm nursery has a proud history of innovation, adaptation, and hard work, it got off to a somewhat serendipitous start. In 1852 John Klehm, a first-generation American from Germany, settled in a little town of Dunton northwest of Chicago almost by accident.

"He'd gone to Buffalo in 1848," great-grandson Roy explains. "He didn't like it, so he got back on the train and was supposed to go all the way to California but

JOHN ELSLEY TEAMS UP WITH THE KLEHMS

John Elsley's move two years ago from his position as horticulture director of Wayside Gardens and the Park Seed Company, to a similar role with the Beaver Creek Nursery and Klehm's Song Sparrow perennial farm was a transition made easy by years of mutual respect.

"Roy had been a close friend," says Elsley, "and for 20-some years, while at Wayside, I had purchased most of our daylilies, hostas, and peonies from him. They had the best in the industry, I think."

Elsley brought a lifetime of experience with him. Born in England, he had trained at the Royal Botanic Garden at Kew and at the University of Leicester before becoming a botanist for the Royal Horticultural Society at Wisley. About 30 years ago he became curator of hardy plants at the Missouri Botanical Gardens in St. Louis, where he helped develop its English garden as a bicentennial project, and then its Japanese garden. He joined Wayside and Park about 20 years ago.

With some 600 to 700 cultivars of daylilies and peonies being produced and evaluated at Song Sparrow—and with hundreds of thousands in total production—Elsley's combination of plant knowledge and marketing experience make him an invaluable addition to the Klehm business.

"John's role is to review all our horticultural practices, and to be on call to all our managers to give them advice," says Roy Klehm. "He works with our mail-order company to help promote it, to work with the plant descriptions used with our photography, and to help us make a really good catalog that is accurate."

Elsley says he is excited about some of the shrubs and trees being offered by Klehm, including *Fothergilla gardenii* 'Beaver Creek' and *Amelanchier* 'Forest Prince'. Elsley also cites Roy's work with lilacs, including the introduction *Syringa pekinensis* 'Beijing Gold'. "It's a major breakthrough," said Elsley, "not only for good foliage and flower color, but great bark. It's a plant that fits extended seasonal interest, and I think that's what we have to look at with plants."

—B.H.



John Elsley, center, adds experience to Roy and Kit Klehm's nurseries operations.

got off in Chicago." The deep, black soil of northern Illinois apparently suited John Klehm, who started a nursery that sold mainly fruits, berries, and Christmas trees. His three sons, Henry, George, and Charles followed in their father's footsteps, working as partners for a while before each started his own nursery.

Charles Klehm, Roy's grandfather, proved the most successful nurseryman, and his interest in herbaceous peonies was the beginning of a major focus of the family's business. He was a charter member of the American Peony Society, joining in 1903, and the family has been growing and hybridizing them ever since. Roy still con-

siders peonies to be the company's signature crop.

"The Klehm name has been famous in the peony world for more than 100 years," says Allan Rogers of Caprice Farms Nursery in Aumsville, Oregon. When Rogers was in the process of writing his book, *Peonies*, he and his wife, Dot, went to Illinois to visit Roy Klehm, who gave them a tour and then helped edit the book.

Roy's father, Carl George Klehm, graduated in 1938 from the University of Illinois after earning a degree in ornamental horticulture. "Dad's first year out of college the nursery still didn't have any tractors," Roy recalls. "They had about 80

acres at the time. They sold cut flowers, including lilacs, delphiniums, gladiolas, lilies of the valley, and, of course, peonies.”

It was Carl Klehm who expanded the family’s wholesale peony business. He bought a farm in southern Illinois, one in central Illinois, and three in northern Illinois—one in the South Arlington Heights area, one near Woodstock, and a third in Rockford—in what was then well outside the northwest suburbs of Chicago.

STARTING YOUNG

THE SECOND OF Carl and Lois Klehm’s four children, Roy began his horticultural education early. “At some point in time—I was probably about five or six—I remember being given a garden hose in the gardening center and being told, ‘OK, guy, go get ’em.’” Before long, Roy was helping with his dad’s peony breeding program. “Even as a little kid my dad let me help select them,” he says.

While pursuing a horticulture degree

FOR MORE INFORMATION on perennial plants, shrubs or trees offered by Klehm’s Song Sparrow nursery, go to www.songsparrow.com. You can request a printed catalog or order plants by calling (800) 553-3715.

at the University of Illinois, Roy made the 300-mile roundtrip home on weekends to work in the South Arlington Heights nursery. By then it had expanded to a 16-acre retail center with almost 200 acres of growing fields all around it. At school he met his future wife, Sarah. “I started helping Roy out while we were dating, cleaning greenhouses and de-budding,” relates Sarah of their early years of courtship.

After graduation, Roy joined his brothers—Carl Henry Klehm, now deceased, and Arnold John Klehm—in the nursery business. Roy began managing several of the Illinois farms, the main garden center

in South Arlington Heights, other satellite garden centers, and started a container operation with production greenhouses.

Over time, all the Klehm farms outside the Chicago area were sold. With the Chicago suburbs steadily encroaching, the Klehms sold the big retail center in 1984, transferring their headquarters west to its current South Barrington location.

At the time of the sale, a considerable number of rare trees and shrubs were growing at the Rockford garden center. These plants had been collected from all over the world by earlier owners William Lincoln Taylor and his brother, Everett. Recognizing their value, the Klehms donated the plants and much of the land to the Winnebago County Forest Preserve District with the stipulation that the site be maintained as an arboretum. Today the 150-acre Klehm Arboretum and Botanic Garden offers a variety of demonstration gardens, entertainment programs, and educational activities.



Roy Klehm checks hostas growing under shade cloth at Song Sparrow Perennial Farm. Although peonies and daylilies are their specialties, the Klehms grow a wide variety of other herbaceous perennials as well as grasses, shrubs, and trees.



Peonies are at the root of the Klehms' business, and the family has a lot of employees to help in its operation. Above left: Roy Klehm discusses the quality of some bare-root peonies with Jose Velazquez, production manager at the Klehms' Song Sparrow nursery in southern Wisconsin. Above right: Blooming peonies being grown for mail-order sale create an early-summer spectacle in the fields at Song Sparrow.

NEW AND BETTER PLANTS

FROM AN early age, Roy showed a keen interest and skill in hybridizing plants. Over the course of his career, he has introduced some 200 new tree and herbaceous peonies and between 300 to 400 daylilies into the trade. "He's one of the few people in the world who are seriously breeding and selecting new varieties of herbaceous peonies on any scale," says John Elsley. "And next year we're going to offer about 40 to 50 selections of Roy's own hybrid daylilies, which nobody else has."

Two of Roy's peonies—"Carl G." and "Lois E."—honor his parents. One of his favorites, 'Cheddar Charm', recently received an award of garden merit from England's Royal Horticultural Society.

Roy's had many mentors when he first began hybridizing plants, and he enjoys providing similar assistance to up and coming plantsmen. He helped Darrell Apps, owner of Woodside Nursery in Bridgeton, New Jersey, and a long-time daylily breeder, introduce the very popular 'Happy Returns' daylily. "Roy is first-class," says Apps. "He's sharp as a tack and he knows quality and good plants. He's just a good guy."

Although best known for hybridizing peonies and daylilies, Roy's horticultural interests also include magnolias. He has

been working closely with Dennis Ledvina, a math teacher in Green Bay, Wisconsin, who has been seriously hybridizing magnolias in his chilly USDA Zone 5 conditions for many years. "Roy is a really good, critical evaluator of plants," says Ledvina, "and his interest in magnolias has soared. He has been up here several times to visit, and he's planting many of our seedlings on his property."

OUTLOOK FOR THE FUTURE

ROY SAYS he has no thoughts of retiring at this point. His goal—the family's goal—is to keep introducing new plants, develop catalog sales, and fine-

tune operations at Beaver Creek and Song Sparrow. The two nurseries now employ some 50 to 75 people full time, with more required in the growing and harvesting seasons. "Sarah and I like to be interested, involved owners," he says. "We like to work with our people."

Roy also enjoys the opportunity to share his knowledge and passion for plants. He has given many talks about his profession across the country, and often welcomes groups and individuals to the Klehm family nurseries for tours.

The almost 100-mile round trips to the various farms keep Roy busy. With his strong sense of family, history, and place, he especially enjoys cresting that little rise in the road near the Illinois-Wisconsin border, where all that rich farmland spreads out before him. In blooming season, the peonies and daylilies appear like exotic strips in a flowery quilt, a stunning display of texture, shape, and color that is visible for miles. It's a sight that still takes Roy's breath away, and makes him and the Klehm family very proud.



Above: 'Cheddar Charm', one of Roy Klehm's hybrid peonies, recently received an award of garden merit from England's Royal Horticultural Society.

Bob Hill is a columnist for the Louisville Courier-Journal. He and his wife, Janet, also run Hidden Hill Nursery, a rare plant and sculpture garden near Louisville, Kentucky, in southern Indiana.

