



The American GARDENER[®]

The Magazine of the American Horticultural Society


November / December 2014

Marietta and Ernie O'Byrne's
Hellebore Haven


A Straw-Bale
Garden Primer

Gardening for
Native Bees

Crapemyrtles for
Smaller Spaces



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contents

Volume 93, Number 6 · November / December 2014

FEATURES



page 14

14 "JUST-RIGHT" CRAPEMYRTLES

BY GARY W. KNOX

Not too big and not too small, mid-size crapemyrtle cultivars fit perfectly in modern gardens.

20 STRAW BALE GARDENING

BY MARY YEE

This newly revived growing technique is gaining popularity with gardeners looking for a space-saving and versatile way to grow both edible and ornamental plants.

24 HOOKED ON HELLEBORES

BY KYM POKORNY

Breeding exceptional hellebore varieties has been a labor of love for Ernie and Marietta O'Byrne.

30 GIVE SHOOTS A SHOT

BY ELIZABETH MILLARD

Keep winter at bay by growing tender and tasty shoots of peas, popcorn, and sunflowers indoors.

34 GARDENING FOR NATIVE BEES

BY JESSIE KEITH

North America's native bees are under threat from habitat loss, pesticides, and climate change. Here's what gardeners can do to help.

DEPARTMENTS

5 NOTES FROM RIVER FARM

6 MEMBERS' FORUM

8 NEWS FROM THE AHS

AHS receives Spirit Award from America in Bloom, River Farm meadow becomes national model for creating pollinator habitat, corporate volunteers help out at River Farm.

12 AHS NEWS SPECIAL

America in Bloom Community Involvement Award.

13 AHS MEMBERS MAKING A DIFFERENCE

Rick Sherman.

40 HOMEGROWN HARVEST

Aromatic and flavor-packed culinary sage.

42 GARDEN SOLUTIONS

Compost's dual benefits.

44 TRAVELER'S GUIDE TO GARDENS

Florida's Flamingo Gardens.

46 GARDENER'S NOTEBOOK

Alternate host for emerald ash borer discovered, scent of cut grass linked to drought tolerance, top landscape architecture awards announced, the Cultural Landscape Foundation releases 2014 list of endangered landscapes, award-winning plants for 2015.

50 GREEN GARAGE

Gardening indoors.

52 BOOK REVIEWS

Taming Wildflowers, *Apples of Uncommon Character*, and *The Big, Bad Book of Botany*.

54 GIFTS FOR THE GARDENER

56 REGIONAL HAPPENINGS

58 PRONUNCIATIONS AND HARDINESS AND HEAT ZONES

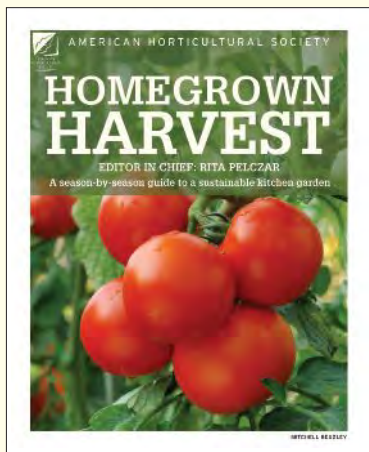
60 2014 MAGAZINE INDEX

62 PLANT IN THE SPOTLIGHT

Contorted hazelnut (*Corylus avellana* 'Contorta').

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Horticultural Society

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NOTES FROM RIVER FARM

IT IS SECOND nature at this time of year to stop and reflect on the things in life—both large and small—for which we are thankful. One huge thing that all of us here at the American Horticultural Society are particularly appreciative of is the support we receive from volunteers, who so generously give of their time and talents to further the mission of the Society.

I was reminded of this by the annual fundraising gala that was held at our River Farm headquarters in late September. Capably led by a committee of four dedicated volunteers, this year's gala was a great success. Some 250 guests enjoyed an enchanting evening in our gardens overlooking the Potomac River, while generating significant monetary support for the stewardship of River Farm and our outreach programs. In addition to the members of the planning committee, many other volunteers contributed to this year's event by helping organize the silent auction, assembling floral arrangements, and spending countless hours preparing the gardens for the big night.

Volunteerism and community involvement also were a major focus of this year's America in Bloom Symposium and Awards program, which I attended in early October in Philadelphia. My awe at hearing the amazing stories of how dozens of communities across America have enthusiastically embraced beautification efforts was only surpassed by the immense pride I felt when accepting a special award from America in Bloom on behalf of the Society. You can read more about the award on page 8.

These are just a few recent examples that spring to mind of how volunteers can make a positive difference in the world. Whether they do so as individuals or as communities, they are invaluable to the continued success of nonprofit organizations like the American Horticultural Society.

We are also tremendously grateful to all of the members and donors, like you, who support our mission financially. This generosity has enabled us to make great progress on our strategic goals over the past year, ensuring that we are well positioned to build on this momentum in 2015. Rest assured that our talented staff, led by a dedicated board, will continue to work hard to make your contributions do the most good in the world of gardening.

All of us can make a difference through tending our own spot of earth, of course, so in this issue of *The American Gardener* you'll find some valuable pointers for ways to reap more rewards from your home garden. These range from steps you can take to attract and foster a variety of native bees, to advice on growing crapemyrtles suited to smaller gardens, and a look at using straw bales to grow edible and ornamental plants.

Best wishes for a joyful, healthy, and safe holiday season from all of us at the American Horticultural Society!

Tom Underwood
Executive Director



Tom Underwood

The American GARDENER

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MEMBERS' FORUM

OYSTERLEAF PHOTO QUESTION

In the article “11 Up-and-Coming Herbs,” published in the May/June 2014 issue, the image of oysterleaf (*Mertensia maritima*) on page 28 [shown below] does not resemble the plants I am familiar with from the Maine coast. An image of



oysterleaf published in the recent edition of the New England Wild Flower Society member publication, *New England WILD*, seems to me to be a more accurate depiction of the plant. Can you ask your photographer to check the identity of the plant shown in your article?

*C. W. Eliot Paine
Kirtland Hills, Ohio*

Editor's response: Oysterleaf, also known as sea bluebells, is native to coastal areas throughout much of the Northern Hemisphere. The image published with our article was taken at Far Reaches Farm in Port Townsend, Washington, by photographer Lynne Harrison, who is based in Seattle. It seems that this species can be somewhat variable in appearance throughout its widely dispersed native range.

GARDEN CLUB'S ROLE IN CONSERVATION

I would like to commend Gabe Popkin for his informative article about mon-

arch butterflies (“Plight of the Butterfly,” March/April 2014). In the article, however, he describes the Garden Club of Kentucky Inc., as “not traditionally a conservation organization.” As president of the Garden Club of Kentucky Inc., I would like to point out that our mission statement specifically addresses conservation of “wildflowers, wildlife, forests, wilderness areas and other natural resources” among many other objectives. Our President’s Special Project for 2013–2015 is to promote the planning and planting of Monarch Waystations throughout the state. We have partnered with the Kentucky State Park system in an effort to educate their visitors with these waystations, and have more than tripled the number of waystations in the state, from 36 in April 2013 to 160 today.

As you can see, we take our role as stewards of the land very seriously, and we hope that your readers will view us in a different light. I welcome you to visit our website at www.gardenclubky.org for further information.

*Joanna D. Kirby
Lancaster, Kentucky
President,*

The Garden Club of Kentucky, Inc.

Editor's response: We do indeed appreciate the work of the Garden Club of Kentucky and all the other state and national garden club groups supporting conservation efforts. Gabe Popkin’s article highlighted many of these programs, particularly the Monarch Waystations that provide monarch butterflies with essential habitat. In this case, an editing error altered the original sense of the sentence, which was that garden clubs are “not traditionally *viewed as* a conservation organization.” Clearly even the original wording was inaccurate, and we apologize for the error.

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.



THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM UPCOMING TOURS



~ TOUR SPOTLIGHT ~

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June 9–21, 2015

Please join us for an exclusive tour of the hidden jewels and national treasures of the Netherlands. Along the way, we will visit palaces, art galleries, and public and private gardens, with highlights including masterpieces by artists like Vermeer and Rembrandt as well as landscapes designed by Mien Ruys and Piet Oudolf. The accommodations for this trip are works of art in themselves, offering a unique blend of historic charm and contemporary comforts. Graciously hosted by AHS Board member Jane Diamantis and her husband, George, and tour leader Susie Orso of Specialtours, this is a journey you won't want to miss.

Accommodations are limited; please make reservations early.

~ Other 2015 Travel Destinations ~

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Participation in the Travel Study Program supports the American Horticultural Society and its vision of Making America a Nation of Gardeners, A Land of Gardens.

For more information about the AHS Travel Study Program, visit www.ahs.org/gardening-programs/travel-study or contact Eleanor Nelson at enelson@ahs.org, (703) 768-5700 ext. 132.



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NATIONAL CHILDREN & YOUTH GARDEN SYMPOSIUM For information about the Society's annual National Children & Youth Garden Symposium, e-mail education@ahs.org or visit www.ahs.org/ncygs.

RECIPROCAL ADMISSIONS PROGRAM The AHS Reciprocal Admissions Program offers members free admission and other discounts to nearly 300 botanical gardens and other horticultural destinations throughout North America. A list of participating gardens can be found on www.ahs.org/rap. For more information, call (800) 777-7931 ext. 119.

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. 119, or visit the Gardening Programs section of www.ahs.org.

WEBSITE: www.ahs.org The AHS website is a valuable source of information about the Society's programs and activities. Users must set up a username and password to access the member's-only sections.

News from the AHS

November / December 2014

PROGRAMS • EVENTS • ANNOUNCEMENTS

AHS RECEIVES SPIRIT AWARD FROM AMERICA IN BLOOM

THE AMERICAN HORTICULTURAL SOCIETY (AHS) is the 2014 recipient of the America in Bloom (AIB) Spirit Award, which is presented annually to an organization whose mission and accomplishments correspond closely with those of AIB.



AHS Executive Director Tom Underwood, right, receives the 2014 AIB Spirit Award from AIB President Charlie Hall.

“Receiving the America in Bloom Spirit Award is a great honor, and has special meaning for the American Horticultural Society,” says AHS Executive Director **Tom Underwood**, who accepted the award at the AIB’s Symposium & Awards Program, held in Philadelphia in October. “First, it is heartwarming to receive an award that is such a positive reflection on how we go about achieving the Society’s mission. Second, to be honored by our peers in this way is particularly significant. Looking at the previous winners, we are in great company.”

Previous recipients of the AIB Spirit Award are the National Garden Clubs (2011), the American Public Gardens Association (2012), and the National Garden Bureau (2013).

Founded in 2001, AIB promotes nationwide beautification through education and community involvement by encouraging the use of flowers, plants, trees, and other environmental and lifestyle enhancements. For more on AIB’s 2014 national awards, turn to page 12.

RIVER FARM MEADOW FEATURED IN NEW FEDERAL POLLINATOR RESOURCE

THE FOUR-ACRE André Bluemel Meadow at the American Horticultural Society’s River Farm headquarters in Alexandria, Virginia, has been a regional resource for several years, but it’s now being showcased as a national model for creating pollinator habitat



River Farm’s André Bluemel Meadow provides valuable wildlife habitat year-round.

TOP: COURTESY OF AIB. BOTTOM: DAVID ELLIS.

in a managed landscape. The meadow is featured as one of the case studies included in the White House Council on Environmental Quality's (CEQ) *Supporting the Health of Honey Bees and Other Pollinators*, released in October.

This document is an addendum to the CEQ's *Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes*, issued three years ago. Creating this addendum was spurred by the Presidential Memorandum issued this past June to create a Federal strategy to support pollinators across the United States.

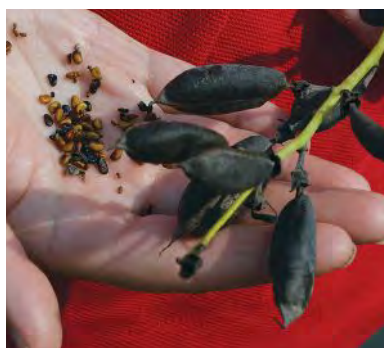
The goal of these new guidelines is to help managers of Federal property to create or improve pollinator habitat. These efforts would then "act as an example and catalyst for other governments or organizations," says **Matthew Shepherd**, communications director for the Xerces Society for Invertebrate Conservation.

Given that the Federal government controls or owns more than 41 million acres of land and 429,000 building assets in the United States, "that's a lot of property that can be made better for pollinators," adds Shepherd.

To learn more, visit www.whitehouse.gov/administration/eop/ceq/sustainability/landscaping-guidance.

GEARING UP FOR 2015 MEMBERS-ONLY SEED EXCHANGE

SEEDS FOR the 2015 AHS Seed Exchange program have been pouring in from all over the country, so over the next few weeks, AHS volunteers and staff will be busily sorting and packaging them,



Seeds collected from wild indigo (*Baptisia* spp.) in the meadow at the AHS's River Farm headquarters will be offered through the AHS Seed Exchange.

or unusual varieties are sometimes in short supply.

While the practice of saving and exchanging seeds can be traced back through time to our hunting and gathering ancestors, the reasons for doing this are just as meaningful today. Exchanging seeds allows for the preservation of genetic traits carried by heirloom and open-pollinated seed. It gives gardeners a chance to try out new or unusual plants. And there is also a special bond created between gardeners when seeds that have a unique family history or regional connection are shared. The AHS is pleased to have been facilitating this time-honored tradition since 1959 through its annual Seed Exchange.

And the program doesn't just benefit AHS members. Any leftover seeds, or seeds that for various reasons were not included in the exchange, are donated to other nonprofit organizations. "We fulfill requests from 4-H groups, master gardeners,

researching cultural and germination information, and compiling a catalog of the seeds available to members. The seed list and order form will be posted on the AHS website in mid-January and printed in the January/February issue of *The American Gardener*. As usual, AHS members who donated seeds to the 2015 exchange will get the first opportunity to order seeds, which can be beneficial because a few rare

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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 September 1, 2014, and October 31, 2014.

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Ms. Ann Currey

If you would like to support the American Horticultural Society as part of your estate planning, as a tribute to a loved one, or as part of your annual charitable giving plan, please call (703) 768-5700.



Mark your calendar for these upcoming events that are sponsored or co-sponsored by the AHS. Visit www.ahs.org or call (703) 768-5700 for more information.

AHS NATIONAL EVENTS CALENDAR

2014

DECEMBER 1–24. **Holiday Trees Display.** River Farm, Alexandria, Virginia.

DECEMBER 13. **Holiday Open House.** River Farm, Alexandria, Virginia.

2015

JANUARY 10–FEBRUARY 1. **Gardens, Wine, and Wilderness: SOLD OUT**
A Tour of New Zealand. AHS Travel Study Tour.

APRIL 10 & 11. **AHS Spring Garden Market.** River Farm, Alexandria, Virginia.

APRIL 10–21. **Mediterranean Cruise.** AHS Travel Study Tour. **SOLD OUT**

APRIL 11–13. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.

JUNE 4. **AHS Great American Gardeners Awards Ceremony and Banquet.** River Farm, Alexandria, Virginia.

JUNE 9–21. **Gardens and Flowers of the Netherlands.** AHS Travel Study Tour.

JULY 9–11. **AHS National Children & Youth Garden Symposium.** Austin, Texas.

community gardening groups, schools, and other seed swaps across the country,” says **Sylvia Schmeichel**, River Farm manager and horticulturist. Among the groups that received seeds from last year’s exchange is the **Women’s Huron Valley Correctional Facility** in Ypsilanti, Michigan, which used the seeds in their inmate horticulture program.

CORPORATE VOLUNTEERS HELP OUT AT RIVER FARM

IN LATE OCTOBER, a team of 30 Capital One employees spent a day volunteering in the gardens at River Farm. Along with lots of weeding and mulching, they helped build raised beds in the edible garden and replaced posts above the ha-ha wall



Capital One volunteers spread mulch on a bed at River Farm.

by the André Bluemel Meadow. They also donated supplies to accomplish these tasks.

“Part of Capital One’s commitment to giving back is the volunteering company associates do in the community,” says **Chetan Poddar**, one of the participants. “Our team wanted to be outdoors and break some sweat in the process of making a contribution and River Farm was perfect for this.”

With 25 acres to maintain, the staff at River Farm relies heavily on volunteers. “Thanks to all the extra hands it brings, a corporate volunteer day helps us tackle larger projects quickly,” notes River Farm Volunteer Programs Manager **Jane Underwood**. “It really does make a difference here!”

