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The Magazine of the American Horticultural Society

September / October 2016

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ON THE COVER: 'Forest Pansy' is a selection of redbud (*Cercis canadensis*) that produces exceptional autumn color, as shown here in Vanessa Gardner Nagel's garden in Vancouver, Washington.

Photograph by Janet Loughrey

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■ Find seasonal gardening tips, beautiful gardens around the world, photos of native plants blooming in our members' gardens, and more. Message us with photos of your home garden.



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■ Enjoy photos from our travels around the U.S., along with year-round views of the gardens at River Farm, our headquarters in Virginia.



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■ We're always creating new boards with images and information to supplement our articles in *The American Gardener*. Check out the boards to see what we're highlighting in this issue! Other popular boards include Container Gardening, Gardens to Visit, and Upcycling.



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■ Enter our monthly, themed garden photo contests. The winning photo is featured in our e-newsletter and on our Facebook page.



Join the Conversation!

MEMBERS' FORUM

SOIL TESTING: IS IT USEFUL?

Editor's note *In the previous issue, we asked: "Is soil testing helpful?" Thanks to all the readers who submitted anecdotes about soil testing. Here are a few of the responses.*

Last fall my employer wanted a new holly hedge planted. We hired an experienced contractor to do the planting but almost immediately afterwards several of the hollies started to turn brown. When they didn't come out of it by spring, we replaced about half of them. Soon after, the leaf tips of the replacements also started to brown. I sent a soil sample off for testing, which revealed very high levels of soluble salts and major nutrients resulting from overfertilizing. We revised the fertilizing schedule and, fortunately, all the damaged plants have now rebounded.

*Deb Wiles
Washington, Virginia*

In February, I volunteered to adopt a small roundabout outside of my subdivision [shown below] and turn it into a monarch butterfly garden. The soil was a mixture of



clay and construction debris that required a tiller to break up. In spring I planted seeds and seedlings of eight different annuals and perennials. Two weeks later, despite regular watering, there was no sign of life. I bought more seeds and replanted the area. After two weeks, I had a few stunted seedlings. At this point, I got the soil tested and discovered it was low in organic matter and all major nutrients, so I worked Milorganite into the soil. That, along with regular fertilizing, helped; by the end of summer the plants

DO YOU HAVE A FAVORITE ALMANAC FOR GARDENING?

There are a number of popular gardener's almanacs still being published. We want to hear about which ones you read, and what information in the almanacs you find most useful or interesting. Send your answers along with your name and where you live to editor@ahs.org. We'll share the best responses in the November/December 2016 issue's "Members' Forum."

had bloomed and attracted monarchs! So the lesson is: I would have saved myself much time, effort, and money if I had the soil tested before I started the project.

*Laura Fish
Parkville, Missouri*

I had my vegetable garden soil tested mostly out of curiosity because I don't believe that one or two soil tests gives an accurate representation of an entire property. Sure enough, the results showed each plot had different excesses and deficiencies. I amended each area with sphagnum peat moss, dolomite lime, earthworm castings, and perlite, with very good results. I also added some egg shells to the tomato planting holes and ended up with eight-and-a-half-foot-tall plants loaded with tomatoes.

*John Hannes
Oswego, Illinois*

CORRECTION

In a news article about genetic studies of petunias (page 51), we wrote: "...these plants diverged from a common ancestor around the same time as the extinction of the dinosaurs, some 30 million years ago." Current research indicates that dinosaurs (except bird ancestors) went extinct 66 million years ago. 🌿

PLEASE WRITE US! Address letters to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308. Send e-mails to editor@ahs.org (note Letter to Editor in subject line). Letters we print may be edited for length and clarity.

NOTES FROM RIVER FARM

HAVE YOU ever read an article in *The American Gardener* and wondered what it would be like to meet the author in person? I had just that opportunity in August when I met Craig LeHoullier (aka NC Tomatoman), who most recently contributed a piece about beefsteak tomatoes for our July/August issue. He was one of the speakers for this year's "In the Garden Weekend" in Hot Springs, Virginia. This annual event, held at the historic Homestead Resort in the picturesque Allegheny Mountains, offers a blend of renowned speakers and special programs focused on various aspects of gardening.

If ever anyone lived and breathed tomatoes, it's Craig! He is not only an heirloom tomato expert and author, but he is a tomato advisor for the Seed Savers Exchange based in Decorah, Iowa. His enthusiastic presentation at the Homestead on growing epic tomatoes and straw-bale gardening captivated the audience, myself included. Although most of us wouldn't go so far as to convert our driveways into a garden of containerized tomato plants, his passion is infectious. I hope that you have the chance to meet him in person yourself.

One comment Craig made really stuck a chord with me: He said, "It's as important to grow great gardeners as it is gardens." All of us at the American Horticultural Society couldn't agree more! We often describe our members as a "national community of gardeners" because we all share a common passion to make the world a greener place one way or another. Though our individual gardening interests are as varied as can be, we work hard to serve and support this diverse community so that it keeps growing.

One way we help you expand your horticultural horizons is with this magazine. Through it, you can glean tips from experts like Craig, discover gardens across the country, keep up to date on the latest innovations, and much more. Timely topics in this issue include integrating spring-flowering bulbs in your borders this fall, a look at how redbuds are enjoying renewed popularity thanks to the work of contemporary plant breeders, and suggestions for making the most out of the autumnal hues many perennials produce.

We're also pleased to profile one of gardening's *grande dames*, Stephanie Cohen, who has been growing great gardeners for decades by sharing her extensive horticultural knowledge leavened with a side of wry humor. And don't miss the article about the Carolina Children's Garden, a highlight of our recent National Children & Youth Garden Symposium that took place in Columbia, South Carolina. This exemplary garden, which traces its beginnings to the children's garden here at River Farm, has grown into a beloved gem of its own. Perhaps it also will inspire future gardens specifically designed for connecting kids and nature.

We hope this issue of *The American Gardener* helps you grow in some way. When you do, our national community of gardeners does, too. So, turn the page and dig in! Happy gardening!

Tom Underwood
Executive Director



Craig LeHoullier expounds on one of his favorite garden topics—how to grow great tomatoes.

The American GARDENER

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RIVER FARM The AHS headquarters at River Farm is open 9 a.m. to 5 p.m. weekdays year-round (except Federal holidays), and 9 a.m. to 1 p.m. Saturdays from April through September. For information about events, rentals, and directions, visit the About River Farm section of www.ahs.org.

TRAVEL STUDY PROGRAM Visit spectacular private and public gardens around the world through the Society's acclaimed Travel Study Program. For information about upcoming trips, call (703) 768-5700 ext. 127, e-mail development@ahs.org, or visit the Gardening Programs section of www.ahs.org.

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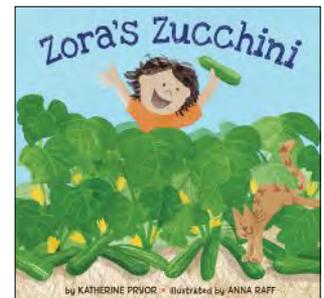
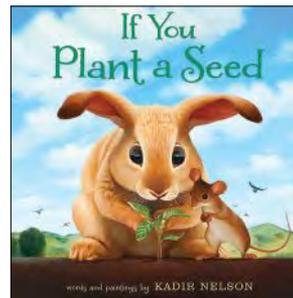
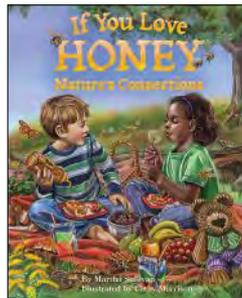
News from the AHS

September / October 2016

PROGRAMS • EVENTS • ANNOUNCEMENTS

2016 GROWING GOOD KIDS BOOK AWARDS

THE WINNERS of the 2016 Growing Good Kids—Excellence in Children's Literature Book Awards, co-sponsored by the **Junior Master Gardeners** (JMG) and the American Horticultural Society, are *Zora's Zucchini* by Katherine Pryor, illustrated by Anna



Raff; *If You Love Honey* by Martha Sullivan, illustrated by Cathy Morrison; and *If You Plant a Seed*, written and illustrated by Kadir Nelson.

"With engaging stories and rich illustrations, these three 'green' children's books are this year's best titles," says **Randy Seagraves**, JMG curriculum director. "From a story about a girl growing a neighborhood garden swap to a rich depiction of the interconnectedness of the natural world to the simple power in small acts of kindness, these stories will appeal to and inspire young readers."

The Growing Good Kids awards recognize books that best advocate for gardening, plants, and the environment to a young audience. This year's winners received their awards at the AHS's National Children & Youth Gardening Symposium in Columbia, South Carolina, in July. To learn more about the Growing Good Kids awards and view previous winners, visit www.jmgkids.us/bookawards.

NEW DIRECTORS JOIN AHS BOARD

THREE NEW members—Laura Dowling, Terry Hayes, and Rachel Muir—joined the AHS Board of Directors starting in July, while longtime Board member and officer **Henrietta Burke** of Alexandria, Virginia, rotated off.



AHS Board members Laura Dowling (above left), Terry Hayes (above), and Rachel Muir (left) began their tenure this July.

Laura Dowling served as chief floral designer at the White House from 2009 to 2015, creating her signature displays for major White House events such as state dinners and holidays. Currently based in Washington, D.C., Dowling speaks on floral design and leads workshops at museums and horticultural events worldwide.

Terry Hayes hails from Washington, where she worked as an accountant for several years before following her passion for gardening to become proprietor of Dirty Hands Designs, which provides landscape design and coaching services to homeowners. She has served

as a board member for the Bellevue Botanical Garden Society and as trustee for the Lake Washington Garden Club.

Rachel Muir lives in Asheville, North Carolina, where she gardens and designs with native plants. A scientist emeritus with the U.S. Geological Survey (USGS), she served as the Science Advisor for the USGS Northeast region for many years. She also helped establish the U.S. Department of Interior's Northeast Climate Center, located in Amherst, Massachusetts.

"We're delighted to welcome Laura, Terry, and Rachel and anticipate that their diverse backgrounds will complement the Board's effectiveness as it steers the AHS's programs and outreach," says Executive Director **Tom Underwood**. "On behalf of the AHS, I'd also like to thank Henrietta Burke for her many contributions during her eight years on the Board."

AHS ANNUAL ONLINE AUCTION

THROUGH AN annual online auction, the AHS offers personal tours of some of the finest gardens in America, led by notable horticulturists and other experts. This year, bidding begins on October 14 and runs through October 27. Packages will include Chicago Botanic Garden in Illinois with its Executive Vice President and Director **Kris Jarantoski**; Denver Botanic Gardens in Colorado with Senior Curator and Director of Outreach **Panayoti Kelaidis**; George Washington's Mount Vernon Estate in Virginia with Director of Horticulture **J. Dean Norton**; and the North Carolina Arboretum in Asheville hosted by Executive Director **George Briggs**.

Proceeds of the auction will support the stewardship of River Farm and the Society's national outreach programs. See www.ahs.org/online-auction for more details.

UNDERWOOD NAMED CO-CHAIR FOR NICH

IN JULY, Executive Director **Tom Underwood** represented the AHS at the second meeting of the National Initiative for Consumer Horticulture (NICH), held at the Denver Botanic Gardens in Colorado. The AHS was one of several nonprofit organizations, government agencies, public gardens, and academic institutions that came together to form NICH in late 2015. The organization advocates for the important role gardening and horticulture plays in health, sustainability, and the economy in America.



Tom Underwood

"The goal of NICH is to rally these disparate sectors of the horticulture industry so we can speak with a united voice," says Underwood. "Promoting all the ways horticulture improves the quality of life for individuals and communities will mean greater support for all the different organizations and businesses involved with gardening."

At the July meeting, NICH representatives fleshed out an organizational structure. **Casey Sclar**, executive director of the American Public Gardens Association, is chair, while Underwood and **Ellen Bauske** of the University of Georgia Center for Urban Agriculture were named co-chairs. Visit www.consumerhort.com for more details.

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SEPT. 22–OCT. 1. Italy: **Architecture and Gardens of the Veneto, Dolomites, and Venice.** AHS Travel Study Program. **SOLD OUT**
OCT. 6–8. **America in Bloom Symposium.** Arroyo Grande, CA. (AHS partner event.)
OCT. 14–27. **8th Annual AHS Online Auction.** National.
DEC. 1–23. **Indoor Holiday Display at River Farm.** Alexandria, VA.
DEC. 10. **Holiday Open House at River Farm.** Alexandria, VA.

2017

APR. 4–17. **Springtime in Japan: Inspiring Gardens & Landscapes.** AHS Travel Study Program.
APR. 21 & 22. **Spring Garden Market.** River Farm, Alexandria, VA.
APR. 22. **Great Gardens and Landscaping Symposium.** Woodstock, VT. (AHS partner event.)
APR. 29 & 30. **Colonial Williamsburg Garden Symposium.** Williamsburg, VA. (AHS partner event.)

NEW SET OF AHS FLORAL MUGS AVAILABLE

TWO NEW limited-edition AHS floral mugs featuring colorful fall and winter plants are now available. Decorated with a wraparound



design by acclaimed nature artist **Liz Fuller**, the new eight-ounce, bone-china mugs complement the spring- and summer-themed designs that were released earlier this year. These

dishwasher- and microwave-safe mugs make perfect gifts for birthdays, weddings, anniversaries, and the upcoming holidays. You can order individual sets of the two new mugs or a full set of four mugs to cover all the seasons. To order them, and learn more about artist Liz Fuller, visit www.ahs.org/floralmugs.

PHOTOGRAPHY CONTEST WINNERS

IMAGES OF dahlias dominated the Gardeners of America/Men's Garden Clubs of America (TGOA/MGCA) photography contest this year. **Shirley Winnes**, from Green Bay, Wisconsin, won Best of Show for her close-up of a white and pink dahlia. Continuing with the dahlia theme, **Richard States** of Cortland, Ohio, won second place with his photograph of a dahlia in full bloom.

Through a special partnership with TGOA/MGCA, the AHS's members are eligible to participate in this annual photography contest. The winning images from each year's competition are featured in calendars produced by TGOA/MGCA. Visit www.tgoa-mgca.org to find out how to enter.

News written by Editorial Intern Natalie Sheffield.

Gifts of Note

In addition to vital support through membership dues, the American Horticultural Society relies on grants, bequests, and other gifts to support its programs. We would like to thank the following donors for gifts received between July 1 to August 31, 2016.

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This photograph of a dahlia in full bloom by Shirley Winnes received best of show in this year's TGOA/MGCA photo contest.

SHIRLEY WINNES, COURTESY OF TGOA/MGCA



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TOP: COURTESY OF GEORGE WASHINGTON'S MOUNT VERNON. BOTTOM: SCOTT DRESSEL-MARTIN. COURTESY OF DENVER BOTANIC GARDENS.

Denver Botanic Gardens



AHS MEMBERS MAKING A DIFFERENCE: Kay MacNeil

by Natalie Sheffield



Kay MacNeil dons attention-grabbing monarch butterfly wings and antennae as part of her presentation at the Garden Clubs of Illinois state flower show in Naperville, Illinois.

COMING UPON a woman wearing butterfly wings and antennae might seem unusual, other than during Halloween. But that's exactly what Kay MacNeil is counting on to grab people's attention. This Illinois gardener dons her monarch wings and carries milkweed seed packets to schools, garden club events, banks, and even Department of Transportation meetings to raise awareness for these imperiled insects, which are threatened by wide-scale loss of habitat and pesticides.

WILDLIFE GARDENING

MacNeil's passion for monarchs originated in her garden. Growing up, she caught the enthusiasm of her mother and grandmother, who would do a "marchabout" of any garden they visited. "All the plants were named, and my mother and grandmother were oohing and ahing over everything," she explains. She draws on this gardening heritage to fill her one-acre suburban lot with wildlife-friendly plants.

While it was her wildlife garden that sparked her passion for saving butterflies,

her membership in the Garden Clubs of Illinois served as the catalyst for acting on it. When the club president sent out a call for project proposals in 2014, MacNeil suggested a topic she thought all garden club members could get behind: a statewide initiative to support monarchs. The group agreed, and MacNeil was named its Bee, Bird, and Butterfly chairman.

MILKWEED FOR MONARCHS

MacNeil leads the initiative from her home



A monarch butterfly in MacNeil's garden pauses for a rest stop on her wrist.

in Frankfort, Illinois, raising awareness at garden club meetings and soliciting seeds from members. She distributes seed packets provided by Ward Johnson, founder of the nonprofit Save Our Monarchs, containing one of several native milkweed species, along with information she has compiled on raising milkweed and monarch caterpillars.

"Many people do not have any way to find milkweed seeds or have internet access," she explains, so she puts her phone number and e-mail address on all her publications. People all over the state and beyond call for seeds or advice on gardening for monarchs. So far she has filled about 300 requests for seeds, including one from Mexico. "Everybody has that little something that they can do," says MacNeil.

A COMMUNITY EFFORT

An American Horticultural Society member since 1994 and a longtime participant in its seed exchange, MacNeil knows the value of a community of seed savers. So she reaches out to people across the state to help her source the extra seeds she needs. Sometimes she comes home to find bags of milkweed seeds dropped off on her front porch.

Working with Joe Stanfa, Cook County Highway Commissioner, MacNeil coordinated the installation of drop boxes all over the county, where people can pick up milkweed seeds and information in return for a small donation. She receives calls from highway employees wanting to incorporate milkweed in their plantings, so many of the seeds she collects are set aside for roadside projects.

Despite her tireless efforts, however, the monarch counts that have been coming in this year are disappointingly low. It's clear there is still more to be done. What's equally clear, however, is that MacNeil is up for the challenge. What she aims to see from her continued efforts is quite simple. "I want milkweeds growing along the highways all around the state," she says.

Natalie Sheffield is an editorial intern for The American Gardener.



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Rise *of the* Redbuds

MY FAVORITE of all our native American trees is the eastern redbud (*Cercis canadensis*). With its delicate, jewellike spring flowers, heart-shaped leaves that offer buttery yellow fall color, and its comparatively small size, it shines in so many landscape situations.

The appearance of the rosy pink blooms of eastern redbud is a sure sign of spring in many parts of the country. It has a broad native range that extends from New Jersey to central Florida, west to southern Michigan and southeastern Nebraska and central Texas. Two naturally occurring varieties extend its range into northern Mexico.

Plant breeders have intensified the charms of the modest trees in the genus *Cercis*.

BY BARBARA PERRY LAWTON

The foliage of 'Forest Pansy' eastern redbud, emerges purple and retains maroon to burgundy shades well before fading in late summer.

The genus *Cercis* includes a number of other species native to North America, Europe, and Asia and many desirable varieties. The beauty and adaptability of the plant has encouraged plant breeders to create new redbud selections that further expand the genus's range of habits, flower and foliage colors, regional adaptability, and disease resistance.

The genus is a member of the legume family (Fabaceae/Leguminosae), evident in its pealike flowers and characteristic flattened beanlike seedpods, which start out green, turn dark brown or red at maturity, and hang on the tree into winter.



height of 20 to 30 feet and generally develop a vase or rounded shape with a spread of about 25 to 35 feet.

Trees begin bearing flowers as early as four to six years old. The flowers open from March to April. Each flower is about a half-inch long, including a short stem. “Its range of color goes from reddish-pink in bud to a lovely rosy-pink when in full flower,” says Ben Chu, supervisor of the Japanese Garden and Southern Gardens at the Missouri Botanical Garden in St. Louis. “This is an exceptional tree for the home landscape. It is useful as a mid-canopy tree or as a



Eastern redbuds like the one on the left often have buttery yellow fall foliage. In fall, trees also can display decorative dark brown to black seedpods, above, that sometimes hang on the bare branches into winter.

The genus name *Cercis* comes from the Greek *kerkis*, meaning weaver’s shuttle, which is likely a reference to the shape of the seedpods.

Alternate, heart-shaped leaves and colorful spring flowers are typical of the genus. Redbud flowers bloom before the leaves emerge, opening along the branches and sometimes even on the main trunk in a beautiful effect that accentuates each tree’s silhouette.

EASTERN REDBUD

The eastern redbud (USDA Hardiness Zones 4–9, AHS Heat Zones 9–2) was

first cultivated in the 17th century. Its species name, *canadensis*, is a reference to its initial discovery in northeastern North America, although subsequently it was found to have a much broader geographic distribution.

While the exact dates for its introduction to Europe are uncertain, it likely occurred in the late 1600s or early 1700s. Colonial botanists Rev. John Banister (1696) and John Custis (1735) both shared correspondence about the tree—and likely specimens—with their British patrons.