Native Viburnums

For three-season interest from flowers, berries, and fall foliage, few shrubs can match our native viburnums.

BY C. COLSTON BURRELL



“A GARDEN WITHOUT a viburnum is akin to life without music and art,” declares University of Georgia horticulturist Michael Dirr in his *Manual of Woody Landscape Plants*. I heartily agree, and so do gardeners everywhere. My first garden was planted in a mature woodland, where a canopy of tulip poplar and oaks towered over thickets of native viburnums. Mapleleaf viburnum (*Viburnum acerifolium*) and blackhaw (*V. prunifolium*) were some of the first shrubs I learned to identify and grow, and they are still favorites. (For details on selected native species, see pages 50 and 51.)

Viburnums are among the most popular shrubs because they delight us with flowers, fruit, and flamboyant autumn foliage. Of the 150 or so species in the genus, about 15 are native to North America. While showy Asian species and hybrids sporting fragrant spring flowers—such as Korean spicebush (*V. carlesii*)—have received the lion’s share of attention, the American natives excel in three and even four seasons, stealing their way into gardeners’ hearts with their subtle beauty and grace. As a wildlife gardener, I also love our native viburnums because they provide food and critical nesting cover to a host of birds and other wildlife.

A member of the honeysuckle family (Caprifoliaceae), this genus of mostly deciduous shrubs to small trees is distributed in northern temperate regions worldwide. Viburnums are characterized by small, five-petaled flowers clustered in flat to gently mounded flowerheads that botanists term cymes. I am particularly enamored of species, such as hobblebush

Mapleleaf viburnum, here in autumn color, looks much like its namesake.

MARK TURNER

(*V. lantanoides*), that sport an outer ring of large, showy sterile flowers to produce an effect similar to that of a lace-cap hydrangea.

Viburnum leaves are borne in pairs on the supple stems. These may be simple or lobed and often have toothed edges. The vegetative (leaf) buds bear a pair of scales like a duck's bill, while flower buds are larger and globular to teardrop shaped.

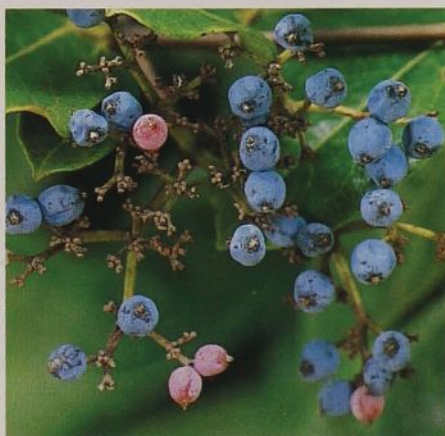
The colorful fruits of viburnums ripen in late summer and autumn. Each fruit, technically a drupe, bears a single large seed surrounded by fleshy pulp. The fruits of many American viburnums have been gathered for food, giving rise to colloquial names such as haw, wild raisin, and cranberry. Many people consider American cranberrybush (*V. opulus* var. *americanum*) and squashberry (*V. edule*) the best tasting and most useful of native fruits. Taste is subjective, however, and some say the fruit—especially after it has been hit by frost—smells like dirty socks. Pick the fruit before frost (for obvious reasons) to make a delicious, clear red jelly. Birds, of course, relish the drupes, too.

GROWING VIBURNUMS

VIBURNUMS ORIGINATE in habitats from marshes and bogs to upland woods. Look to nature as a guide for what will grow well in your area, and under what conditions of light, soil and moisture. As with all plants, success depends on matching the plant to the garden site.

Culturally, viburnums fall into two main groups based on their native habitats: those for wet soils and those that tolerate dry conditions. But there is some overlap, and all species thrive in rich, evenly moist soil. For example, viburnums native to wetlands, such as American cranberrybush (*V. opulus* var. *americanum*), witherod (*V. nudum* var. *cassinoides*), and arrowwood (*V. dentatum*) are perfect choices for wet spots, but will thrive under ordinary garden conditions as well.

As a general rule, the flowering and berry set will be most prolific if the shrubs are planted in full sun or very light shade. This is particularly true of blackhaw. The exceptions to this are hobblebush and mapleleaf viburnum, which require shelter from hot sun. Hobblebush, in partic-



Top: The flowers of hobblebush (*V. lantanoides*) resemble those of lacecap hydrangea. **Above:** The variously blue fruits of *V. nudum*.

ular, is intolerant of heat and must be planted in a cool shady site that has consistently moist soil. If you have dense shade, the choices are more limited, but in addition to hobblebush and mapleleaf viburnum, American cranberrybush will perform admirably in low light.

As viburnums mature, they form full, rounded to oval crowns that branch all the way to the ground. New canes are produced each year, displacing older stems that become moribund. Rejuvenate the clumps by removing declining canes every few years. To reduce the size or renew the entire crown, cut all stems to the ground in late winter. New shoots will be produced in spring, though plants will not flower until the following spring. With age, larger species will tend to form a few husky

trunks along with suckers and basal shoots. At this point you may choose to arborize them—encourage a treelike appearance—by retaining one to three of the stoutest trunks, and removing all other basal stems and suckers.

PLANTING VIBURNUMS

VIBURNUMS ARE sold bare root, in containers, or nursery dug with the rootball wrapped in burlap (growers call this “balled and burlapped,” or B&B, for short). Bare-root plants are dormant—they are only available in early spring and must be planted before the buds break. Soak the bare roots for several hours in a tub of water before planting. Trim off any broken, twisted, or overly long roots and reduce the branches by about a third, trimming off crossing or inward-facing limbs. Set the crown—the juncture of the stem and roots—level with the soil surface and water well after planting.

Container stock is readily available. Before planting, shake as much of the soil off the roots as you can because soil typically used in containers is much lighter than garden soil and may otherwise dry out. If a plant is severely pot bound, slice through the encircling roots with a sharp knife in two or three places and spread the roots out in the planting hole.

Balled-and-burlapped stock offers the least soil incompatibility and will generally become established more quickly than bare-root or container plants.

A FEW PROBLEMS

OUR NATIVE viburnums have relatively few major pest and disease problems. Deer will eat the foliage, but they tend to prefer more succulent fare, such as hydrangeas. In the north, moose and elk chomp viburnums mercilessly. Powdery mildew, a fungal disease, is the most common problem, especially on smooth-leaved species such as blackhaw and nannyberry. Plants are most susceptible when drought stricken.

The most insidious pest is the viburnum leaf beetle (*Pyrrhalta viburni*), which is spreading around the country in nursery

continued on page 52

Native Viburnum Species

MY FAVORITE OF ALL viburnums, native or exotic, is **mapleleaf viburnum** (*V. acerifolium*, Zones 4–8, 8–1), shown on page 48. The subtle beauty of this species may not impress you immediately, but in time you will appreciate its quiet charms. One major selling point is its ability to thrive and bloom in dense shade and dry soil. Its creamy white spring flowers give way to black berries on colony-forming clumps that reach four to six feet tall and wide. The best feature is undoubtedly the dusty-rose autumn foliage color, which is unique among woody plants. My woods are full of this glorious plant, and in late autumn, when most trees are bare, the last of the luminescent leaves keep company with the deep black fruits, enlivening the stark forest slopes. It is native to upland woods from New Brunswick and Wisconsin, south to northern Florida and east Texas.

Arrowwood (*V. dentatum*, Zones 3–8, 8–2.) is a mainstay among the limited palette of hardy shrubs available to northern gardeners. This twiggy species forms large, rounded crowns six to 12 feet tall and wide. Plants are prized for their prolific flowers and copious autumn clusters of deep blue fruits set off against wine-red foliage. The spear-shaped, toothed leaves are of medium texture, and plants are ideal as hedges and shrub borders. Several worthy selections have been made, including 'Cardinal',

which has deep red fall color, and a suite of trademarked introductions from Chicagoland Grows—Autumn Jazz, Chicago Lustre, and Northern Burgundy—that feature good form, fruit set, and autumn color. These cultivars are highly recommended for the upper Midwest but, according to Michael Dirr, are undistinguished in the South. This native of swamps and woodland edges from New Brunswick and Minnesota south to Florida and Texas tolerates sun or shade and thrives in wet or dry sites.

I have always loved **hobblebush** (*V. lantanoides*, formerly *V. alnifolium*, Zones 2–7, 7–1), shown on page 49, but have never been able to grow it well. It is a plant for cool-climate gardeners and is susceptible to powdery mildew in warmer and drier regions. Common at northern latitudes from Nova Scotia and Michigan south in the mountains to Georgia, this dramatic plant has luscious quilted oval leaves and lacecap-style flowers with a showy ring of sterile white flowers. Red fruits ripen to deep blue-black against leaves that may be orange, red, or maroon, or a combination of these colors. The somewhat lax stems form open, oval crowns 12 feet wide and tall.