NEW RIVER FARM ORNAMENT AVAILABLE

WITH THE HOLIDAYS just around the corner, it’s the perfect time to purchase one of the brand new River Farm ornaments, now available at the River Farm Garden Shop or via mail-order. Proceeds support the AHS’s stewardship of River Farm and its outreach programs. You can read more about the ornament, and how to get one, in our holiday gift guide on page 54.



News written by Editorial Intern Mary Chadduck with AHS staff.

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AHS NEWS SPECIAL: America In Bloom Community Involvement Award

by Mary S. Chadduck

BELPRE DOES it again! For the second year in a row this little town in southeastern Ohio wins the Outstanding Achievement in Community Involvement Award from the America In Bloom (AIB) competition. This award, sponsored by the American Horticultural Society, recognizes exceptional beautification efforts across community sectors. Belpre also received a four bloom rating overall and a special mention for Heritage Preservation in their population category.

Every year since 2002, AIB has sponsored a competition for communities around the United States. The event helps fulfill AIB's mission of promoting "nation-wide beautification through education and community involvement by encouraging the use of flowers, plants, trees, and other environmental and lifestyle enhancements."

There are eight divisions of competition based on population, nine outstanding achievement awards, and 10 special awards in addition to the AIB Spirit Award and the Circle of Champions. Each city is judged in six categories: overall impression, environmental efforts, heritage preservation, urban forestry, landscaped areas, and floral display.

PLANTING TOWN PRIDE

According to Belpre in Bloom Chair **Leslie Pittenger**, just about everyone in the town got involved in beautification projects for this year's competition. "The Lions, Rotary, Women's Club, Girl Scouts, Boy Scouts, schools, and local businesses all stepped up," Pittenger says. "Everyone's favorite project," she notes, was the installation of a new four-tier, illuminated fountain at a prominent intersection. The summer-long project involved preparing the site, placing the fountain, and landscaping with river stones and colorful plants. "It was such a huge improvement and is so eye-catching."

The town's "Planter Program," involving individuals and local businesses, also helped to beautify the streets. Bob's Market and Greenhouse supplied plants consistent with the chosen theme color—this year Belpre selected pink—and delivered planters to program participants



Left: A new fountain and landscaping at a key intersection in Belpre. Above: AIB judges Susie Stratton, left, and Sue Amatangelo, third from left, with a group of Girl Scouts who installed this butterfly garden.

around town who then maintained them. Every week for 15 weeks, a "Business in Bloom" sign was awarded to acknowledge a planter participant. The fact that these signs remain on display even after the AIB competition has ended for the year, says Pittenger, clearly indicates the significant community pride this program has inspired. She hopes to build on this and double program participation next year.

Schools found ways to get involved, too. The Parent Teacher Organization at Belpre Elementary School worked with the Belpre In Bloom Committee on a cleanup of the school grounds. Miss Belpre in Bloom **Veronica Miller** reigned at the elementary school until late October. At the high school level, the Belpre Lady Eagles Softball Team,

Kraton Polymers, Bob's Market, the Belpre High School Alumni Association, and the city teamed up to create four new flower beds at Belpre High School.

PLANNING AHEAD

Already looking ahead to next year, Belpre plans to continue its winning streak by incorporating suggestions for improvement provided by AIB judges. For example, the new fountain landscape is a no-mow zone based on a recommendation resulting from the 2013 competition.

For a complete list of 2014 AIB award winners and additional information about the annual competition, visit www.americainbloom.org.

Mary S. Chadduck is an editorial intern for The American Gardener.

2014 AMERICA IN BLOOM AWARD WINNERS

Population Category Awards

- Under 3,500 **McCall, Idaho**
- 3,501–4,500 **Gallipolis, Ohio**
- 4,501–10,000 **Estes Park, Colorado**
- 10,001–15,000 **Washington, Missouri**
- 15,001–19,000 **Ottawa, Illinois**
- 19,001–24,000 **Calabasas, California**
- 24,001–50,000 **Holland, Michigan**
- Over 50,000 **Fayetteville, Arkansas**

Outstanding Achievement Awards

- Heritage Preservation **Pella, Iowa**
- Floral Displays **Gallipolis, Ohio**
- Landscaped Areas
Arroyo Grande, California
- Environmental Efforts
Madisonville, Kentucky
- Community Involvement **Belpre, Ohio**
- Urban Forestry **Washington, Missouri**

AHS MEMBERS MAKING A DIFFERENCE: Rick Sherman

by Sarah Miller

STARTING AND running a school garden can be daunting process, but in Oregon, hundreds of these gardens now have an invaluable network to draw upon—each other. Rick Sherman, the Farm to School and School Garden Program Coordinator for the Oregon Department of Education in Salem, Oregon, oversees this network, providing resources and helping make connections between school garden coordinators.

MAKING CONNECTIONS

No such network existed when Sherman was hired for the job in 2012. The individual garden coordinators “didn’t know their neighbors existed,” says Sherman. So he got to work, calling every school in the state. The resulting database of about 350 school gardens has since grown to more than 500. “Now they can go on our website and find help next door,” says Sherman. “They’re visiting each other’s gardens and sharing each other’s problems and solutions.”

Sherman, an American Horticultural Society (AHS) member, also helped organize Oregon’s first annual school garden summit, which took place this past January near Salem. More than 200 people attended, and plans are underway for a second summit in January 2015. He also attended this year’s AHS National Children & Youth Garden Symposium in Columbus, Ohio, as a presenter.

In addition to his work with school gardens, Sherman supports school cafeterias, local farmers, and nonprofits engaged in farm-to-school activities. He is responsible in part for managing a \$1.2 million grant from the Oregon Department of Education to incorporate local produce into school lunches. This side of his job allows him to facilitate what he sees as one of the most important aspects of school gardens—allowing the students to eat the fruits or vegetables of their labor.

“We find that when kids go through the seed-to-table process, when they’re actually participating and having educational opportunities take place in the garden, and



Left: Rick Sherman and a feathered friend in his home garden. Above: Harvesting cranberries from the cranberry bog school garden near Pacific High School in Port Orford, Oregon.

coordinators, Kelly Douglas, earlier this year raised \$30,000 for a school garden in her small community. “She just knocked on doors and called people,” says Sherman. “She doesn’t take no for an answer.”

BUILDING ON SUCCESS

Despite all the challenges, or perhaps because of them, Oregon boasts a diverse mix of school gardens that often reflect the innovative approaches the individual garden’s coordinators have taken.

In Portland, where space on school grounds is limited, for example, “they have the garden on their roof, or they’ll have a vertical garden on a fence in burlap sacks,” says Sherman. “We have the country’s only cranberry bog school garden.”

No matter what kind of garden a school has, Sherman’s job is to offer the guidance and resources needed to help it flourish. He knows that if they are well run, these gardens can benefit the health and wellbeing of students for years to come. For him, “that’s what it’s all about.”

Sarah Miller is a former editorial intern with The American Gardener.

when produce they’ve grown is brought into the cafeteria, they will eat it,” he says.

COMMON GROUND

From Sherman’s experience, the success of school gardens is most hampered by the absence of a long-term plan, lack of support from the school administration, and the low retention of volunteer coordinators, who are often parents who leave the school after their children graduate. To avoid these stumbling blocks, “start small and do something you can do well. Have a sustainable plan,” he advises.

A big challenge for school gardens is finding funding when school budgets are already so thin. But even that can be worked out with a little tenacity, says Sherman. One of Oregon’s most ambitious school garden

“just-right” Crapemyrtles

BY GARY W. KNOX



WHEN I MOVED to the South 20-some years ago, I quickly became enraptured by crapemyrtle (*Lagerstroemia indica*) with its huge fluffy panicles of flowers looking for all the world like puffs of cotton candy in white, pink, lavender, and purple. At that time, this crapemyrtle species native to Asia was being supplanted by hybrids introduced by Donald Egolf, a legendary plant breeder then working at the U.S. National Arboretum

Not too big and not too small, mid-size crapemyrtle cultivars fit perfectly in modern gardens.

(USNA) in Washington, D.C. Created by crosses between *L. indica* and *L. fauriei*, a species with attractive peeling bark introduced from Japan in 1956, the now-familiar National Arboretum hybrids with Native American tribal names such as ‘Natchez’, ‘Muskogee’, ‘Tuscarora’, and others have vigor, graceful habits, disease-resistance, and flower power that far surpasses their parents.

Easy to produce in the nursery and fast-growing in the landscape, these cultivars soon conquered the South—and me! Over the years, my zeal for crapemyrtles led me to collect and plant in my north Florida garden as many species and cultivars as I could find. My collection, now numbering 128, continues to grow.

Featuring disease-resistant purplish foliage and deep pink flowers, Delta Jazz™ usually tops out under 12 feet at maturity. At the Louisiana State University AgCenter Hammond Research Station, where this specimen is growing, five-year-old trees are about eight feet tall.

COURTESY OF ALLEN OWINGS, LSU AGCENTER

MATTERS OF SCALE

What some of us didn't realize when we first planted them was that most of the early hybrids released by the USNA were relative giants. As time passed, I watched these hybrid crapemyrtles develop into statuesque trees 20 to 30 feet tall. Meanwhile, home gardeners tended to use the new hybrids in much the same way they used the old-timey crapemyrtles—as shrubs. This disconnect between giant-growing hybrid and shrub-size usage quickly devolved into “crape murder,” in which hard pruning or

selections, see “Looking for Something Smaller?” on page 18.)

The flurry of new mid-size introductions adds new foliage colors, growth habits, and earlier blooming. It also refocuses attention on several older mid-size cultivars previously overlooked. The following are some of the best of the newer and time-tested selections.

GREEN-LEAF CULTIVARS

Red Rooster[®], Pink Pig[™], and Purple Cow[™] form the Barnyard Series from

the plum-purple leaves, which gradually fade to dark green. ‘Purple Magic’ is another standout with luscious purple flowers, glossy green leaves, and a compact, rounded form.

DARK-LEAF CULTIVARS

The latest breakthrough in crapemyrtle breeding is stunning dark leaves with color persistence from budbreak to leaf drop. These new cultivars are making a huge impact on crapemyrtle breeding, marketing, sales, and gardener appreciation. “People love that dark foliage,” says Texas gardening expert Neil Sperry, of *Neil Sperry's Gardens* magazine. “The flowers almost become the bonus.”

These new leaf colors may be described as red, burgundy, maroon, purple, or black, depending on the plant, the time of year, and the observer. Delta Jazz[™], introduced in 2010, was the first cultivar to boast dark foliage all summer long. It also suits the size of smaller gardens, maturing at a height of six to 10 feet with a width of four to five feet. The leaf color might be described as bronze, smoky, or purplish but the leaves undeniably retain their dark color all season long and contrast nicely with the pink flowers. Leveraging this success, the Southern Living Plant Collection is following Delta Jazz with Delta Breeze[™], Delta Eclipse[™], Delta Flame[™],



Green-leaved Red Rooster[®] features a profusion of striking red flowers from summer to fall.

topping is employed to reduce the hybrids' size. Ultimately this pruning strategy results in disfigured winter profiles—ugly trunks and stubby branches.

An awkward détente persisted until the relatively recent introduction of several new series of mid-size crapemyrtles. Maturing at heights of six to 12 feet, these crapemyrtles fit better into smaller, modern gardens, and consequently have no need for radical pruning. These downsized hybrids are perfect as patio trees, courtyard focal points, and front door specimens for year-round interest. When closely spaced, they serve as a hedge or screen to block unsightly views; more widely spaced, they can be used as an attractive allée. (For even more compact

the Gardener's Confidence Collection[®]. Bred by woody plant expert Michael Dirr, these mid-size crapemyrtles are expected to top out at eight to 10 feet with a width of five to six feet. Of the three, Red Rooster is the clear standout, with its brilliant red flowers. This plant carries its shiny, medium-green leaves on an upright plant that is somewhat loose and open.

Also bred by Dirr and marketed through Plant Introductions Inc. is the First Editions[®] Magic[™] Series. ‘Plum Magic’, ‘Purple Magic’, ‘Red Magic’, and ‘Coral Magic’ grow as wide as they are tall with final size expectations of six to 10 feet tall and wide. My favorite of the series is ‘Plum Magic’. I like the way its bright pink flowers contrast with



The red buds of dark-leaved ‘Ebony and Ivory’ open to reveal pure white flowers.

Resources

Crapemyrtle – *Lagerstroemia* spp., www.clemson.edu/extension/horticulture/nursery/ipm/book_files/chapter_6, Southern Nursery IPM Working Group (collaboration of southeastern university researchers and Extension specialists).

Crapemyrtles for Texas, http://aggie-horticulture.tamu.edu/databases/crapemyrtle/crape_myrtle_varieties.html, Texas Cooperative Extension, College Station, Texas.

Cultivars and Names of *Lagerstroemia* (aka Crapemyrtle Checklist), www.usna.usda.gov/Research/Herbarium/Lagerstroemia/index.html, U.S. National Arboretum, Washington, D.C.

The Manual of Woody Landscape Plants (6th ed.) by Michael A. Dirr. Stipes Publishing, Champaign, IL, 2009.

Sources

Fairweather Gardens, Greenwich, NJ. (856) 451-6261. www.fairweathergardens.com.

Forestfarm at Pacifica, Williams, OR. (541) 846-7269. www.forestfarm.com.

Wayside Gardens, Hodges, SC. (800) 845-1124. www.waysidegardens.com.

Whitman Farms, Salem, OR. (503) 585-8728. www.whitmanfarms.com.

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

and Delta Moonlight™ with similarly colored foliage and pink, lavender, red, and white flowers, respectively.

Breeders have built upon the success and genetics of Delta Jazz to develop foliage so dark that it looks almost black! The first of these improved introductions were bred and released by Cecil Pounders of the USDA Agricultural Research Service's Thad Cochran Southern Horticultural Laboratory in Poplarville, Mississippi. Confusingly for gardeners, this new series is sold under two sets of names: Ebony and Black Diamond™.



The author shows off the profuse neon-red flowers of 'Cheyenne', a newer U.S. National Arboretum introduction that also boasts dark red fall foliage.

'Ebony Embers', 'Ebony Fire', 'Ebony Flame', 'Ebony Glow', and 'Ebony and Ivory' have red, bright red, dark red, light pink, and white flowers, respectively. All have dark burgundy leaves and mature at a height of about eight feet as vase- or globe-shaped plants. These cultivars also have been trademarked and are being widely sold at big box stores under the corresponding names Black Diamond™ Red Hot, Black Diamond™ Crimson Red, Black Diamond™ Best Red, Black Diamond™ Blush, and Black Diamond™ Pure White.

While these are all too new to have been thoroughly tested, David Creech, director of the Stephen F. Austin University Gardens in Nacogdoches, Texas, likes 'Ebony Fire' (Black Diamond Crimson Red) for the bright red flowers and dark foliage. Similarly, I like the pure white flowers of 'Ebony and Ivory' (Black Diamond Pure White) for the stark contrast against the dark leaves.

Recent releases from Dirr's Magic series also have dark leaves. I consider the foliage of Midnight Magic™ and Moonlight Magic™ superior to previously mentioned selections, which have leaves that are slightly folded inward along the central vein, exposing part of the lighter-colored leaf undersides. In contrast, leaves of Midnight Magic and Moonlight Magic are flat so less of the lighter-colored leaf undersides are exposed. However, with dark pink and white flowers, respectively, these two new Magics seem to lack the flower power of some of the others.

The buzz about these dark-leaved crapemyrtles indicates breeders will be working furiously to further improve the dark foliage and other characteristics. More new cultivars are sure to come.

TRIED AND TRUE

I contacted a number of crapemyrtle experts nationwide to learn their favorites



Among the most widely recommended U.S. National Arboretum crapemyrtle introductions are 'Acoma', above, with its graceful arching habit, and 'Catawba', lower left, with its purple blooms and orange-red fall foliage.

er, now-common types. From coast to coast, the best and most frequently mentioned were 'Acoma' and 'Tonto'. Other often-cited top-performers are 'Hopi', 'Catawba', and 'Cheyenne'.

As the official state shrub of Texas, crapemyrtle holds a prominent place in the hearts and gardens of Texans. Thus, recommendations from Texas horticulture experts Sperry and Creech carry extra weight. Both highly recommend 'Acoma' for its beautiful gray-green foliage and distinctive horizontal branching. When displaying the smallish clusters of white flowers, the plant has an almost weeping habit. I wholeheartedly concur with their endorsement. In my experience, 'Acoma' tops out at about 10 feet tall and 12 feet wide. It is the perfect large shrub or hedge plant and when limbed

among mid-size selections. From California to Texas, Louisiana, and Pennsylvania, each one proclaimed most of the new crapemyrtles "too new" to wholeheart-

edly recommend. On the other hand, all of them endorsed older, mid-size USNA hybrids that never reached the popularity and market penetration of the larg-

LOOKING FOR SOMETHING SMALLER?