The leaves emerge reddish purple, maturing to a rich green. Trees grow to a

specimen in a garden with limited space,” says Chu.

Eastern redbuds grow as understory trees in the open woods of bottomlands and valleys. They grow best in moist but free-draining sandy or loamy soils that range from slightly acidic to slightly alkaline but will adapt to less ideal situations if given supplemental watering during extended droughts.

This adaptability to climatic conditions also depends on their provenance, which is not surprising given the species’ widespread natural range. Varieties and cultivars are often more limited in their hardiness range

than the species, but some are far more adaptable to hot, dry conditions. For this reason, it is important to do some research and choose selections suited to your region.

EASTERN REDBUD VARIETIES AND CULTIVARS

The Texas redbud (*C. canadensis* var. *texensis*, Zones 6–9, 9–6) has glossy, leathery leaves, which help it withstand the heat and dryness of its natural range from Oklahoma and Texas to Mexico. It grows 10 to 15 feet tall and wide. The similarly sized Mexican redbud (*C. canadensis* var. *mexicana*, Zones 7–9, 10–7) is typically multi-stemmed. Its

flowers are deeper pinkish-purple than the species. A cross between ‘Forest Pansy’ and a white-flowering selection, *C. canadensis* var. *texensis* ‘Texas White’, resulted in the cultivar ‘Merlot’, which inherited dark purple leaves and bold purple flowers from ‘Forest Pansy’, and good drought tolerance and a more upright habit from the Texas redbud. Like the Texas redbud, it is only hardy to USDA Zone 6.

Cultivars with distinct growth habits include ‘Ace of Hearts’, a compact variety that grows only 12 feet tall with a 15-foot spread. ‘Covey’ (trademarked Lavender Twist™), grows only 10 feet tall and has a distinct-

and flowers are lighter purple than the species. This variegated cultivar is best grown in part shade. For more redbud selections, see the chart on page 18.

WESTERN REDBUD

While eastern redbuds prefer a well-drained loam, the western redbud (*C. occidentalis*, Zones 8–10, 12–8) is better suited to dry slopes and canyons.

It is somewhat variable in habit, but generally grows as a multi-stemmed, 10- to 15-foot shrub with a slightly smaller spread. Its two- to three-inch leaves are blue-green and glossy. Its native range



White-flowered redbuds, like this one at Chanticleer garden in Pennsylvania, are particularly effective viewed against trees with dark foliage.

leaves are glossy with notably wavy margins. It occurs in the wild from southwest Texas to northeastern Mexico.

The oxymoronic white-flowered redbud (*C. canadensis* var. *alba*), is a naturally occurring variety that sports white blooms that are particularly dramatic after dark.

Perhaps the most familiar eastern redbud cultivar is ‘Forest Pansy’, whose leaves emerge a bold scarlet-purple, maturing to a deep maroon that fades a bit in summer. Its

ly weeping habit. “Lavender Twist redbud is one of my favorite weeping trees, a great choice to use near a water feature,” says Nancy Buley, director of communications with J. Frank Schmidt & Sons Co., a wholesale tree nursery in Boring, Oregon. ‘Ruby Falls’ boasts both purple leaves and a weeping habit; it may require staking while young.

The leaves of ‘Silver Cloud’ are irregularly splashed with bright green and white. Trees are a bit slower-growing

extends from Oregon and California to Utah, Nevada, and northern Arizona, and it is well adapted to dry summers and mild winters. Lindsey Collinsworth, education director for the San Luis Obispo Botanical Garden in California, says western redbud “is a great small, multi-trunked California native tree that requires little to no water once it is established.”

The white western redbud (*C. occidentalis* var. *alba*, syn. *C. occidentalis* ‘Alba’)

produces snowy-white blossoms that stand out dramatically against its bronze bark.

EUROPEAN AND ASIAN SPECIES

The Judas tree (*C. siliquastrum*, Zones 6–9, 9–3) is native to western Asia and southern Europe. It grows 15 to 25 feet tall and wide and can be pruned as a single-trunk tree or multi-stemmed shrub. It performs best in well-drained soil with consistent moisture. The magenta flowers that appear in spring are somewhat larger than other redbud species and they may persist longer—they are often still present as leaves emerge in spring.

“I don’t know why *C. siliquastrum* is not more widely grown here in California as we have a great climate for it,” says Randy Baldwin, president and manager of San Marcos Growers in Santa Barbara, California. “I like the clean-looking, heart-shaped leaves that have a reddish-bronze cast when first emerging and then age to a slightly glossy dark green,” he adds. And the striking purple seedpods add a pleasing touch of color to the winter landscape.

Native to central China, the Chinese redbud (*C. chinensis*, Zones 6–9, 9–3) reaches eight to 15 feet tall with a slightly smaller spread and is most often grown

as a multi-stemmed shrub. Both its rosy-pink flowers and seedpods are a bit larger than those of eastern redbud. “Chinese redbud is a smaller tree but lovely in bloom in late winter against our dark green conifers,” says Ray Larson, curator of living collections at the University of Washington Botanic Gardens in Seattle. Like the eastern redbud, it grows best in well-drained loamy soil, with supplemental watering during dry periods.

Cercis chinensis ‘Don Egolf’, a release from the U.S. National Arboretum in Washington, D.C., bears prolific rosy-mauve flowers and produces no fruits. It



Western redbud, left, often takes the form of a multi-trunked large shrub or small tree. The dense flower clusters that form on Chinese redbud, above, are of interest to breeders, who are including the species in hybridization efforts.

has a compact habit and displays good disease resistance.

BREEDING NEW CULTIVARS

While current redbud selections offer many options, breeding programs continue to exploit this ornamental genus for new qualities and combinations of existing traits. Some lesser-known species offer useful qualities, such as the supersized leaves and vigorous habit of *C. gigantea*, the pendulous flower clusters of *C. racemosa*, and the canker resistance of *C. glabra*.

MORE REDBUD SELECTIONS FOR GARDENS

Name	Height/Spread (in feet)	Outstanding traits	USDA Hardiness Zones, AHS Heat Zones
<i>Cercis canadensis</i>			
'Alley Cat'	20–30/25–35	Variegated foliage—white with coppery tints and green, resists burning and fading	5–8, 9–2
'Flame'	20–30/15–25	Double, rosy-pink flowers, and no pods; blooms about a week later than the species, and also tends to have a more upright growth habit	6–9, 9–2
'Hearts of Gold'	15–25/18–20	Leaves emerge bright yellow-gold, maturing to chartreuse; lavender-purple flowers	5–9, 9–2
'Royal White'	20–30/20–25	Early and abundant white flowers, very cold hardy	4–9, 9–2
<i>C. canadensis</i> var. <i>texensis</i>			
'Oklahoma'	15/15	Wine-red flowers and glossy green leaves with wavy margins	6–9, 9–6
'Traveller'	8–10/8–12	Arching, weeping habit, glossy leathery dark green foliage, deep rose-pink flowers	6–9, 9–6
<i>C. chinensis</i>			
'Avondale'	10–12/10–12	Profuse dark rose-purple flowers cover stems on multi-stemmed shrub with glossy green foliage and compact habit	6–9, 9–3
'Shirobana'	10–12/10–12	Pure white flowers cover branches; usually grown as multi-stemmed shrub	6–9, 9–3



C. canadensis 'Hearts of Gold'



C. chinensis 'Avondale'

“There are many interesting traits in various species that we would like to explore further,” says Margaret Pooler, research leader at the U.S. National Arboretum, which began a redbud breeding program in the 1960s. “Flowers that occur in long racemes, glaucous foliage, unusual flower color, and of course the less tangible traits such as adaptation to

environmental stress or resistance to disease,” are among their breeding objectives, explains Pooler.

The JC Raulston Arboretum, on the campus of North Carolina State University (NCSU) in Raleigh, has been at the forefront of redbud breeding under the leadership of horticulture professor and former arboretum director Denny Werner.

Werner mainly uses the eastern redbud in his work. “There has been enough variability in *C. canadensis* to keep me busy for 20 years. I have used *C. gigantea* to a limited extent, and am still hoping to develop a cultivar with that species in the parentage, primarily for very large leaf size,” says Werner.

According to Werner, major objectives of the NCSU program include develop-

Sources

Monrovia Nursery, Azusa, CA. www.monrovia.com.

Nature Hills Nursery, Omaha, NE. (888) 864-7663. www.naturehills.com.

Whitman Farms, Salem, OR. (503) 510-0486. www.whitmanfarms.com.

Resources

California Native Plant Society. [http://calscape.org/Cercis-occidentalis-\(Redbud\)](http://calscape.org/Cercis-occidentalis-(Redbud)).

Encyclopedia of Trees and Shrubs by Michael A. Dirr. Timber Press, Portland, OR, 2011.

Native Trees for North American Landscapes by Guy Sternberg with Jim Wilson. Timber Press, Portland, OR, 2004.

U.S. National Arboretum. www.usna.usda.gov/Newintro/DonEgolf.pdf.



A number of different forms of redbud are now available, including weeping selections like 'Covey' (usually sold as Lavender Twist), shown here cascading over a stone wall.

ment of novel ornamental cultivars by recombining genes controlling leaf color (gold, purple, variegated, green), flower color (magenta, reddish-purple, purple, white), architecture (weeping, upright, standard), stature (compact, standard), and single/double flower. Another goal is to incorporate the glossy leaf and heat and drought tolerance from *C. canadensis* var. *texensis* in other redbud types.

The arboretum has established a comprehensive redbud collection that has been recognized by the American Public

Gardens Association Plant Collections Network, so it is a great place to view the diversity of the genus.

David Roberts, general manager and head breeder for Plant Introductions, Inc., located in Watkinsville, Georgia, is working with both eastern redbud and *C. chinensis* to develop a line of regionally adapted hybrids for both northern and southern gardens. "These hybrids will possess unique morphological characteristics and improved environmental tolerance such as improved cold hardi-

ness or improved heat tolerance in their respective regions," says Roberts.

REDBUDS IN THE LANDSCAPE

Redbuds can serve as handsome specimens placed at strategic sites in the home landscape. Weeping cultivars or selections with colorful or variegated foliage add interest beyond the spring flowering season. If space allows, a group of three or more redbuds creates a stunning large-scale spring flower display.

Whether grown as a standard with a single trunk, or as a multi-stemmed shrub, redbuds make excellent additions to shrub borders. Taller, single-trunk selections can be planted for shade near terraces and patios. Both eastern redbud and Chinese redbud are well suited to woodland gardens, growing as understory trees in dappled shade or at the wood's edge.

Because the leathery leaves of western redbud withstand high heat and low humidity, New Mexico landscape designer and author Judith Phillips calls it a good choice for planting "among boulders or mixed with Arizona rosewood (*Vauquelinia californica*) or curlleaf mountain mahogany (*Cercocarpus ledifolius*) as a color and texture accent."

Landscape designer and garden blogger Rebecca Sweet of Los Altos, California, says she often uses Judas tree to add height in smaller gardens, because its manageable 15- to 20-foot dimensions won't overwhelm the space. "Its multi-season interest can't be beat, with cheery magenta blooms in early spring, followed by heart-shaped foliage that bursts forth with reddish-bronze tints, transforming to deep green as the season progresses," she says.

Redbuds, along with dogwoods, effectively introduce the spring season, followed by crabapples, cherries, and other spring bloomers of all sorts and sizes. Currently available species and cultivars offer gardeners many options that satisfy a range of regional environmental conditions and ornamental features. As breeders continue to work their magic with this lovely and diverse genus, there are certain to be more exciting choices to come.

Barbara Perry Lawton has written several garden books, including Parsleys, Fennels and Queen Anne's Lace (Timber Press, 2007).



Stephanie Cohen *grande dame of gardening*

Throughout her long career as a teacher, mentor, writer, and speaker, Stephanie Cohen has shared her gardening passion and wisdom with everyone she meets.

BY MARTHA SWISS

Stephanie Cohen says naming her personal garden Shortwood was not a self-deprecating nod to her diminutive stature, "but because Longwood was already taken."

COURTESY OF STEPHANIE COHEN

AFTER NEARLY 40 years in the horticulture industry, Stephanie Cohen remains a force of nature. She has made wide-ranging contributions—from teaching to plant trialing, arboretum director to author, professional speaker to mentor. Today she is still writing, still speaking, and still encouraging young people to follow their own paths. She is proud of her many accomplishments as well as the accolades and awards she has received. But aside from her family, she is most proud of her students, many of whom still think of her as their teacher and remain in touch.

“We all have such a grand respect for her,” says Lori Hayes, North Regional Parks Manager at Philadelphia Parks & Recreation. “I’m proud to have become a professional under her tutelage. She instilled a love of lifetime learning in me. Some teachers you’ll never forget and she’s one of them.”

“Seeing my students become successful gives me a lot of pleasure,” Cohen says. “Helping young people with their careers and advising older people on how they can be more successful in their careers is near and dear to my heart.”

Even those who have not directly been her student find her to be an inspiring mentor. “There are a lot of people I feel have been mentors but Stephanie is in a class of her own,” says Kelly Norris, horticulture manager at the Greater Des Moines Botanical Garden. “She is passionate about seeing people grow and becoming contributors in horticulture. She has done so many things in her life and is an example that if you get to a point where you aren’t inspired, you can do something else. It’s a powerful life lesson.”

GARDENING BEGINNINGS

Growing up, Stephanie Sherman, as she was known then, lived in Camden, New Jersey. When she was six years old, her parents planted a Victory garden at their home to support civilian efforts for World War II. This modest plot introduced her to gardening, but in true Stephanie fashion, she put her own spin on it. “I thought flowers were more interesting than vegetables, so I convinced my parents to let me plant a flower garden,” she remembers.

After high school, she earned degrees in history and English from Temple University in Ambler, Pennsylvania, and began

“Keep learning, no matter the subject. You might not think you have use for it but you don’t know, so think outside the box. A flower-arranging course might help your design skills. Something that you think might not be useful often is later.” —Stephanie Cohen



One of the most rewarding aspects of Cohen’s teaching career has been mentoring students as they transition into professional horticulture. Here she catches up with Kelly D. Norris, who is now horticulture manager at the Greater Des Moines Botanical Garden in Iowa.

teaching junior high school English. She also married Dick Cohen—a dentist—and over the next several years the couple



Cohen’s irrepressible nature shows through in this childhood photo taken at New York Botanical Garden.

welcomed three children. At that point, she enjoyed being a stay-at-home mom.

Cohen’s interest in horticulture came roaring back with the houseplant craze of the 1970s. “I had 200 houseplants and glass shelves to hold them in every window. We didn’t need curtains, there were so many plants, and my kids complained that they

couldn’t open a window,” she says.

Things reached a critical point when her well-watered pots dripped and blew out the family’s TV. “At that point, my husband declared a moratorium on any more houseplants.” He also recognized how smitten his wife was with plants and encouraged her to go study them.

Cohen enrolled in night school at Temple University to study horticulture. As she neared completion of her undergraduate degree, she considered becoming a horticultural therapist but changed her mind. She had worked at the university greenhouse and knew she enjoyed that, so after graduation Cohen went to work for a company that sold greenhouses. When that didn’t pan out, she tried plant sales and lasted one day. Clearly, she needed to find her niche.

TEACHER AND MENTOR

“I had graduated in the summer of 1980, and when I returned from a week’s vacation near the end of August, I was offered a job teaching horticulture at Temple,” she remembers. “They knew I had taught before, had graduated with honors, and worked part time in the school’s greenhouse while going to school. Of course, I accepted and the rest is history.”

Her teaching repertoire grew to include herbaceous plants, design, soils, entomology, and pathology. She remained at Temple for 21 years, where she taught and inspired hundreds of students. She also taught herbaceous plants for the horticulture program at the Barnes Arboretum in Merion, Pennsylvania, for several years during that time.

“Her style of teaching inspired me,” says Hayes. “I was a young African-American woman and there were not many people who looked like me in the horticulture department. She was my go-to person when I needed advice and always provided inspiration and encouragement. I admire the way she taught by example.” Cohen continues to stay in touch with Hayes through Facebook. “She will give me an ‘atta girl’ and let me know she is proud of me. Even though I’m 55 now, she’s still my teacher,” says Hayes.

Friend and colleague Steve Still, professor emeritus at Ohio State University in Columbus, says, “Stephanie opened her students’ eyes to the opportunities available in the horticulture industry. She

“In this field there is no one who knows everything. If you’re that narcissistic, you have a lot to learn.”

believes that teachers must do more than provide information and knowledge—we must instill passion for horticulture.”

Many of Cohen’s students have gone on to forge successful, life-long careers in horticulture. As Norris says, “We’ve been this new generation that she has adopted, not only in making sure we meet people and make connections, but in making good choices, too.”

Norris recalls meeting Cohen at the 2006 Perennial Plant Association Annual Symposium in Montreal, where he was a scholarship winner. “I remember walking out of the hotel and Stephanie was holding court with a group of industry people at a table on the terrace. I instantly became part of the conversation because she welcomed me to the group,” says Norris.



Cohen is active in a number of professional groups, including GWA—the Association for Garden Communicators. Here she and her husband, Dick (in light blue shirt), pose with a GWA group during a meeting held at the Pennsylvania home of Kirk and Sara Brown.

As much as Cohen loves teaching and mentoring, she loves learning, too. While teaching at Temple, she enrolled at Arcadia University near Philadelphia, where she earned a degree in environmental studies in 1983. “This opened new opportunities and gave me a chance to look at environmental issues—soil, water, weather, air, and all the interconnected issues we are now facing,” she says.

Her last project at Temple was helping to found its arboretum and serving as its first director for five years. Sinclair Adam, fellow Temple teacher and Extension educator remembers, “As director of the arboretum, she needed to figure out how to do things correctly since it was brand new. She steered the ship with a firm hand.”

A PROLIFIC AUTHOR

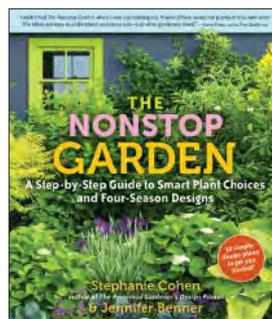
With her background in English and her desire to teach, writing was a natural progression for Cohen. She became a contributing editor for *Fine Gardening* magazine.

Books soon followed articles: *The Perennial Gardener’s Design Primer* with Nancy Ondra in 2005, then another collaboration with Ondra in 2007, *Fallscaping: Extending your Garden Season into Autumn*.

Cohen is most proud of the first book, which provides practical information

that she synthesized from her 21 years of teaching. “People come up to me with the pages of that book dirty and tell me, ‘I really like this book.’ It’s nice that people really use it,” says Cohen. It has sold more than 80,000 copies and received an award from GWA—The Association for Garden Communicators.