V. lentago

Native in woods and fields from Nova Scotia and Alberta south to West Virginia and Iowa, **nannyberry** (*V. lentago*, Zones 2–8, 8–1) is more a tree than a shrub, with low-branching trunks 20 to 35 feet high. Pointed, ovate, glossy leaves with winged petioles turn yellow, orange, or deep red in autumn, depending on the amount of sun. Creamy, dense flower

clusters give rise to sparse clusters of black berries on carmine pedicels. 'Deep Green' is a prolific fruiting selection with dark green leaves. In the garden, plants tolerate sun or part shade and moist or dry soils.

You won't find many more attractive and versatile shrubs than **possumhaw** or **smooth witherod** (*V. nudum* var. *nudum*, Zones 6–9, 9–6), shown on page 49. Lush, glossy oval leaves that turn rich purple to burgundy in autumn set off the broad, lacy flower clusters. The fruit clusters begin to color in midsummer and go through a kaleidoscopic metamorphosis from pink to red, blue, purple, and nearly black. The richly colored fruits against the flaming foliage will challenge all comers for best in show. Plants form spreading oval crowns that can reach 20 feet, but are more often six to nine feet tall. 'Winterthur' is a dwarf selection that grows to six feet with glossy leaves and abundant blue berries. 'Count Pulas-ki' is larger and more open, with fruits as colorful as its name. This is the southerly of two varieties of this



V. dentatum

species, ranging from New England south to Texas, mostly in the coastal plain and Piedmont. Plants thrive in sun or shade, and in moist to wet soil.

The northerly variety, **witherod** (*V. nudum* var. *cassinoides*, Zones 2–8, 8–1), was once considered a separate species and is still sometimes listed as *V. cassinoides*. It is a dense shrub



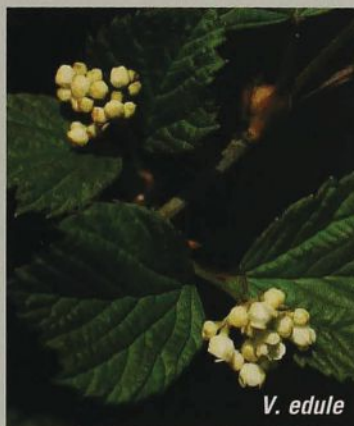
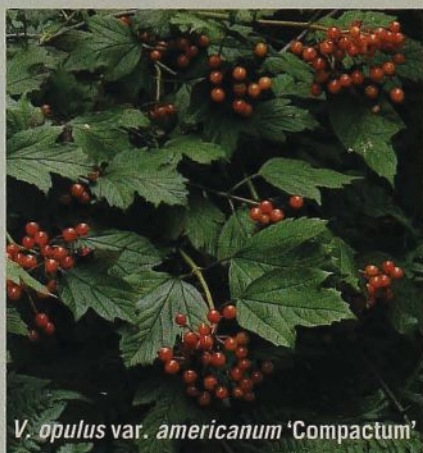
that matures into a multistemmed, treelike form to 12 feet or more tall and wide. Multicolored fruit clusters ripen unevenly in shades of yellow and red to deep powdery blue. Its spear-shaped, finely toothed foliage starts out orange and matures to deep purple. Plants thrive in soggy as well as well drained soil in sun or part shade. In the wild it is found from Newfoundland and Michigan south in the mountains to Georgia.

American cranberrybush (*V. opulus* var. *americanum*, Zones 2–8, 8–1) gets the prize for showiest flowers and fruits. Multistemmed, upright-oval crowns rise eight to 12 feet, with stout stems that can be limbed up to form small trees. Showy white sterile flowers surround the central cluster of fertile flowers that form large, glossy red, edible fruits in early autumn; the handsome three-lobed leaves turn deep burgundy to crimson. The decorative qualities of this

species have led to a number of outstanding selections being made. 'Andrews', 'Hahs', and 'Wentworth' have good form and large edible fruits. 'Compactum' is small, twiggy, and tight at the expense of graceful form. 'Red Wing' has showy red petioles, good fruit set, and excellent fall color. Native to swamps

and wet woods from Newfoundland to British Columbia and south to Indiana and Washington, this species thrives in sun or moderate shade, in wet or dry near-neutral soils.

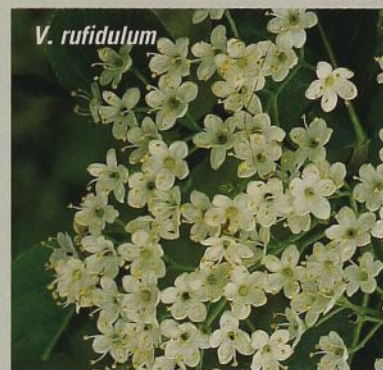
Squashberry or moosewood viburnum (*V. edule*, Zones 2–7, 7–1) is similar to *V. opulus* var. *americanum* but ranges farther north. The three-lobed, toothed leaves are smaller, and the flowers lack the sterile flowers that make American cranberrybush



so showy. The tasty bright red fruits are widely used by Native Americans in the Pacific Northwest, who call the plant highbush cranberry, leading to some taxonomic confusion. It is found from Newfoundland, Labrador, and Alaska, south to Pennsylvania, Iowa and Washington.

The country lanes and streamsides where I live are lined with **blackhaw** (*V. prunifolium*, Zones 3–9, 9–1, shown on page 52), and the branches in autumn are always host to hungry birds. This large shrub to multistemmed small tree reaches 35 feet at maturity. The oval to nearly round, blunt-tipped leaves are deep glossy green in summer and rich scarlet to burgundy in autumn. The pendant clusters of black fruits on red pedicels last well into winter if the birds don't get them first. This species is confined to old fields and woodland margins and needs sun and well-drained soil for best growth. Excessive drought may promote mildew, which is often a problem for this species.

Rusty blackhaw or blue haw (*V. rufidulum*, Zones 7–9, 9–7) is a southern version of *V. prunifolium*, with a more open crown, leaves with rust-haired petioles, and blue-black berries. Tolerant of heat and humidity, plants are native from Virginia and Kansas, south to Florida and Texas.



Downy arrowwood (*V. rafinesquianum*, Zones 3–8, 8–1) is a dense, very twiggy shrub similar to arrowwood but smaller overall, with smaller, narrow leaves and a finer texture. The buds are pubescent. Blue-black fruits follow the creamy flowers, and the autumn foliage is maroon. This upland species demands good drainage, is shade and drought tolerant, and grows in acid or alkaline soils.

—C.C.B.

Resources

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Sources

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V. acerifolium, *V. dentatum* Autumn Jazz, Chicago Lustre, Northern Burgundy; *V. lentago*, *V. nudum* and cultivar 'Winterthur', *V. prunifolium*, *V. rafinesquianum*.

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www.forestfarm.com. Catalog \$5. Free if ordered online. *V. acerifolium*; *V. dentatum* and cultivar Northern Burgundy, *V. lentago*, *V. nudum* var. *cassinoides*; *V. nudum* 'Winterthur', *V. opulus* var. *americanum* cultivars 'Compactum'

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Prairie Moon Nursery, Winona, MN. (507) 452-1362. www.prairiemoonnursery.com. Catalog free.

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We-Du Nurseries, Marion, NC. (828) 738-8300.

www.we-du.com. Catalog \$3. *V. dentatum* and cultivar Autumn Jazz; *V. nudum* and cultivar 'Winterthur', *V. opulus* var. *americanum* 'Compactum' and 'Hahs', *V. prunifolium*.

Woodlanders, Inc., Aiken, SC. (803) 648-7522.

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continued from page 49

stock. Introduced into Canada from Europe in 1978, it is now making its way down the East Coast. This quarter-inch-long, dark-colored beetle lays its eggs on the stems and the larvae skeletonize the leaves. Arrowwood, American cranberrybush, and mapleleaf viburnum are extremely susceptible. Trim out infected stems before the eggs hatch, or spray the larvae with an insecticide labeled for use against this pest.

PUTTING VIBURNUMS TO WORK IN THE GARDEN

NATURAL SYSTEMS are layered: In a forest, trees form the dominant, or highest layer, called the canopy. Below the canopy, smaller flowering trees like redbud and dogwood step down to an intimate, ceiling height. The shrub layer is the next level down. Like walls, shrubs fill the gaps between the understory and the lowest herbaceous layer.

Viburnums and other shrubs create architectural frames, or bones. Like walls, they divide and define outdoor spaces. Viburnums en masse can block or frame views, hide eyesores, and direct traffic. The contrast of a flaming bank of possumhaw heavy with multicolored fruit clusters against a backdrop of richly colored evergreens, electrifies the eye more than a single specimen with no context. Even a single specimen can make a powerful statement.



Blackhaw (*Viburnum prunifolium*) can be trained to form an attractive hedge, as shown above.