Dwarf crapemyrtles are defined as those that mature at heights of four to six feet within five years or so. While breeders have been introducing lots of new dwarf selections, they have not yet gained much market traction, despite their promise as container plants, groundcovers, and alternatives to other summer bloomers such as butterfly bush (*Buddleia* spp.) and lantana. Many dwarf releases exhibit reversion, in which a branch suddenly and dramatically outgrows the rest of the plant, with larger leaves, thicker stems and longer internodes. In contrast, other dwarfs grow so slowly that nurseries can't afford to grow them because it takes so long to produce a marketable plant.



Growing to only about four feet tall, **Cherry Dazzle®** is both compact and colorful.

Despite these limitations, a number of dwarfs are available. The Razzle Dazzle® series comprises true dwarfs topping out at four feet tall. A number of Razzle Dazzle® cultivars have come and gone, but Cherry Dazzle® is a survivor that stands out with cherry-red flowers on a mounding plant with fine textured leaves. Newer dwarf entries are the Enduring Summer, Little Princess, and Early Bird™ series. These are not yet well-tested but all should have maximum heights of less than six feet.

Further evaluation of these dwarf selections is needed to determine their durability in home landscapes and regional adaptability. —G.W.K.



Heat-tolerant **'Tonto'** is an excellent choice for southern gardens.

up, makes a particularly dramatic and graceful small tree.

These Texas experts also give high praise to 'Tonto'. Another USNA hybrid, it is slightly larger and more upright than 'Acoma' and sports fuchsia-red flowers. 'Catawba', another longstanding favorite, boasts rich purple flowers, but is not as disease resistant as others.

According to Paul Bonine of Xera Plants in Sherwood, Oregon, 'Hopi' and 'Cheyenne' are among the most consistent mid-size performers in his region. 'Hopi' features bright pink flowers on a round-

ed plant that grows to eight feet tall and wide. While 'Cheyenne', a newer hybrid from the USNA, may be difficult to find, it features spectacular "true" red flowers on a plant that grows slightly wider than its height of 12 feet. In addition to disease resistance, an added advantage of USNA cultivars is they are not patented or trademarked, so they are less expensive to produce and buy.

AVAILABILITY

The newer branded, patented, or trademarked cultivars often have fancy mar-

REGIONAL ADAPTABILITY

Crapemyrtles earn their keep in gardens because they are not only tough and easy to care for, but put on an attractive and long-lasting flower display. Just provide sunshine—at least six hours each day—and well-drained soil, and crapemyrtles will flourish for decades. The primary reason crapemyrtles have not become more widely grown in North America is a lack of cold hardiness. While the late Donald Egolf and other plant breeders of his era accomplished wonders—many hybrid crapemyrtles are well adapted to USDA Plant Hardiness Zones 7 to 9—contemporary breeders tell me we are likely reaching the genetic cold hardiness limitations of the genus.

NORTHERN LIMITS

That said, crapemyrtles have crept northward as far as Hardiness Zone 6 and sometimes even 5 if in a protected site. Whether you attribute it to climate change, wishful thinking, or gardener



Despite its affinity for warmer southern climes, 'Hopi' performs well in this Long Island, New York, garden designed by Conni Cross.

optimism, increasingly they can be found growing in places like Philadelphia, Cincinnati, and St. Louis. My colleague Andrew Bunting at the Scott Arboretum of Swarthmore College, near Philadelphia, tells me many of the U.S. National Arboretum hybrids and *Lagerstroemia fauriei* selections tolerate most winters in the 6b/7a area of Philadelphia, although top growth is often damaged by winters in Zone 6 and occasionally in Zone 7.

As a last resort, you can take advantage of the fact that crapemyrtle roots are usually hardy into Zone 5. Because crapemyrtle flowers on new wood, it can be cut back to the ground in winter and allowed to send out new stems each spring. Indeed, the Missouri Botanical Garden recommends that gardeners in the Zone 5b/6a area of St. Louis grow crapemyrtle in the same manner as a butterfly bush (*Buddleia* spp.).

CRAPEMYRTLES IN THE WEST

A secondary limitation is that crapemyrtles have a distinct preference for warm summers, flowering most prolifically in areas within AHS Heat Zones 9 to 6. Don Merhaut, an Extension specialist at the University of California–Riverside, says that cool coastal and high mountain conditions don't provide the heat in which crapemyrtles thrive, although further inland, in the central valleys, they perform well.

In western Oregon, "The best varieties are those that require less heat to initiate flowering," says Paul Bonine, co-owner of Xera Plants in Sherwood, Oregon, that carries a number of the USNA selections. Only a couple of hundred miles north, in western Washington, crapemyrtle culture is even more challenging, according to Raymond Larson, curator of living collections at the University of Washington Botanic Gardens (UWBG) in Seattle. Careful site selection is the key, says Larson. "We have several of the USNA selections planted in groupings in a sunny parking lot at the UWBG Center for Urban Horticulture, and they flower well for us with the reflected light and heat provided," says Larson. "But in most of western Washington they are shy about flowering." Larson notes that in the Seattle area, crapemyrtles "tend to be grown as much for bark effect as for flowering, but they do put on a nice late summer to early fall display if given the right conditions." —G.W.K.

keting programs, and many can be found at big box stores and major garden centers as well as through mailorder sources (see "Sources," page 16). However, if you can't find the cultivar you want, contact the company introducing the new crapemyrtle (for example, First Editions® Magic Series at www.firsteditionsplants.com). Often it has networks of buyers and can put you in touch with the closest retailer. The websites of some of these companies also may include a do-it-yourself locator to help you find retailers that carry their product lines.

Older crapemyrtle varieties may be more difficult to find, mainly because many nurseries only have space to grow or sell a limited assortment. Your best bet for finding older cultivars is to contact a good local garden center and ask if it could locate and procure that special cultivar for you.

MORE TO COME

The crapemyrtle revolution started by Egolf at the National Arboretum decades ago is being continued by several other breeders across the country working to

expand the line of pleasing varieties to include new flower colors, plant sizes, and leaf colors. Given all this breeding activity, it is no wonder that new cultivars are being released at a dizzying pace. With so much attention devoted to developing the crapemyrtle's ornamental potential, we can look forward to new, improved, and varied selections to entice American gardeners for years to come.

Gary W. Knox is a horticultural researcher at the University of Florida's North Florida Research and Education Center in Quincy.



Straw Bale Gardening

This newly revived growing technique is gaining popularity with gardeners looking for a space-saving and versatile way to grow both edible and ornamental plants.

BY MARY YEE

EVER SINCE Joel Karsten's book *Straw Bale Gardens* (Cool Springs Press, 2013) came out last year, growing plants in baled straw has been getting a lot of press. And why wouldn't it? The book's subtitle claims it's the "breakthrough method for growing vegetables, anywhere, earlier and with no weeding." "Anywhere" can be a space as small as a balcony or a driveway and you don't need to mess with bags of soil or buy expensive containers. This

technique also allows you to garden even if your soil is poor or contaminated.

Although straw bale gardening is currently trendy, some sources claim the ancient Egyptians and the Aztecs grew crops this way, and there are many instances of its use in more recent times. Basically, using straw bales allows you

Birdhouse gourds, beans, and watermelons were among the plants flourishing in River Farm's straw bale garden in early August.

to grow plants aboveground wherever there is sufficient light. The bales become simple raised beds by serving as both biodegradable containers and growing medium. No soil is needed because the straw eventually breaks down, creating a soilless growing medium.

Curious to see if this technique is as good as it sounds, American Horticultural Society (AHS) horticulturist Sylvia Schmeichel set up a straw bale garden this past spring at the AHS's 25-acre River Farm headquarters

in Alexandria, Virginia. She used Karsten's book as a guide to rig up a multi-bale system for growing a mix of vegetables, fruits, and herbs. To find out how this garden performed, see the sidebar on page 23. To create your own straw bale garden, here are some important guidelines to keep in mind, along with tips from Schmeichel's experience.

BASIC CONCEPTS

All you need to start is at least one bale of straw and a place to situate it where it will get six to eight hours of sunlight and is easy to water. Straw bale gardens need plenty of water and should never be allowed to dry out. The dimensions of a bale can vary, but most are roughly three feet by one foot by one foot, and bound by two or three pieces of twine or plastic bands.

Make sure you get *straw* bales and not hay bales. Straw is the tough inedible stem of grain plants and is used mainly for livestock bedding; hay is usually cut grass or alfalfa



Top right: The straw from the interior of a properly conditioned bale will look partly decomposed. **Bottom right:** Horticulturist Sylvia Schmeichel harvests a watermelon.

used for animal feed. Hay decomposes much faster than straw and often contains seeds of plants you don't want. Be sure the straw is not from a source that uses herbicides. You should be able to purchase straw bales at garden centers and farm supply stores.

It will take at least 10 days from setting up the bales before they can be planted because they need to be "conditioned" first. This is done by watering and fertilizing the bales to start decomposing the straw, a process that makes nitrogen and other nutrients available for plants to utilize.

You can plant almost anything in it that you would in an in-ground garden or container garden, including root crops such as beets, potatoes, parsnips, and onions. Crops that are not worth growing in straw bales include corn, which requires too much space, and perennial vegetables like asparagus, since the straw bales disintegrate within a year or so. You can also grow or incorporate annual flowering plants such as marigolds and nasturtiums.

STARTING A STRAW BALE GARDEN

Place the bales where they will get sufficient sunlight, making sure the bales are aligned



so the twine or ties are on the sides and not on top; this helps the bale stay together. You might want to put the bales on top of some landscape fabric or, for a more refined look, put the bale into a large shallow planter or plastic storage box. “It’s best to set up with at least two people,” Schmeichel advises, “because the bales are heavier than they look, especially if they are wet.”

Next, you will need to condition the bales before they can be planted. Some sources recommend just watering the bales for the first three days before applying a high-nitrogen fertilizer—such as lawn fertilizer, blood meal, or well-composted chicken manure—to help start internal decomposition; other sources, including Karsten, suggest applying the fertilizer from the first day on.

If you opt to use granular fertilizers, sprinkle about a half cup on top of each bale. If you use liquid fertilizer, add one to three cups of solution. Just be sure the fertilizer does not contain any pesticides, and follow each application of fertilizer by watering until each bale is saturated. Keep up this process daily for about 10 days. During this time, the inside of each bale should heat up with bacterial activity to well over 115 degrees F. One sign this is happening is the appearance of mushrooms on the bales; they aren’t harmful (although they should not be considered edible) and should disappear once the bales cool. The time it takes for the bale to heat up may take several weeks longer, depending on weather conditions and the type of fertilizer you use—organic fertilizers seem to take longer than non-organic types—so 10 days is just a rough guideline.

After 10 days, just maintain watering so the bales stay moist. If you plan to sow seeds, you can start them at this point. If you plan to plant seedlings, check the inside of the bales to make sure it isn’t too hot for planting. Use a trowel to dig a hole in a bale and stick your hand in; if it feels barely warm, it’s ready to plant. Otherwise, wait a few days.

PLANTING AND MAINTAINING THE GARDEN

To plant the bales with seeds, spread a couple of inches of moist potting mix evenly on top of each bale, sow the seeds, and water thoroughly. If you are using transplants, dig a hole on top of each bale large enough to fit the rootballs, removing as much straw as necessary.



Top: Horticulture intern Megan Rozen helps plant the straw bales in April. Note a soaker hose has been placed on top to facilitate watering. **Above:** To plant a seedling, dig a hole with a trowel and remove some of the straw before inserting the plant. If seedlings are grown in peat pots, remove the pots prior to planting to allow roots to grow more easily in the bales.

Then pop the plant in, tamp it down, and water well. For most crops, you will be able to grow two to three plants on top of each bale. Smaller plants, such as herbs or annuals, can also be planted in the sides of the bale.

Large, sprawling crops such as indeterminate tomatoes and squash will need to be staked. Drive tall, sturdy stakes into the ground along one side of the bales and attach the plants to the stakes with twine or install trellising before planting. The supports will

RIVER FARM'S STRAW BALE GARDEN EXPERIMENT

At River Farm, headquarters of the American Horticultural Society (AHS) in Alexandria, Virginia, the goal is to offer inspiration to the visitors who come to enjoy its gardens, which are open to the public throughout the year. This year, it seemed fitting to create a straw bale demonstration garden to introduce the technique to the uninitiated. "It's all well and good to read about it in a book, but quite different to see how it works in real life," says AHS horticulturist Sylvia Schmeichel. "Straw bale gardening isn't something you see everywhere, so it did draw a lot of interest from people who saw it."

With the help of horticulture intern Megan Roozen, Schmeichel planted a straw bale garden this past spring to try out the technique. Here's how the experiment fared from start to finish.

THE SETUP

The River Farm straw bale garden was set up as two U-shaped "beds," each made of 10 individual bales in a 20-by-20-foot area covered with landscape fabric to suppress weeds and enclosed by a 10-foot-tall deer fence. The bales, donated by a local organization that had used them for a fall festival, spent a winter outdoors before being planted in April.

Schmeichel conditioned the bales for two weeks with a high-nitrogen granular fertilizer. The best tool to determine if the bales are ready to plant, she suggests, is your hand. "The straw at the surface of the bale should feel wet and loose enough to pull tufts out fairly easily," she says. "If you can't get your hand through the straw, the roots of plants will have a hard time as well."

The bales were planted with lettuce, kale, Swiss chard, and beans from seed. Schmeichel used established seed-

lings of watermelons, tomatoes, peppers, artichokes, okra, birdhouse gourds, and various herbs. She set up a drip irrigation hose on top of the bales to make watering more efficient.

DURING THE GROWING SEASON

Although the seeded plants did germinate, Schmeichel says, "We had a varmint problem—most likely squirrels and groundhogs—so most of the sprouts got eaten repeatedly." The transplants fared better, especially the birdhouse gourds, watermelons, and okra, which yielded an abundant harvest. Schmeichel adds, "The tomatoes would have been more productive if they hadn't suffered from late blight."

Minor pest and disease problems were treated using organic methods such as insecticidal soap. Schmeichel also noted, "After the initial application of fertilizer to prep the bales for planting, we really had little need to add more."

Minor pest and disease problems were treated using organic methods such as insecticidal soap. Schmeichel also noted, "After the initial application of fertilizer to prep the bales for planting, we really had little need to add more."

SEASON'S END

After a final harvest in mid-September, the bales were broken up and composted.

Over all, Schmeichel was pleased with the straw bale experience and River Farm visitors frequently asked questions about it.

"Compared to in-ground beds, it was nice to not have to bend over as much to harvest," she says. "Because we arranged the bales abutting each other, we were able to successfully use drip irrigation hoses and a timer to minimize labor." Next time, however, she would do a few things differently. "In hindsight," she says, "I wouldn't have let the bales weather for so long before planting, because towards the end of summer, they started to fall apart. Also I would start earlier in the season with cool-weather crops such as lettuce and spinach." —M.Y.



Okra, planted as seedlings, thrive in River Farm's straw bale garden.

also help prevent the bales from sagging too much as they continue to decompose.

To make watering easier, lay a soaker hose on top of a row of bales, securing it with large U-shaped pins, the kind usually used for anchoring landscape fabric to the ground. "With drip irrigation," says Schmeichel, "everything on that line gets watered the same amount, so group plants with similar watering requirements on the same lines—don't place thirsty, established tomato plants with lettuce seeds." Attaching a timer to the

hose is a good way to automate watering.

Keep the bales watered and apply fertilizer according to product instructions throughout the growing season. If any weeds start growing on the bale, they are easily removed. Harvest from the straw bales as you would in any garden.

With a new year around the corner, you might want to make a resolution to try straw bale gardening yourself. ☺

Mary Yee is Managing Editor and Art Director for The American Gardener.

Resources

Straw Bale Gardens by Joel Karsten. Cool Springs Press, Minneapolis, MN, 2013.

A search online will provide a wealth of information on straw bale gardening from Extension Services, along with first-hand accounts from garden bloggers who have tried it for themselves.



Hooked *on* Hellebores

Breeding exceptional hellebore varieties has been a labor of love for Ernie and Marietta O’Byrne, whose resulting plants have earned national and international acclaim. BY KYM POKORNY

EASY TO GROW, deerproof, widely adaptable, and sporting ever-green foliage and winter blooming flowers, hellebores (*Helleborus* spp.) have become indispensable elements in American gardens. And because these herbaceous perennials, particularly Lenten roses (*H. xhybridus*), easily cross-pollinate with each other, breeders have created a wide variety of selections to choose from.