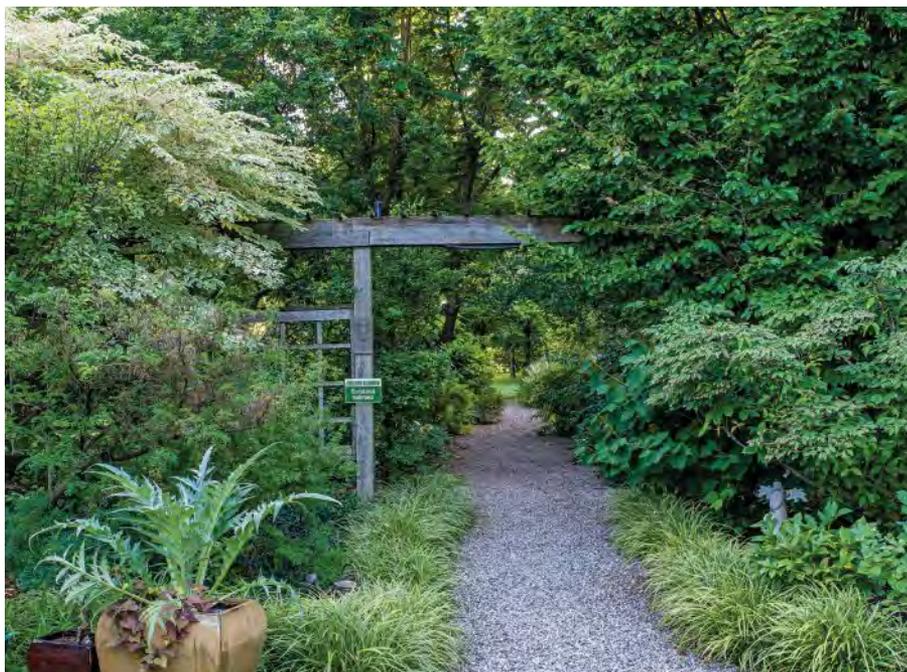
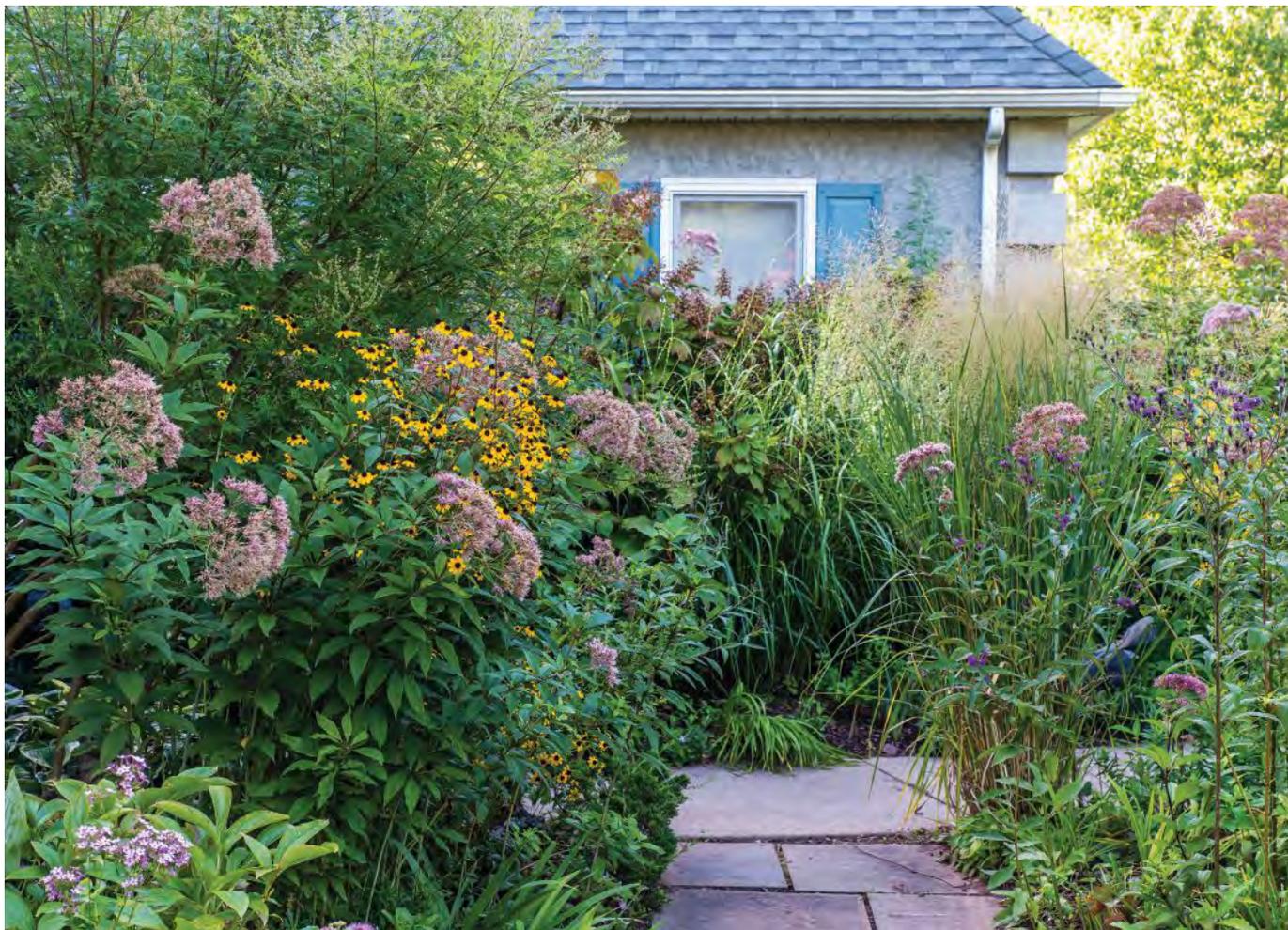
Her most recent book, *The Nonstop Garden—A Step-by-Step Guide to Smart Plant Choices and Four-Season Designs*, was written with Jennifer Benner and published in 2010. It was also well-received and has been translated into Russian. “I still have not read that version,” she jokes.



THE SPEAKING CIRCUIT

Professional speaking was another outgrowth of her teaching and writing. Cohen has lectured coast to coast in more than 35 states, including Alaska. “She is known throughout North America for her enthusiastic and knowledgeable presentations,” says Still. “She packs the house with her talks.”

That’s not surprising given their entertaining nature, spiced with Cohen’s own brand of humor—she named her extensive home gardens Shortwood not in reference to her height, she quips, “but because Longwood was already taken.”



In her personal garden, Cohen combines the passion of a plant collector with the deft eye of a designer. Top: A dense planting of North American natives such as Joe Pye weed, switch grass, and black-eyed Susans edge a path near her house. Above left: A gravel path lined with shrubs and trees leads visitors from one area to another. Above right: A bumblebee visits the flowers of 'Henry Eilers', a cultivar of sweet black-eyed Susan (*Rudbeckia subtomentosa*) that has distinctive rolled ray petals.

Lecture topics range from “Perennials with Attitude” and “Trends from the Trenches,” to “An Evening with Miss Gertrude Jekyll.” Her latest talk, “Landscaping with Grasses,” is among her personal favorites because “there are a whole bunch of things you can do with grasses, they’re very practical. Plus they are not water guzzlers and are deer proof,” she says.

Another of Cohen’s favorite activities is watching former students speaking. “I did a workshop for the Hardy Plant Society and she was the moderator,” remembers

“I don’t believe in growing plants that require life support systems to keep them going.”

Hayes. “She was so proud that I was giving a workshop right next to her.”

TELLING THE TRUTH

Cohen is a successful teacher because she learns first and teaches second. “I would never teach about a plant I hadn’t grown myself,” she says. Plant breeders noticed her talent for evaluating and using plants and enlisted her to help them. “She is a highly creative thinker in terms of design and choosing plants,” says Sinclair Adam. “She came to a meeting of the Perennial Plant Association (PPA) and said, ‘If a plant is a dog, I’ll tell the world, and if it’s great, I’ll tell the world, too.’ So when I would bring a plant to the marketplace I would always run it by her.”

“Just because you may no longer be able to get down on your knees and your back is killing you, it doesn’t mean you can’t do something helpful. Advise a gardening group or work at an Extension office answering questions.”



This blue bench in Cohen’s garden invites visitors to stop and take in a summer day.

Perennials, tropicals, shrubs, trees, and annuals for various companies have all come her way. Rather than rushing new plants to market, she believes they should be trialed for a minimum of three or four years. This provides time to evaluate for insects, disease, invasiveness, and how much water and care they need to be sure they live up to marketing claims.

ACCOLADES AND MISSION

Cohen has received numerous awards for teaching, mentoring, writing, and speak-



‘Stephanie Returns’ daylily was named in honor of Cohen’s horticultural achievements.

ing. She was named a Temple University Alumni Fellow in 2005 and a GWA Fellow in 2014, for which she is especially proud. “This is the highest honor one can receive in garden writing, and I was chosen by my peers. It’s like receiving the Academy Award and the Pulitzer Prize in one.” Another award she treasures is the 2005 Honor Award from PPA; she was the second woman to receive it.

The names of several plants even pay tribute to Cohen’s horticultural contributions. The list includes *Achillea siberica* ‘Stephanie Cohen,’ *Hemerocallis* ‘Stephanie Returns,’ *Phlox paniculata* ‘Shortwood’ and ‘Blushing Shortwood,’ and *Tiarella cordifolia* ‘Stephanie Cohen.’ “I’ve almost caught up with Gertrude Jekyll for the number of plants bearing my name!” she jokes.

But for Cohen, she still considers her students’ successes her most significant achievements. “I love when they come up to me at a trade show and they are so proud of what they are doing,” she says with a smile. “I would like to know that the people I taught will pay it ahead and inspire other people in this field,” she says. “That is the legacy.”

Martha Swiss designs gardens and has written on a range of gardening topics for several publications. She enjoys teaching horticulture classes and is a freelance publications editor for the Pittsburgh Botanic Garden.

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THE SPARKLING colors of fall that ripple through the eastern hardwood forests from Canada to Georgia, Alabama, and even Texas prompt admiration and envy around the world. Oaks and maples and, on a smaller scale, birches and buckeyes, dogwoods and arrowwoods bring us a fiery succession over several autumn weeks. Gardeners often include a carefully chosen array of fall-coloring trees and shrubs for a similar show at home.

But it's easy to forget that the autumnal foliage of many perennials and grasses mirrors that of the finest woody plants, developing golden, amber, buttery yellow, orange, scarlet, pink, and biscuit-brown tones as cooler conditions inspire a colorful transition before the foliage falls. And the great thing about this elegant senescence is that the late burst of color is a bonus to the plants' spring or summer features.

Selecting perennials with reliable fall foliage color is not as straightforward as simply choosing a whole genus. For ex-

Perennials *for* Fall Foliage

Increase your garden's autumn splendor by integrating perennials and grasses that have colorful foliage. BY GRAHAM RICE

ample, not all hardy geranium cultivars have colorful fall foliage, so picking the right selection is crucial. Another complication is that unlike flowers, which

tend to provide consistent displays year in and year out, fall foliage color can range in intensity and longevity depending on weather and region. These

Mauve-flowered aster (*Symphotrichum turbinellum*), foreground, and the wine-tinted foliage of the 'Heiliger Hain' cultivar of switch grass (*Panicum virgatum*) make a striking pairing in this autumn border at the Royal Horticultural Society's Wisley garden in England.

variables make creating appealing plant combinations an inexact science, but the flip side is that there's always a chance you'll end up with an even more breathtaking display than you expected.

With that in mind, here are a few suggestions for perennials, grasses, and ferns worth considering for their fall foliage.

BARRENWORTS

Barrenworts (*Epimedium* spp.) are tough, ground-covering, mostly shade-loving perennials. They are grown mainly for their colorful and dainty spring flowers, but many develop attractive foliage color later in the year that can last into winter. The timing of the coloring and final deterioration of the foliage is governed by the type and by the local climate.

Deciduous types drop their leaves in late fall. Among these, 'Enchantress'



The foliage of *Epimedium grandiflorum* changes to red before dropping in late fall.

stands out for its rich red foliage following pale pink flowers, while some selections of *E. grandiflorum* f. *flavescens* feature red or yellow fall color.

Semi-evergreen barrenworts have foliage that deteriorates in early winter, but before that, a number of forms of *E. ×versicolor*—'Cupreum', for example—features orange and red color to follow the coppery flowers. The dainty *E. ×youngianum* 'Otome' has fiery fall color to follow the blushed spring flowers.

Evergreen selections carry their color through the winter in USDA Hardiness Zone 7 and above, but in colder areas the foliage may be reduced to a skeleton of veins by January. The foliage of *E. pinnatum* ssp. *colchicum* 'Thunderbolt' develops a dark, bold, jagged pattern while the glossy 'Black Sea' features almost black foliage as winter approaches, later turning to rich brown.

■ **Growing tips** When the leaves of evergreen and semi-evergreen types have lost their color or look ratty, usually in late winter, trim them back before the spring flower



In this native plant border, the bright yellow foliage of threadleaf bluestar, foreground and left center, is paired with false indigo (*Baptisa australis* 'Purple Smoke'), New York ironweed (*Vernonia noveboracensis*), and switch grass (*Panicum virgatum*).

Resources

Fallscaping: Extending Your Garden

Season Into Autumn by Nancy J.

Ondra and Stephanie Cohen.

Storey Publishing, North Adams, MA, 2007.

Herbaceous Perennial Plants

(3rd edition) by Allan M. Armitage.

Stipes Publishing, Champaign, IL, 2008.

The Well-Designed Mixed Garden

by Tracy DiSabato-Aust. Timber Press, Portland, OR, 2003.

buds start peeping through. USDA Hardiness Zones 5–10, AHS Heat Zones 9–4.

BLUESTARS

Most bluestars (*Amsonia* spp.) have colorful butterfly to caramel or orange fall foliage that rivals the early summer display of their clusters of starry, pale-blue flowers.

The best of the lot is Hubricht's or threadleaf bluestar (*A. hubrichtii*, Zones 5–9, 9–1), which is native to a very small area overlapping Arkansas and Oklahoma but widely adaptable in gardens across the country. Voted the Perennial Plant Association (PPA) plant of the year in 2011, its slender, threadlike foliage turns bright yellow and eventually red-tinted in autumn.

Fringed bluestar (*A. ciliata*, Zones 5–9, 9–1), native to the Southeast, features

golden fall tones and is more colorful in flower, while the more widely ranging common bluestar (*A. tabernaemontana*, Zones 3–9, 9–1), has broader, willowlike leaves that mature to pale yellow.

■ **Growing tips** Bluestars are happy in sun or part shade and adaptable to a range of soil types. As the foliage turns, their stems may flop, so consider cutting stems back to six to eight inches after flowering to prompt shorter, sturdier late growth. Zones 3–10, 10–1.

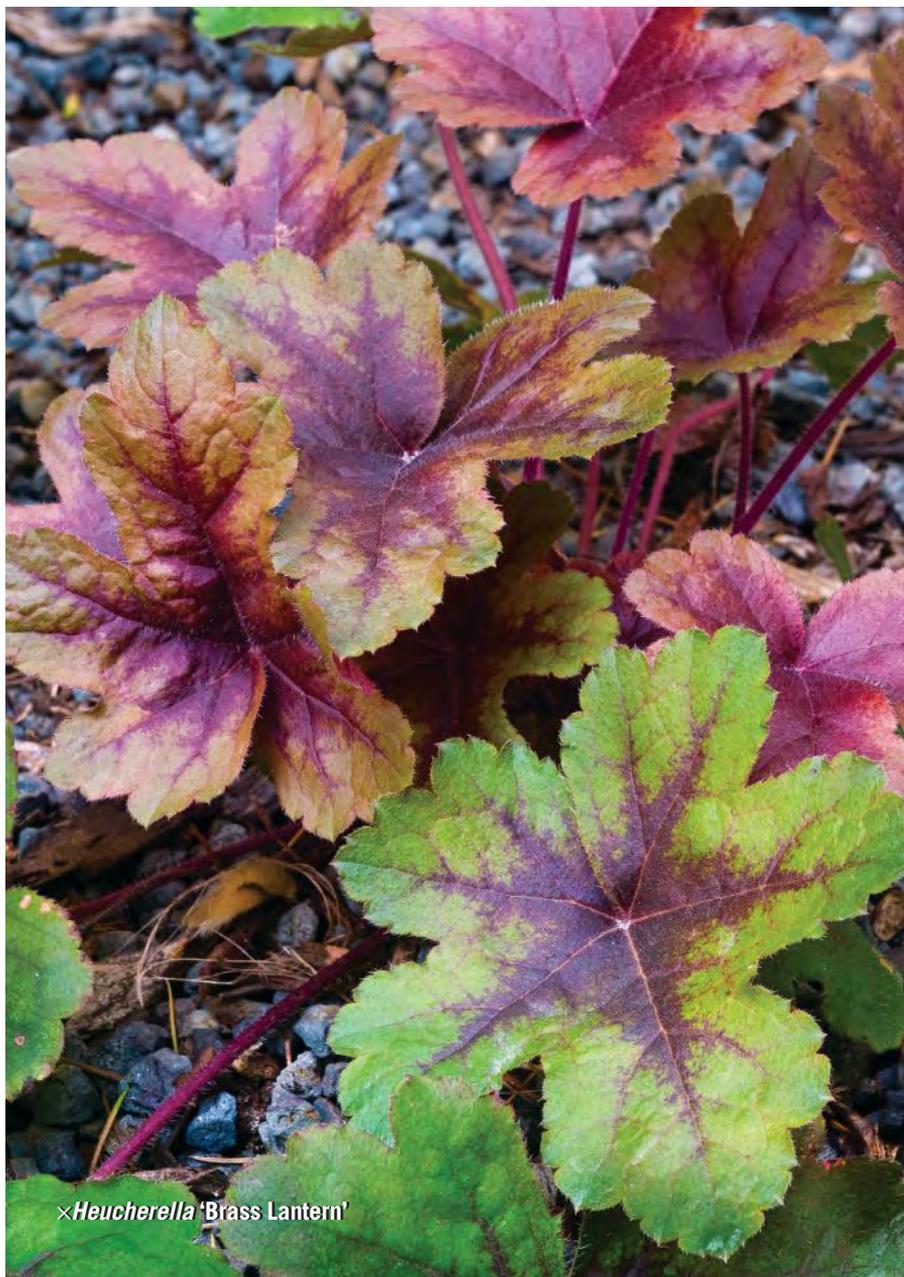
CORALBELLS AND FOAMYBELLS

The fact that the foliage of so many coralbell (*Heuchera* spp.) cultivars changes along with the seasons is one of the most valuable qualities of this popular genus.

Many of the yellow, gold, and amber selections—including ‘Amber Waves’ and ‘Ginger Ale’—develop richer coloring in fall. The aptly named ‘Autumn Leaves’ turns red, while ‘Galaxy’ develops a range of purple, red, amber, and tan tones.

Some, including the old favorite ‘Green Spice’ and especially ‘Snowfire’, develop rosy or even salmon fall tints. ‘Delta Dawn’ moves from veined in brick red to a rich red rimmed in lime.

Foamybells (*×Heucherella* spp.), an intergeneric hybrid between coralbells and foamflowers (*Tiarella* spp.), have similar qualities. As selections such as ‘Brass Lantern’ and ‘Sweet Tea’ begin to



×*Heucherella* ‘Brass Lantern’



Osmunda cinnamomea

turn, the older and more recent foliage reveal subtle differences in hue, creating an attractive tapestry effect.

■ **Growing tips** Both groups appreciate fertile soil with good drainage. Selections hybridize freely, so look out for interesting seedlings. Zones 3–8, 8–1.

FERNS

Ferns, including many American natives, are among the most exciting as their color turns in the fall.

In damp situations, the sensitive fern (*Onoclea sensibilis*, Zones 3–9, 9–2), native to much of eastern North America, makes an excellent groundcover. As temperatures drop, the fronds turn yellow

before being knocked back by the first frost—hence the name sensitive fern.

The cinnamon fern (*Osmunda cinnamomea*, Zones 3–10, 10–2), native to a wide swath of the Eastern Seaboard, is perhaps the pick of the native ferns for the bright yellow to apricot or cinnamon fall color of its fronds. Its statuesque European and Asian relative, the royal fern (*O. regalis*, Zones 2–10, 9–1) develops a slightly rustier color if it gets at least half a day of sun.

■ **Growing tips** These ferns prefer shade and moist soil, but can take some sun as long as they aren’t allowed to dry out.

HARDY GERANIUMS

Among the 300 or so species in this pop-

ular genus, the few that sport attractive fall color are well worth growing.

Spotted geranium (*Geranium maculatum*, Zones 3–8, 8–1), native to the eastern United States, brings fiery flashes to roadsides and gardens in part shade long after its pink spring flowers. The color usually moves to the center from the tips of the leaves, changing from yellow to orange to scarlet so two or three shades often light up the plant at the same time.

The European bigroot geranium (*G. macrorrhizum*, Zones 4–8, 8–1) and its hybrid *G. ×cantabrigiense* (Zones 5–8, 8–1) form dense groundcovering mats and are very reliable in fall, with scarlet and burgundy tones predominating. Bigroot geranium is the more vigorous and more adaptable of the two, thriving in shade and also in sun



in cooler zones. Both have spring flowers in white or deep to pale pink.

The heat-tolerant selection Rozanne ('Gerwat'), which is another PPA winner, follows its long season of white-eyed blue flowers with pinkish orange fall color.

■ **Growing tips** Hardy geraniums are adaptable; all but Rozanne will tolerate dry conditions in sun or shade.

GRASSES

Probably the most dependable perennials for fall color are the ornamental grasses. Less susceptible to variations in weather from season to season than other herbaceous perennials, the leaves of both native and non-native species produce a richness of color that changes



over the weeks and into the winter and may even last until spring.

Big bluestem (*Andropogon gerardii*, Zones 2–7, 7–1) features striking blue-green foliage that turns red, orange, and then bronze in fall. In hot and humid climates, it can reach 10 feet in height although in the drier conditions that enhance the coloring and prevent flopping, it also stays more compact.

Clump-forming Hakone grass (*Hakonechloa macra*, Zones 5–9, 9–5) turns a bright straw shade in fall and winter; some cultivars, including ‘Aureola’, develop red autumnal patches on the slender striped foliage as well.