American cranberry bush in full lacy flower, laden with scarlet fruit, or covered with snow holds the eye in any context.

Viburnums are also wonderful natural trellises for vines. Grow a clematis or yellow passion vine (*Passiflora lutea*) up through an airy species like arrowwood for double the impact. Try scarlet honeysuckle (*Lonicera sempervirens*), Carolina jessamine (*Gelsemium sempervirens*), or a climbing rose to augment the stout stems of blackhaw or cranberrybush.

With judicious selection and an eye for

both harmony and contrast, you can use native viburnums to meet all your shrub needs. If you can't limit yourself—and what dyed-in-the-wool hortaholic can—integrate your viburnums with other shrubby beauties to create a garden that delights the senses as well as providing a feast for birds.

Landscape designer C. Colston Burrell's book *A Gardener's Encyclopedia of Wildflowers* received the 1997 American Horticultural Society Book Award. He gardens in the Blue Ridge Mountains of Virginia.

California Sedge

by John Greenlee

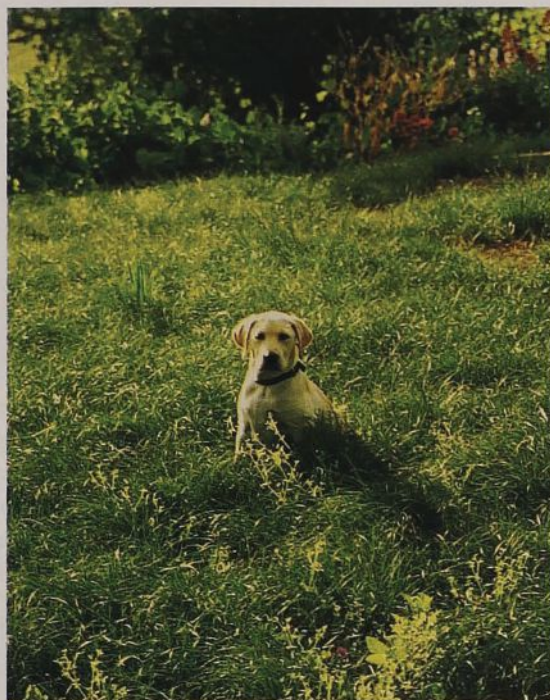
MY FAVORITE grasses are essentially meadow-making, ground-cover grasses and sedges that can be walked upon. And, from a nurseryman's point of view, it's hard not to like best the one you sell the most of. For me, that is California sedge (*Carex pansa*), a grasslike plant native to the West Coast that will spread to form what I consider a natural lawn.

When I entered the nursery business, I basically started with all the ornamental grasses that were in the European nursery trade, such as Japanese silver grass (*Miscanthus sinensis*), fountain grass (*Pennisetum* spp.), and feather reed grass (*Calamagrostis × acutiflora*). But in Southern California's Mediterranean climate, I quickly found I needed grasses that can handle heat and drought—not just ones that are ornamental when grown under optimal conditions.

Carex pansa doesn't have the glory or sexiness of those ornamental grasses listed above, but it has the distinct advantage of growing well in a wide range of regions and climates. So, now California sedge and a host of other little creeping sedges are the foundation of the meadows and grassy gardens I am designing. A lot of them are not sexy or colored blue or gray. But if you are planning a meadow, what you're looking for is a reliable green patina around which to build.

ADAPTABILITY IS THE KEY

California sedge, sometimes listed as one or more forms of *C. praegracilis*, is found in every state west of the Mississippi. Its forms are so versatile they can be used



Believe it or not, Otis is not sitting on turfgrass, but in a carefree meadow of California sedge.

from Baja to Alaska and in clay or in dune sand. *Carex pansa* will even survive without summer water, going dormant and simply turning crispy. But with regular irrigation, it will green up. Basically it's evergreen where there are no hard

Regional Equivalents

Don't live in the West? No need to despair; sedges that serve a similar role can be found in most areas of the country. If you are on the East Coast, you can try Pennsylvania sedge (*Carex pennsylvanica*); if you live in Texas, you can use *C. perdentata*. In the Pacific Northwest, you would probably choose *C. pennsylvanica* var. *pacifica*.

At a Glance

Height: to 8 inches

Spread: slowly creeps by rhizomes to form clumps and, eventually, a turflike ground cover

Form: grassy blades

Flowers: inconspicuous in spring

Special features: tolerates summer drought but requires watering to stay green

Provenance: Pacific Coast of North America

USDA Hardiness and AHS Heat Zones: 4–8, 8–1.

freezes; in colder climates, it turns a copper color in winter.

As an alternative to conventional turf, California sedge is a versatile, walk-upon grass. If you don't mow it, it will stay low—about six to eight inches tall—and be perfect for walking barefoot. If for some reason you do choose to mow it like a conventional lawn, you'll only need to do it six times a year instead of 40.

Some neatniks may start out mowing it, but my guess is sooner or later you'll be captivated by how beautiful it is unmowed. Next thing you know, a little speedwell or a little daisy or a little blue-flowered violet will come up and you're going to say, "That's pretty, maybe I shouldn't mow my California sedge meadow at all!" And then your neighbor will notice it, see that it doesn't need regular mowing, and follow suit. The revolution can happen one garden at a time!

John Greenlee is president of Greenlee Nursery, Inc., a wholesale nursery in Pomona, California. He is author of The Encyclopedia of Ornamental Grasses (Rodale Press, 1992).

Book Reviews

Gardening with Conifers.

Adrian Bloom. Photographs by Adrian and Richard Bloom. 208 pages. Firefly Books, 2002, Toronto, Ontario, Canada. Publisher's price, hardcover: \$39.95, softcover: \$24.95.

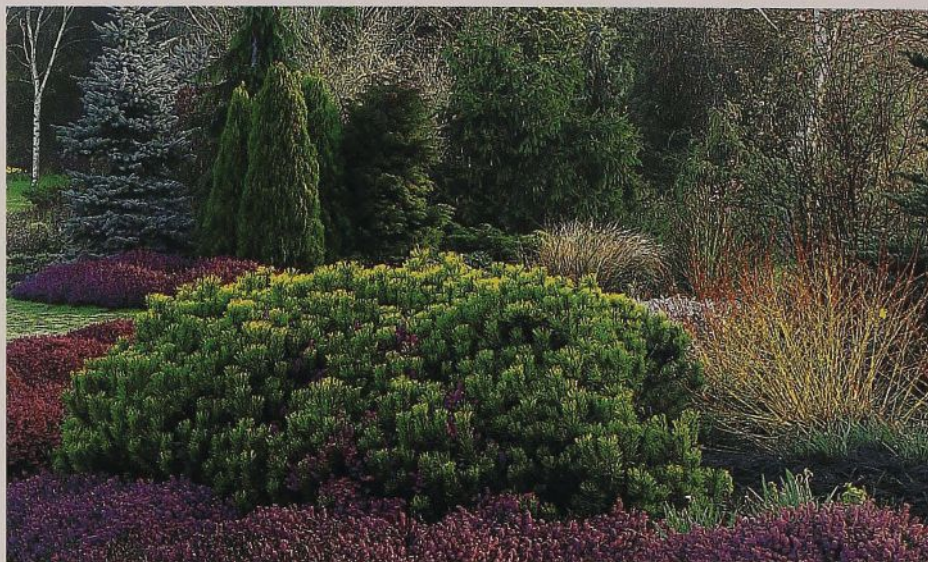
THERE ARE some very good handbooks and encyclopedias featuring conifers, but there has been a distinct need for a moderately sized, reasonably priced, "gardener friendly" conifer reference. *Gardening with Conifers* has filled the void. It is a book complete with photographs of conifers in garden settings, as well as individual portraits of particularly ornamental conifers.

Adrian Bloom, a well-known and respected British author, is able to speak to the American experience with authority, having spent significant time in the United States. In preparation for this book, he and his photographer son, Richard, visited sites throughout the United States, speaking with many gardeners and photographing their gardens.

Bloom's first book on conifers, *Conifers for Your Garden*, published in 1972, has become the standard guide for gardening with conifers. The new book far exceeds the scope and content of the first. *Gardening with Conifers* opens with a discussion of the unique "magic" of conifers including their function in the garden, their origins, how they grow, and how they are named. The next chapter looks at conifer anatomy, shapes and growth rates.

A thankfully large portion of the book discusses growing and designing with conifers. The remaining 40 percent of the book is an encyclopedia of some of the best conifers for gardens.

The gardens shown in the photographs make one want to incorporate as many



A group of *Pinus mugo* 'Winter Gold' is stunning amid a pool of heather in this conifer garden. Photograph by Richard Bloom from the book *Gardening with Conifers*.

conifers as possible into the garden. Both gardener and designer benefit from the discussion of seasonal effects, color variation, and combinations with perennials and non-coniferous woody plants. Height and width estimates are given for both 10-year-old and mature plants. Most importantly, the cultural information provided is correct for various parts of the United States.