In the 1980s and 1990s, British and German breeders produced the most coveted hellebore seed strains, but in the last decade, American breeders have begun catching up with their European counterparts. Among those gaining wider recognition are Ernie and Marietta O’Byrne of Northwest Garden Nursery in Eugene, Oregon.

Although the O’Byrnes are not a household name among American gar-

deners, their two-decade-long breeding program, crowned by the introduction of their Winter Jewels™ hellebore seed strain, is garnering national and international acclaim in the nursery industry. Paul Bonine, co-owner of Xera Plants, a wholesale nursery in Sherwood, Oregon, has known the O’Byrnes for more than 20 years. Over that time, he says, they’ve raised thousands upon thousands of helle-

The O’Byrnes’ Winter Jewels™ hellebore series includes, outer ring, clockwise from top center: ‘Golden Sunrise’, ‘Rose Quartz’, ‘Red Sapphire’, ‘Black Diamond’, ‘Peppermint Ice’, ‘Harlequin Gem’, ‘Golden Sunrise’, ‘White Pearl’, ‘Ruby Wine’, ‘Jade Tiger’, ‘Cherry Blossom’; inner circle, clockwise from top center: ‘Red Sapphire’, ‘Apricot Blush’, ‘Cherry Blossom’, ‘Sparkling Diamond’, ‘Ruby Wine’, and ‘Cherry Blossom’.



Hellebore breeders Ernie and Marietta O'Byrne with one of the nursery's helpers.

bores from seed and crossed them meticulously to develop the desired traits, such as strong, clear colors, double flowers, vigorous, disease-free plants, and outward facing blooms.

"I am blown away by their plants—the uniformity, intensity of color, the whole process—there's nothing else like it in the U.S.," says Tony Avent, owner of Plant Delights Nursery in Raleigh,

North Carolina. "I have visited most of the major hellebore breeders around the world, and the only comparable hellebore breeding program is Ashwood Nurseries in the U.K."

The couple's home and nursery are located on 50 acres of farmland Marietta purchased in 1972. Most of the property is now relatively untamed meadow and forest, but the nursery and garden take

up about three acres around the 1918 farmhouse where Ernie and Marietta live.

The O'Byrnes cater primarily to wholesalers, but on two weekends a year—one in late February, and one in early March—they hold open houses in which visitors can purchase hellebore seedlings at relatively bargain prices. The real crazy-for-hellebores customers start lining up hours early, even though they're not allowed to buy anything until the bell rings at 10 a.m. About 2,000 plants later, the sales are over, but many people stay to wander around the couple's beautiful garden, which adjoins the nursery sales area.

DEVELOPING A PARTNERSHIP

The couple met in 1977, four years after Ernie moved to Oregon. They became acquainted, ironically, through Marietta's then-husband. When Marietta and her husband parted ways not long afterwards, she asked him who would chop wood and help take care of the 300 chickens and 40 sheep they were raising. He replied, "Oh, Ernie will take care of you," never imagining how prophetic his words would turn out.

A shared love of plants helped forge a bond between the couple, and a year after their first official date, they were married. Over time, their relationship has become so interconnected that friends sometimes refer to them collectively as Ernietta. "They are a team," says C. Colston Burrell, a long-time friend and co-author with Judith Tyler of *Hellebores: A Comprehensive Guide*. "They have a shared vision that's unusual for partners and gardeners."

The couple initially found an outlet for their mutual enthusiasm for gardening by setting up a landscaping business. Soon, however, working in other people's yards began to wear thin. "We wanted to stay home," Ernie says of that time in the late 1980s, "so we worked at our place in the morning and went to jobs in the afternoon."

In 1992, the O'Byrnes heeded the advice of friend and fellow plant geek Roger Gossler, co-owner of nearby Gossler Farms Nursery, who urged them to start a specialty nursery devoted to unusual perennials. The business took off, especially once customers started visiting the rapidly evolving garden, which was a showcase for shade-loving perennials such as trilliums, *Brunnera*, Jack-



A mosaic by Portland area artist and landscape designer Jeffrey Bale is the centerpiece for a series of designed areas in the O'Byrnes' personal garden.

TOP: COURTESY OF ERNIE AND MARIETTA O'BYRNE. BOTTOM: JOSH MCCULLOUGH.

A FEW FAVORITES

Asking a hellebore breeder to pick a few of their favorites is like asking a parent to name favorite children. However, Ernie and Marietta gamely named three hellebores they like to grow in their own garden.



"One of my favorites is a single yellow hellebore called **'Golden Sunrise'**," says Marietta. One of the seed strains in the O'Byrnes' Winter Jewels™ series, it has banana-yellow flowers that sometimes have red veins, speckling, or blush on the petals. Additionally, the leaves turn a brilliant yellow-green color in winter, "just when things get drab."

Another is *H. ×ericsmithii* **'Winter Moonbeam'**, a sterile selection developed from a cross between *H. ×sternii* and *H. niger*, which Marietta says has "beautiful marbled evergreen foliage and white flowers that turn to copper or mahogany" as they age.

The last is an unusual red-flowered hellebore called **'Anna's Red'**. It was created from a cross between *H. lividus*, *H. ×hybridus*, and *H. niger*, which Marietta says "used to be considered impossible." In addition to the brilliant red flowers, it has "lovely marbled foliage with silvery patterning." —K.P.



Slate-gray **'Blue Diamond'** is one of the single-flowered cultivars in the Winter Jewels series.

in-the-pulpits (*Arisaema* spp.), meadow rues (*Thalictrum* spp.), euphorbias, bleeding hearts (*Dicentra* spp.), hardy geraniums, ferns, and, of course, hellebores.

FOCUS ON HELLEBORES

Initially, the O'Byrnes propagated and sold a wide variety of herbaceous perennials. But they quickly found themselves fascinated by hellebores. The catalyst for their conversion was a copy of *The Gardener's Guide to Growing Hellebores*, written by Graham Rice and Elizabeth Strangman. "When we saw those pictures," Marietta says, "We thought, 'Wow, there are hellebores like that?' At first, our main interest was in acquiring more."

And they did. In 1993, they saw an ad in the Royal Horticultural Society's magazine, *The Garden*, offering "the best hellebore seed in the world." The ad was from British nursery owner Will McLewin—a lovable curmudgeon, says Marietta—who became a friend and provided them with

some of their first seed. Additional seed came from Gisela Schmiemann, a hellebore breeder in Cologne, Germany.

The next step in their development as hellebore breeders occurred 10 years later; the O'Byrnes—accompanied by Burrell and fellow hellebore growers Dick and Judith Tyler of Pine Knot Farms nursery in Clarksville, Virginia—crossed the Atlantic to visit the holy grail of hellebore breeders: Ashwood Nurseries in Kingswinford, a town in the Midlands region of England.

Ashwood's breeder, Kevin Belcher, kept all the young hellebores that were blooming for the first time in a roped off area for viewing and potential sale. But he often had a hard time letting go of his prize plants, Marietta recalls. Marietta would select a few with especially beautiful flowers to purchase, and, inevitably, Belcher would exercise his right of refusal. "He kept saying, 'Ah, no, I'm going to keep that one,'" she says.

Nonetheless, the O'Byrnes came home with 72 prime plants. With those and others acquired from two other notable hellebore nurseries—Blackthorn Nursery in Hampshire, England, and De Hessenhof nursery in the Netherlands—they were on their way.

After more than a decade of careful crosses and recrosses, they slowly built a pool of stock plants with the characteristics they were seeking. The result was the introduction in 2007 of the couple's now legendary Winter Jewels series, which currently includes nine single color groups, one semi-double, and 14 double-flowered selections. Among the newest introductions is 'Double Slate', a double with slate gray flowers derived as an offshoot of the 'Onyx Odyssey' strain.

"Marietta has an excellent eye, and she's ruthless," says Burrell. "She won't settle for second best. In consequence, her plants are quite exceptional. They rival the best plants produced anywhere."

Reflecting on what sets Marietta and Ernie apart from other breeders, Avent says, "The best way to describe it is that they *get it*. They are good gardeners and expert breeders, which generally don't go together. Most plant breeders are not good gardeners."

PAINSTAKING PROCESS

Creating hybrid plants may sound romantic, but it is actually a time-consuming, labor-intensive, and meticulous process.

For More Information

Northwest Garden Nursery

86813 Central Rd. NW, Eugene, OR 97401. (541) 935-3915.
www.northwestgardennursery.com.

The wholesale nursery is open to the public for two special sales weekends in February and March each year. Group tours are sometimes available by special arrangement with the nursery.

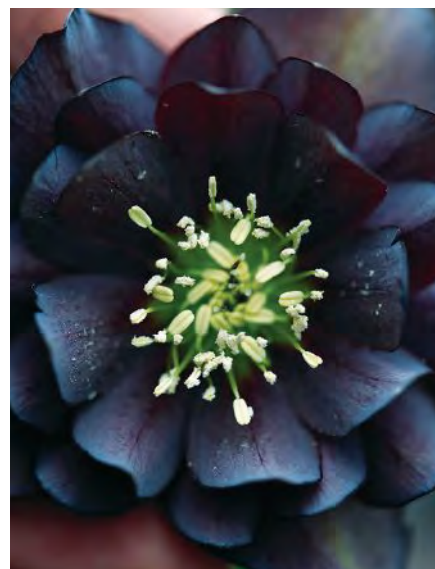
For the O'Byrnes, the hybridizing season starts January 15. Each morning, Marietta picks up a red trug that holds her No. 6 watercolor brushes, tags, and alcohol and keeps a date with the hellebore stock plants, which grow in large containers on tables in the nursery's three poly houses. It's time to start the painstaking process of moving pollen from plant to plant by hand.

By early April, she and Ernie start placing small fabric bags over hellebore flowers so they can keep track of the seeds from each carefully planned cross. "The seeds ripen at different times, and if we didn't bag the flowers, the seeds would fall to the ground. Bags are tagged so we know the history of that particular cross," says Ernie. While the seeds ripen, the couple gets a month's rest—time they use to work in the garden or go on backpacking trips.

In May, it's back to work cutting off the bags, cleaning the seed, and sowing flats of next year's plants.

Marietta basically taught herself how to hybridize hellebores. "It involved some reading and a lot of trial and error," she says. Her mentors included Belcher at Ashwood Nurseries and John Massey, Ashwood's owner. "Those two are the top hellebore breeders in the world," says Marietta. Ernie chimes in to point out that it is important to note that Belcher and Massey, in turn, learned much from the pioneering hellebore breeding conducted by an even earlier generation of British breeders, such as Elizabeth Strangman of now-closed Washfield Nursery and Helen Ballard. "We have all been lucky that we got to build on their work," Marietta acknowledges.

Successful plant breeding requires becoming familiar with the gene pool in your stock plants. "After some generations you learn the background of the plant, so you have an inkling of what you breed with what," says Marietta. She explains that while in some plant genera—such as dahlias—crossing one plant that has attractive flowers with an equally attractive one can produce offspring with a pleasing blend of colors, it's not the case with hellebores. "When you do this with hellebores, it's more like a child playing with watercolors—you end up with a muddy purple-brown color," she says.



Left: As part of their breeding program, the O'Byrnes hand-pollinate their stock plants each winter. Above: 'Onyx Odyssey' is the closest-to-black selection in the Winter Jewels series.

Instead, she focused on developing stock plants that offered pure color strains. “If you want something new, you have to develop it incrementally,” she says. “So if I want an apricot color, I use a yellow-flowered stock plant as one parent and cross it with another yellow that has a little more pink in it. Once you have a plant that’s really good, you sometimes do self-pollination to produce more of a similar color.”

Failures are part and parcel of the breeding process. Some are composted and others are sold as seedlings, since appreciation for color can differ from one person to another. The O’Byrnes are not fond of purple-colored flowers, and Ernie recalls one double-flowered strain they produced that had spotted purple flowers. “We thought it was really ugly, so we stopped breeding

it, but people who saw it loved it,” he says.

Creating double-flowered selections is even more difficult, because seedlings with double flowers rarely produce doubles when crossed again. “When we started our breeding, doubles were very rare,” admits Marietta. “But now when we breed our doubles with another double, we get a double.”

In addition to working on pure color strains, Marietta and Ernie strive to produce hellebores with outward-facing flowers that open above the foliage and can be viewed more easily from the side or above. They also prefer hellebores with a compact habit that is less likely to be flattened by winter rain or snow.

Developing plants resistant to fungal diseases is another key component of their breeding work. “When we come across plants that are more prone to botrytis and black spot, we take them out of the breeding program,” says Marietta.

The O’Byrnes have an advantage over hellebore breeders in other regions because the benevolent climate of the Pacific Northwest encourages seedlings to start blooming earlier than they do elsewhere. “We get quite a high percentage of plants to bloom in one year—they grow well and are faster to flower here,” says Ernie. Marietta estimates that it

takes “at least three or four generations—five or six years—to develop a successful hybrid.”

ARTFUL GARDEN

The same single-mindedness that Ernie and Marietta put into hand-pollinating hellebores is applied in their acre and a half garden. It starts at the farmhouse, which is shielded from the road by 160 feet of timber bamboo (*Phyllostachys nigra* ‘Henons’), and radiates in seamless transitions. Marietta points out dozens of mayapples (*Podophyllum* spp.), a seven-species genera that holds a particular fascination, along with Jack-in-the-pulpits (*Arisaema* spp.). “I love arisaemas, especially *A. consanguineum*, because they come on late,” Marietta says of the silver-centered whirligig of foliage growing beneath the horizontally-tiered giant dogwood (*Cornus controversa* ‘Variegata’).

The bountiful perennial borders lead to a plant-inspired pebble mosaic created by Portland landscape architect and artist Jeffrey Bale. Four paths radiate from the mosaic circle, taking visitors through other garden areas. One is a chaparral garden that has the look of the American Southwest. The soil in the garden was amended with six inches of washed gravel to cater to a range of native and Mediterranean re-

Sources

Northwest Garden Nursery hellebores are available from the following mailorder sources.

Gossler Farms Nursery, Springfield, OR. (541) 746-6611.
www.gosslerfarms.com.

Greenwood Nursery, McMinnville, TN. (800) 426-0958.
www.greenwoodnursery.com.

Joy Creek Nursery, Scappoose, OR. (503) 543-7474. www.joycreek.com.

Klehm’s Song Sparrow Farm & Nursery, Avalon, WI. (800) 553-3715.
www.songsparrow.com.

Pine Knot Farms, Clarksville, VA. (434) 252-1990.
www.pineknotfarms.com.

Plant Delights Nursery, Raleigh, NC. (919) 772-4794.
www.plantdelights.com.

Roots & Rhizomes, Randolph, WI. (800) 374-5035.
www.rootsrhizomes.com.

Resources

The Gardener’s Guide to Growing Hellebores by Graham Rice and Elizabeth Strangman. Timber Press, Portland, OR, 1993.

Hellebores: A Comprehensive Guide by C. Colston Burrell and Judith Knott Tyler. Timber Press, Portland, OR, 2006.



A chaparral-style garden area planted with colorful Western natives and Mediterranean-region plants often surprises visitors to the Oregon nursery.



In addition to hellebores, the O'Byrnes are trying their hand at breeding podophyllums, a genus of woodland plants native to the United States and Asia.

gion plants that thrive with poor soil and good winter drainage, including shrubby oaks, conifers, cacti, wild buckwheats (*Eriogonum* spp.), bottlebrushes (*Callistemon* spp.), manzanitas (*Arctostaphylos* spp.), and penstemons. There's also a rock garden area filled with small alpine plants such as bellflowers (*Campanula* spp.).

"What I respond to most in Ernie and Marietta's garden is that it's a continuous tapestry," says Burrell, who considers the garden one of the best he has seen in the country. "It's a collection of both rare and common plants grown together beautifully. The combinations are exquisite."

Two resident greyhounds help welcome nursery visitors and provide deer patrol for the garden in summer. "We've kept generations of greyhounds, and before that we kept Irish wolfhounds," says Marietta. Other full-time residents include two cats, four peacocks, and a dozen chickens—the avian contingent is confined to a meadow abutting the nursery.

LOOKING AHEAD

Staying at the top of any field requires commitment, but Ernie and Marietta have no plans to scale back their efforts. "I'd love to see a double where the inside petals are

a different color than the ones on the outside," says Ernie. They are also trying to develop a pure purple color in a selection called 'Amethyst Gem' that has violet-red flowers marked with a pink edge. "We're still working on that plant because we want pure color and flowers that don't hang down quite so much," says Marietta.