Many switch grass (*Panicum virgatum*) and fountain grass (*Pennisetum* spp.) cultivars develop fiery fall color, as does little bluestem (*Schizachyrium scoparium*, Zones 2–7, 7–1).

■ **Growing tips** Foliage can often be left in place until late winter, but be sure to cut it back before the spring shoots emerge.

HOSTAS

Many gardeners miss a valuable opportunity by ignoring the contribution some hostas can make in the fall landscape.

The dwarf blue ‘Halcyon’ is one of the finest for fall color, turning an almost glossy biscuit brown. Some, but not all, plants derived from Siebold’s hosta (*H. sieboldiana*), such as the invaluable cream-edged ‘Christmas Tree’ (buttery primrose in fall) and the green-leaved ‘Devon Green’ (gold with rusty tints) fit the bill, while the bold blue ‘Krossa Regal’ (gold with orange tints in fall) is larger than both.

The fall foliage of hostas, perhaps more than other perennials, is susceptible to the first frosts. An extended cool, but not frosty, fall helps the foliage stay in good condition for as long as possible.

■ **Growing tips** Begin protecting hostas from slugs even before the shoots emerge in early spring. Zones 3–8, 8–1.

PEONIES

Hardy perennial peonies (*Paeonia* spp.) can offer fine fall color, although this is seldom mentioned in book or catalog descriptions. Tending more towards red in sun (where they are best suited) and yellow in partial shade. The color is often slow and steady in its fading, rather than



Schizachyrium scoparium

bright and brief and may vary from year to year.

Two stand-out species are the yellow-flowered *P. mlokosewitschii* and the pink-flowered *P. veitchii*, both of which develop rusty-orange tones in fall.

Among selections notable for their autumn coloring are bright-red-flowered ‘Paul M. Wild’, which develops reddish copper leaves; the single red ‘Scarlet O’Hara’; and blushed white ‘Shirley Temple’. All three fare well in southern gardens. Other good options are red-flowered ‘Armani’, which features especially bright fiery colors; rich pink ‘Inspecteur Lavergne’, which develops

redder shades; and pale primrose-flowered ‘Prairie Moon’, which turns red.

■ **Growing tips** Peonies thrive in rich, loamy soil in full sun. Allow plants to mature into fat clumps before dividing. Zones 3–8, 8–1.

SOLOMON’S SEALS

The foliage of both the American and the Asian species of Solomon’s seal (*Polygonatum* spp.) and their cultivars provides reliable fall color, as does the related American native false Solomon’s seal (*Maianthemum racemosum*, Zones 3–8, 8–1).

Small Solomon's seal (*P. biflorum*, Zones 3–8, 8–1), native to much of the eastern United States, turns an impressive butterscotch shade that fades to soft tan in contrast with the blue-black berries lining the stems among the leaflets. The best choice is probably the variegated selection of European fragrant Solomon's seal (*P. odoratum* 'Variegatum', Zones 3–8, 8–1), whose cream-edged summer leaves turn deliciously buttery as fall arrives.

False Solomon's seal develops yellow fall color after—or sometimes along with—the scarlet berries, depending on how long the birds and rodents wait before eating them.

foliage coloring at the same time that its pink flower heads turn rusty.

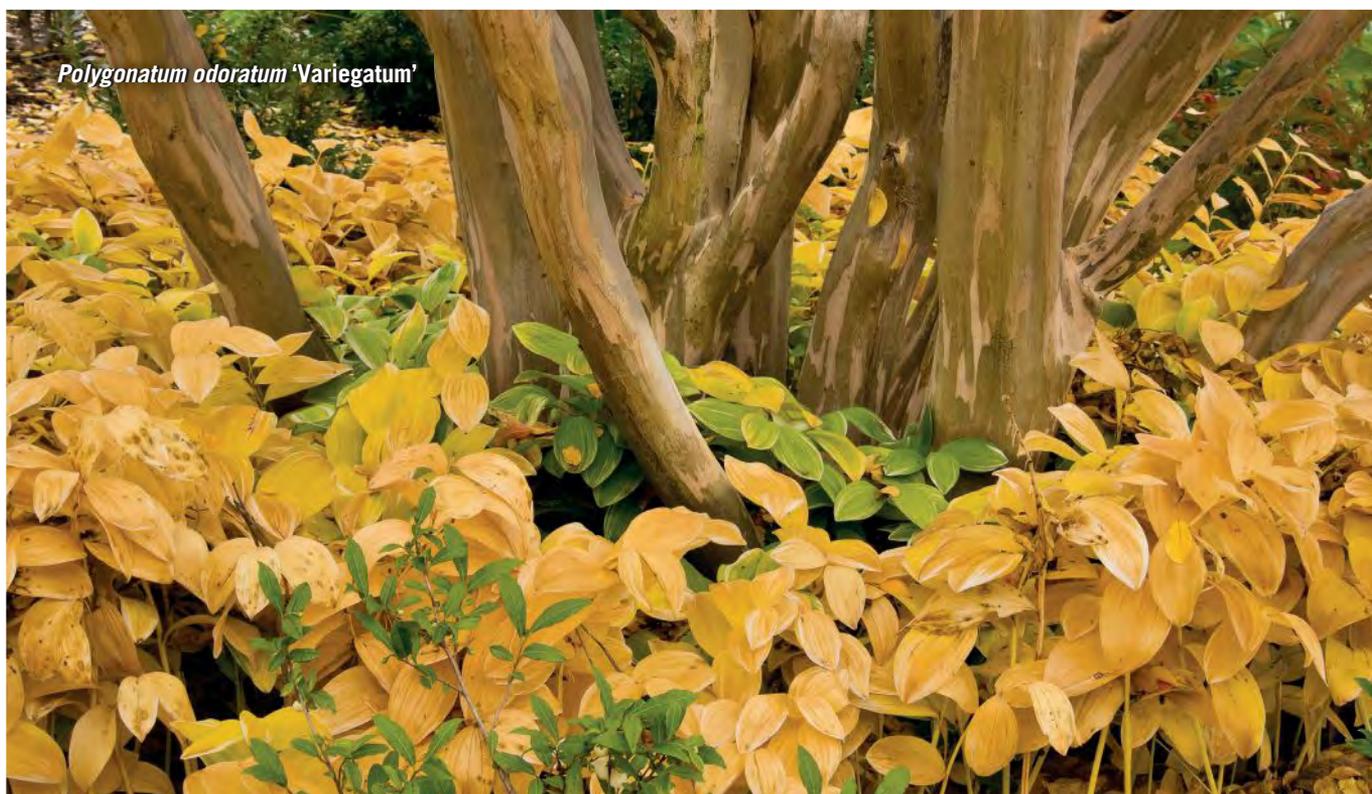
PRACTICALITIES

Shelter from strong winds is important in prolonging autumn coloring, while protection from early morning sunshine after the first frosts also helps extend the display. Plants in dappled shade that receive protection from early frosts will generally hold their color better than those in exposed sites, but the tradeoff is that those in exposed sites may exhibit richer color.

If conditions are dry as fall approaches, color may be intensified, but dry conditions, especially for shade lovers, may

ciduous shrubs that develop seasonal fall color. Instead, choose evergreens that not only create a protective environment but provide contrasting and harmonizing foliage colors and textures. Broad hosta foliage contrasts well with boxwoods; amsonias are ideal in front of blue-leaved hollies such as *Ilex xmeserveae* Blue Princess ('Conapri'); evergreens with bold forms such as upright conifers are ideal with low groundcovering *Geranium macrorrhizum*.

Late-flowering perennials are often the best companions, so consider late asters (*Symphotrichum* spp.), Joe Pye weeds (*Eupatorium* spp.), and toad lilies (*Tricyrtis* spp.).



Polygonatum odoratum 'Variegatum'

■ **Growing tips** All Solomon's seals grow best in fertile soil in part or dappled shade.

A FEW OTHERS WORTH CONSIDERING

The deep red coloring that many bergenias (*Bergenia* spp.) develop as winter approaches is quite striking. Milkweeds (*Asclepias* spp.), especially butterfly milkweed (*A. tuberosa*) and swamp milkweed (*A. incarnata*, Zones 3–9, 9–2) turn yellow in fall while many forms of balloon flower (*Platycodon grandiflorus*, Zones 4–9, 9–1) also brighten sunny borders with golden fall foliage.

Showy stonecrop (*Sedum spectabile*, Zones 4–9, 9–1) often develops pale yellow

also shorten the duration of the colorful transition.

DESIGN TIPS

The best use of these fall foliage perennials is as seasonal surprises. Their performance is less predictable even than that of trees and shrubs, so planning for specific planting combinations can be a gamble; the presence, absence, and timing of seasonal rains and of the first frosts can significantly influence the intensity of the developing color—and its timing—from one year to the next.

It can be tricky to coordinate the autumnal hues of these perennials with de-

Used strategically, perennials and grasses with attractive fall foliage can create stunning displays that complement the autumn-flowering plants and berry-bearing shrubs in your borders. For an existing border, add one or two likely candidates each year and keep notes on how they do. You can always move or replace them if they don't meet expectations. In my experience, tinkering with design like this is an enjoyable and challenging part of gardening.

Graham Rice maintains gardens in Pennsylvania and in the United Kingdom. Visit his blog at transatlanticgardener.com.

WITH THE arrival of fall, the siren call of bulb catalogs accumulated over the summer comes to a crescendo. If you have a new garden with lots of space to fill, then you have the luxury of crafting a plan to blend bulbs with herbaceous perennials and shrubs to create a harmonious, seasonally changing symphony of colors, textures, and shapes.

But even if your garden, like mine, is already well established, you can always find a little more space to tuck some bulbs within, among, around, or under other plants to create a complementary effect and that amazing spring payoff. Gardens are not

lap, however, keeps a garden pleasing to the eye for the longest time. With careful selection, you can create a display where something is in bloom the entire season.

Planting for maximum effect is important, but it's even more critical to match bulbs and plants with similar cultural needs. So assess your site for exposure to sun or shade, and check the soil to determine how wet or dry it stays as well as its acidity or alkalinity. And, of course, be sure your bulbs are hardy and heat tolerant in your region. If you live in a warm-winter region like southern Florida and southern California, you may have to pre-chill your bulbs.

interplanting Spring Bulbs

Integrating bulbs with herbaceous perennials and shrubs can extend a garden's flowering season and offer opportunities for creating more dynamic color combinations. BY BECKY HEATH

static, after all; they are constantly evolving as plants outgrow their space or die and have to be replaced. Gardeners' tastes and interests change over time, too, in response to new trends, changing conditions, and an ever expanding plant palette.

FINDING SPACE

So how do you add bulbs to an already existing garden? The best answer is: carefully. But it isn't impossible, and it's actually fun to test out new color combinations and even create changing color displays from year to year.

There are several approaches to combining bulbs with herbaceous perennials, shrubs, and trees. Choosing combinations that will bloom at the same time creates the biggest impact, like the finale of a fireworks display. Combining plants so that they bloom sequentially with a slight over-

PARTNERING WITH PERENNIALS

Combining bulbs with herbaceous perennials and low-growing shrubs is a great way to mask the maturing foliage of the spring bulbs after they have flowered. The colors of the early-blooming perennials are what attract your attention—and that means you'll be less tempted to cut down the bulb foliage too early. Remember, after bulb flowers have faded, the foliage needs at least eight weeks of sunlight to help replenish the energy for the following year's bloom.

Some of the best herbaceous perennials to help camouflage the maturing foliage of spring bulbs include daylilies (*Hemerocallis* spp.), peonies, hellebores, catmint (*Nepeta x faasinii*), and hostas.

For example, in our Gloucester, Virginia, garden, my husband Brent and I have a two-square-foot area that has white daffodils emerging through the dark burgundy foli-





Left: In this Conni Cross-designed garden on Long Island, New York, daffodils and 'Blushing Lady' tulips create splashes of bright color among low-growing shrubs and herbaceous perennials such as hostas and sedums. **Above:** Clumps of daffodils bloom in synchronized splendor with Lenten roses in this border at the American Horticultural Society's River Farm headquarters in Virginia.

age of a peony in mid-spring. Later, when that peony matures, masking the daffodil foliage, its dark green leaves and rose-pink flowers look beautiful with blue Dutch irises coming right up through them, blooming at the same time. Actually, this combination was quite serendipitous. We planted the daffodils and Dutch irises one year, and the next season we planted a peony on top of the bulbs, forgetting they were there.

Most spring-flowering bulbs prefer to be dry and cool in the summer, when they are dormant. The perennials planted in the same bed as the bulbs make useful neighbors to the bulbs by helping to soak up the moisture from the summer thunderstorms as well as shading the bulbs during the hot-

test summer months. That is just one more reason for mixing bulbs, perennials, and annuals in the same border.

As perennials grow, their branches and foliage often spread out, covering part of the bed's surface, even though their actual root bases cover much less territory. Often you can carefully lift the foliage of a perennial to make space to dig a hole for some bulbs. In most cases, the bulbs will have no problem coming up through or around the perennial—or may even bloom while it is still dormant.

Where there is very limited garden space, you can still have a long-lasting display if you stack the bulbs and take advantage of staggered bloom times. You can

PLANTING TIPS

- The best time to plant spring-flowering bulbs is after the first hard frost. Before then, the soil normally remains warm from the summer heat, and early autumn rains may cause newly planted, non-established bulbs to rot.
- The basic rule of thumb for planting depth is three times the height of the bulb. So if the bulb is two inches tall, then the bottom of the hole should be about six inches deep. Tulips and lilies, which prefer really cool soil, benefit from being planted even deeper—I often suggest placing them eight to 10 inches deep.
- The roots of spring-flowering bulbs start growing in autumn, so after planting, water the area and add a topdressing of compost or a slow-release fertilizer that is low in nitrogen and high in potash (5–10–20).
—B.H.

LEFT: SUSAN A. ROTH; RIGHT: DAVID J. ELLIS

plant tulips or lilies eight to 10 inches deep, then above them place daffodils, hyacinths, or alliums at about six inches. Smaller early-blooming bulbs—such as crocuses, anemones, and dwarf irises—can even be planted in the top three inches.

AROUND TREES AND SHRUBS

Bulbs are one of the most effective companions for flowering trees. For example, planting bulbs in front of a weeping cherry or a flowering plum enhances the overall effect when viewed from a distance. Choose bulbs with flowers that echo the color of the tree's flowers for a harmonious effect. For a vibrant look, try bulbs whose flowers contrast with those of the tree.

The area around the base of a tree is the perfect place to plant small bulbs such as crocuses, chionodoxa, squills (*Scilla* spp.), or miniature daffodils. The tree offers the bulbs some added protection from severe weather during the winter and early spring, and the bulbs can be planted shallowly so they won't damage tree roots. Some other effective small flowering trees for this purpose are crabapples, pears, dogwoods, redbuds, magnolias, and serviceberries (*Amelanchier* spp.)—or shadbushes, as we call them here in coastal Virginia.

Very early-blooming small spring bulbs such as crocuses, dwarf irises, and snowdrops (*Galanthus* spp.) are also very complementary to deciduous shrubs. Plant them around the base of red- and yellow-twig dogwoods (*Cornus sericea* cultivars), winter hazels (*Corylopsis* spp.), and deutzias.

Evergreen shrubs such as rhododendrons, skimmias, and heathers provide a dark backdrop against which to display pale-flowered early spring bulbs. White daffodils and tulips are so lovely, but if planted in the wrong place, they may not be noticed. When white flowers are planted in front of dark-leaved shrubs, they really stand out and shine. Later in the spring, the blooming shrubs shift attention away from the spent foliage of the bulbs. For a double dose of color, plant later-blooming bulbs to coincide with the bloom of the shrubs.

Consider the flower color of neighboring shrubs when choosing your bulbs. In our garden, we have the tulip 'Juan' growing up through a groundcover of *Vinca minor*. A nearby variegated euonymus echoes the tulip's yellow heart, making for an incredible display.

KEEPING TRACK OF BURIED TREASURES

All of us have occasionally stabbed a bulb or the crown of a dormant perennial when planting in an established flower bed. Before I start digging in a spot where I'm not sure what is below, I usually gently explore with my fingers to see if something that I had forgotten is on the verge of trying to emerge. I also keep a map or drawing of our garden that shows approximate placement of bulbs and perennials in relationship to shrubs and trees that remain above ground.

Marking bulbs with labels not only helps in keeping them from being damaged, but is also an aid for remembering which color scheme was used in a particular spot—this is especially helpful as you plan for future additions. —B.H.



Making use of vertical space, this artful combination in a Chicago, Illinois, garden features summer snowflake (*Leucojum aestivum* 'Gravetye Giant') emerging beneath the taller, arching stems of bleeding heart (*Dicentra spectabilis*).

Another successful combination in our garden is 'China Pink' tulip planted with fothergilla. Other suitable deciduous shrubs include azaleas, forsythias, viburnums, and witch hazels (*Hamamelis* spp.).

UNDERPLANTING GROUNDCOVERS

An area of established groundcover is a perfect spot for adding strong, sturdy bulbs to extend seasonal interest. Groundcovers suited to this process include evergreens such as periwinkle (*Vinca minor*), pachysandra, lysimachia, sedums, lamium—and even prostrate conifers like creeping juniper—and deciduous ones such as leadwort (*Ceratostigma plumbaginoides*) and certain St. Johnsworts (*Hypericum* spp.).

The dark backdrop provided by evergreens shows off the bulb flower's face and

coloration to its best advantage. The foliage over the bulbs during the winter can also serve as a living mulch, providing insulation to help bulbs survive in areas where their winter hardiness is questionable.

With most of these plants, small bulbs can be planted directly through the groundcover by digging small slots with a sharp, narrow-bladed trowel. For larger bulbs, you will need to carefully make slots with a narrow spade or larger bulb planting tool, taking care to avoid cutting major roots.

SELECTING BULBS

When you get to the exciting point of choosing what bulbs to integrate into your garden, there are several things to keep in mind.

For instance, if you want something perennial that will come back reliably year



Above: In the author's garden, bright pink 'Renown' tulips echo the color of the adjacent heather flowers. **Left:** A dynamic chartreuse and purple color mix of myrtle euphorbia (*Euphorbia myrsinites*) and grape hyacinths (*Muscari* sp.) is enhanced by the textural contrast between the conelike and rounded flower shapes.

after year, think about daffodils, snowflakes (*Leucojum* spp.), grape hyacinths (*Muscari* spp.), colchicums (*Colchicum* spp.), and perennial tulips. Non-perennial tulips make relatively inexpensive annuals.

Another consideration is your climate. If you live south of USDA Zone 8 or where there is not a discernible winter, you may need to order pre-chilled bulbs or specific types whose ancestors hail

Resources

Bulbs by John E. Bryan. Timber Press, Portland, OR, 2002.

Daffodils for North American Gardens by Brent and Becky Heath. Bright Sky Press, Albany, TX, 2001.

Taylor's Guide to Bulbs by Barbara W. Ellis. Houghton Mifflin, Boston, MA, 2001.

Tulips for North American Gardens by Brent and Becky Heath. Bright Sky Press, Albany, TX, 2001.

Sources

Brent and Becky's Bulbs, Gloucester, VA. (804) 693-3966.

www.brentandbeckysbulbs.com.

John Scheepers, Inc., Bantam, CT. (860) 657-0838.

www.kitchengardenseeds.com.

Old House Bulbs, Ann Arbor, MI. (734) 995-1486.

www.oldhousegardens.com.

from warmer climates. Jonquilla- and Tazettas-type daffodils are an example of this type of bulb, but there are many more. Check with your bulb supplier, local Extension agent, or gardening friend if you're not sure which bulbs will thrive in your garden.

And, of course, there are critter issues. If deer, voles, or rabbits are a problem in your area, then certain bulbs, such as tulips and crocuses, require some form of protection. Better yet, plant daffodils, snowflakes, and colchicums, which animals don't eat.

TAKE THE FIRST STEP—AND ENJOY

Adding new bulbs to an existing garden can be a bit daunting. However, once you take the first step and see some successes, you'll find yourself digging bulbs and dividing perennials and passing them on to your friends. To me, one of the best things in life is sharing happy gardening experiences with friends!

Becky Heath and her husband, Brent, are co-owners of Brent and Becky's Bulbs, a nursery in Gloucester, Virginia, that specializes in bulbous plants for all seasons. This is an updated version of an article that was originally published in the September/October 2005 issue of this magazine.



Nurturing Young Minds *with* Nature

The Carolina Children's Garden provides an imaginative space focused on nature where kids can learn through play.