I strongly recommend Adrian and Richard Bloom's book to anyone looking for a useful guide to planting and using conifers in their gardens.

—Bill Thomas

Bill Thomas is co-author of *Growing Conifers: Four-season Plants* (Brooklyn Botanical Garden), and is past president of the American Conifer Society.

Native Trees, Shrubs, & Vines: A Guide to Using, Growing, and Propagating North American Woody Plants.

William Cullina. Houghton Mifflin Company, Boston, Massachusetts. 356 pages. Publisher's price, hardcover: \$40.

I'VE SPENT some time with North America's native plants; still, every time I

open one of Bill Cullina's books I discover a wealth of new insights and understandings. Cullina is a true American



original with a knowledge and viewpoint evolved from a lifetime of first-hand experience. This book is a natural follow-up and perfect companion to his superb *The*

New England Wild Flower Society Guide to Growing and Propagating Wildflowers of the United States and Canada (Houghton Mifflin Company, 2000). National in scope, *Native Trees, Shrubs, & Vines* includes information on nearly 1,000 different species, illustrated with more than 200 color photographs.

After opening with a discussion of the book's layout and use, Cullina makes a persuasive pitch for ecological gardening, a philosophy that is deftly but firmly woven throughout the book. Defining this as "an environmentally friendly way

to grow plants," the author draws on his extensive knowledge of cultural conditions in native habitats to suggest planting and maintenance strategies for designed landscapes. Scientifically sturdy but easy to read, this section's topics include light, soil, temperature, transplanting, pruning, and diseases.

The heart of the book is the 229-page "Encyclopedia of Plants," organized alphabetically by genus. Each genus entry begins with a general discussion of common traits, continuing with individual species entries. The consistent format organizes basic information—scientific name, common name, USDA zones, soil preference, native range, size, and color—under bold-faced headings, affording quick reference. The essays that accompany each listing reveal the author's deep familiarity and experience, describing plants in clear language that is often as entertaining as it is informative. Cullina's writing is full of useful stories and gentle humor, making this book one of those rare, truly encyclopedic works that is a joy to read. The book's final pages include a lengthy section on propagation.

"Must-haves" for any gardener seriously interested in our indigenous flora, both of Bill Cullina's books are stellar evidence of the maturation of the American garden, and of a home-grown literature that can point the way to a beautiful, more sustainable environment for us all.

—Rick Darke

Rick Darke is author of The American Woodland Garden: Capturing the Spirit of the Deciduous Forest (Timber Press, 2002).

Eden on Their Minds; American Gardeners with Bold Visions.

Starr Ockenga. Clarkson Potter, New York, 2001. 240 pages. Publisher's price, hardcover: \$60.

I CONFESS THAT most gardeners' profile books make me a tad queasy—stringing together what often appear to be glorified magazine articles with more name-dropping of owners than plants. But not Starr Ockenga's book. In this, her second impressive publication in this format, we are again treated to carefully

researched portraits of passionate gardeners, as well as a generous helping of the kind of truly useful information that will enable us to follow in their paths.

With a zippy writing style and her inimitable exquisite photographs, Ockenga introduces us to a tremendous range of horticultural settings. Sonny Garcia and Tom Valva in their minute San Francisco backyard provide us with "twelve tips for making a small garden seem big," while Dino Anagnost, who seemingly tends endless fields of sunflowers in Germantown, New York, offers a generous list of favorite varieties with details on flower size, color, and height.

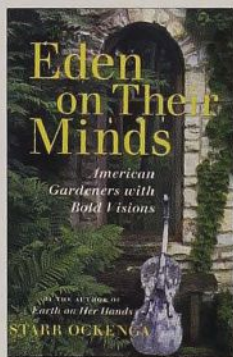
Then there is Richard Reames of Williams, Oregon, an "arborsmith"—a sculptor whose medium is living trees. We meet him perched on one of his creations—a planting of 20 red alders, shaped and grafted together to create a living bench. From him we gather tips for successful grafting.

Among these 21 zealots in gardens from Alabama to Washington is Mary A. Homans, who we find among her northeast natives near the sea in Islesboro, Maine. Her botanical treasures include a collection of meticulously carved trough gardens filled with dwarf species; her hard-won secrets include a detailed sampling of some of the wondrous woodland perennials that are willing to shrug off a sometimes hostile seaside climate.

It is fascinating indeed to make the acquaintance of these serious tillers of garden soil surrounded by their favorite things, and be privy to their personal advice. In this beautiful and highly readable book, Starr Ockenga has managed to give us the next best thing to actually being there.

—Linda Yang

Former garden columnist for The New York Times, Linda Yang is author of The City Gardener's Handbook, recently published by Storey Publications.



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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.

AHS Plants for Places.

Simon Maughn, editor. DK Press, New York, 2002. 576 pages. Publisher's price, softcover: \$17.95.

THIS HANDY, pocket-sized reference suggests plants that are suited to a wide range of garden conditions and uses. Plants are arranged according to the appropriate site, from soil type (clay, sandy, alkaline, acidic) through exposure, light conditions, and moisture levels. Coverage of plants for specific uses, such as ground covers, hedges, walls and pavings, water gardens, and containers is also provided.

More than 1,000 plants are listed, each with a photograph, description, and basic cultural information. This compact, informative volume is perfect for carrying to the garden center or nursery to guide your selection of plants for your specific garden conditions and needs.

Carnivorous Plants of the United States and Canada, second edition.

Donald E. Schnell. Timber Press, Portland, Oregon, 2002. 468 pages. Publisher's price, hardcover: \$39.95.

THIS EXPANDED and revised edition of a classic reference originally published in 1976 offers easily accessible information on 45 species and numerous hybrids

of these unusual and fascinating plants. Vivid descriptions and 200 full-color photographs of pitcher plants, Venus flytraps, sundews, butterworts, and bladderworts bring the subject to life and provide details of their bizarre beauty, their unique digestive processes, and background on how they have adapted to their environment.

Experienced carnivorous plant enthusiasts and interested beginners alike will find all the information they need for selecting and growing carnivorous plants successfully. Also covered are conservation issues surrounding the endangered habitats that support carnivorous plants as well as efforts to protect them.

The Pesto Manifesto: Recipes for Basil and Beyond.

Lorel Nazzaro. Chelsea Green Publishing Company, White River Junction, Vermont, 2002. 182 pages. Publisher's price, softcover: \$14.95.

FROM A self-confessed "over-the-top basil aficionado" comes a book that assures your bumper crop of basil will be put to good use. Nazzaro covers basil in detail, from its history and folklore, through a profile of basil types, to growing and harvesting techniques.

The bulk of the book, however, is a compendium of recipes using basil as a critical ingredient. Included are recipes for appetizers, soups, egg dishes, pastas,

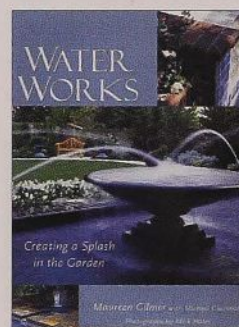
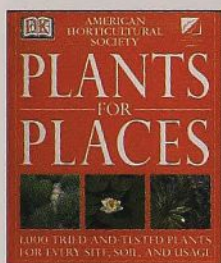
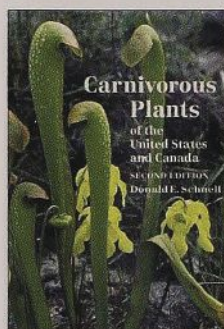
salads, meat and fish, breads—even desserts. Of particular interest to successful basil growers is information on drying and freezing basil and suggestions on how to best use your preserved basil in cooking. So if pesto ranks high on your list of culinary treats, you may want to invest in this in-depth reference.

Water Works: Creating a Splash in the Garden.

Maureen Gilmer with Michael Glassman, photographs by Mick Hales. Contemporary Books, New York, 2002. 198 pages. Publisher's price, hardcover: \$34.95.

THIS BOOK examines the use of water in the landscape, from an historic perspective of its role in daily life to its place in contemporary gardens. Beginning with a look at water use in ancient Egypt, Rome, and Japan, the authors—both landscape designers—illustrate how the design elements reflected by traditional roles of water in a landscape can be incorporated into contemporary gardens.

The abundant, detailed photographs of gardens, from small urban yards to large country estates, illustrate how a well-planned water feature can set the tone for an entire garden. All aspects of design are covered, from mechanical safety and functionality, to space and budget concerns, building codes, and more. Written with gardeners, designers, and homeowners in mind, the designs and photographs of ponds, pools, fountains, man-made streams, dry rock beds, and other features will inspire you and have you dreaming of ways to add the element of water to your landscape.



Seasonal Garden Goods

Planting bulbs just got easier on your hands with the high-strength cast aluminum alloy **Softouch Transplanter** from Fiskars. The soft-grip helps reduce wrist and hand strain. Features beveled edges and graduation marks and is guaranteed not to rust, bend, or break. Retail for \$4.99. Fiskars Brands, Inc., (800) 500-4849. www.fiskars.com.