The O'Byrnes are trying to develop a hybrid hellebore featuring the spectacular fernlike foliage of *Helleborus multifidus*.

Another challenge they have embraced is trying to develop larger flowers with more exciting colors on *Helleborus multifidus* ssp. *hecegovinus*, a deciduous species native to southeastern Europe that has very fine fernlike foliage, with each leaf divided into 100 leaflets. They have managed to create some hybrid seedlings that have this combination, but the problem is that the fine foliage only shows up after three years of growth. A few large plants growing in their nursery provide a glimpse of what this hybrid might offer in a garden, but the O'Byrnes admit the process of developing them takes so long that it wouldn't be economically viable.

In addition to their ongoing work with hellebores, they are dabbling in breeding and selecting other herbaceous perennials, notably podophyllums and trilliums.

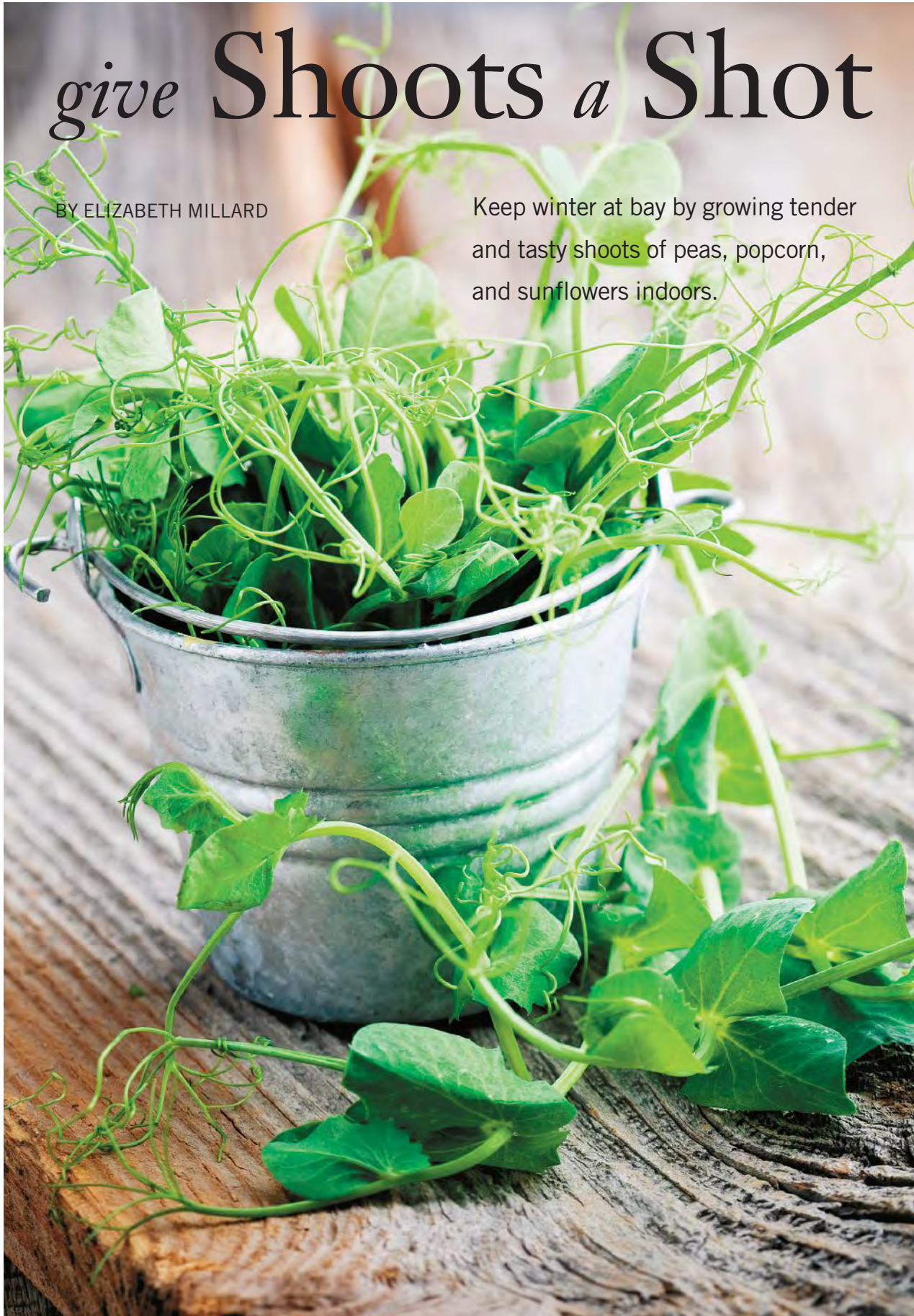
"The bar is always moving upwards in plant breeding," says Avent. "What was a great hellebore 20 years ago is trash today. Ernie and Marietta don't rest on their laurels; their strain continues to improve year after year. They just love plants and that's why they are doing what they do." 🌱

A communications specialist for Oregon State University's Extension and Experiment Station, Kym Pokorny lives in Corvallis, Oregon.

give Shoots *a* Shot

BY ELIZABETH MILLARD

Keep winter at bay by growing tender and tasty shoots of peas, popcorn, and sunflowers indoors.



ALL PHOTOGRAPHS FROM INDOOR KITCHEN GARDENING BY ELIZABETH MILLARD (COOL SPRINGS PRESS, 2014). USED WITH PERMISSION FROM THE PUBLISHER.

SOMETIME AROUND the middle of February, it always seems to hit: the weariness of filling my shopping basket with fresh vegetables from California, Chile, Mexico, and even Peru or New Zealand. No offense to the hardworking farmers across the United States and around the world, because I truly appreciate the opportunity to eat oranges during a Minnesota snowstorm. But these products require, by necessity, lengthy shipping times that sap them of flavor and nutrition to some degree.

Still, it's not easy to eat local when you live in a place that requires budgeting 20 minutes every morning for scraping the ice off your windshield. The only way it can be done, in even a small way, is to

My favorites to grow are pea, sunflower, and popcorn shoots. Pea shoots have a satisfying crunch and a delicate flavor that tastes like spring. Sunflower shoots are nutty and succulent, with a texture that's surprisingly firm and holds up well in a sauté.

Popcorn shoots, my biggest experiment of all, are delightfully strange in their own right. They look a little like wheatgrass, but taste like very young sweet corn, then hit you with an aftertaste of corn stalk. With these three options, shoots are only just a few weeks away from thriving under your own lights.

CONTAINERS

For shoots, I prefer seedling trays with minimal depth and drainage slots in the

rious thing happens: the roots begin to curl up into each other, forming a dense mat. This makes composting the soil after harvest very easy. Bonus for homesteaders: chickens love the leftover stems and seeds from shoots trays.

PLANTING PREPARATIONS

For growing shoots, I find that a pure compost mix works very well, as long as it has a fluffy consistency when dry. If all you have is indoor potting soil or a heavy compost mix, lighten it up by adding vermiculite to it. I recommend moistening your planting mix before sowing seeds because it will speed germination time by a few days.

When adding water, go for a consistency that's like a crumbly brownie mix. Test it by picking up a handful and squeezing. If a few drops of water come out, that's perfect. If there's a steady stream of water, it means you've made the mixture too wet, and you should add more dry mix.

To speed germination time even more, soak the seeds for about 24 hours before planting. Sometimes when the house temperature feels like it's on the colder side, I soak them for a day or two longer so that they begin to sprout before I plant them. This can reduce germination time by up to a week in some cases.



Pea shoots, opposite, are easy to grow indoors and make a tasty addition to many dishes, such as salads, above. Harvested shoots can be stored in the refrigerator for about two weeks.

either grow what you can indoors, or tap into whatever canning and dehydrating you accomplished the summer before. Since we tend to run out of our food preservation goodies by March at my house, I began experimenting with easy-to-grow options, and that led right to shoots.

Unlike sprouts—which are grown in water and require meticulous scheduling for rinsing and care to avoid bacterial issues—shoots are grown in soil, so they are more flexible in terms of timing, resource usage, and space.

bottom. That's because the seeds are sown so close to each other that, without good drainage, root rot can become an issue within just 24 hours of planting.

When choosing a pot or tray, keep soil usage in mind. Shoots don't need as much soil depth as plant starts or even indoor herb gardens. Save soil and make the process of harvesting easier by selecting a relatively shallow tray.

Normally peas, sunflowers, and corn require plenty of space for their roots, but when planted in a shallow tray, a very cu-



This article is an adapted excerpt from Elizabeth Millard's recent book *Indoor Kitchen Gardening* (published by Cool Springs Press, Minneapolis, Minnesota, 2014; \$22.99). Used with permission from the publisher.

TROUBLESHOOTING SHOOTS

Sure, it can feel frustrating when mold or crumpled foliage or worse—NOTHING—appears despite your best efforts. Here are some common problems you may experience during your shoot-growing ventures and potential solutions for them.

No or Slow Germination If you know your seeds are fresh, poor germination would most likely be caused by low soil temperature. Putting a cover over the tray keeps the moisture and warmth in, but sometimes you need an extra boost, so consider setting the tray on a heat mat, available at any garden store.

Mold in the Tray Moldy clumps can be a result of improper airflow, overwatering, or too much humidity. If there are unaffected shoots in the tray, lift out that section (throw out the moldy part) and relocate it into a different tray, letting the soil dry out a little before you water again. Wait a few days before

harvesting to see if mold develops on this section as well; if it does, discard and start over in a clean tray with fresh soil mix.

Tops of the Shoots Are Browning If the shoots get too close to the light source, they can get scorched. Move them away from the light by another six inches, clip off the browned tips, and they should continue to thrive.

Yellowing or Droopy Shoots Usually, yellowing means overwatering, so let your soil dry out a little more between waterings and see if they improve. By contrast, wilting shoots are often caused by underwatering. In that case, bottom water the shoots and see if they perk up after about 15 minutes. If the shoots remain droopy, you may just want to harvest and eat—they'll still be tasty and nutritious, just a bit less crisp.

—E.M.

SOWING AND GERMINATION

Start with a clean tray, pot, or other container, and add a few inches of your pre-moistened soil mix. Don't pack the soil down, or your shoots tray will turn into a hardened brick when it's put under lights, but do take a moment to smooth the surface, especially along the sides. An uneven soil surface will result in unevenness in your water distribution, allowing some seeds to sit in water for too long while others dry out too soon.

Once your soil mix is ready, seed it generously. Keep in mind that each seed will grow a shoot vertically, so it's fine if they're all fractions of an inch from each other. If you do happen to sow them thicker and they're touching one another, they'll be fine but you might get less germination than expected.

The good news is that any non-germinating seeds tend to get a second chance after your first harvest. With pea shoots especially, you can get two to three more harvests because of this. These subsequent harvests won't be as abundant as the first, but they're enough to be worth the effort.

There's no need to cover the seeds with more soil mix; they will grow perfectly well on top of the soil.

Water very lightly, and then place an empty black tray over the top of the seed tray to help keep the seeds warm and moist. Once the seeds show any sign of growth (in about three to four days), remove the cover.

LET THERE BE LIGHT

After the germination stage, the seedlings need at least eight hours of light a day. You



When growing for shoots, the best setup is a shallow tray that can be covered while seeds, like these peas, germinate on top of the pre-moistened soil mix.

can place them in a sunny window if you're in a season or a geographic area where the sun can meet this requirement, but be aware the shoots will bend toward the light, so be sure to rotate the tray as necessary. Otherwise, supplement with artificial light.

I prefer full-spectrum fluorescents because they're affordable and widely available. But if you want to try LED bulbs or other grow light systems, go for it. Just make sure to place the tray directly under the lights so the bulbs are about six inches from the tops of the plants.

One important note when it comes to lighting: just like people, plants need a night

as well as a day. I turn the lights on in the morning and turn them off about the same time as sunset; in the winter, I keep the lights on longer in the evening but make sure to turn them off before I go to bed. You also can put the lights on a timer to ensure they get turned on and off as needed.

MAINTAINING HEALTHY GROWTH

Once they've established, shoots don't require much care other than watering. To do so, I recommend using a "bottom watering" strategy. Simply fill a kitchen sink, bathtub, even another empty tray, with about an inch of water and set the shoots tray into it for a



When shoots are ready to be harvested, grasp a bunch and snip them off with sharp shears.

few minutes. The soil will absorb the water through the tray's drainage holes. You also can just water carefully at soil level.

If the air in your house seems especially dry, mist the plants when they're in an early stage of growth and then put a clear tray on top. These are available at any garden store, and they help to let in light but lock in moisture. I find these invaluable in the winter, especially when the shoots are just emerging.

Set up an oscillating fan to provide some air flow in your growing area. The idea is to mimic the low levels of wind that plants are naturally exposed to outdoors. Research indicates this helps reduce incidence of disease and makes plants more robust.

HARVEST TIME

For each of the plants grown for shoots, there is a window of time to harvest them for best flavor.

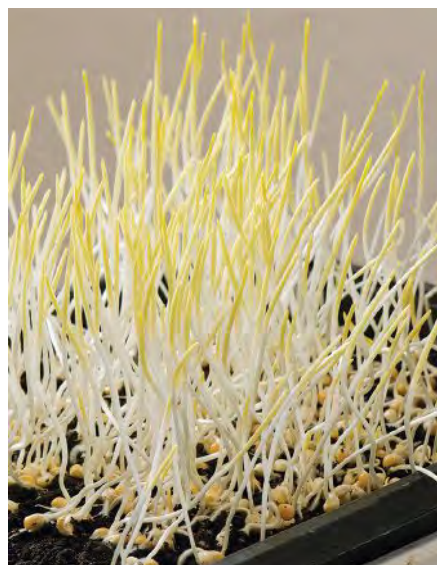
For peas, I harvest when they reach about eight to 10 inches. If you want sweeter and more uniform shoots, harvest at around four inches when they're just beginning to unfurl their leaves. If you let them go much more than 12 inches, they start flopping over as well as develop a woody flavor.

Sunflower shoots taste best before they develop their first true leaves. At the shoot stage, the plants have only two thick seed leaves, known as cotyledons, that are nicely crunchy. The first true leaves come

up between these cotyledons; they have a scratchy texture that I don't enjoy, even though they're perfectly edible.

Popcorn shoots are best at about six inches. Once the shoots get taller than this, they're fun to have in the windowsill because they look so vibrant, but the taste becomes more and more grassy as they grow.

When your shoots are ready to harvest, use a sharp pair of kitchen shears to snip them off close to the soil level. Then, either use them right away or refrigerate them in a sealed glass container like a Ma-



Popcorn shoots resemble wheatgrass and taste similar to very young sweet corn.

SEEDS FOR SUCCESS

When growing for shoots, variety doesn't matter very much so feel free to experiment. Here are some options that have worked well for me.

For pea shoots, I like 'Dwarf Gray Sugar' because they're hearty, easy to grow, and taste really amazing when you turn them into pesto. Nearly any other pea seed can be used for shoots, too, but I'd avoid varieties designed to be tall and robust, such as 'Oregon Giant'.

Johnny's Selected Seeds, a company out of Maine, offers a sunflower seed variety specifically for sprouting that's highly dependable and very hearty. When I've tried other options, it's been disappointing, especially when I've played around with growing from sunflower seeds that are usually meant for bird feeders. Stick with seeds meant for human consumption.

Popcorn is derived from specific strains of corn that were cultivated for popping. You might be able to use other types of corn and get the same effect, but popcorn is more reliable if you're trying to grow shoots. —E.M.

son jar. Pea shoots are remarkably long lasting and remain crunchy for about two weeks. Sunflower shoots are even tougher; I've kept some for three weeks in the fridge without any discernible loss of flavor. Popcorn shoots taste best when eaten the same day they are harvested.

Try mixing and matching these shoots with each other in salads and sandwiches, or add them at the last minute to omelets and stir-fries.

With any indoor growing efforts, enjoy the process—especially when those shoots you grew can be thrown into dishes just moments after you harvest them. Revel in that burst of pride that comes with seeing a plant begin to sprout up from the soil, and appreciate that feeling as it carries through all the way to the moment you serve it as part of a meal.

Elizabeth Millard is co-owner of Bossy Acres farm in Northfield, Minnesota, and author of Indoor Kitchen Gardening (Cool Springs Press, 2014).



gardening for Native Bees

North America's native bees are under threat from habitat loss, pesticides, and climate change. Here's what gardeners can do to help.

BY JESSIE KEITH

Bees like this eastern carpenter bee (*Xylocopa virginica*), here taking a shortcut to nectar by slicing through the side of a hosta flower, are among hundreds of bee species native to North America.



spread pesticide use, and climate change all have an impact, but gardeners can help.