BY VIVEKA NEVELN

FIRE ANTS nip at my sandaled feet while the unrelenting July sun beats down on our small group at the Clemson University Sandhill Research and Education Center in Columbia, South Carolina. Our guide, Arlene Marturano, welcomes us with straw fans and water bottles. As she begins to tell us the story of the Carolina Children's Garden, which we're here to see, I momentarily forget the heat and insects as I absorb her words. Take one shoestring budget, add in a few dedicated visionaries, a small army of volunteers, and "a whole lot of stick-to-it-tiveness," says Marturano, and what you get is one magical place for kids to learn about plants while building an affinity for the natural world.

Marturano tells us that this two-acre garden grew out of her experience attending the first National Children & Youth Garden Symposium hosted by the Amer-

ican Horticultural Society (AHS) in 1993. During that event, she visited the brand new children's garden at the AHS's River Farm headquarters in Virginia. Spaces at public gardens designed specifically for children have become much more common since then, but at the time the AHS's garden was at the leading edge of this trend.

This garden's playful approach to presenting environmental concepts and plants to young visitors stuck with Marturano, who was then teaching science at a middle school in Columbia. "Imagination had been largely removed from education but here it was at River Farm," she remembers. She also appreciated that

The Carolina Children's Garden comprises several themed areas such as the alphabet garden in the foreground and the Mesozoic Memories garden beyond it.

the ideas she saw "seemed do-able at home or a school, like a butterfly garden or an alphabet garden." On a personal level, she says, "it reminded me of my childhood garden and made me want to share that positive experience with more children."

Though she had already established an extensive garden program at her school, Marturano began to envision a garden for a broader audience than her students. She set her sights on Clemson's Sandhill facility because of its natural beauty and emphasis on horticultural demonstration for the public's benefit. She convinced its director at the time that a children's garden on site would be a win-win, based on the River Farm example. With the site secured, she then reached out to local businesses, organizations, and government agencies—"basically anyone who would listen to me," she says with a laugh. Half a



Brightly painted structures such as the arbor framing the entrance to the Bird Garden, left, and whimsical figures such as a topiary bear pushing a wheelbarrow, right, convey each area's theme.

dozen eagerly responded, so with the help of these community allies, the Carolina Children's Garden opened in 1997.

IGNITING IMAGINATIONS WITH THEMES

Fast forward a couple of decades and Marturano is now giving us a tour as part of the 24th annual National Children & Youth Garden Symposium. We're also accompanied by Todd Beasley, who heads the Friends of the Carolina Children's Garden organization that oversees the garden. They are both particularly enthusiastic to

show us around because the garden has just undergone what Marturano characterizes as a makeover. Everything from the vigorous young plants to the jaunty bandanas on a family of topiary-frame bears bespeaks the recent rejuvenation.

The Carolina Children's Garden's basic layout remains unchanged, however. It still comprises several themed areas, reminiscent of the River Farm children's garden that inspired it. The first to catch my eye is the alphabet garden's large, brightly colored letters attached to a low, white picket

fence. I make a beeline for it after Marturano invites our group to explore on our own. Alongside each letter, I notice a plant with a name that begins with it—cheery orange cosmos for C, for instance—labeled in block letters on a wooden paint stirrer.

I begin working my way over to Z but before I reach the final letter, I spy a kid-sized birdhouse painted with colorful flowers that draws me into an adjacent area dedicated to all things avian. This Bird Garden had originally been installed by Marturano's sixth-grade students as part of a unit on bird ecology, so it is filled with plants that provide food and shelter for several species of songbirds.

Then I notice a dinosaur-shaped slide back in the direction I had come so I wander over to explore the Mesozoic Memories Garden. It features the types of plants that existed in prehistoric times, such as ferns, palms, and ginkgos. The recent makeover included the addition of many new plants to this area. Beasley gestures to the rope-and-post fence that surrounds them, which is also new. "Hopefully it will protect the smaller plants for a while," he says, until they become more trample-proof.

Save the Date!

2017 National Children & Youth Garden Symposium, July 12-15, Greater Portland, Oregon, and Vancouver, Washington, area.



Arlene Marturano (center) and Todd Beasley welcome a group of visitors to the Carolina Children's Garden as part of the 2016 National Children & Youth Garden Symposium in July.

Such modifications may be necessary while establishing young plantings, but one of the garden's best features, according to Beasley, is that "kids are not constrained by structured rules and pathways." This means they can literally run wild if they want to and engage in the sort of free play that encourages creativity and learning. I realize that my own meandering progress around the garden shows that adults aren't constrained either!

This freedom to roam sounds all well and good, particularly when considering the boundless energy youngsters seem to need to burn, but Beasley believes it serves a much larger purpose. "Natural areas that allow imagination, discovery, and exploration to happen," he says, "are how many of us become interested in environmentalism." Instilling that interest is vital to gener-



Left: Student volunteers repair Eeyore's hut in Pooh's Corner. Right: School kids enjoy an activity during a visit to the Carolina Children's Garden.

ating future stewards of the earth who will be moved to protect the plants, animals, and landscapes they learned to love.

OPEN TO ALL, THANKS TO MANY HANDS

Beasley feels that another of the garden's best qualities is that "it is a free garden that allows access for all socio-economic demographics and diverse cultures." And access it, they do. Open seven days a week, the garden is frequented by "homeschoolers, family and organization picnics, moms' clubs, prayer groups, dog-walkers, and many others from morning until gates are closed in the evening," Marturano says. Occasionally, the garden offers special events such as an Arbor Day celebration and nature walks, which draw even more visitors.

Consequently, one of the crucial roles of the Friends organization is finding creative ways to make all of this possible. A "reindog" parade and costume contest at Christmas-time has proven to be a successful fundraiser, for example. Grants provide funds for everything from a part-time educator hired a few years ago to the supplies for the recent makeover. But perhaps most essential has been the "friend-raising" to secure helping hands and needed supplies. Marturano points to the garden's main entrance to illustrate. Its brick path and the plants around it came about as a service project for the members of the Greater Columbia Landscape Association.

Several other groups such as Master Gardeners, scouts, and college students participate in monthly service days to help with garden maintenance tasks. Local woodworkers, sculptors, and other artists contrib-

ute their skills for specific projects. Others donate their expertise, such as naturalists and birders who help out with programs.

Area businesses have pitched in, too. A local garden center created Pooh's Corner, complete with painted plywood characters from the Winnie-the-Pooh stories and a "Kanga and Roo Sandpit" where kids can dig to their hearts' content. An independent bookstore sponsored the nearby Reading Garden, a shady nook tucked into a stand of native longleaf pines where visitors are encouraged to indulge in the printed word. Even the garden's current Master Plan is a generous gift, created *pro bono* by a Columbia-based landscape architect.

Visit the Garden



CAROLINA CHILDREN'S GARDEN

900 Clemson Road
Columbia, SC 29229
www.carolinachildrengarden.org

EVEN BIGGER DREAMS

That Master Plan, on display in a large kiosk that I pause beside as our tour concludes, indicates there's still much more to come. The drawing shows a native wildflower area and a play area made of grassy moguls joining the existing gardens. Log structures for climbing and a "workshop" site filled with sticks, rocks, and other natural items for construction play add to the fun. A walking path unobtrusively connects everything.

The physical evolution of the children's garden is clearly a major focus, but Marturano hopes to develop more educational programming as well. "Some people see this as a community park," she says, "but I have bigger dreams." In the past, grants have allowed the garden to offer a formal environmental education program that served as many as 1,500 schoolchildren in an academic year. Building on that success is a no-brainer in Marturano's mind. "Gardening is an organizing thread for education," she says, meaning that it can be used to teach so many different concepts and subjects from geography to engineering. She sees limitless potential for using the children's garden for both informal and more curated learning.

The garden certainly has ambitious goals, but if its past accomplishments are any indication, there's no doubt it will find a way to make them happen. For now, this treasured part of the Columbia community will continue doing all it can to infuse kids with a sense of wonder for plants and nature. 🌱

Viveka Neveln is associate editor of The American Gardener.

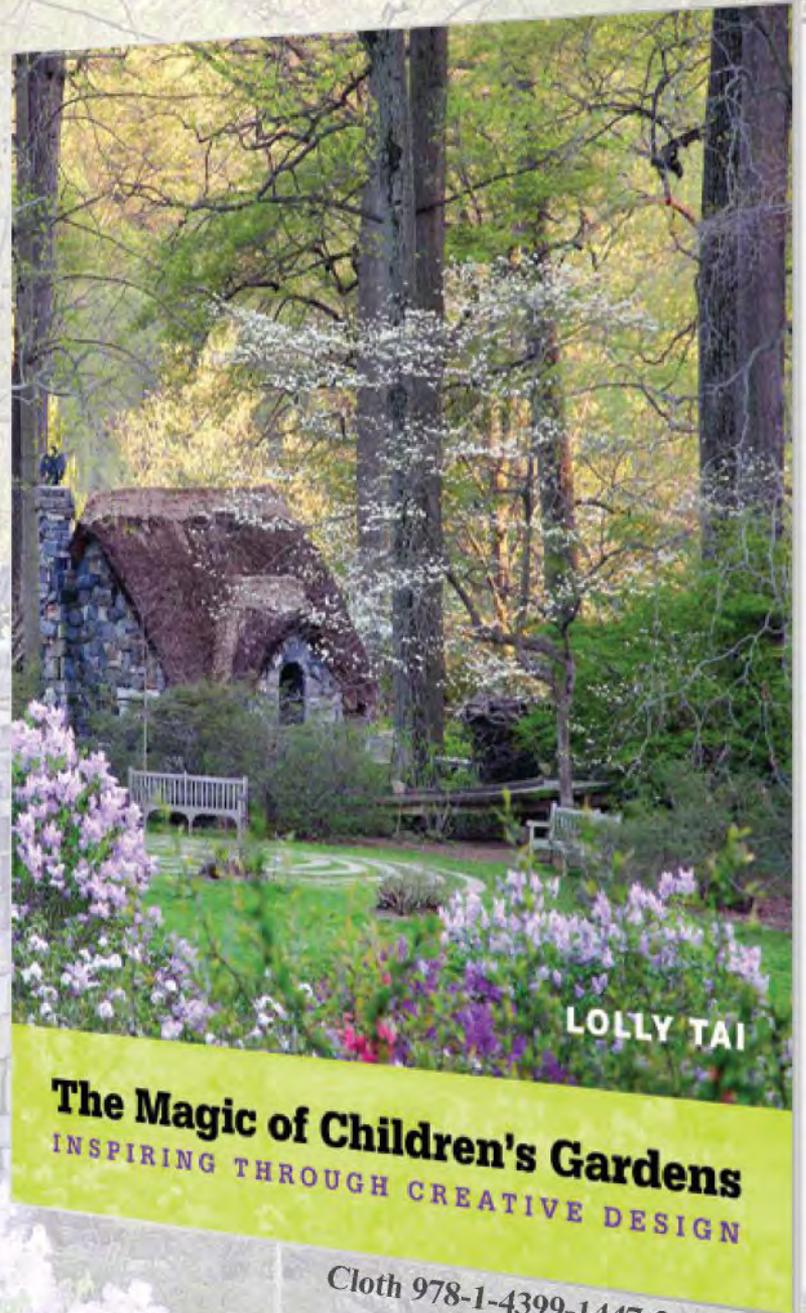
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Tips for Overwintering Tropicals

by Scott Aker



Many popular garden plants native to tropical or semi-tropical habitats, such as cannas and coleus, must be brought indoors to survive the cold winters in most parts of North America.

MOST OF US have plants with tropical or semi-tropical origins in our gardens—those that thrive in the heat and put on their best show in late summer and early fall. As colder weather approaches in most parts of the country, it's only natural to think about saving as many of them as possible for the next growing season. Every fall I used to cram as many plants as I could into a room in my house equipped with a high-intensity discharge lamp, but I've now learned to be selective about the ones that get to spend the winter there. Some plants—such as coleus and geraniums (*Pelargonium* spp.), unless they are

prized varieties—can be easily replaced next spring and are not worth retaining, and I've found ways for saving others that don't take up a lot of space.

INSPECT PLANTS NOW

It's always best to plan the autumn plant migration before frost threatens for the first time. Start early by checking plants thoroughly for signs of pests and disease. Look for fuzzy white mealybugs and the round brown bumps of soft scale along the branches and in the axils of the leaves. Small plants infested with scale can be treated with a dip in a solution of four tablespoons of horticultural oil per gallon of

water. Remove all the soil you can before you treat plants, and pot them in fresh soil. Consider discarding larger infested plants.

Unpot container-grown plants to inspect their roots; those with unhealthy roots will likely decline even more during their time indoors. If you see mites or aphids, blast them off with a garden hose. Look under pots and just inside drain holes for slugs and snails and remove them before bringing plants indoors.

SPREAD OUT THE JOB

A common misconception is that all tender plants need to be moved indoors at the same time. Some, such as philodendrons, are truly tropical and are injured by temperatures below 40 degrees Fahrenheit (F), so they need to come indoors long before the first frost. Most garden plants, however, can tolerate some cold and may even benefit from exposure to temperatures that are just above freezing to slow their growth before they head indoors. Some, such as rosemary and bay, can even handle a few degrees of frost. I use my unheated garage to carry these plants through the coldest months, giving them enough water every few weeks to keep the soil barely moist.

OVERWINTERING DORMANT PLANTS AND BULBS

Not all tropical plants need to actively grow throughout winter. Bananas, angel's trumpets (*Brugmansia* spp.), geraniums, and elephant ears (*Colocasia* spp.) are good examples. In their native habitats, they encounter cooler, drier weather for part of the year and stop growing until moisture and warmth return. I dig these up and put the root balls in a box or trash can liner before moving them near a small sunny window in my basement, which stays around 60 degrees F throughout the winter. I give them a little water two or three times over the course of the winter. The plants may start looking tired but usually recover when placed outdoors in spring.

Frost-tender plants with bulbs or tuberous roots are a cinch to save, since they go dormant in cool, dry weather and can remain this way for months indoors. Bulbs and corms such as caladiums, gladioli, ornamental sweet potatoes, and dahlias need to be dried properly before storage to reduce the chances of rot. Dig these plants in advance of first frost, ideally when there are a few days of warm, dry weather in the forecast. Place them in a dry, shady location with good air circulation. After a week or two, they can go into a box or plastic bag for storage in a root cellar or cool, dry basement. If you use plastic bags, be sure they have holes for ventilation.

you can give them. Because the sunniest locations indoors provide less light than the shadiest locations outdoors, the best option for these plants is to use high-pressure sodium or mercury vapor lamps. These fixtures produce bright light that retains its intensity several feet away from the lamp.

Plants in pots should generally be kept in a cool place with adequate light and air circulation. Allow the soil to dry a bit between watering and don't fertilize. Group plants together to help boost moisture. I also place my plants on trays of pebbles that I keep filled with a small amount of water; the water cools and humidifies the air as it evaporates.

Gardening Q&A with Scott Aker

REPLACEMENT FOR A MUGO PINE

I live southwest of Chicago in USDA Hardiness Zone 5. A new mugo pine that I planted in a row of pines recently died and fell, bringing down with it half of an established mugo pine next to it. Is there another tree I can plant to fill the space that will tolerate root competition?

Mugo pine (*Pinus mugo*) doesn't tolerate soggy soil. Your location might have a drainage problem that killed the new tree. I suggest replacing it with a plant that will tolerate the dry conditions created by root competition, yet be able to survive wet periods if the soil is poorly drained. A good choice is American arborvitae (*Thuja occidentalis*). This native evergreen conifer can grow to 40 feet or more, but most cultivars are shorter. Narrow, upright selections such as 'Degroot's Spire' and 'Smaragd' growing 15 to 25 feet are available, as well as rounded dwarfs such as 'Rheingold' and 'Little Giant' that grow to four or five feet tall.

BIRD-PROOFING TOMATO PLANTS

Mockingbirds have been eating my ripening tomatoes before I can harvest them. I've tried bird netting and fencing, but to no avail. What do you suggest?

Bird netting should work, but the holes need to be small enough to prevent mockingbird passage through them—about three-quarter-inch. The netting must be placed so that the barrier it creates is far enough from the plants to prevent the birds from reaching in to sample the tomatoes; you might need to install some type of frame around the plants to support the netting. Also be sure the edges of the netting are securely fastened to the ground or buried to prevent entry. —S.A.

Send your gardening questions to Scott Aker at saker@ahs.org (please include your city and state with submissions).

Cuttings Save Space

Coleus, impatiens, and angel wing begonias are usually treated as annuals in American gardens, but they are actually tender perennials. These soft-stemmed plants can be saved from winter cold by bringing entire plants indoors, but a better and space-saving way to keep them going is to take cuttings just before the first frost. These root easily in a glass of water placed on or near a sunny windowsill. Be sure to change the water every week. You may be able to hold them for months this way. Pot the rooted cuttings in late winter or early spring to get them growing again before they go back out to the garden. —S.A.



These coleus cuttings have formed large root systems and are ready to be potted.

Cannas, elephant ears, and amaryllises need to retain as many roots as possible, so take them directly from the garden into storage. Leave them in pots, or if they are growing in the ground, place them in a box or plastic bag filled with wood shavings or dry peat moss.

Store gladioli, cannas, and dahlias in a location with high humidity and temperatures around 40 degrees F. If the indoor air is too dry, soak wood shavings in water and add a few to the storage box or bag from time to time. Caladiums and amaryllises need temperatures about 60 degrees F. Store ornamental sweet potatoes in a cool, dry location.

WINTER CARE

Some tender plants—such as citrus trees, hibiscuses, and orchids—need to have as much light during their winter vacation as

Check dormant bulbs monthly and discard any that are completely shriveled or show signs of rot.

Wait until after the average last frost date in your area to start returning plants to the garden. Place them in a sheltered, shady location for a few hours the first day, gradually increasing the duration each day for a week or two before situating them in their permanent spots.

With a bit of planning, you can bring tender garden plants indoors and spare them from winter's wrath. Tending them while they're indoors serves as a reminder that spring will return. When it does arrive, you'll be able to shift them back outdoors to provide another season of beauty. ❧

Scott Aker is head of horticulture and education at the United States National Arboretum in Washington, D.C.

Sweet Potatoes: Culinary and Nutritional Superstars

by Ira Wallace

DELICIOUS AND nutritious sweet potatoes (*Ipomoea batatas*) thrive in hot, humid areas, but are easy to grow throughout temperate North America. In the United States, this vining perennial is usually grown for its tuberous roots, which can be served baked, boiled, steamed, or as fabulous fries. Clad in brown to red-colored skin, the tubers typically have bright orange flesh, but yellow, white, and purple fleshed varieties are also available. They are high in fiber, carbohydrates, potassium, manganese, and vitamins A and C, yet low in fat and sodium.

The deeply lobed leaves—which are edible and widely consumed in many parts of the world—are attractive in their own right and look great used as an annual ground cover or trailing over the edge of a container.

GROWING GUIDELINES AND TIPS

Sweet potatoes need heat, sun, and at least four months of frost-free growing. They prefer loose, well-drained, slightly acidic soil (with a pH of 5.8 to 6.2), and moderate fertility. Too much nitrogen can result in lush vines and few tubers. Work lots of compost or other organic material into the soil to improve its texture. Plant in eight- to 12-inch-high ridges or in raised beds to ensure drainage.

Most gardeners start with slips—small, live shoots—from a local garden center or reputable mail-order source. Plant your slips as soon as possible after they arrive, so long as it is at least four weeks after your average last frost date and the soil temperature exceeds 65 degrees Fahrenheit (F). If the weather or the soil is still too cold, heel the slips into some moist potting soil, in a warm temporary location such as a cold frame or greenhouse, for transplanting later.

Gardeners with short growing seasons should select early varieties that mature 90 to 100 days from transplanting. If you



A freshly harvested crop of 'Beauregard' tubers shows a motley assortment of shapes.

have a long growing season, your choice of varieties is much greater. Choose the sunniest part of your garden and two to



Sweet potatoes need space to spread in order to produce large tubers.

three weeks before planting, cover the ground with black plastic sheets to warm the soil and suppress weeds.

Don't worry if your slips don't have roots. With proper care, new roots will develop rapidly. Plant slips in the garden about two to four inches deep with at least two leaves above ground. Space the plants 10 to 18 inches apart in rows at least three feet wide to provide plenty of room for the sprawling vines. Plants spaced closer together produce smaller tubers; wider spacing produces larger ones, especially over a long growing season.

Water the soil before planting if the weather is warm and dry. Transplant in the evening or on a cloudy day and water the slips immediately. Keep the soil moist for 20 days or so until the plants are well established. Use organic mulch to reduce weeds; once the vines come into their own, they will shade out competition.