Fall is the time to plant all those spring-blooming bulbs that bring so much color and life to the early-season garden. Here are some tools and products that will help make planting them easier—and help guard them from critters that can turn your efforts into a no-show come March and April.

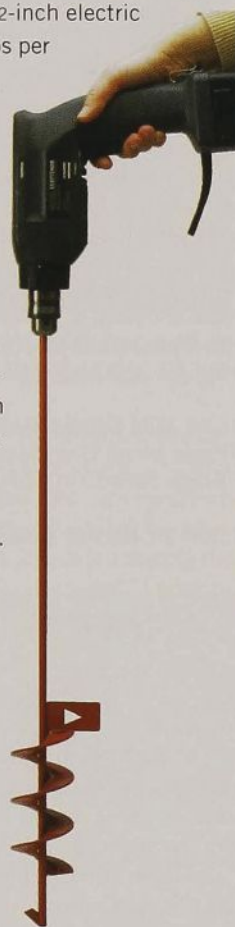


Made from biodegradable food products harmless to humans, animals, and the environment, **Bulb Guard** can be sprayed on your bulbs before planting to safely and effectively repel deer, rabbits, squirrels, voles, and other animals likely to snack on tender bulbs. The 16-ounce concentrate retails for \$24.99. Eight-ounce and 32-ounce sizes are also available. Havahart products, Woodstream Corporation. www.havahart.com.



A non-toxic soil additive, **VoleBloc** provides a physical barrier to voles in the soil surrounding the root system, but will not hamper root growth. Its coarse particles of expanded natural slate not only have sharp edges that deter burrowing rodents, but also improve soil texture and drainage, encouraging roots to grow. A 15-pound bag retails at \$8.95. Carolina Stalite Company, (877) 737-6284. www.volebloc.com.

Save your wrists and back by using this **Planting Auger** with any 3/8-inch or 1/2-inch electric drill to plant up to 500 bulbs per hour. Features a triangular cutting tip and a soil whip and comes in two sizes. The red, 2 1/2-inch diameter auger (\$24.95) is great for most bulbs and annual bedding plants. The yellow, three inch-diameter auger (\$32.95) is perfect for larger bulbs and perennials with a 3- to 4-inch-diameter root ball. Drill not included. Best Buds Garden Supply Company, (877) 777-2873. www.bestbudsgarden.com.



Regional Happenings

NORTHEAST

SEPT. 17. **Fall Wildflower Walk and Luncheon.** Sponsored by the Rhode Island Wild Plant Society. Nettie Jones Nature Preserve, The University of Rhode Island's W. Alton Jones Campus, West Greenwich, Rhode Island. (401) 783-5895.

SEPT. 19. **Gardeners' Fair & Picnic.** Dinner, plant sale, and a live and silent plant auction. Wave Hill, Bronx, New York. (718) 549-3200 ext. 233.

SEPT. 28. **Garden Demonstration.** Sample and learn to grow lemon-scented herbs. Wave Hill, Bronx, New York. (718) 549-3200 ext. 232.

SEPT. 28. **Wild Edibles Workshop.** Sponsored by Rhode Island Wild Plant Society. Coventry, Rhode Island. (401) 783-5895.

OCT. 19 & 20. **Harvest Weekend.** Old Stur-

bridge Village, Sturbridge, Massachusetts. (508) 347-3362 ext. 338. www.osv.org.

MID-ATLANTIC

SEPT. 7-29. **GardenFest Celebrates Longwood Gardens Country Estate Era.** Featuring the Greater Philadelphia Dahlia Society flower show. Longwood Gardens, Kennett Square, Pennsylvania. (610) 388-1000 ext. 442. www.longwoodgardens.org.

SEPT. 20 & 21. **Fall Plant Sale.** Lewis Ginter Botanical Garden, Richmond, Virginia. (804) 262-9887 ext. 316.

AHS. SEPT. 21 & OCT. 5 & 19. **Saturday Hort-Takes.** Informative talks on gardening. American Horticultural Society. George Washington's River Farm, Alexandria, Virginia. (800) 777-7931 ext. 124. www.ahs.org.

SEPT. 21. **The Palette of the Past: Plants in**

the Historic Landscape. Seminar. Colonial Williamsburg, Williamsburg, Virginia. (757) 220-7182. www.colonialwilliamsburg.org.

AHS. SEPT. 28. **AHS Gala: The Garden as Art.** American Horticultural Society. George Washington's River Farm, Alexandria, Virginia. (800) 777-7931 ext. 144. www.ahs.org.

OCT. 18. **19th Annual Perennials Conference.** The Scott Arboretum of Swarthmore College, Swarthmore, Pennsylvania. (610) 328-8025.

OCT. 18 & 19. **American Association of Botanical Gardens and Arboreta Northeast Regional Meeting.** Brookside Gardens, Wheaton, Maryland. (301) 962-1421.

OCT. 19. **National 59th Annual Convention and Show.** The Ninth Meeting of the International Chrysanthemum Council. Hosted by the National Chrysanthemum Society. Hyatt

Olbrich Gardens Fall Symposium

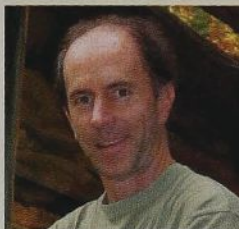
THE WISCONSIN HARDY PLANT SOCIETY is teaming up with the Olbrich Botanical Society (OBS) to host the annual fall symposium, to be held October 26 at Olbrich Botanical Gardens (OBS) in Madison, Wisconsin. This year's symposium, titled "Making the Right Connections," will focus on ways gardeners can add elements to their home gardens that will reflect and tie in with the region's natural landscape.

Ed Lyon, director of education for OBS, says this year's event is expected to draw a large crowd because of a lineup of nationally known garden experts. "This symposium helps us get people more involved with gardening," he says. "They get excited, they get interested...and it leads them to take more intensive courses at the botanical garden."

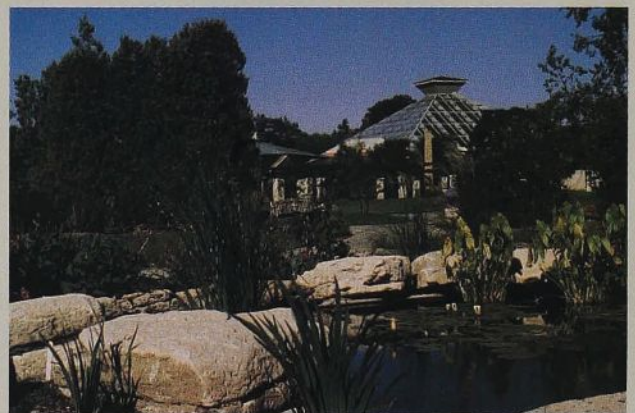
Keynote speakers on Midwest gardening include Rick Darke, an author and landscape design consultant from Landenberg, Pennsylvania, who received the 1998 AHS Scientific Award; Neil Diboll, president of Prairie Nursery in Westfield, Wisconsin; Lauren Springer, plant expert and author from Denver, Colorado; and James Ault, director of ornamental plant research for Chicago Botanic Garden in Glencoe, Illinois. In addition, a local panel of gardeners will tell the audience how they successfully designed their own personal landscapes, adding an 'anyone can do it' appeal to the session.

The all day event will begin at 8:45 a.m. and end around 4:30 p.m., with a late registration period just before the symposium at 7:30 a.m. Registration is \$80 for the general public and \$70 for Olbrich Botanical Society and Wisconsin Hardy Plant Society members. For more information visit www.olbrich.org/olbrich_index.htm or contact Olbrich Botanical Gardens at 3330 Atwood Avenue, Madison, WI 53704. To register, call (608) 246-4550.

—Cheryl Ross, Editorial Intern



Above: Featured speaker Rick Darke. Right: The Bolz Conservatory at the Olbrich Botanical Gardens.



AHS Events

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

Regency Bethesda Hotel, Bethesda, Maryland. (703) 560-8776. www.mums.org.

OCT. 19–NOV. 24. **Annual Chrysanthemum Festival.** Longwood Gardens, Kennet Square, Pennsylvania. (610) 388-1000.

NOV. 2. **Virginia's First Annual Shenandoah Valley Gourd Festival.** Stephens City, Virginia. (540) 869-6340.

AHS. NOV. 3. **The Healing Garden.** Lecture by Carole Ottesen, an associate editor of *The American Gardener*. U.S. National Arboretum, (202) 245-5898. www.usna.usda.gov.

SOUTHEAST

SEPT. 18, 21, 25, & 28. **Summer Orchid Classes.** American Orchid Society. International Orchid Center, Delray Beach, Florida. (561) 404-2000.