APPRECIATING DIVERSITY

American bee species “come in a jewel box of different colors—from metallic green to bottle blue, gold, brown, and glossy black,” says Scott Hoffman Black, the executive director of the Xerces Society, an organization dedicated to invertebrate conservation. Sizes vary from the enormous one-inch valley carpenter bee (*Xylocopa varipuncta*) to one of the world’s smallest bees, *Perdita minima*, which is under two millimeters long. Throw in different shapes, hair types, tongue lengths, and other characteristics, and their diversity is staggering.

When it comes to nesting, about 90 percent of these species are solitary,



Left: Fall-blooming plants such as this aster (*Symphyotrichum* sp.) provide nectar to many species of native bees as they prepare to hibernate over the winter. Above: Specialized hairs on the underside of this female leafcutter bee’s (*Megachile* sp.) abdomen hold the pollen she collects for feeding her young.

HONEY BEES (*Apis mellifera*) may garner more of the lime-light, but North America is also home to approximately 4,000 known native bee species that are just as agriculturally, horticulturally, and ecologically important. While they don’t form large, honey-making colonies like their better known but non-native counterparts, these indigenous bees are among the most essential pollinators in our natural areas, farm fields, and gardens.

Some North American species even appear to do a better job of pollinating crops than honey bees. For example, researchers have found that blue orchard mason bees

(*Osmia lignaria*) are far more effective pollinators of cherry orchards, resulting in over twice the fruit yields of honey bee pollinated orchards. This is not surprising given that many native bees are often more tolerant of cool or moist conditions and have longer foraging times—giving them the pollination edge.

However, like honey bees, native bee populations have been declining over the last several years. This decline “speaks towards land use and the lack of diversity of our vegetation,” says Deborah Delaney, bee specialist and assistant professor of entomology at the University of Delaware in Newark. Factors such as habitat loss, wide-

while the rest are social and hive-forming. Nests may be underground or above ground in cavities; depending on the species, nests may be constructed from mud (mason and plasterer bees), plants (leafcutter bees), earth (mining bees), or excavated wood (carpenter bees). Solitary bees tend to produce few young (often one to 10) in underground nests, while some bumble bees and sweat bees nest in aboveground crevices and produce small colonies.

There is a direct correlation between bee size and flight distances, larger species like bumble bees can fly up to a mile or more when foraging, while medium to small bees

may only forage a couple hundred feet from their nests. Most native bees are polylectic, which means they pollinate a wide variety of plant species. Others may be oligolectic (pollinating a few, closely-related plant species) or specialized even further to be monolectic (pollinating one plant species).

NURTURING NATIVES

With these basic facts in mind, there are several things gardeners can do to support native bees. “If every gardener tried to create a haven for bees, it would increase habitat exponentially,” notes Black. Protecting and providing nesting areas and food sources are key. Equally important



A spacious, artificial hive, right, may appeal to honey bees, but a modest piece of wood drilled with numerous holes like the one above provides many native solitary bees with ideal nesting sites.

is safeguarding bees from pesticides. All broad-spectrum pesticides can kill bees, but research shows that neonicotinoid pesticides used in agriculture and horticulture—such as clothianidin, thiamethoxam, and imidacloprid—are the most harmful. Because neonicotinoids maintain residues in pollen, they can poison pollinators long after application.

To encourage native ground-dwelling bees to nest, avoid disturbing areas of bare, friable earth around plants as much as possible, and avoid applying bark mulch. Choose



compost or leaf mold instead. If this is not feasible for you, try doing this in just a small area of your yard that you leave “wild.”

For above-ground nesters, you can create artificial nest sites. For example, layers of clay-mud blocks may encourage certain southwestern bee species adapted to arid conditions to nest in the cool cracks between blocks. “Nest blocks,” either purchased or homemade from wooden blocks drilled with holes, appeal to tunnel-nesting species. Bundles of hollow stems cut and positioned cross-wise are also attractive to tunnel-nest-

ing bees; bamboo, teasel, and reeds all work well for making these nest bundles.

Most essential to healthy bee habitat is a variety of plants to ensure a steady supply of nectar and pollen. Nectar is a bee’s main energy source. Nutritious pollen, rich in protein, nutrients, and oils, is primarily used by bees to feed developing larvae. Solitary females typically roll the pollen into nectar-infused balls of “bee bread” and lay a single egg on each ball. The pollen is all the food larvae need to develop and mature into adult bees. Different bee species

BASIC BEE CHARACTERISTICS

Bees are closely related to wasps, so share several features such as large compound eyes on the sides of their heads and two pairs of wings. However, a number of characteristics distinguish the two insects. Physically, the most obvious difference between the two is that bees tend to be much hairier than wasps. These soft hairs are feathered or branched, whereas any wasp hairs are straight. While most wasps are carnivorous, all bees are vegetarians.

Wasps do not collect pollen, and only female bees collect and transport pollen to nests to feed their young. For this purpose, they often have specific structures on their hind legs or abdomen adapted for carrying

pollen. These structures are either corbiculae (“pollen baskets” consisting of a smooth concave area with fringes of curved long hairs) that hold pollen, or scopae (patches of stiff hairs) to which pollen can adhere.

Some wasps—such as yellow jackets or bald-faced hornets—can be aggressive when defending themselves, but there is little to fear from native bees in general. “Most solitary bees don’t or can’t sting,” says Scott Hoffman Black, executive director of the Xerces Society, a nonprofit organization dedicated to invertebrate conserva-

tion. “Bumble bees can sting but they rarely do,” he adds. Male bees do not have stingers at all.

—J.K.



Hairiness is one conspicuous characteristic that differentiates bees like this mining bee (*Andrena dunningi*), left, from wasp cousins like this paper wasp (*Polistes* sp.)



Sweat bees, like the one here visiting a black-eyed Susan, are efficient pollinators.

produce young at different times, so ideally your planting scheme should ensure that something is in bloom during all the seasons, even winter.

“I recommend planting three good bee plants for spring, three for summer, and

three for fall,” says Black, “so there is a buffet of flowers throughout the growing season.”

Gordon Frankie, professor of urban entomology at the University of California, Berkeley and director of the Urban Bee Lab, concurs with this strategy. He

suggests that gardeners aim for at least 20 different plant species overall to bring the bees, based on bee population sampling he has conducted around California. No matter the season, Frankie found the richest diversity of bee species in Berkeley and Santa Cruz. By contrast, he found “little in the way of bees in San Diego,” he says. He attributes the difference to the regional plant palettes—landscapes featuring a few plant species with limited wildlife value correlated with very low bee diversity and numbers in general. “The more bee-plant biodiversity you have, the more diverse the bees you will attract,” he notes.

PLANTS THAT ATTRACT BEES

As a general guideline for deciding which plants to include in your garden to attract native bees, it’s helpful to keep in mind that flowering plants that depend on bee pollinators to reproduce have specific suites of floral traits adapted to attract them. These traits include “landing pads” for bees to rest upon while collecting and feeding, sweet fragrance, and sugary nectar. The flowers tend to be shades of yellow, blue, or white with special markings that guide bees to nectar. Many are tubular with bilateral symme-

try, like salvia and snapdragon flowers, or in heads, as with daisies and sunflowers.

Because native bee and plant species evolved together, growing native flowering plants is a good way to attract local bee species to your garden. For example, the scented, golden flowers of vernal witchhazel (*Hamamelis vernalis*) will lure early-emerging native bees as will pussy willows (*Salix discolor*). Woodland wildflowers such as sharp-lobed hepatica (*Hepatica acutiloba*), violets (*Viola* spp.), and rue anemone (*Thalictrum thalictroides*) also draw spring-emerging solitary bees. Waves of spring beauties (*Claytonia virginica*) that appear in open woodlands and lawns are favored by a diminutive andrenid bee (*Andrena erigeniae*). The bright white flowers of bloodroot (*Sanguinaria canadensis*) are pollinated almost entirely by Carlin's andrena bee (*Andrena carlini*).

Later in the spring, natives such as false indigos (*Baptisia* spp.), lupines (*Lupinus* spp.), and California poppies (*Eschscholzia* spp.) attract a variety of bees. Spring-blooming trees and shrubs, such as American linden (*Tilia americana*), serviceberries (*Amelanchier* spp.), eastern redbud (*Cercis canadensis*), and hawthorns (*Crataegus* spp.), are also essential nectar and pollen providers.

In summer, perennials such as blanketflowers (*Gaillardia* spp.), penstemons (*Penstemon* spp.), and coneflowers (*Echinacea* spp.) attract all sorts of different native bees. The violet-purple spikes of giant blue hyssop (*Agastache foeniculum*) are favored by bumble bees (*Bombus* spp.), digger bees (*Melissodes* spp.), and leaf-cutter bees (*Megachile* spp.). Summer and winter squash are sure to attract tiny squash bees (*Peponapis* spp.). Native roses (*Rosa* spp.) are almost exclusively bee pollinated, and though milkweeds are often associated with butterflies, several species are important to native bees as well—particularly showy milkweed (*Asclepias speciosa*) and common milkweed (*A. syriaca*).

Fall-blooming asters (*Symphotrichum* spp.), perennial sunflowers (*Helianthus* spp.), goldenrods (*Solidago* spp.), and Joe Pye weeds (*Eutrochium* spp.) supply bees with the requisite food stores to overwinter.

The flowers of many non-native plants also can feed bees, including lavenders (*Lavandula* spp.) and other aromatic herbs. Fragrant, showy-flowered species that be-



Above: The nectar-rich flowers of American linden (*Tilia americana*) attract large numbers of native bees and other pollinators, as do the flowers of mint family members such as giant blue hyssop (*Agastache foeniculum*), left.

long to the mint (Lamiaceae), composite (Compositae), and rose (Rosaceae) families make good choices, too, and offer options that can be grown in most regions of the United States. If you opt to grow specific cultivars in these families, avoid those with double or non-fragrant flowers—their supplies of pollen and nectar have sometimes been unintentionally bred out of them.

THE BIG PICTURE

Awareness of pollinators and their vital agricultural and ecological roles is definitely increasing. As a result, more and more over-manicured, urban and suburban green spaces like parks, corporate

NATIVE PLANTS PROVIDE A SMORGASBORD FOR BEES

The following native plants attract a wide variety of native bee species and other pollinators throughout different seasons. They are also relatively easy to grow and adaptable across several regions. For many of the genera listed below, there are several other species that are good pollinator plants, too. See “Resources,” below, to find more extensive plant lists.

Common Name (Botanical Name)	Type	Height (feet)	Season of Bloom	USDA Hardiness, AHS Heat Zones
Basket flower (<i>Centaurea americana</i>)	annual	3–5	midsummer to early fall	0–0, 10–1
Blue camas (<i>Camassia quamash</i>)	bulb	1–3	late spring to early summer	4–11, 12–1
Blue sage (<i>Salvia azurea</i>)	perennial	3–5	midsummer to fall	5–9, 10–1
Common sunflower (<i>Helianthus annuus</i>)	annual	3–15	summer	0–0, 12–1
Giant ironweed (<i>Vernonia gigantea</i>)	perennial	5–10	mid- to late summer	4–8, 8–3
Great blue lobelia (<i>Lobelia siphilitica</i>)	perennial	2–4	mid- to late summer	4–8, 8–1
Lanceleaf coreopsis (<i>Coreopsis lanceolata</i>)	perennial	1–2	early to midsummer	4–9, 9–1
Lead plant (<i>Amorpha canescens</i>)	shrub	2–3	midsummer to early fall	2–8, 8–1
Prairie rose (<i>Rosa arkansana</i>)	shrub	1–3	summer	3–8, 8–3
Sassafras (<i>Sassafras albidum</i>)	tree	20–80	spring	4–8, 8–3
Smooth beardtongue (<i>Penstemon digitalis</i>)	perennial	3–4	spring to early summer	3–8, 8–1
Spotted geranium (<i>Geranium maculatum</i>)	perennial	1–2	spring	4–8, 8–1
Wild bergamot (<i>Monarda fistulosa</i>)	perennial	2–4	summer	3–9, 9–1



Males of the aptly named long-horned bees (*Melissodes* spp.) sport extra-long antennae.

parks, school yards, and golf courses are being converted into managed meadows and savannahs rich in plants for bees and other wildlife. Green roofs offer further opportunities for flowers to blossom in city spaces, as do “eco-lawns” planted with low-growing flowering plants for pollinators. And in rural areas, intentionally planted nectar- and pollen-rich wildflowers line a growing number of agricultural fields, old railways, highways, and roadsides.

All are steps in the right direction, but there’s still a lot to do, starting with your home garden. As Black puts it, “Plant a variety of native bee flowers, heirlooms, and vegetables. Avoid insecticides, cultivate your garden well, and let the bees come.”

Jessie Keith is a horticulturist, writer, photographer, and garden designer. She lives in Wilmington, Delaware, with her husband and two daughters.

Resources

Websites

Native Bee Conservancy, www.nativebeeconservancy.org.
Pollinator Partnership, www.pollinator.org.
University of California–Berkeley Urban Bee Lab, www.helpabee.org.
The Xerces Society, www.xerces.org.

Books

Attracting Native Pollinators: Protecting North America’s Bees and Butterflies by Xerces Society. Storey Publishing, North Adams, MA, 2011.
The Bee: A Natural History by Noah Wilson-Rich. Princeton University Press, Princeton, NJ, 2014.
Bees of the World by Christopher O’Toole and Anthony Raw. Blandford, London, UK, 1991.
Bees, Wasps, and Ants: The Indispensable Role of Hymenoptera in Gardens by Eric Grissell. Timber Press, Portland, OR, 2010.
Bumble Bees of North America: An Identification Guide by Paul H. Williams et al. Princeton University Press, Princeton, NJ, 2014.

Sage Advice

by Kris Wetherbee

CULINARY SAGE has always held an essential place in my kitchen. For the last 20 years or so, it has also been a prominent part of my garden. Initially, my desire to grow sage was to have fresh access to its piney aroma and robust, earthy flavor that is heightened with just a touch of citrus. But sage is so attractive, with its bold, velvety textured leaves and spikes of purple-blue summer flowers, that I've incorporated it into flowerbeds, herb gardens, and mixed container plantings. I find it to be one of the easiest herbs to winter over indoors, too.

GROWING GUIDELINES

Garden or culinary sage (*Salvia officinalis*, USDA Hardiness Zones 5–8, AHS Heat Zones 8–5) and its green-leaved cultivars are well equipped to weather the winter garden in USDA Zone 5 and above, and are evergreen or semi-evergreen in much of this range. There are several varieties with colored foliage that vary in hardiness, with most not surviving winters north of USDA Zone 7. You can usually gain an extra zone of winter hardiness by growing plants in a sheltered microclimate within your garden, and by providing protection with a loose winter mulch, such as straw.

Sage can be grown as an annual in colder regions of the country, or grown in containers that are brought indoors to



'Berggarten', foreground, a cultivar of culinary sage, is also an attractive ornamental bedding plant.

spend the winter. Sage is also best grown as a winter/spring annual in hot and humid areas in AHS Heat Zones 12 to 9.

For best results, grow sage in full sun and well-drained, slightly acidic soil of average fertility. In very warm regions it will benefit from some afternoon shade. Sage tolerates a wide range of soil types, but for sage to thrive in clay soil you will need to add organic matter to lighten the soil and improve drainage. Water regularly until plants become established, then allow the soil to dry slightly between waterings.

To encourage new growth and to maintain a compact, bushy shape, some

experts advise pruning plants every year in early spring, reducing the overall size by two-thirds. But if cut back too early, plants can be damaged by late frosts, so I wait to prune established plants until growth starts and leaves unfurl—usually mid-spring—cutting diagonally just above the leaf node. I also thin out up to one-half of the oldest woody growth, along with any sections with old or dead leaves, cutting these stems back to the crown. I prune again after flowering, at which time I cut plants back by one-third.

Once your spring pruning is done, get new growth off to a good start by

Sources

Goodwin Creek Gardens, Williams, OR. (800) 846-7359.

www.goodwincreekgardens.com.

Richters Herbs, Goodwood, ON.

Canada. (905) 640-6677.

www.richters.com.

Sandy Mush Herb Nursery,

Leicester, NC. (828) 683-2014.

www.sandymushherbs.com.

lightly side dressing with an organic fertilizer or watering with fish emulsion or compost tea. Despite diligent pruning and fertilizing, plants will eventually become woody or leggy. Plan on replacing them every three to five years to ensure vigorous plants and healthy harvests.