PEST AND DISEASES

Sweet potatoes generally have few pests

but you may need to protect foliage from browsing deer or rabbits. In southern areas, wireworms and root-knot nematodes may be a problem. Prevention is best: Rotate your planting area each year, choose disease-resistant varieties and certified disease-free slips.

RECOMMENDED VARIETIES

'All Purple' (120 days) This variety is purple inside and out, with starchy, slightly sweet flesh suited for savory dishes.

'Beauregard' (100 days) High-yielding and crack-resistant tubers have pale reddish skin and dark orange, sweet, moist flesh. One of the most popular selections among farmers for its reliability.



'Bush Porto Rico' (110 days) Copper skin with orange flesh. Compact vines grow 12 to 30 inches tall with big yields. Good for smaller gardens and containers.

'Georgia Jet' (90 days) Popular early variety, especially in the Northeast, because of its cold tolerance. Red skin with deep-orange flesh.

'O'Henry' (100 days) White flesh, cream or pale tan skin. Sweet with dry flesh that cooks to a smooth, creamy texture, excellent in savory dishes. Large tubers grow in a cluster under the plant, making for easy harvest.

ENJOYING THE HARVEST

Harvest leaves and young shoots for greens any time during the season. They make great additions to stir fries, salads, and omelets. The tuberous roots form near the surface and can be harvested whenever they reach your preferred size.

Gently lift the foliage and look for “baby bakers,” or dig up one of your plants at the recommended maturity date for the variety. If the sweet potatoes are still too small for your liking, try again in a week or so.

Harvest on a sunny day when the soil is not too wet; it is helpful to reduce watering for the two weeks preceding your anticipated harvest. Pull aside the vines so you can see where you're digging. Using a garden fork or shovel, begin digging 18 inches from the center of the plant to avoid damaging the roots as you gently lift them out. Let them dry in the sun for no more than one hour. Take care to avoid bruising.



'All Purple', left, and **'O'Henry'**, above, are well suited for use in savory dishes.

Sweet potatoes left in the ground will grow until frost, but for best storage quality and taste, harvest them before the soil temperature drops below 55 degrees F.

CURING AND STORAGE

Freshly dug tubers don't have a lot of flavor. For optimum sweetness as well as successful long-term storage, tubers need to undergo curing, a process of exposing them to the right environmental conditions that help convert starch to sugar and promote the healing of scratches or other damage to the tubers that is inevitable during harvesting. Do not wash the tubers; just let the skins fully dry, then shake or gently brush off excess soil. Keep the tubers at a high relative humidity—at least 90 percent—and approximately 85 degrees F for seven to 10 days. A furnace room or space heater can provide the right storage conditions.

PLANTING BASICS

Sweet potatoes can be grown wherever the frost-free growing season is at least four months long. Choose a sunny location with well-drained soil.

Planting Plant slips right away if possible, or heel them in to a temporary location (cold frame, greenhouse, indoor flats) if the soil is not yet warm enough. Plant at least four weeks after average last frost, when soil temperature exceeds 65 degrees F. In cooler areas, warm the soil by covering with black plastic two to three weeks before planting.

Spacing Plant two to three inches deep with at least two leaves above ground, in raised beds or ridges, 10 to 18 inches apart in rows at least three feet apart.

Growing Keep the young plants well watered and weeded until they are established. Irrigate for higher yields and to avoid cracks.

Days to harvest 90 to 140 days, depending on variety.

—I.W.

Sources

Johnny's Selected Seeds, Winslow, ME. (877) 564-6697. www.johnnyseeds.com.

Southern Exposure Seed Exchange, Mineral, VA. (540) 894-9480. www.southernexposure.com.

W. Atlee Burpee & Co., Warminster, PA. (800) 888-1447. www.burpee.com.

Never refrigerate uncooked sweet potatoes; cold storage causes tubers to form hard cores and lose flavor. Properly cured sweet potatoes can be stored for five to 12 months at 55 to 70 degrees F in a dry, well-ventilated area, away from light. This is more than long enough to provide good eating until the next growing season. ☺

Ira Wallace is a worker/owner at the cooperative Southern Exposure Seed Exchange, co-organizer of the Heritage Harvest Festival at Monticello, and author of The Timber Press Guide to Vegetable Gardening in the Southeast.

Rutgers Gardens in New Brunswick, New Jersey

by Natalie Sheffield

IN 1916, Rutgers University in New Brunswick, New Jersey, acquired a nearby 37.5 acre farm for only a dollar. Over time, the property that would become Rutgers Gardens gradually evolved into a base for peach, holly, and dogwood breeding programs and a site for trialing ornamental plants to assist the area's nursery industry. Today, Rutgers Gardens' primary focus has transitioned to providing garden displays and



Left: Visitors enjoy the irises in bloom during an open house day in 1939. Extension Specialist in Home Horticulture Donald B. Lacey replaced these mass iris plantings in the 1960s with the demonstration annual garden, above, which bears his name.

educational programs for the public on what is now about a 180-acre site, but the unique range of plants that have accrued on the property provide a window into its 100-year history.

GROUNDING IN RESEARCH

Until the last quarter-century, the property originally known as Hort Farm 1 was primarily used by Rutgers staff for agricultural research. "The public was never pushed out, but there was no shingle put up saying, 'Welcome, come in,'" explains Bruce Crawford, Rutgers Gardens' director. The only time the public was actively invited to visit was during times of the year when the research farm's collections of irises, chrysanthemums, peonies, and other nursery staples bloomed *en masse*.

Among the garden's claims to fame is North America's second largest *Ilex*

collection, the legacy of its notable holly breeding and trial program in the last century. Renowned plant breeder Elwin Orton, who joined the university in 1960, started out working with hollies, and then took on the challenge of trying to develop attractive, disease-resistant dogwoods by crossing native eastern dogwoods (*Cornus florida*) with the Asian *Cornus kousa*. The resulting Rutgers hybrid dogwood series, released in the 1990s, is still widely acclaimed and popular with home gardeners (for more on Orton's work, see the article on him in the September/October 2012 issue of this magazine).

The eventual transition from a university-funded research property to a public garden is due in large part to former Rutgers horticulture professor Bruce Hamilton. In the 1990s, when rumors circulated about the land's sale, Hamilton, along

with the Garden Club of New Jersey, advocated for the garden's preservation and generated public support. According to Crawford, without benefit of a budget or official support from Rutgers, Hamilton "just figured out how to make it happen," using volunteers, donations from the community, and plant sales.

PROGRAMS AND PRODUCE

Plant sales, now overseen by Rutgers Gardens' horticulturist Monica McLaughlin, still happen annually. These four-day events each spring draw plant lovers with a comprehensive stock of vegetables, annuals, and perennials either grown onsite or sourced from local nurseries. The garden has also begun a sustainable agriculture farm in collaboration with Rutgers University faculty and undergraduates, and with the help of interns it is producing its



These iconic green Adirondack chairs in the Edwin J. and Ida M. Otken Memorial Garden were inspired by an oversized rocking chair on the 1960s TV comedy show “Rowan and Martin’s Laugh In,” says Rutgers Gardens Director Bruce Crawford.

first vegetables this season. Surplus vegetables are donated to a local food bank, and the hope is to eventually open a farm-to-table restaurant as well.

Rutgers Gardens also supports the surrounding community by offering a broad range of educational programs tailored to adults with different levels of gardening expertise and also to children of all ages.

DISPLAY GARDENS

“It’s very much a strolling garden,” McLaughlin says of the current Rutgers Gardens displays. Guests can walk through

the diverse gardens, take photographs, and even hold events in the pavilion or log cabin built by the Civilian Conservation Corps in the mid-1930s.

An extensive “forest” of evergreen bamboo, originally planted to provide winter protection for beehives, surprises and intrigues many visitors. McLaughlin says that, for most visitors, walking the trails through the three-acre forest “takes you outside of anything you’ve experienced.”

Another highlight for many visitors is the annual display in the **Donald B. Lacey Display Garden**, which incor-



A popular spot for weddings, the Lillian Koelsch Gazebo is also an inviting spot for visitors to relax.

Additional Information

Rutgers Gardens

130 Log Cabin Road, New Brunswick, NJ 08901. (732) 932-8451.
www.rutgersgardens.rutgers.edu

- Hours: Open all year 8:30 a.m. to dusk
- Admission: Free
- Rutgers Gardens participates in the AHS’s Reciprocal Admissions Program. AHS members with a current membership card receive discounts in the gift shop.

Other nearby sites to explore:

Grounds for Sculpture,
www.groundsforsculpture.org

Reeves-Reed Arboretum,
www.reeves-reedarboretum.org

Zimmerli Art Museum,
www.zimmerlimuseum.rutgers.edu

porates more than 100 plants, including All-America Selections winners. It is sure to feature a salvia variety or two, as McLaughlin considers them “indispensible...and great for pollinators.” Crawford planned the **Edwin J. and Ida M. Otken Memorial Garden** with two bright green, oversized Adirondack chairs as the focal point. These have become popular with visitors for photo opportunities and the sense of whimsy they bring to the garden. In winter, a dusting of snow sets off the varied shades and shapes of trees in the evergreen garden. The adjoining **Frank G. Helyar Woods** offer hiking trails and views of a neighboring lake.

PROMISING FUTURE

Rutgers Gardens’ tagline is “where the future of horticulture is grounded in our past,” and the master plan for its future takes the idea of history seriously. Crawford wants to rework existing garden areas in order to illustrate the evolution of plants on earth, so that “as you walk through the garden, you walk through time,” he says. For a garden with a long and storied past, this vision bodes well for the next 100 years. 

Natalie Sheffield is an editorial intern with The American Gardener.

Horticultural News and Research Important to American Gardeners



'Blueberry Sundae's' profusion of blooms and compact nature made it the best blue-flowering *Baptisia* cultivar in Mt. Cuba Center's trial.

BAPTISIA HIGHLIGHTED AS OUTSTANDING NATIVE PLANT FOR GARDENS

The Mt. Cuba Center, a 150-acre garden near Wilmington, Delaware, dedicated to native plants and ecosystems, recently completed a four-year *Baptisia* trial. Native to regions east of the Rocky Mountains, these members of the legume family (Fabaceae) are "super easy to grow, deer-resistant, incredibly low-maintenance, and long-lived," says Mt. Cuba's Research Horticulturist George Coombs. He rated the flower quality and plant habit of 46 species and cultivars during the evaluation.

According to Coombs, the quality that clearly set the cultivars apart was floppiness—some plants' long stems were easily toppled by wind or rain. Others grew too large for the average home garden, or had foliage that obscured the

flowering stalks. Among Coombs' top choices were 'Blueberry Sundae,' a cultivar that's "the perfect size, and a nice blue color;" and 'Lemon Meringue,' a cultivar with distinctive gray stems and yellow flowers. To access the full report, visit www.mtcubacenter.org.

PLANTS DISPLAY RISKY BEHAVIOR

Animals may not be the only living things that take risks for a chance at greater gain. In a study published in the July 2016 issue of the journal *Current Biology*, researchers found that pea plants take gambles when it comes to root growth. A team of scientists from Tel-Hai College in Israel and Oxford University in England demonstrated this in an experiment where pea seedlings were grown with their roots divided between two pots that contained differing levels of nutrients.

As might be expected, pea seedlings with their roots divided between a pot with adequate levels of nutrients and one with variable levels—sometimes high and sometimes low—grew more roots in the stable pot.



Scientists analyzed pea plants' roots, divided between two pots, to determine how they responded to the amount and variance of available nutrients.

However, when a seedling's roots were divided between a pot with insufficient nutrients for survival and one with variable levels of nutrients, more roots grew in the varying pot. In the second scenario, where the plant would almost certainly die in the pot with consistent but low levels of nutrients, greater root growth in the pot that had a chance of providing enough nutrients indicates that plants have a mechanism to respond to risk, similar to animals.

According to the study's co-author Alex Kacelnik of Oxford University, "This is the first demonstration of an adaptive response to risk in an organism without a nervous system." He adds that this research shows that "interesting behaviors can theoretically be predicted as biological adaptations" that help the organism take advantage of natural opportunities. For more information, visit www.cell.com/current-biology/home.

TAPPING TECHNOLOGY TO TRACK BUGS

What's bugging you in your garden? A new citizen-science project called the Big Bug Hunt wants to know. Through its website, it collects reports from gardeners around the world about the insect and other invertebrate sightings in their area. Its immediate aim is to develop a



An early warning about potential pests could give gardeners such as Dan Dore a head start on taking preventive measures in his edible front garden, pictured left.

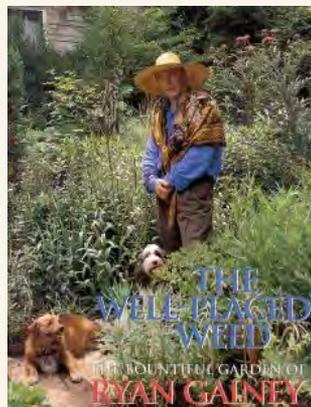
prediction system to let gardeners know when pests are approaching.

"Every gardener has experienced the disappointment of losing crops or plants to a sudden invasion of pests," says Dan Dore, designer and internet marketing strategist for Growing Interactive, the software development company that built the website. "With most wanting to garden organically, they need a warning system to take preventive action," he adds.

PEOPLE and PLACES in the NEWS

IN MEMORIAM: GEORGIA LANDSCAPE DESIGNER RYAN GAINEY

Ryan Gainey, a renowned horticulturist and designer, died July 29 at the age of 72 during a fire at his second home in Lexington, Georgia. Gainey was well known in the Lexington community as well as in Decatur, Georgia, where he had his primary home.



Gainey owned his own landscape design company, Ryan Gainey & Co, and designed numerous gardens in the United States and abroad. He also created a line of terracotta pots and garden accessories, and published several books, among them *The Well Placed Weed*, in which he writes about his distinctive, exuberant gardening style and the creation of the gardens around his Decatur home. Designed as a series of picturesque rooms, they embody his philosophy that the house and garden should blend seamlessly.

The gardens, which have been a fixture on the Atlanta Botanical Garden's "Gardens for Connoisseurs" tour for more than 20 years, have been featured in numerous magazine articles and books.

Gainey was lead designer for the visitor center and gardens at South Carolina Botanical Garden at Clemson University, and he had collaborated with the Atlanta Botanical Garden, the Atlanta History Center, and the Atlanta Opera to create horticultural displays for major fundraising events. For more information, visit www.ryangainey.com.



Since launching in June, the website has gathered more than 10,000 reports, which according to Dore, can each be made "in under 15 seconds." These data are already being used to develop prediction algorithms for common insects such as aphids, which will be made available to the public in the near future. The Big

Bug Hunt also collects data on beneficial creatures such as bees and lacewings.

Go to www.bigbughunt.com for additional information and to report your own sightings.

Written by Editorial Intern Natalie Sheffield and Associate Editor Viveka Neveln.

GARDENER'S NOTEBOOK SPECIAL: The Sentinel Plant Network

by Natalie Sheffield

IN EARLY 2015, the Bloedel Reserve, a public garden and forest preserve on Bainbridge Island, Washington, received an alarming diagnosis for its ailing mountain pieris (*Pieris floribunda*) plants. The brown leaf spots and dead limbs were caused by *Phytophthora ramorum*. This funguslike pathogen introduced from Asia is the vector in sudden



Horticulturists noted the browning leaves, above, and dieback on the branches of a mountain pieris at the Bloedel Reserve, right, the first specimen on the property diagnosed with *Phytophthora ramorum*.



oak death, a disease that has been wiping out oaks and related plants in California in recent years. It can infect more than 100 host species, so early detection is essential for slowing its spread throughout the West Coast and beyond.

The disease's occurrence at Bloedel, one of the first reported cases at a public garden in the United States, was a definite emergency. Enter the Sentinel Plant Network (SPN), a collaborative effort between the American Public Gardens Association (APGA) and the National Plant Diagnostic Network (NPDN), formed to address pest and disease situations just like this one. As a participant in this network, Bloedel Reserve was well equipped to take immediate action.

UNITING AGAINST COMMON ENEMIES

The SPN originated with the 2010 Farm Bill, which provided funding through the U.S. Department of Agriculture's Animal Health

and Plant Inspection Service, charged with protecting the health and value of American agriculture and natural resources. It combines the strengths of public, garden-focused organizations and a national network of pest and disease diagnostic labs.

Through the APGA, it enlists public garden professionals across the country in the search for plant threats. The NPDN ensures accurate diagnostics and that any high-consequence pests and diseases are reported via associated university, state, and federal labs. The SPN provides introductory pest and disease training for public garden professionals at biennial conferences in all regions of the United States, and these events connect horticulturists with diagnosticians and regulatory officials.

"Learning about significant plant health threats at these meetings has helped me to recognize whether a problem needs more attention, such as sending in a sample for testing," says Sylvia Schmeichel, River

Farm manager and horticulturist for the American Horticultural Society, which has been a member of the SPN since 2012. "The SPN's resources also help me to respond appropriately to more serious issues before they get out of control," she adds.

TAKING ACTION

The SPN's work "has made awareness of high consequence pests and diseases a priority," says Darren Strenge, plant health manager at Bloedel. That's why Bloedel could effectively deal with its *P. ramorum* outbreak. Working with Department of Agriculture officials, staff burned all the infected plants, steam-sterilized the surrounding soil, and implemented a quarantine to stop the spread of the disease. So far, there's been no indication the disease has returned or spread.

"We also elected to go public about the presence of this disease at Bloedel in hopes of raising awareness of this pathogen locally," Strenge says. The publicity helped pro-

mote its yearly NPDN First Detector class, which trains participants how to monitor for high-consequence pests and diseases in their own neighborhoods. Bloedel also collaborated with Federal, state, and local agencies to develop standards that other public gardens can use when faced with a similar case.

PROTECTING PLANT RESOURCES

As plants face increasing threats from pests and diseases, the SPN ensures that public gardens will be ready to respond. Dan Stern, who coordinates the APGA's involvement in the SPN, views the network as an invaluable tool for public gardens to deal with inevitable plant health

Horticulturists learn pest and disease diagnostics skills at a SPN workshop at ABQ BioPark in Albuquerque, New Mexico.

issues. It also presents gardens with an opportunity to reach beyond their own borders by raising awareness among their members and visitors. Every gardener has a role to play in preventing another pest or disease epidemic along the lines of Dutch elm disease, which devastated



American elm trees starting in the 1940s. "We shouldn't take plants for granted," says Stern. "We should all be thinking about how to protect them."

To that end, visit www.sentinelplantnetwork.org to learn about any reports of serious pest and disease problems in your

region. You'll also find a list of local SPN gardens, many of which offer First Detector Training classes that prepare you to help monitor for top priority problems. 

Natalie Sheffield is an editorial intern for The American Gardener.

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Handy Harvest Helpers

by Rita Pelczar

BEING ABLE to pick a bounty of vegetables and fruits fresh from your kitchen garden is reward for the hours you've spent planting, watering, weeding, and patrolling for pests all season long. However, gathering and storing a bumper crop can present other challenges. Here are a number of products that I've come to depend upon to facilitate both tasks so I can better enjoy my homegrown produce.

Peppers, cucumbers, squash, and eggplant are best harvested with sharp snips or shears. Fiskars **Herb & Veggie Shears** allow you to reach in among the leaves



Herb & Veggie Shears

and make a precision cut that won't damage the plant. The shears are also great for cutting micro greens and snipping fresh herbs. The serrated stainless steel blades come apart for easy cleaning, and the ergonomic handle reduces hand fatigue.

The oak logs I inoculated with shiitake mushroom spores several years ago continue to delight me with a seasonal harvest. Lee Valley's **Mushroom Knife** makes harvesting simple; I use the blade's curved inner surface to cut the mushroom



Mushroom Knife



Tubtrug

cleanly off the log. If you're one of those who likes to peel the outer layer of mushroom caps before using them, the outer serrated surface works well for this purpose. If you're in the camp of folks who prefers just removing any debris from the caps before cooking or eating them, use the natural pig-hair brush that extends from the base of the zebrawood handle. The blade has a locking mechanism to hold it open when you're using it, but it folds for storage in a compact holster.

Tubtrugs, available from Gardener's Edge and Gardener's Supply Company, come in handy when hauling your harvest

from garden to kitchen. These flexible, sturdy, polyethylene buckets have built-in handles and they come in a range of sizes and bright colors. A **Tubtrug Colander**, also made of sturdy polyethylene,



Tubtrug Colander

is handy if you want to wash your produce before taking it into the kitchen. It also fits into the larger Tubtrugs, so you can soak and rinse directly in the bucket, which helps conserve water.