OCT. 1–NOV. 3. **Annual Mum Festival.** Cypress Gardens, Florida. (800) 282-2123.

OCT. 1–3. **Third Eastern Native Grass Symposium.** Sponsored by North Carolina Botanical Garden. Friday Center for Continuing Education, Chapel Hill, North Carolina. (252) 482-2364. www.unc.edu/depts/ncbg.

OCT. 4 & 5. **Conifer Weekend.** "Gardening with Conifers" lecture and garden tour. Piccadilly Farm, Bishop, Georgia. (706) 769-6516.

OCT. 10 & 11. **American Association of Botanical Gardens and Arboreta Southeast Regional Meeting.** Huntsville, Alabama. (256) 830-4447.

OCT. 19–21. **Harvest Herb Festival.** Programs on herb gardening. Beech Community Center, Asheville, North Carolina. (828) 258-6135.

OCT. 30. **Herb Day 2002: Taste the Harvest.** Lectures and workshops. Birmingham Botanical Gardens, Birmingham, Alabama. (205) 414-3950. www.bbgbgardens.org.

NORTH CENTRAL

SEPT. 17. **Gardening Chicago Style Symposium.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org/symposia.

SEPT. 21. **Gardens of the Great Basin Public**

Dinosaurs Roam San Antonio Botanical Garden

WITH THE HELP of dinosaurs and living examples of prehistoric plants, San Antonio Botanical Gardens (SABG) aims to turn plants into an entertainment opportunity for people of all ages this fall in a special exhibit in the garden's conservatory.

"Dinosaur Tex: Giants in our Backyard" has been in the works for at least four years, according to Cathy Garrison, advisory director of the San Antonio Botanical Society and creative mind behind this "colossal" undertaking. The exhibit, which began on August 31 and runs through December 1, focuses on building children's interest in plants by making a connection between those growing now and those that existed in prehistoric times. "Botanical gardens have such potential for involving children," says Garrison. Noting that carnivorous dinosaurs are often the focus of most "dino-hype," Garrison also hopes the exhibit will increase enthusiasm and knowledge about herbivorous dinosaurs and the plants they ate.



A model of a daspletosaurus lurks in this scene from prehistoric Texas in the San Antonio Botanical Garden.

Accomplished fossil collector and expert Guy Darrough of Lost World Studios in Arnold, Missouri, created the life-size dinosaurs, some of them 30 feet long. The prehistoric plants, including tree ferns, cycads, ginkgo trees, and palms, were acquired with grant funds and will become part of SABG's permanent collection once the exhibit ends.

A variety of complementary activities and events have been scheduled during the course of the exhibit. These include plant sales, monthly family days, and "Dinos in the Dark," a special story time to be hosted by SABG's resident "dino man," George Blasing, on October 27.

The botanical garden is open from 9 a.m. to 5 p.m. daily. Admission is free for SABG members and—since the garden is a participant in the American Horticultural Society's reciprocal admissions program—AHS members can get in free by displaying their membership card. Nonmember admission costs \$4 for adults, \$2 for seniors and military, and \$1 for children aged 3 to 13. For more information visit www.sabot.org or call (210) 829-5100.

—Cheryl Ross, Editorial Intern

Opening. Unveiling of three new gardens. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

SEPT. 25. **Feast Your Eyes: The Unexpected Beauty of Vegetable Gardens.** The second in the American Garden Legacy series, a Smithsonian Institution traveling exhibition. Lauritzen Gardens, Omaha, Nebraska. (202) 357-3168. www.si.edu/sites.

SEPT. 28. **Fourth Annual Harvest Ball.** Presented by the Guild of the Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440.

SEPT. 28 & 29. **12th Annual Magical Mum Fest.** Lake Anna Park, Barbarton, Ohio. (330) 848-6653.

OCT. 2–4. **American Association of Botanical**

Gardens and Arboreta Midwest Regional Meeting. Nebraska City, Nebraska. (402) 272-2212.

OCT. 3, 10, 17, & 24. **It's Elemental: Let's Talk Plants Lecture Series.** Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4550. www.olbrich.org/olbrich_index.htm.

OCT. 10 & 11. **The Power of Perennials.** 12th annual Perennial Plant Symposium. Speakers include Allan Armitage and Stephanie Cohen. Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

OCT. 18. **Professional Workshop: Trees for Troubled Soils.** Olbrich Botanical Gardens, Madison, Wisconsin. (608) 246-4550.

OCT. 27–30. **Invasive Plants: Global Issues,**

Local Challenges. Symposium sponsored by the Chicago Botanic Garden. Congress Plaza Hotel, Chicago, Illinois. (847) 835-8261.

SOUTH CENTRAL

SEPT. 27-29. **Fall Texas Home and Garden Show.** Austin Convention Center, Austin, Texas. (713) 821-1194.

OCT. 5-NOV. 10. **Dallas Blooms Autumn.** Dallas Arboretum, Dallas, Texas. (212) 327-8263. www.dallasarboretum.org.

OCT. 10. **Soils: How to Enable Your Plants to Eat, Breathe, and Drink the Good Life.** Lecture. Botanica, The Wichita Gardens, Wichita, Kansas. (316) 264-0448.

OCT. 12. **Plant Swap Meet.** Bring plants to share with others. Crosby Arboretum, Picayune, Mississippi. (601) 799-2311.

OCT. 18 & 19. **Fall Flower & Garden Fest.** Truck Crops Experiment Station, Crystal Springs, Mississippi. (601) 892-3731.

SOUTHWEST

SEPT. 28. **Kick Off and Ribbon Cutting of Campus Arboretum.** University of Arizona, Tucson, Arizona. (520) 621-7074.

OCT. 3 & 4. **Third Annual Arizona Highlands Garden Conference.** Sponsored by the University of Arizona Cooperative Extension Master Gardeners. Arizona Snowbowl, Flagstaff, Arizona. (928) 523-9539.

OCT. 12. **14th Annual Pumpkin Festival.** Chatfield Nature Preserve, Denver Botanic Gardens, Littleton, Colorado. (720) 865-3500. www.botanicgardens.org.

OCT. 26. **Goblins in the Gardens.** Halloween family event. Denver Botanic Gardens, Littleton, Colorado. (720) 865-3552.

NORTHWEST

SEPT. 20-22. **American Rhododendron Society Fall Western Regional Conference.** Hampton Inn, Bellingham, Washington. (360) 479-4968.

OCT. 3-6. **Fall Home & Garden Show.** Portland Expo Center, Portland, Oregon. (503) 736-5200.

OCT. 6. **Fall Bulb & Plant Sale.** Washington Park Arboretum, Seattle, Washington. (206) 726-1954. www.arboretumfoundation.org.

OCT. 9. **Celebrating the American Landscape in your Garden.** Sponsored by the Northwest Horticulture Society. Center for Urban Horticulture, Seattle, Washington. (206) 527-1794.

Garden Market

CLASSIFIED AD RATES: All classified advertising must be prepaid. \$2.50 per word; minimum \$60 per insertion. Copy and prepayment must be received on the 20th of the month three months prior to publication date. To place an advertisement, contact Lori Houston at (563) 652-2824.

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WEST

SEPT. 19-21. **American Association of Botanical Gardens and Arboreta Interior West Regional Meeting.** Sponsored by Las Vegas Springs Preserve. Imperial Palace Hotel, Las Vegas, Nevada. (702) 259-8195.

SEPT. 27 & 28, OCT. 5 & 6. **Gardening Under Mediterranean Skies III: Design With Purpose.** A Pacific Horticulture Symposium. September 27 & 28: Strybing Arboretum & Botanical Gardens, San Francisco, California. (415) 661-1316 ext. 354. October 5 & 6: The Arboretum of Los Angeles County, Los Angeles, California. (626) 821-4641.

SEPT. 31. **19th Annual Succulent Plants Symposium.** The Huntington Library, Art Collections and Botanical Gardens, San

Marino, California. (626) 405-3504.

OCT. 10-14. **Fall Plant Festival.** The Huntington Library, Art Collections, and Botanical Gardens, San Marino, California. (626) 405-2100.

OCT. 12 & 13. **Orchid Fair at Del Mar Fair Grounds.** Quail Botanical Gardens, Encinitas, California. (760) 436-3036 ext. 204.

CANADA

SEPT. 22. **Ikenobo Ikebana Japanese Flower Society Show.** Royal Botanical Gardens Centre, Burlington, Ontario. (905) 527-1158.

OCT. 22. **The World of Trees.** Garden walk. The Arboretum, University of Guelph, Guelph, Ontario. (519) 824-4120 ext. 2358.