PESTS AND DISEASES

Few pests bother sage, so if it's not growing well, more often the culprit is that it has been planted in unfavorable conditions. Poor air circulation, too much moisture, heavy soil, and lack of pruning can bring on powdery mildew and/or root rot. To avoid both, thin plants regularly to encourage good air circulation; add organic matter to the soil to improve drainage; keep the leaves dry as much as



'Tricolor', above left, and 'Purpurascens', above right, are grown mainly for their decorative foliage.

possible; and mulch around plants with pebbles, crushed stone, or nut hulls.

RECOMMENDED SELECTIONS

When it comes to culinary use, common garden sage and its green-leaved cultivars offer unrivaled flavor. They are also the easiest to grow and the hardiest choices for regions with cold winters.

The species typically grows from two to three feet in height with a three-foot spread. 'Rosea' is similarly sized but features bright pink flowers. 'Holt's Mammoth' grows quickly and has larger leaves than the species, making it a great choice

for cutting and drying bulk quantities. 'Berggarten' is more compact, growing 16 to 24 inches tall, with broader leaves, denser growth, and fewer flowers than the species. For a more fine textured effect, try the small-leaved 'Minimus', sometimes listed as Dwarf, which grows 12 to 15 inches tall and 24 inches across; it's a good choice for containers.

Three sage varieties noted more for their ornamental value than their culinary virtues are 'Icterina', 'Tricolor', and 'Purpurascens'. All three are more sensitive to cold than garden sage and may overpower dishes with their heightened camphor-like flavor.

'Icterina' has compact, dense growth and striking golden variegation on green leaves. 'Tricolor' sage, which does not



tolerate weather that's cold and wet, features variegated leaves in cream, purple-pink, and green. 'Purpurascens' has a compact, vigorous growth habit with leaves that are washed with soft purple or red-violet. Of the three, 'Purpurascens' has the most culinary value.

ENJOYING THE HARVEST

Harvest leaves sparingly during the first year by pinching the stem tips off; this will also encourage bushiness. The second year, harvest leaves before plants bloom for best flavor and texture. Remember that each time you harvest

PLANTING BASICS

Getting Started Culinary sage can be started from seed, but the seed does not store well and seedlings may be slow to establish. Rooted cuttings or purchased plants grow faster for more abundant harvests and stay true to type and flavor. Propagate your own plants by rooting four-inch cuttings taken in late spring or fall, from crown divisions, or by layering (pin branches to the ground and they will often set roots on their own).

Spacing Space most varieties 18 to 24 inches apart. Space dwarf varieties such as 'Minimus' closer together, 12 to 15 inches apart.

Days to Harvest For the first year, allow plants to grow and become established before harvesting more than a few leaves. The second year, harvest leaves at any time during the growing season, with the last big harvest taken six to eight weeks before the average first frost date in fall.

the leaves for culinary use, you are also pruning. Leaves harvested after plants bloom may have a more intense flavor and be slightly tougher in texture. But their culinary value is still intact—just use less, then taste. You can always add more if needed.

Use sage fresh or dried. Fresh sage has more of a lively citrus flavor than sage that has been dried. To dry sage, simply hang bundles of stems upside-down out of direct light, or dry leaves in a food dehydrator. Store whole dried leaves in an airtight container in a cool location. Crush and rub whole dried leaves between your hands just before cooking to release maximum flavor.

Sage is extremely versatile. It pairs wonderfully with poultry dishes from turkey dressing to chicken soup or salad. Its distinctive flavor is also well suited to pork roast, venison stew, lamb kabobs, and baked fish. Use it to season pumpkin or winter squash soup, or to flavor roasted vegetables, omelets, or frittatas.

A regular contributor to The American Gardener, Kris Wetherbee is a freelance writer based in Oakland, Oregon.

Compost's Dual Benefits: Recycle Yard Waste, Improve Soil

by Scott Aker

ORGANIC MATTER needs to be added to the soil from time to time to support beneficial organisms that normally live there—the same organisms that play a part in optimizing plant growth. Compost is one of the best amendments for this purpose, and, conveniently, composting is also an excellent way to dispose of the vegetative excess that every garden produces, reducing the burden on our landfills.

There are lots of “recipes” out there for how to create compost—four parts this to three parts that with a sprinkling of something else. When you consider the variety of types of green waste that your household generates, and how it varies in proportion from season to season, following a strict recipe would mean storing a lot of different materials. For that reason, I never use recipes, opting instead to focus on creating an optimal setup and environment for decomposition.

WAYS TO HASTEN DECAY

Decay is the destiny of everything that is no longer living. There are just different routes to the same end result, and generally the fastest route is the best in a garden. Piling up all your leaves, vegetable scraps, and lawn clippings and simply letting them rot on their own schedule is easy but probably won't give you the best results. This passive approach can only be used for material that is not too wet and also doesn't contain weed seeds or disease spores—fine for autumn leaves, but not the other green waste your garden generates.

Active, or hot, composting—where you help speed up the decay process—is a better way to go. This means that you must control several key factors: volume, particle size, and moisture levels.

Volume Unless a storm has created a lot of debris at one time, you are unlikely to



have enough fodder for your compost heap at one time to achieve rapid decay, simply because a smaller pile cannot build up enough heat to satisfy the needs of microorganisms that need high temperatures to multiply and help things disintegrate. The issue is not actually volume, but the surface-to-mass ratio of your compost heap. In a small pile, the amount of surface is great and the mass is small, so any heat generated is quickly lost. Without enough volume, your compost may never reach a high enough temperature to kill weed seeds and disease organisms that might be

Regularly turning the contents of a hot compost pile encourages rapid decay, above. The internal temperature of the pile—which is easily determined with a soil or old kitchen thermometer, left—will tell you when turning is needed.

in the mix. And instead of taking six weeks from start to finish, the process may take six months or more. A better approach is to accumulate materials in bulk until you have enough to make up at least two cubic yards in volume, after the materials are shredded. Bulk materials may shred down to a quarter of their initial volume, so you'll need to start with at least eight cubic yards of most materials prior to shredding.

Only a few things should be kept out of hot compost. Most diseases are killed by the heat, as are weed seeds. While many people prefer to avoid adding materials that may have pesticide residue on them, such as lawn clippings from neighbors, studies indicate that commonly-used herbicides are volatilized or degraded into

basic elements by the microbes. Material contaminated with metals should be left out, as should any meat scraps or fat, because these will attract vermin.

Particle Size All decay organisms feed at the surface of things and won't be able to multiply rapidly if surface area is limited, so shred the material you are composting into pieces no larger than coins. A mulching lawn mower works well for autumn leaves, but if you have a lot of other types of green waste, it may be better to buy, borrow, or rent a shredder.

Moisture All life needs water to sustain itself, and too little of it will curtail the growth and reproduction of the microbes in your compost. Those that promote rapid decay also need oxygen, so air needs to be able to move freely through the pile. Ideally, the material in a pile should be uniformly damp; you should never be able to wring water out of it. It is always easier



Drum composters, such as this easy-to-turn model, are especially useful in small spaces.

to add water to dry material rather than drying out material that is too wet, but, of course, this sometimes happens. It's a good idea to store some dry shredded leaves so you can add them to a pile that gets too wet. You can even use shredded newspapers if nothing else is on hand.

Some nitrogen is needed to get the process started. This will be recycled as

microorganisms die, so you don't need a lot. Some grass clippings will work, as will a few handfuls of nitrogen fertilizer. Compost starter mixtures are available commercially, but they aren't necessary because spores of the needed decay microorganisms are everywhere, even floating on air.

SETUP AND MAINTENANCE

There are many composting devices available for home use, from metal and plastic drum units that can be turned effortlessly to cube-shaped bins made of wire mesh or heavy-duty plastic. While these keep a pile tidy, they aren't necessary for success. Compost can be produced successfully in an open heap.

In any active or hot composting process, turning and mixing the material is essential. The temperature of the pile will tell you when it needs to be turned. If you followed the parameters described above, the pile should heat up to a temperature around 140 degrees Fahrenheit (F) within two or three days after you've assembled it—you can check the temperature by inserting a compost thermometer or kitchen meat thermometer into the pile. After a week, it should steam when you dig into it. Within another week it may begin to cool, perhaps to a temperature a bit above 100 degrees F. When that happens, turn the pile with a garden fork to mix the materials and give the part of the heap that was on the outside a chance to decay in the warmer interior.

Your compost is almost finished when it won't heat up much after you turn it. This may take six to eight weeks. Don't be tempted to use your compost right away. As the heat subsides, the main decay organisms die off and are gradually replaced by a broader array of beneficial fungi and bacteria. Many of these protect plants from diseases and create complex biochemical associations that help make nutrients available to plants. After letting your compost rest for a couple of weeks, you can start using it to give your garden soil a healthy boost. ♻️

Scott Aker is a horticulturist based in the Washington, D.C., area.

Gardening Q&A with Scott Aker

TREATING INSECTS ON INDOOR HERBS

I move my outdoor herbs indoors when temperatures drop in fall, but they usually become infested by aphids or scale. Toxic sprays are not an option and the non-toxic commercial and homemade plant soap sprays that I have tried are not effective. Do you have suggestions for how to get rid of these pests?

Delay moving the plants indoors as long as possible. If aphids are present on plants, spray the plants thoroughly with a strong jet of water from your garden hose to dislodge the aphids before bringing the plants inside. Scale insects are harder to control, so it's best to leave any scale-infested plants outdoors. If aphids or mites appear on plants during the winter, take the plants to your shower and give them a blast of water to wash away the pests. This will also rinse off any dust accumulating on the leaves, which can impair photosynthesis.

BLUEBERRY SHRUBS NOT PRODUCING

For the past 30 years, I have had a good crop of blueberries from about 40 plants variously located in sunny, semi-shady, and shady sites in my garden. This year I did not see many blossoms or fruits on three bushes that are planted in heavy shade. I mulch all the plants but rarely fertilize them, so this spring I applied azalea fertilizer. Is there anything else I can do to ensure their productivity?

Lack of sunlight is likely the main problem. Blueberries tolerate some shade but need full sun to bear heavy crops. You might need to relocate the plants to a sunnier spot, or remove any overhanging tree branches that are casting shade. Old stems also become less fruitful, so cut the thickest branches to the ground to stimulate stronger growth. —S.A.

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

Flamingo Gardens

by Mary S. Chaddock

THERE ARE indeed flamingos at Flamingo Gardens, just as there were in 1925 when Floyd and Jane Wray purchased 320 acres of swampland in the Everglades west of what is now Fort Lauderdale, Florida. Consistent with agricultural practices of the time, they planted acres of citrus trees, and in 1927 they christened the enterprise Flamingo Groves. They also opened up the property for tours and the gardens became a test site for plants from tropical and subtropical regions around the world, expanding its potential as a horticultural showplace.

Over time, as the land became more valuable for housing than for orchards, sections of the original property were sold off. Visitors still came to see the gardens and its resident flamingos, peacocks, alligators, and other wildlife. Following Floyd Wray's death, in 1969 the Floyd L. Wray Memorial Foundation was established to preserve the core 60-acre property, which was renamed Flamingo Gardens.

EVERGLADES ECOSYSTEM

Fast forward 45 years and Flamingo Gardens today is an intriguing hybrid that manages to be both a botanical garden and a wildlife sanctuary. The botanical garden incorporates some of the original plantings around the Wrays' house, which serves as a museum. The house was built on a hardwood hammock, which is a unique Everglades feature formed from land barely above flood level that is populated by hardwood tree species. Some of the live oaks (*Quercus virginiana*) that were on the hammock when the Wrays arrived are estimated at over 200 years old.

The gardens is home to several more impressive trees. These include a cluster fig (*Ficus racemosa*) that measures a stunning 60 feet in circumference and 70 feet in height, and a cuipo or canoe tree (*Canavallisia platanifolia*) that is so significant



This cluster fig (*Ficus racemosa*) is one of the largest of the species in the state of Florida.

that six-lane Highway 823 was moved slightly to accommodate the tree.

The gardens house two plant collections of note. Restoration and cataloging efforts are underway for a collection of hel-



Native to Brazil, blue ginger (*Dichorisandra thyrsiflora*) is a tropical evergreen perennial related to spiderworts.

iconias (*Heliconia* spp.) and members of the ginger family (Zingiberaceae). The collection traces its roots to an earlier period when the garden was a national repository for the genera in these species. The West Arboretum includes a **Croton Garden** that features one of the largest collections of crotons (*Codiaeum* spp.), a genus of evergreen perennials and shrubs with colorful variegated foliage, in the country.

WILDLIFE SANCTUARY

In 1990, with the opening of its Everglades Wildlife Sanctuary, Flamingo Gardens expanded its operations to include native wildlife. This facility gives a permanent home to injured or non-releasable animals native to Florida, including many rare and endangered species. The 25,000 square-foot **Everglades Free-Flight Aviary** alone houses more than 45 species of native birds in habitats modeled on five ecosystems unique to the Everglades: coastal prairie, mangrove swamp, cypress forest, subtropical hardwood hammock, and sawgrass prairie.

Additional Information

Flamingo Gardens, 3750 South Flamingo Road, Davie, FL 33330. (954) 473-2955. www.flamingogardens.org.

- Open year-round 9:30 a.m. to 5 p.m. (except Christmas Day and Thanksgiving Day.)
- Admission: Members free. \$18 (ages 12+), \$10 (ages 3–11), free (2 and under). Discounts: \$15 (age 65+, armed services, and college students); ID required.

Flamingo Gardens participates in the American Horticultural Society Reciprocal Admissions Program. AHS members who reside more than 90 miles from Flamingo Gardens receive free admission and free parking.

Other nearby sites to explore:

Bonnet House Museum & Gardens, Fort Lauderdale, FL. www.bonnethouse.org.

Morikami Museum and Japanese Gardens, Delray Beach, FL. www.morikami.org.



The aviary is home to over 250 birds from more than 45 species native to Florida.

The gardens feature a mixture of native and exotic plants, but incorporating more natives is a priority for the staff. For example, the new **Butterfly Garden** was planted in conjunction with the Florida Wildflower Foundation, with the goal of increasing the diversity of butterflies and moths in the garden by broadening the palette of native plants.

The preservation and restoration of native landscapes is in evidence in other areas, such as the sawgrass prairie and the hardwood hammock in the aviary, both undergoing facelifts that include the removal of invasive species. And the constructed wetlands give visitors a chance to experience the Everglades as the pioneers and Native Americans might have seen them.

Education has become a major component of the garden's mission. "Our focus is on native plants—in particular Everglades plants—and education, while maintaining our tropical and subtropical collections," says Keith Clark, the gardens' managing and development director. To that end, Flamingo Gardens hosts thousands of school children each year and offers a variety of classes for all ages.

As the Wrays' living legacy, Flamingo Gardens celebrates the enchanting natural beauty of the Florida landscape while preserving its unique native flora and fauna.

Mary S. Chadduck is the editorial intern for The American Gardener.

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Horticultural News and Research Important to American Gardeners



ALTERNATIVE HOST FOR EMERALD ASH BORER DISCOVERED

The U.S. Department of Agriculture Animal and Plant Health Inspection Service has confirmed that adult and larval insect samples taken from a white fringe tree (*Chionanthus virginicus*) by Don Cipollini of Wright State University in Dayton, Ohio, are emerald ash borer (EAB). Previously thought to only attack ash trees (*Fraxinus* spp.), which are important in the furniture and other industries, EAB is a devastating pest first found in North America in 2002. This new find demonstrates that the insect can spread to other trees.

Despite a Federal quarantine that prohibits the movement of ash wood with bark and sapwood, ash nursery stock, and all hardwood firewood out of the quarantine area, EAB has killed millions of ash trees as it has relentlessly expanded its range to encompass 15 states. Scientists estimate this invader could cause as much as \$10.7 billion worth of damage to ash alone by 2019.

While fringe tree, which belongs to the same family as ash, is not as economically valuable as its relative, this native species is widely found in the eastern and south-central United States and is becoming a popular garden ornamental. Both its ecological role in forests and its landscape use could be threatened by EAB infestation. Scientists are also concerned that this may mean



Though adult emerald ash borers, above, measure only a half inch in length, these tiny pests have devastated millions of ash trees, and now have also attacked fringe trees, left.

that other closely related genera—such as lilacs (*Syringa* spp.), forsythias, and privets (*Ligustrum* spp.)—are at risk from EAB as well. Visit www.aphis.usda.gov to view a map of the EAB quarantine area as well as updates regarding the pest.