Use the durable plastic **Bramble Berry Keeper** from Gardener's Supply Company to rinse and store blueberries, black-



Bramble Berry Keeper

berries, or raspberries. Place the berries in the slatted inner basket and run water over them; after they drain, nestle the basket into the clear outer box with its tight-fitting lid for storing in the refrigerator.

The **Berry Scoop** from Lee Valley Tool Company removes the tedium of harvesting very small fruits, such as

Sources

Fiskars, www2.fiskars.com.
Gardener's Edge,
www.gardenersedge.com.
Gardener's Supply Company,
www.gardeners.com.
Lee Valley Tool Company,
www.leevalley.com.

elderberries, that ripen uniformly. The scoop consists of a powder-coated steel comb for raking fruits off branches and a plastic basket with a handle for catching them. Depending on your use for the berries, they may require a little fine



Berry Scoop

grooming in the kitchen to remove small pieces of stem that make it through the comb, but that doesn't take long.

Washing and thoroughly drying salad greens can be time-consuming. With the **OXO Good Grips Salad Spinner**, this job is a snap. I rinse the greens in a sinkful of cold water to remove debris. Then I scoop the leaves into the spin-



OXO Good Grips Salad Spinner

ner's slatted basket and cover it with the lid. Unlike most spinners, which require turning a handle or pulling on a retractable cord to make the basket spin, all you do with this one is push down on the knob on the lid. A non-slip base helps keep it from sliding off your counter as the centrifugal force of the spinning basket sheds excess water from the greens. *Voila!* The leaves are ready for your dinner salad or to store in a plastic bag or lettuce keeper in the fridge for later.

Many vegetables can be stored for use throughout winter in a dark, dry, cool location such as a garage, root cellar, or unheated basement. The compact **Root Storage Bin** from Gardener's Supply Company is

a great way to store root crops in such a space. The metal frame is easily assembled; it supports a jute fabric liner that you fill with layers of damp sand or sawdust for carrots, beets, celeriac, or parsnips. Potatoes and winter squash can be stored in the bin without sand or sawdust.



Root Storage Bin

With the help of all these handy products, kitchen gardeners everywhere can reap what they sow—and enjoy the payoff to its fullest. 🌿

Rita Pelczar is a contributing editor for The American Gardener and maintains a large vegetable garden in the mountains of North Carolina.



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Recommendations for Your Gardening Library

The Hidden Half of Nature: The Microbial Roots of Life and Health

David R. Montgomery and Anne Biklé. W.W. Norton & Company, New York, NY, 2015. 320 pages. Publisher's price, hardcover: \$26.95.

AS MOST GARDENERS know, healthy plants require healthy soil. *The Hidden Half of Nature* offers insight into the soil life forms—specifically the microbes—that play an essential role in supporting plant growth. It also explores an intriguing link between these microbes and the microbes in our digestive systems that affect our health.

For authors David R. Montgomery and Anne Biklé, their path to this revelatory connection began with puttering in the garden. As they became more accomplished organic gardeners, their interest turned to the “hidden half,” the life in the soil. What, exactly, was it that made their garden soil so productive?

In this book, they discuss subjects such as nitrogen-fixing bacteria that colonize legume roots; beneficial fungi that absorb minerals directly into root cells (mycorrhizal association); the vibrant root ecology where nutrients are absorbed (the rhizosphere); the chemical exudates that help release minerals into a form roots can absorb; and useful bacteria that interfere with pathogens.

In the midst of their research, Biklé was diagnosed with cancer. She emerged with a clean bill of health after surgery, but this experience led her to investigate the beneficial microbes that colonize human digestive organs and their roles in keeping us healthy. Our bodies and the soil may seem like disparate entities, yet the authors draw many fascinating parallels.

Montgomery and Biklé also review some of the earlier proponents of organic or sustainable farming: Sir Albert Howard of the 1930s, Lady Eve Balfour in the 1940s, and William Albrecht of the 1950s. All proposed a link between the organic nurturing of the soil and a healthy body, but it's only recently that these assumptions have been scientifically substantiated.

On that note, I love scientific detail so I appreciate this book's copious footnotes and citations for further inquiry. I would have preferred more depth to the index, but this is a minor quibble.

Overall, the authors make a strong case for “working with rather than against the microbial communities that underpin the health of plants and people.” This book will illuminate the connections between what we feed the soil and ourselves.

—Robert Kourik

Robert Kourik is the author of 15 gardening books, including Understanding Roots. Visit him at www.robertkourik.com.

High-Value Veggies

Mel Bartholomew. Cool Springs Press, Minneapolis, MN, 2016. 128 pages. Publisher's price, softcover: \$17.99.

THE BEST-SELLING author of *Square Foot Gardening*, Mel Bartholomew, who died earlier this year, has helped millions of gardeners create intensive, high-yielding vegetable gardens. All of his books approach gardening through the lens of his engineering and construction background, and *High-Value Veggies* is no exception. While there are loads of books with how-to-grow instructions for herbs and vegetables, this book helps readers select crops that yield the greatest dollar value.

Bartholomew acknowledges growing veggies your family will eat is an essential first step. To help with the rest of the selection process, he calculated Return on Investment (ROI) for popular crops. Part One explains how he used factors such as yield per square foot, cost per pound, and the cost of supplies and labor to develop the formula.

Part Two presents herbs and vegetables in order from most to least value. Each is accompanied by a chart listing yield per foot, cost per pound, value of harvest, cost of input (labor and materials), and net value or ROI. Herbs rank highest because of their high cost per pound, and the list contains many of the most popular culinary herbs. The top-scoring vegetable is parsnip, followed by tomatoes, then garlic, turnips, and leeks. In all, 42 types of vegetables and herbs are included.

The text for each entry includes basic cultural information, but this book is far more useful for selecting crops than learning how to grow them. Readers will undoubtedly want to use another reference for nitty-gritty growing specifics.

Bartholomew recognizes that gardening isn't all about numbers, though, and that other factors influence the crops we grow. Part Three provides alternative lists for selecting crops, including vegetables for a children's garden, a shady spot, an ornamental food garden, challenging soils, and highest yields.

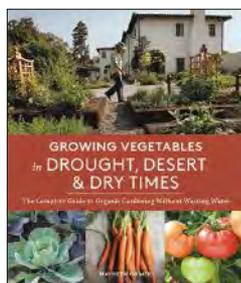
This book, which is illustrated with 79 color photographs, has real value for gardeners who struggle with that annual question, “What should I grow?” It will be a useful tool long before the season commences and help readers ensure that each gardening investment is a good one.

—Barbara W. Ellis

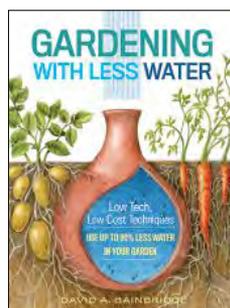
Barbara W. Ellis is the author of Chesapeake Gardening & Landscaping (University of North Carolina Press) and The Veggie Gardener's Answer Book (Storey Publishing).

Managing Water Resources

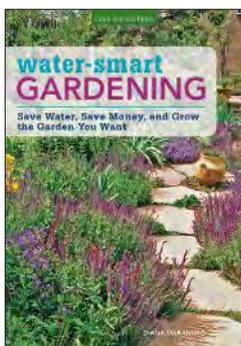
HAVE YOU just endured a hot, dry summer that ran up your water bill? Or perhaps the runoff from tumultuous summer storms repeatedly swept away your plants or mulch. Modifying your water management strategies in the garden can help you cope with both too little and too much rain. These recently published books provide plenty of advice on wisely managing water in the garden, from reducing the thirstiness of your vegetable plot, to implementing an aesthetic rainwater management system, and even going hydroponic with your houseplants.



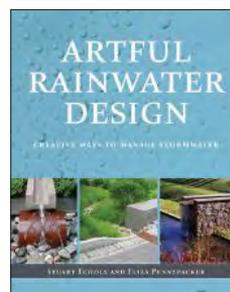
Vegetable crops are among the most water-hogging plants. With a special focus on western states, *Growing Vegetables in Drought, Desert, & Dry Times* (Sasquatch Books, 2015, \$22.95) by Maureen Gilmer explains how to plan for healthy soil, apply efficient irrigation, and locate the vegetable garden to make the best of dry conditions. It also covers organic pest management and includes an index of vegetable families with climate-specific tips.



In *Gardening with Less Water* (Storey Publishing, 2015, \$14.95), David A. Bainbridge opines that “learning from the past is critical to improving irrigation performance, reducing water use, and improving land management.” Accordingly, his book focuses on water-saving techniques from indigenous or agricultural traditions in desert or dry areas throughout the world. Colored sketches and photographs accompany easy-to-implement and cost-efficient ideas.



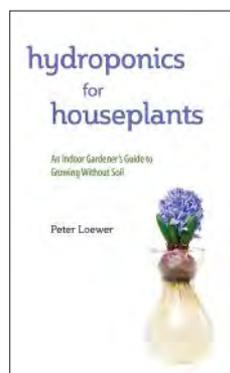
Water-Smart Gardening (Cool Springs Press, 2016, \$24.99) by Diana Maranhao contains step-by-step instructions for creating a garden that will use water efficiently. The book guides readers from key soil preparation and structural elements to selecting and maintaining water-wise plants. Before-and-after photographs of newly redesigned gardens as well as profiles for garden styles such as Mediterranean, prairie, or cottage gardens may give you some design ideas of your own.



Artful Rainwater Design (Island Press, 2015, \$45) by Stuart Echols and Eliza Pennypacker features some of the most innovative solutions to rainwater collection and retention. Aimed at urban designers, landscape architects, and civil engineers, the book discusses effective rainwater management systems that are educational, visually pleasing, encourage visitor interaction, and portray the importance of water. The second half of the book analyzes case studies, replete with color photographs.



The Water-Saving Garden (Ten Speed Press, 2016, \$19.95) by Pam Penick focuses on design elements that will help you reduce water use in your garden. The book includes plans for lush, sustainable borders to reduce thirsty lawns, and provides ideas for evoking water in the garden with elements such as blue-colored decor, grasses, and rippled paving. It also contains a wealth of creative solutions for permeable paving and decorative irrigation.



For the indoor garden, *Hydroponics for Houseplants* (Skyhorse Publishing, 2016, \$12.99) advocates for boosting your success rate by simply growing in water rather than potting mix. Author Peter Loewer begins with a concise history of hydroponics, then describes needed supplies and common species grown as houseplants. His detailed descriptions and pen-and-ink sketches of plants that he has grown hydroponically fill out the rest of the book.

—Natalie Sheffield, Editorial Intern



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

CT, MA, ME, NH, NY, RI, VT

RAP SEPT. 29. **Putting Your Garden to Bed.** The Fells. Newbury, NH. (603) 763-4789 ext. 3. www.thefells.org.

RAP OCT. 6. **Gardeners' Day.** Lectures, plant sale, food. Blithewold Mansion, Gardens & Arboretum. Bristol, RI. (401) 253-2707. www.blithewold.org.

RAP OCT. 8–30. **Kiku: The Art of the Japanese Garden.** Exhibit. New York Botanic Gardens. The Bronx, NY. (718) 817-8700. www.nybg.org.

RAP OCT. 9. **Fall Back on Nuts.** Walk. Landis Arboretum. Esperance, NY. (518) 875-6935. www.landisarboretum.org.

OCT. 11. **Invasive Plant Symposium.** Connecticut Invasive Plant Working Group. Storrs, CT. (860) 486-6448. www.cipwg.uconn.edu.

OCT. 20. **Fall Flower Gardening.** Conference. Perennially Yours. Red Lion Inn, Stockbridge, MA. (207) 502-7228. www.pyyours.com.

RAP OCT. 20. **Wild by Design.** Lecture. The Arnold Arboretum of Harvard University. Boston, MA. (617) 384-5209. www.arboretum.harvard.edu.

RAP OCT. 22. **The Great Pumpkin Hunt.** Fair. Coastal Maine Botanic Gardens. Boothbay, ME. (207) 633-8000. www.maine gardens.org.

RAP NOV. 2. **Fall Foliage Walk.** Wave Hill. Bronx, NY. (718) 549-3200. www.wavehill.org.

RAP NOV. 13. **Rooted in Place: Creating Gardens that Respond to the Local Landscape.** Conference. Berkshire Botanical Garden. Stockbridge, MA. (413) 298-3926 ext. 15. www.berkshirebotanical.org.

MID-ATLANTIC

DC, DE, MD, NJ, PA, VA, WV

RAP SEPT. 27. **Historical and Heirloom.** Lecture. Glen Burnie Gardens. Winchester, VA. (888) 556-5799. www.themsv.org.

RAP OCT. 1. **Perennials that Drink Respon-**

Botanical gardens and arboreta that participate in AHS's Reciprocal Admissions Program are identified with the **RAP** symbol. AHS members showing a valid membership card are eligible for free admission to the garden or other benefits. Special events may not be included; contact the host site for details or visit www.ahs.org/rap.

sibly. Lecture. U.S. National Arboretum. Washington, D.C. (202) 245-2726. www.usna.usda.gov.

RAP OCT. 2. **Rose Fest.** Lewis Ginter Botanical Garden. Richmond, VA. (804) 262-9887. www.lewisginter.org.

RAP OCT. 9. **Plant Disease Management.** Lecture. Pennsylvania Horticultural Society. Philadelphia, PA. (215) 988-8800. www.phsonline.org.

OCT. 14. **Networks for Life: Your Role in Stitching the Natural World Together.** Lecture. United States Botanic Garden. Washington, D.C. (202) 225-1116. www.usbg.gov.

OCT. 14. **Perennial Plant Conference.** Lang Performing Arts Center. Swarthmore, PA. (610) 388-5238. www.perennialplantconference.org.

RAP OCT. 15. **Beauty in Sustainability Symposium.** Green Spring Gardens. Alexandria, VA. (703) 642-5173. www.fairfaxcounty.gov/parks/greenspring.

OCT. 20. **Add Some Cheer to Your Fall and Winter Containers.** Workshop. Ladew Gardens. Monkton, MD. (410) 557-9570. www.ladewgardens.com.

RAP OCT. 22–NOV. 20. **Chrysanthemum Festival.** Longwood Gardens. Kennett Square, PA. (610) 388-1000. www.longwoodgardens.org.

RAP OCT. 23. **Tree Lore Walk.** West Virginia Botanic Garden. Morgantown, WV. (304) 216-8704. www.wvbg.org.

SOUTHEAST

AL, FL, GA, KY, NC, SC, TN

RAP SEPT. 26. **Hometown Habitat:**

Stories of Bringing Nature Home.

Documentary screening. Memphis Botanic Garden. Memphis, TN. (901) 219-7323. www.memphisbotanicgarden.com.

RAP OCT. 1. **Friends of the Arboretum Annual Plant Distribution.** JC Raulston Arboretum. Raleigh, NC. (919) 513-7005. www.jcra.ncsu.edu.

RAP OCT. 8. **Perennial Vegetables.** Class. Bok Tower Gardens. Lake Wales, FL. (863) 676-1408. www.boktowergardens.org.

RAP OCT. 22. **Fall Gardens for Gardeners.** Charleston Horticultural Society. Charleston, SC. www.chashortsoc.org.

RAP OCT. 22. **Grafting Tropical Fruit Trees.** Class. Fairchild Tropical Botanic Garden. Coral Gables, FL. (305) 667-1651. www.fairchildgarden.org.

RAP OCT. 29. **The Art of Espalier.** Class. Harry P. Leu Gardens. Orlando, FL. (407) 246-2620. www.leugardens.org.

RAP OCT. 30 & 31. **Central South Native Plant Conference.** Birmingham Botanical Gardens. Birmingham, AL. (205) 414-3950. www.bbgardens.org.

RAP NOV. 1–3. **Southeastern Partners in Plant Conservation.** Conference. Atlanta Botanical Gardens. Atlanta, GA. (404) 876-5859. www.atlantabg.org.

RAP NOV. 4–6 & 11–13. **Moonlight in the Garden.** Lights Installation. JC Raulston Arboretum. Raleigh, NC. (919) 513-7005. www.jcra.ncsu.edu.

RAP NOV. 11–13. **Fall Garden Festival.** Fairchild Tropical Botanic Garden. Coral Gables, FL. (305) 667-1651. www.fairchildgarden.org.

NORTH CENTRAL

IA, IL, IN, MI, MN, ND, NE, OH, SD, WI

RAP SEPT. 28. **Faded Glory: The Autumn Garden.** Class. Reiman Gardens at Iowa State University. Ames, IA. (515) 294-2710. www.reimangardens.com.

SEPT. 30 & OCT. 1. **Seed Stories School.** Conference. Seed Savers Exchange. Decorah, IA. (563) 382-5990. www.seedsavers.org.

RAP OCT. 1 & 2. **Fall Native Plant Sale.** The University of Michigan Matthaei Botanical Gardens and Nichols Arboretum. Ann Arbor, MI. (734) 647-7600. www.lsa.umich.edu.

RAP OCT. 8. **Western Reserve Herb Society Herb Fair.** Cleveland Botanical Garden. Cleveland, OH. (216) 721-1600. www.cbgsociety.org.

OCT. 6-10. **Independent Plant Breeders Conference.** The Morton Arboretum. Lisle, IL. (630) 719-2468. www.mortonarb.org.

RAP OCT. 14. **Gardening at Great Dixter.** Lecture. Cranbrook House and Gardens. Bloomfield Hills, MI. (248) 645-3149. housegardens.cranbrook.edu.

RAP OCT. 15. **Pollinator Paradise: Creating Habitat for Birds, Bees, & Butterflies.** Class. Dawes Arboretum. Newark, OH. (740) 323-2355. www.dawesarb.org.

RAP OCT. 20. **Get Back to Nature: Grow Orchids on Plaques & Wood.** Workshop. Green Bay Botanical Garden. Green Bay, WI. (920) 490-9457. www.gbbg.org.

RAP OCT. 22. **Annual Symposium.** Greater Des Moines Botanical Garden. Des Moines, IA. (515) 323-6290. www.dmbotanicalgarden.com.

Sustainability Symposium in Iowa

THE GREATER DES MOINES BOTANICAL GARDEN in Iowa is taking an in-depth look at sustainability for its third annual symposium on Saturday, October 22.



Titled, “Living in the Garden,” the symposium will take the broader theme of sustainability in gardening and address it from different perspectives in order to “paint one picture from different angles,” Whitney Bouma, the garden’s director of education and outreach, says.

Four nationally known speakers will discuss how they factor in environmental concerns such as sustainable plant breeding and garden design, climate change, and protecting pollinators with traditional plant and aesthetic considerations. The conference speakers include garden expert Ken Druse, author of *The New Shade Garden*; Dan Heims, president of Terra Nova Nurseries, Inc.; Jessica Walliser, writer and co-host of the radio show “The Organic Gardeners”; and Jeff Epping, director of horticulture at Olbrich Botanical Gardens in Wisconsin.

“Sustainability is an important topic in this day and age,” says Bouma, “and one of our visions here at the botanical garden is to be a resource for people on how to be good environmental stewards.” For more information, call (515) 323-6290 or visit www.dmbotanicalgarden.com.

—Natalie Sheffield, Editorial Intern



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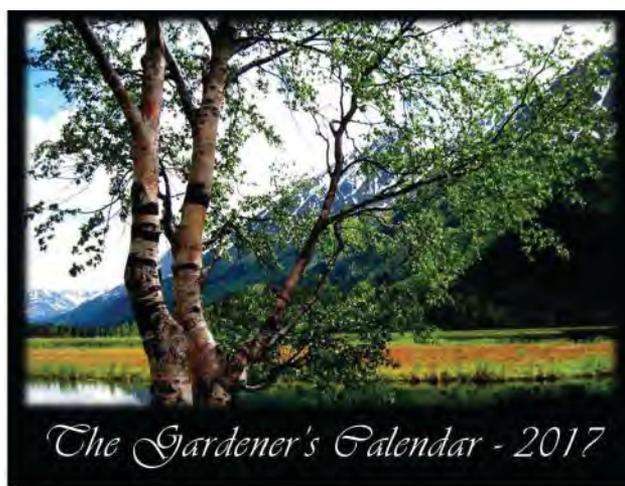


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SOUTH CENTRAL

AR, KS, LA, MO, MS, OK, TX

RAP SEPT. 17–NOV. 23. **Autumn at the Arboretum.** Festival. Dallas Arboretum and Botanical Garden. Dallas, TX. (214) 515-6612. www.dallasarboretum.org.