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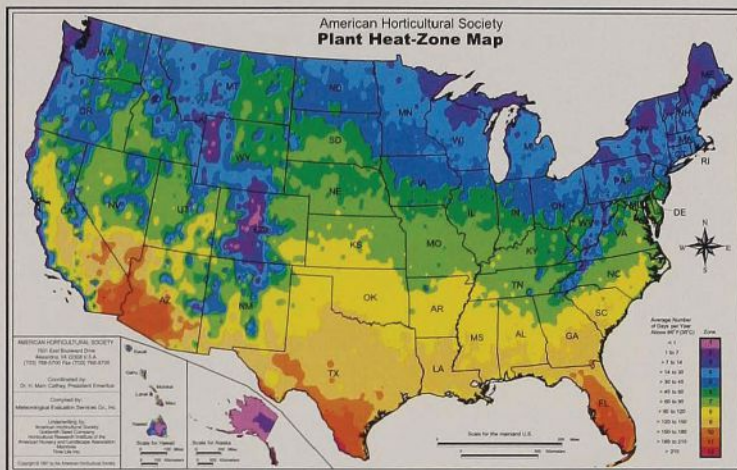
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Pronunciations and Planting Zones

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 a two-by-three-foot glossy AHS Plant Heat-Zone Map for \$9.95, call (800) 777-7931.



A-F

- Acer palmatum** AY-ser pal-MAY-tum (USDA 5-8, AHS 8-2)
Amelanchier 'Forest Prince' am-eh-LANG-kee-ur (4-9, 9-1)
Amsonia hubrichtii am-SO-nee-uh hew-BRIK-tee-eye (5-9, 9-3)
Arum italicum AIR-um ih-TAL-ih-kum (7-9, 9-3)
Berberis × ottawensis BUR-bur-iss ah-tuh-WEN-sis (4-8, 8-3)
Calamagrostis × acutiflora kah-luh-mah-GROS-tiss x ak-yew-tih-FLOR-uh (5-9, 9-5)
Carex pansa KAIR-eks PAN-suh (4-8, 8-1)
C. pensylvanica var. **pacifica** C. pen-sil-VAN-ih-kuh var. puh-SIH-fih-kuh (4-8, 8-1)
C. praegracilis C. pre-GRASS-ih-lis (4-8, 8-1)
Cercis canadensis SUR-siss kan-uh-DEN-siss (4-9, 9-2)
Chionodoxa forbesii ky-on-o-DOK-suh four-BEES-ee-eye (3-9, 9-1)
Cornus sanguinea KOR-nus sang-GWIN-ee-uh (4-7, 7-1)
Crocus ancyrensis CRO-kus an-kih-REN-sis (5-8, 8-5)
C. chrysanthus C. krih-SAN-thus (3-8, 10-1)
C. sieberi forma **tricolor** C. SEE-bur-eye forma TRY-kul-ur (3-8, 8-1)
C. tommasinianus C. tom-uh-sin-ee-AY-nus (3-8, 8-1)
C. vernus C. VER-nus (3-8, 8-1)
Cuphea ignea KOO-fee-uh IG-nee-uh (10-1, 12-1)

- Eranthis cilicica** ee-RAN-thiss sih-LISS-ih-kuh (4-9, 9-1)
E. hyemalis E. hy-ih-MAL-iss (4-9, 9-1)
Fothergilla gardenii fah-ther-GIL-uh gar-DEE-nee-eye (4-9, 9-1)
F. major F. MAY-er (4-8, 9-2)

G-S

- Galanthus nivalis** guh-LAN-thus nih-VAL-iss (3-8, 8-1)
Gelsemium sempervirens jel-SEE-me-um sem-pur-VY-renz (7-9, 9-4)
Hamamelis virginiana ham-uh-ME-liss vir-jin-ee-AN-uh (3-8, 8-1)
Hydrangea quercifolia hy-DRAN-juh kwer-sih-FO-lee-uh (5-8, 8-1)
Ilex verticillata EYE-leks vur-tih-sih-LAY-tuh (5-8, 8-2)
Itea virginica eye-TEE-uh vir-JIN-ih-kuh (5-9, 10-7)
Leucjum vernum lew-KO-jum VER-num (4-8, 9-1)
Lonicera sempervirens lah-NISS-er-uh sem-pur-VY-renz (4-9, 9-3)
Miscanthus purpurascens miz-KAN-thus per-per-ASS-senz (4-9, 9-1)
Muscari armeniacum mus-KAR-eye ar-meen-ee-AH-kum (4-8, 8-1)
Narcissus pseudonarcissus nar-SIS-sus soo-doh-nar-SIS-sus (3-9, 9-1)
Passiflora lutea pass-ih-FLOR-uh LEW-tee-uh (6-10, 12-1)
Pennisetum alopecuroides pen-ih-SEE-tum al-o-pek-yew-ROY-deez (5-9, 9-2)

- Pinus strobus** PY-nus STRO-bus (4-9, 9-1)
Scilla siberica SIL-luh sy-BARE-ih-kuh (5-8, 8-5)
Stewartia pseudocamellia stew-AR-tee-uh soo-doh-kuh-MEEL-yuh (5-8, 8-4)
Syringa pekinensis 'Beijing Gold' sih-REENG-guh pee-kih-NEN-siss (4-7, 7-1)

T-Z

- Tulipa biflora** TOO-lip-uh by-FLOR-uh (4-8, 8-1)
Viburnum acerifolium vy-BUR-num ay-sur-ih-FO-lee-um (4-8, 8-1)
V. dentatum V. den-TAY-tum (3-8, 8-2)
V. edule V. ed-YEW-lee (2-7, 7-1)
V. lantanoides V. lan-tuh-NOY-deez (2-7, 7-1)
V. lentago V. len-TAY-go (2-8, 8-1)
V. nudum var. **cassinoides** V. NEW-dum var. kass-ih-NOY-deez (2-8, 8-1)
V. nudum var. **nudum** V. NEW-dum var. NEW-dum (6-9, 9-6)
V. opulus var. **americanum** V. OP-yew-lus var. uh-mair-ih-KAN-um (2-8, 8-1)
V. prunifolium V. proo-nih-FO-lee-um (3-9, 9-1)
V. rafinesquianum V. raf-ih-nes-kwee-AN-num (3-8, 8-1)
V. rufidulum V. roo-FID-yew-lum (7-9, 9-7)
Weigela florida wy-JEEL-yuh FLOR-ih-duh (4-8, 8-1)

Scenes from River Farm



Farewell to summer. The first chilly night is the herald of many more to come as summer gives way to autumn, but in early October, there's still much to see at River Farm. The gardens are filled with plants putting on a final show, including the bright yellowing leaves of bottlebrush buckeye (*Aesculus parviflora*), above, the rusty-red flowerheads of *Sedum* 'Autumn Joy', left, and the exotic-looking speckled blossoms of toadlily (*Tricyrtis hirta* 'Miyazaki'), below.



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—Brian E. Holley, Director, Cleveland Botanical Garden

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—Katy Moss Warner, AHS President and CEO

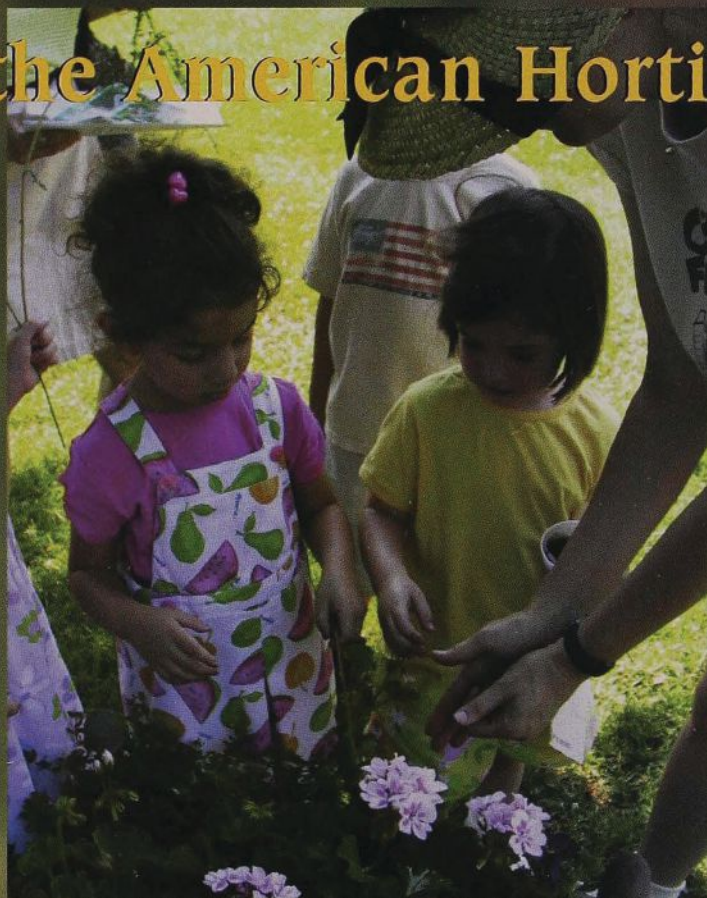


Garden Calm at River Farm

the American Horticultural Society

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