RAP OCT. 7 & 8. **Ecological Restoration in a Changing Biosphere.** Symposium. Missouri Botanical Garden. St. Louis, MO. (314) 577-5100. www.mobot.org.

OCT. 13–16. **Texas Rose Festival.** Tyler, TX. (903) 592-6978 ext. 224. www.texasrosefestival.com.

OCT. 14 & 15. **Conservation and Climate Change.** Symposium. Native Plant Society of Texas. Glen Rose, TX. www.npsot.org/wp/symposium2016.

RAP OCT. 16–22. **Texas Native Plant Week.** Lady Bird Johnson Wildflower Center. Austin, TX. (512) 232-0200. www.wildflower.org.

OCT. 21–24. **ASLA Annual Meeting and EXPO.** American Society of Landscape Architects. Ernest N. Morial Convention Center, New Orleans, LA. (800) 424-5249. www.aslameeting2016.com.

RAP NOV. 5. **Texas Tree Climb.** Workshop. Lady Bird Johnson Wildflower Center. Austin, TX. (512) 232-0200. www.wildflower.org.

SOUTHWEST

AZ, CO, NM, UT

RAP SEPT. 27. **365 Days of Color.** Class. Thanksgiving Point Gardens. Lehi, UT. (801) 768-2300. www.thanksgivingpoint.org.

RAP SEPT. 30. **How to Grow, Harvest, and Take Care of your Grapes.** Lecture. Santa Fe Botanical Garden. Santa Fe, NM. (505) 471-9103. www.santafebotanicalgarden.org.

RAP OCT. 1. **Putting your Roses to Bed.** Lecture. The Hudson Gardens and Event Center. Littleton, CO. (303) 797-8565. www.hudsongardens.org.

RAP OCT. 4. **Bulb Forcing Workshop.** Red Butte Garden and Arboretum at the University of Utah. Salt Lake City, UT. (801) 585-0556. www.redbuttegarden.org.

OCT. 10–MAY 31, 2017. **Frida Kahlo: Art, Garden, Life.** Exhibit. Tucson Botanical Gardens. Tucson, AZ. (520) 326-9686. www.tucsonbotanical.org.

RAP OCT. 12. **Building Healthy Soil.** Lecture. Santa Fe Botanical Garden. Santa Fe, NM. (505) 471-9103. www.santafebotanicalgarden.org.

OCT. 16–18. **Train Tracks in your Garden.**

Pumpkin Palooza

THE AUTUMN STAPLE, a pumpkin patch, takes on a whole new meaning at the Dallas Arboretum and Botanical Garden's Autumn at the Arboretum annual fall festival. Some 90,000 pumpkins are included in the arboretum's multi-acre displays, opening September 17 this year and running until November 23. "We'll feature 30 different types of pumpkins from Floydada, the Pumpkin Capital of Texas, this year," says Dave Forehand, vice president of gardens for the Dallas Arboretum. "Last year, a quarter of a million people came to Autumn at the Arboretum, which takes 50 members of our horticulture team three weeks to build."



The popular HayBale maze and Tom Thumb Pumpkin Patch both return this year, along with the festival's biggest construction, a one-acre Pumpkin Village. For the 11th year in a row, the horticulture team will construct cottages where orange, white, and green pumpkins line the walls and cascade from the doorways. This year's theme is "the art of the pumpkin" and horticultural staff will draw artistic inspiration from nature while designing the Village and the enormous pumpkin mosaic they build every year.

Visitors can pose in a Cinderella's carriage reconstruction replete with pumpkins, and stroll among the arboretum's late-blooming summer flower beds as well as new ones planted with southern fall favorites such as chrysanthemums, copper plants (*Acalypha* spp.), and firebush (*Hamelia patens*). The festival will also feature "The Great Contributors," an exhibit of eight life-size bronze statues of historical figures, lectures and workshops led by the artist, a harvest-themed tea and beer garden, and the arboretum's Cool Thursdays concert series. For more information, visit www.dallasarboretum.org or call (214) 515-6615.

—Natalie Sheffield, Editorial Intern

Show. ABQ BioPark Botanic Garden. Albuquerque, NM. (505) 768-2000. www.cabq.gov/biopark/garden.

WEST COAST

CA, HI, NV

OCT. 6–9. **The Changing Environment: Reimagining Our Communities.** America in Bloom Symposium & Awards Program. Arroyo Grande, CA. (614) 453-0744.

www.americainbloom.org.

RAP OCT. 8. **Plant Sale.** San Francisco Botanical Garden at Strybing Arboretum. San Francisco, CA. (415) 661-1316. www.sfbotanicalgarden.org.

RAP OCT. 15 & 16. **Japanese Garden Festival.** Descanso Gardens. La Cañada Flintridge, CA. (818) 949-4200. www.descansogardens.org.

OCT. 15 & 16. **Summit 2016: Shaping a New Garden in a Challenging Environment.** Pacific Horticulture Society. Luther Burbank Center for the Arts, Santa Rosa, CA. (510) 849-1627. www.pachort.org/summit.

RAP OCT. 15-17. **Fall Plant Sale.** San Diego Botanic Garden. Encinitas, CA. (760) 436-3036. www.sdbgarden.org.

RAP OCT. 22 & 23. **Cactus and Succulent Show and Sale.** San Diego Botanic Garden. Encinitas, CA. (760) 436-3036. www.sdbgarden.org.

RAP NOV. 4 & 5. **Plant Sale.** San Luis Obispo Botanical Garden. San Luis Obispo, CA. (805) 541-1400. www.slobg.org.

RAP NOV. 15. **Planting Native Plants Horticulture Demonstration.** Workshop. Descanso Gardens. La Cañada Flintridge, CA. (818) 949-4200. www.descansogardens.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP SEPT. 28. **Sprinkle Flowers on Your Plate.** Lecture. Alaska Botanical Garden. Anchorage, AK. (907) 770-3632. www.alaskabg.org.

RAP OCT. 1. **Fall Harvest Festival.** Idaho Botanical Garden. Boise, ID. (208) 343-8649.

www.idahobotanicalgarden.org.

RAP OCT. 1. **Washington Native Plant Society Plant Sale and Environmental Festival.** Bellevue Botanical Garden. Bellevue, WA. (425) 451-3775. www.bellevuebotanical.org.

RAP OCT. 1-NOV. 1. **Super Squash Scavenger Hunt.** Bloedel Reserve. Bainbridge Island, WA. (206) 842-7631. www.bloedelreserve.org.

RAP OCT. 7 & 8 AND 14-16. **Fall Tree and Shrub Sale.** Kruckeberg Botanic Garden. Shoreline, WA. (206) 546-1281. www.kruckeberg.org.

RAP OCT. 13. **Great Hedges for the Pacific Climate.** Workshop. Lakewold Gardens. Lakewood, WA. (253) 584-4106. www.lakewoldgardens.org.

RAP OCT. 19. **The Emergent City: Transforming the Urban Experience with Dynamic Landscapes.** Lecture. Bellevue Botanical Garden. Bellevue, WA. (425) 451-3775. www.bellevuebotanical.org.

RAP OCT. 19. **Mosses, Lichens, and Liverworts.** Workshop. Hoyt Arboretum. Portland, OR. (503) 865-8733. www.hoytarboretum.org.

RAP OCT. 22. **Fern Propagation.** Workshop. Kruckeberg Botanic Garden. Shoreline, WA. (206) 546-1281. www.kruckeberg.org.

RAP OCT. 22. **Forest Ecology Walk.** Mount Pisgah Arboretum. Eugene, OR. (541) 747-3817. www.mountpisgaharboretum.org.

RAP OCT. 26. **Attracting Garden Pollinators.** Workshop. Leach Botanical Garden. Portland, OR. (503) 823-9503. www.leachgarden.org.

CANADA

RAP OCT. 25. **Rebuilding Nature's Relationships at Home.** Lecture. Toronto Botanical Garden. Toronto, Ontario. (416) 397-1341. www.torontobotanicalgarden.ca.

OCT. 27-29. **National and International Symposium and Awards Ceremonies.** Communities in Bloom. Regina, Saskatchewan. (514) 694-8871. www.communitiesinbloom.ca.

RAP OCT. 28. **Urban Ravine Restoration: Plants, Plans, and Progress.** Symposium. Toronto Botanical Garden. Toronto, Ontario. (416) 397-1341. www.torontobotanicalgarden.ca.

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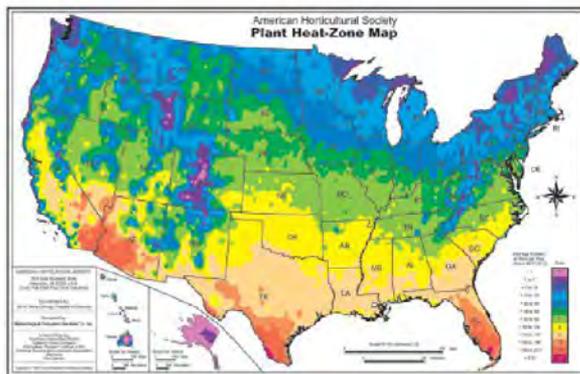
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PRONUNCIATIONS AND PLANTING ZONES

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. USDA Zones listed are still aligned with the 1990 version of the USDA's map.

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 0–0 means that the plant is a true annual and completes its life cycle in a year or less.

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

- Achillea sibirica*** ah-kih-LEE-uh sy-BEER-ih-kuh (USDA Hardiness Zones 3–8, AHS Heat Zones 8–1)
Amsonia ciliata am-SO-nee-uh sil-ee-AH-tah (5–9, 9–1)
A. hubrichtii A. hew-BRIK-tee-eye (5–9, 9–1)
A. tabernaemontana A. tab-ur-nee-mon-TAN-uh (3–9, 9–1)
Andropogon gerardii an-dro-PO-gon jeh-RAR-dee-eye (2–7, 7–1)
Asclepias incarnata as-KLEE-pee-us in-kar-NAY-tuh (3–9, 9–2)
Ceratostigma plumbaginoides sur-at-o-STIG-muh plum-baj-ih-NOY-deez (5–9, 9–4)
Cercis canadensis SUR-siss kan-uh-DEN-siss (4–9, 9–2)
C. canadensis* var. *mexicana C. kan-uh-DEN-siss var. mex-ih-KAN-uh (7–9, 10–7)
C. canadensis* var. *texensis C. kan-uh-DEN-siss var. tek-SEN-sis (6–9, 9–6)
C. chinensis C. chy-NEN-sis (6–9, 9–3)
C. occidentalis C. ahk-sih-den-TAL-iss (8–10, 12–8)
C. siliquastrum C. sil-ih-KWASS-trum (6–9, 9–3)
Epimedium grandiflorum* f. *flavescens ep-ih-ME-dee-um gran-dih-FLOR-um f. flay-VESS-enz (5–8, 8–5)
E. pinnatum* ssp. *colchicum E. pin-NAY-tum ssp. KOAL-chih-kum (5–9, 9–4)
E. ×versicolor E. vur-SIK-uh-lur (5–8, 8–5)
E. ×youngianum E. yung-ee-AN-um (5–8, 8–5)
Geranium ×cantabrigiense juh-RAY-nee-um kan-tuh-brij-ee-EN-see (5–8, 8–1)
G. macrorrhizum G. mak-ro-RHY-zum (4–8, 8–1)
G. maculatum G. mak-yew-LAY-tum (3–8, 8–1)
Hakonechloa macra ha-kon-eh-KLO-uh MAK-ruh (5–9, 9–1)
Hosta sieboldiana HAHS-tuh see-bold-ee-AN-uh (3–8, 8–1)
Maianthemum racemosum my-AN-theh-mum rass-eh-MO-sum (3–8, 8–1)
Nepeta ×faassenii NEP-eh-tuh fas-SEN-ee-eye (4–8, 8–1)
Onoclea sensibilis on-o-KLEE-uh sen-sih-BIH-liss (3–9, 9–2)
Osmunda cinnamomea ahz-MUN-duh sin-uh-MO-mee-uh (3–10, 10–2)
O. regalis O. ree-GAL-iss (2–10, 9–1)
Paeonia mlokosewitschii pee-O-nee-uh muh-lo-ko-suh-WICH-ee-eye (5–8, 8–4)
Phlox paniculata FLOKS pan-ik-yew-LAY-tuh (4–8, 8–1)
Platycodon grandiflorus plat-ee-KO-dun gran-dih-FLOR-us (4–9, 9–1)
Polygonatum biflorum pah-lih-go-NAY-tum by-FLOR-um (3–8, 8–1)
P. odoratum P. o-doh-RAY-tum (3–8, 8–1)
Schizachyrium scoparium shiz-ah-KEER-ee-um sko-PAR-ee-um (2–7, 7–1)
Sedum spectabile SEE-dum spek-TAB-ih-lee (4–9, 4–1)
Symphotrichum oblongifolium sim-fy-o-TRY-kum ob-lon-jih-FO-lee-um (3–8, 8–1)
Tiarella cordifolia tee-uh-REL-luh kor-dih-FO-lee-uh (3–7, 7–1)
Vinca minor VING-kuh MY-nor (4–9, 9–3)

GARDEN MARKET

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Aromatic Aster (*Symphotrichum oblongifolium*)

by Max Eber



'October Skies' is a compact selection of aromatic aster that grows up to two feet tall.

ASTERS ARE among the crown jewels of late summer and autumn gardens, when their vivid purple, violet, periwinkle, lilac-blue, pink, and white daisylike flowers create a cool haze of color in borders that lasts well into the harvest season. North America is home to many native aster species, which in addition to their beauty are also welcome last-stop smorgasbords for native pollinators at a time when other flowering species are winding down.

There are so many asters to choose from that perhaps the most difficult task is selecting which ones to grow. In my experience, aromatic aster (*Symphotrichum oblongifolium*, USDA Hardiness Zones 3–8, AHS Heat Zones 8–1), is a star that deserves to be more widely

planted. Formerly named *Aster oblongifolius*, this robust species native to northeastern and central North America erupts into bloom over a period of two to three months in early to mid-fall. Its lavender to periwinkle-blue flowers are rather typical of the genus, but what makes it truly unique is the fine, disease-resistant foliage that gives off a

Sources

Digging Dog Nursery, Albion, CA.
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peppery-mint fragrance when brushed or bruised. This fragrance, pleasant to us but not very appealing to animals, results in a higher resistance to animal browsing and foliar disease.

A tough, low-maintenance plant, aromatic aster is tolerant and adaptable to both alkaline and acidic soils as well as various soil types, including clay. It thrives in well-drained average to dry soil in full sun, but will tolerate part shade and is extremely drought tolerant.

Among its many cultivars, 'Raydon's Favorite' is a particularly vigorous selection that is widely available. It was named the 2016 Plant of the Year by the Garden Club of America, and for good reason. Capable of reaching two to four feet tall and equally as wide, it has a more saturated blossom color and is more floriferous than the species. It's perfect in a variety of settings, from cottage gardens, to wildflower meadows, large containers, and xeriscapes. Place it where garden visitors will brush by it, so they will experience its fragrant foliage.

For smaller spaces where the large size of 'Raydon's Favorite' would be overwhelming, the dwarf selection 'October Skies' is a good substitute. It reaches a compact one-and-a-half to two feet tall, forming a slightly broader mound with lavender-blue flowers come fall. 'Raydon's Birthday Pink' is similar in scale, but it has pale pink flowers. Both of these selections are easy to tuck into a relatively small gap in a mixed perennial border.

In a genus that is sometimes overlooked because a few species are a little rough around the edges, aromatic aster has cross-over appeal from naturalistic to more formal gardens because it is not only tough, vigorous, and disease-resistant, but beautiful and fragrant to boot.

Max Eber is a garden writer based in Owings Mills, Maryland.

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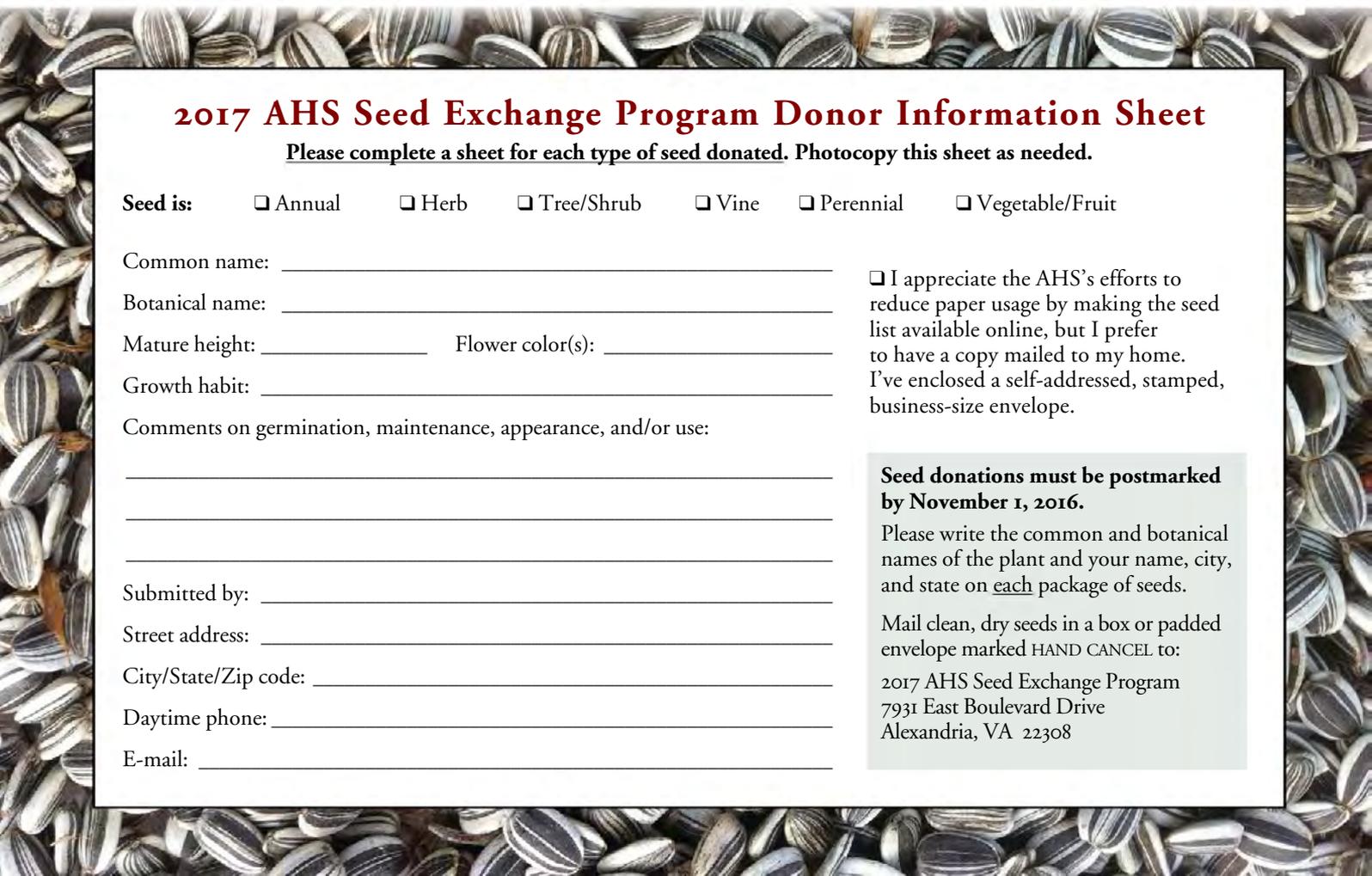
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2017 SEED EXCHANGE

If you have seeds you would like to donate to the 2017 Seed Exchange Program, here's what to do:

1. Collect enough seeds of each variety to fill a minimum of 50 orders. (See "Tips for Collecting Seeds" at www.ahs.org/seeds). For very small seeds, one order would be enough to fill the tip of a teaspoon; for large seeds, such as beans, it would be five to 10 seeds.
2. Package clean, dry seeds in zip-top plastic baggies, each labeled with the name of the plant.
3. Complete a Donor Information Sheet (below) for each type of seed. Photocopy as many sheets as needed.
4. Mail seeds in a box or padded envelope marked **HAND CANCEL** to: 2017 AHS Seed Exchange Program, 7931 East Boulevard Drive, Alexandria, VA 22308. **Must be postmarked by November 1, 2016.**

A list of available seeds will appear in the January/February 2017 issue of *The American Gardener*. The catalog of available seeds complete with descriptions will be posted on the AHS website (www.ahs.org) in mid-January. AHS members who donate seeds get first pick from the entire list of seeds.

Please note: Due to Federal regulations, the AHS can only accept seed donations from, and send seeds to, members living in the United States.



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When perfection matters, why trust anything else?



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