SCENT OF FRESHLY CUT GRASS MAY BE LINKED TO DROUGHT TOLERANCE

The smell of cut grass may be part of the equation to breed plants with more drought tolerance. This was inadvertently discovered by Michael Kolomiets, an associate professor in the plant pathology

and microbiology department at Texas A&M University while he was exploring the relationship between green leaf volatiles (GLV) and caterpillar damage to corn plants by comparing normal plants to those mutated to not produce GLV.

In normal plants, GLV performs two roles: It activates chemical defenses within the plant and, when dispersed into the air, it attracts beneficial insects. While humans perceive GLV as that distinctive “cut grass smell,” parasitic wasps apparently equate these chemicals with the opportunity to lay eggs on caterpillars feeding on the plant. When the wasp eggs hatch, the caterpillar is destroyed, thus benefiting the plant.

While conducting the study, Kolomiets noticed that the mutant plants lacking GLV were more susceptible to drought than control plants. This observation has resulted in a \$490,000 grant from the United States Department of Agriculture for Kolomiets and two colleagues “to understand molecular and biochemical mechanisms behind drought tolerance and what are the most important genes related to it.” Ultimately, this research may allow plant breeders to develop varieties more resistant to drought.



While studying corn plants' defense response to caterpillar feeding, researcher Michael Kolomiets discovered that drought resistance appears to be connected to the same defense chemicals.

TOP LANDSCAPE ARCHITECTURE AWARDS ANNOUNCED

Each year since 1981, the American Society of Landscape Architects (ASLA) recognizes outstanding projects around the world with its Professional Awards. This year's five Award of Excellence and 29 Honor Award winners were chosen by a jury from more than 600 entries in the categories of general design, residential design, analysis and planning, communication, and research.

Among the Award of Excellence recipients is the Bill and Melinda Gates Foundation Campus in Seattle, Washington, in the category of general design. According to the ASLA, this site was designed by Gustafson Guthrie Nichol to be "an ecologically and socially sustainable hub for global collaboration and local engagement" in keeping with the Foundation's "principles of having a global mission with local roots." Nine Honor Awards were given in this category to projects ranging from two parks in New York to the Gebran Tueni Memorial in Beirut, Lebanon.



Above: The Norman B. Leventhal Park in downtown Boston, Massachusetts, received the ASLA's 2014 Landmark Award. Above right: An Award of Excellence went to the Bill and Melinda Gates Foundation Campus in Seattle, Washington.



In addition to the category awards, the ASLA also recognizes professional projects, completed between 15 to 50 years ago, which have maintained landscape significance and continue to contribute to communities. This year's Landmark Award went to the Norman B. Leventhal Park at Post Office Square, Boston, Massachusetts. The project, completed in 1992, is a green haven in downtown Boston, providing people space above and parking space underneath.

For details about all the winning projects, visit www.asla.org/2014awards.

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PEOPLE and PLACES in the NEWS

Spotlight on Endangered Landscapes

The Cultural Landscape Foundation (TCLF) based in Washington, D.C., recently released its annual compendium of threatened landscapes in North America. *Landslide 2014: Art and the Landscape* comprises “eleven examples of land-based art forms...threatened with demolition, neglect, poor maintenance, vandalism, and lack of funding.”

Among these are the 70th Street Garden at the Frick Collection in New York, by the British landscape architect Russell Page; ancient rock art in the New Mexico’s Wells Petroglyph Preserve; and projects by Mary Miss and Robert Morris, pioneers in site-specific earth art installations.

“The interrelationship of art and the landscape has yielded diverse, historically significant and irreplaceable representations of our cultural identity,” says Charles A. Birnbaum, TCLF founder and president. “However, they are often fragile, overlooked, and threatened.”

Full descriptions and photographs of all the sites are available on TCLF’s website at www.tclf.org.



‘Northwind’ switchgrass, left, and ‘Roxanne F1’ radish, above, are among national and regional award-winning plants for 2015.

PRIZE-WINNING PLANTS FOR 2015

When pondering which plants to add to your garden, it’s a good idea to consider ones spotlighted by regional and national plant awards from various organizations. These award programs often seek to promote lesser known, yet lovely, low-maintenance plants. For example, the Pennsylvania Horticultural Society based in Philadelphia recently named its Gold

Medal Plants for 2015. Six are native to the United States: weeping Alaska cedar (*Xanthocyparis nootkatensis* ‘Pendula’), ‘Major Wheeler’ trumpet honeysuckle (*Lonicera sempervirens*), variegated Solomon’s seal (*Polygonatum odoratum* ‘Variegatum’), dark-leaved bugbane (*Actaea simplex* ‘Hillside Black Beauty’), great coneflower (*Rudbeckia maxima*), and ‘Northwind’ switchgrass (*Panicum virgatum*). Also making the list are fernleaf full moon Japanese maple (*Acer japonicum* ‘Aconitifolium’) and leatherleaf mahonia (*Mahonia japonica*). To see a list of past Gold Medal winners, visit www.phsonline.org.

If you are looking for top-performing edible plants to try growing next year, two varieties have garnered the national All-America Selections (AAS) 2015 Vegetable Award. ‘Roxanne Fr’ radish and ‘Sandy’ lettuce both received excellent ratings in trial gardens across North America for qualities such as appearance, flavor, and disease resistance. AAS also named four regional vegetable winners for 2015: ‘Hestia Fr’ Brussels sprouts, ‘Parisian Gherkin Fr’ cucumber, ‘Bopak Fr’ pak choi, and ‘Sweet Sunset Fr’ pepper. To learn more, visit www.all-americaelections.org.

News written by Editorial Intern Mary S. Chadduck with Associate Editor Viveka Neveln.

Exciting New Perennial Varieties from Seed



PULSATILLA vulgaris ‘Rosen Glocke’

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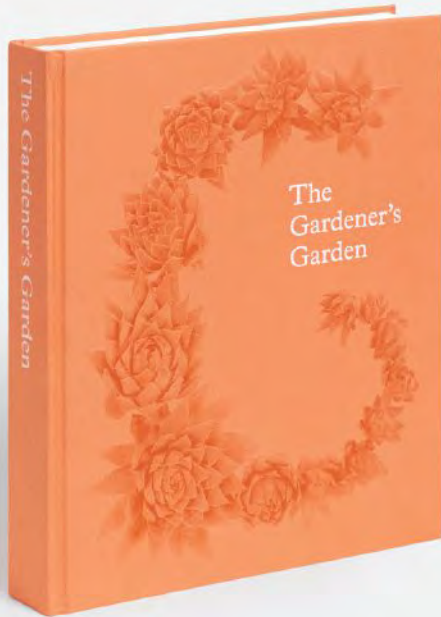
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Gardening Indoors

by Rita Pelczar

COLD WEATHER can't stop a gardener, but may require re-focusing efforts indoors. Houseplants, especially those that summered outdoors, often need extra attention now to deal with decreased humidity and lower light conditions. Here are a few products to help you keep your houseplants healthy and vigorous.

Repotting plants that have outgrown their container or just need fresh media is necessary from time to time, and good potting soil is critical to success. As I repotted some of my plants recently, I employed a few new products that I really like because they provide a good environment for healthy root growth, *and* they are made of recycled materials.

From Growstone® comes a line of American-made products designed to prevent overly soggy soil and the resulting problems. Made from recycled glass, “growstones” are lightweight, pH neutral, clean, and non-compacting. They come in different sizes for different purposes.

Growstone GS-2 is a soil aerator; it adds porosity to any compost- or coir-based mix. You can customize your potting soil for specific plants, adding more growstones for those that need more drainage, such as cactus and succulents. They provide more aeration than perlite, and they don't rise to the surface and wash out of the container when watered like perlite sometimes does.



Gnat Nix!

Gnat Nix!™, another Growstone product, significantly reduces a pest problem associated with soggy soils: fungus gnats.

As I moved some large plants from their outdoor summer homes back indoors this fall, I was pleased to have the help of the

A ½- to ¾-inch top dressing of this product provides good control of fungus gnats without chemicals. I discovered that care must be taken to water gently, alternatively you can water from the bottom, so an even layer remains intact; as long as the Gnat Nix covers the entire surface of the container, it provides a physical barrier that effectively disrupts the life cycle of the gnats. It can be used indoors or out. www.growstone.com.

Magic Dirt™ is a sustainable, environmentally friendly alternative to peat-based products. Developed by Cenergy USA, it is a potting mix composed of anaerobically digested dairy manure fibers and composted forest products. The patented two-stage digester used to process the manure cap-



Magic Dirt

tures methane gas that is used to generate renewable energy. It has excellent porosity, its texture is light and spongy, and it's available at independent garden centers and Wal-Mart stores. The company just announced that Magic Dirt received a Bioproduct Innovation of the Year award. www.magic-dirt.com.

As I moved some large plants from their outdoor summer homes back indoors this fall, I was pleased to have the help of the



PotLifter from Gardeners Edge

PotLifter, from Gardeners Edge. It's a very well constructed two-person tool that can support up to 200 pounds. The sturdy sling can cradle any pot from nine to 26 inches in diameter; nylon straps are attached to comfortable grips. It's also useful for moving large stones. It makes lifting without bending so much easier and less awkward—your back will thank you. www.gardenersedge.com.

Good saucers that don't leak prevent damage to furniture and floors. Lee Valley's **Steel Pot Saucers** do the job and look good at the same time. They are made of powder-coated galvanized



Lee Valley's Steel Pot Saucer



Down Under Plant Turner

steel with four nylon sliders on the underside that make sliding large plants, particularly over carpet, much easier. They come in two colors: charcoal or terra cotta; and three sizes: 10, 13, and 15 inches. www.leevalley.com.

Some container-grown plants respond well to regular turning; it keeps



Emily's Garden System

their growth from becoming lopsided. The **Down Under Plant Turner**, also from Gardeners Edge, makes it easy to rotate even large plants—it's a combination 12-inch plastic plant saucer and lazy Susan. It can be used indoors or outside to rotate plants weighing up to 250 pounds.

Nothing can beat a homegrown tomato, so I turned to a hydroponic system to grow my winter tomatoes in the south facing windows of my mudroom, supplemented with suspended plant lights. **Emily's Garden System** from HydroFarm is the perfect size for my set up. It is 16 inches wide and 24 inches long and has six good size planters. The kit comes complete with growing media, an air pump and tubing, seed starter cubes, nutrients, water level indicator, and a pH test kit. It was easy to set up and the motor is quiet. I started my tomatoes in pots and transplanted them into two of the hydroponic containers when they were about six inches tall. I seeded basil directly in the supplied planting cubes placed in the center of the remaining four containers. It's still too early to evaluate my harvest, but fresh Caprese salad is on my holiday menu. www.hydrofarm.com.

While for me, nothing quite equals working outside in my gardens but taking good care of my indoor plants keeps my hands in the dirt throughout winter. 🌱

Rita Pelczar is a contributing editor for The American Gardener.

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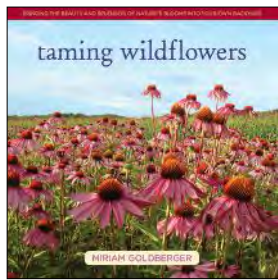
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Recommendations for Your Gardening Library

Taming Wildflowers

Miriam Goldberger. St. Lynn's Press, Pittsburgh, Pennsylvania, 2014. 194 pages. Publisher's price, hardcover: \$18.95.

IF YOU ENJOY cut flowers, why not grow your own? In *Taming Wildflowers*, Canadian flower farmer Miriam Goldberger makes a compelling case for going a step further and growing native flowering plants for this purpose. Just as homegrown tomatoes always taste better than store-bought ones, she posits, homegrown wildflowers often boast superior quality to exotic species shipped long distances. Goldberger emphasizes the aesthetic qualities native flowering plants offer in gardens



and arrangements, as well as their value as sources of food and shelter for local wildlife. In addition, she points out that growing native plants requires fewer resources—including pesticides, fertilizer, and water—than their exotic counterparts.

Next, Goldberger profiles 60 of her favorite wildflowers that lend themselves well to floral arrangements. She organizes them by blooming season rather than month “because, while a flower may bloom in different months in each state, flowers across the country will always bloom in the same phase of a season, regardless of the region they’re planted in.”

For each plant, the book lists key features ranging from height and flower color to whether it is deer resistant, salt tolerant, or edible. Cultural preferences are also provided, including germination requirements. And Goldberger throws in helpful information based on her decades of experience using wildflowers in floral designs, such as how long to expect a particular flower to last in a bouquet and which other wildflowers complement it in an arrangement.

In addition to a color photograph of each plant in bloom and as a seedling, there’s a chapter on growing these wildflowers from seed.

Other chapters cover gardening basics such as assessing soil conditions and site preparation; describe tools and tips for creating arrangements; and provide ideas and instructions for planning gardens with particular themes. The final chapter is dedicated to designing appealing arrangements for weddings, including bouquets and boutonnières.

Taming Wildflowers is an exciting read for gardeners who are passionate about flowers and want to explore the prospect of growing natives for use in cut arrangements.

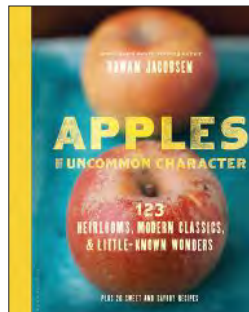
—Philip Bauerle

Based in Pittsburgh, Pennsylvania, Philip Bauerle enjoys growing and reading about native plants.

Apples of Uncommon Character

Rowan Jacobsen. Bloomsbury USA, New York, New York, 2014. 320 pages. Publisher's price, hardcover: \$35.

A FASCINATING topic and beguiling writing style make for a winning combination in Rowan Jacobsen’s *Apples of Uncommon Character*, which celebrates apples, especially some of the wonderful lesser-known varieties, including many that were once thought to have been lost.



The profiles of apple varieties are organized by the fruit’s usefulness or other unifying characteristic. Hence you’ll find a section on summer apples (early ripeners), of which Jacobsen writes, “The window between ripe and

rot can be so narrow that you are advised to stand under the tree and eat them before they know they’ve been picked.”

Introducing dessert apples, he notes, “Dessert apples perform solo and unplugged, with no backing from spices, ovens, or presses.” Jacobsen explains that bakers and saucers (candidates for apple sauce and other cooked recipes) should be dense and acidic, two properties that make them more refreshing in a sugary dessert and allow them to retain more firmness.

Keepers, those apples that improve with age, are a rarity since the advent in the 1960s of controlled ways to store and preserve mass-produced apples such as Red Delicious. Jacobsen laments this reality, noting that “the flavor of an ‘aged’ Arkansas Black is something no brand-new apple will ever have. Those flavors, once eagerly anticipated by generations of farm children, have disappeared from our modern table.”

Then there’s the cider fruit, the juice of which can be fermented to make a delicious, nuanced alcoholic beverage. A recent renaissance of the hard cider industry in America relies on these varieties to create drinks that “combine the best qualities of white wine, red wine, and beer, while resembling none of them,” writes Jacobsen.

Oddballs make up the final category in the book. These varieties have survived by sheer dint of their weirdness, prized for “being small and cute, for example, or having red flesh, or by being the ugliest apple on the planet.”

Beautifully illustrated with photography by Clare Barboza and others, this book provides a tantalizing glimpse of the extraordinary diversity and versatility of apples.

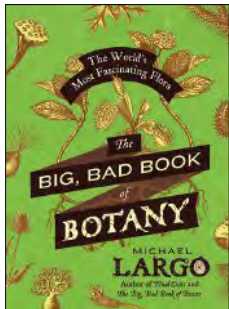
—Catriona Tudor Erler

Catriona Tudor Erler is a garden writer and photographer based in Charlottesville, Virginia.

**The Big, Bad Book of Botany:
The World's Most Fascinating Flora**

Michael Largo. William Morrow, New York, New York, 2014. 416 pages.
Publisher's price, softcover: \$18.99.

WHAT HAPPENS when a wise-guy plant nut tosses all the amazing, and occasionally really odd, botanical lore he can think of into a well produced book? You get a wild ride through the plant world, from artemesia, the source of absinthe—Van Gogh created “Starry Night” while being forcibly detoxed from this “medicinal herb”—to zubrowka, an aromatic grass used as a flavoring in a Polish vodka that bears the same name.



The brief introduction gives a nod to notable forebears like Pedanius

Dioscorides—the first-century Greek physician whose pharmacological treatise, *De Materia Medica*, set the standard for “useful” (i.e. medicinal) plants for the next 16 centuries or so. However, the avowed purpose of this book goes far beyond medicinal plants as Michael Largo attempts to “capture the incredible diversity of plants and marvel at the vast plant kingdom’s many wonders.”

To that end, Largo leads readers through groves of mango trees, which he dubs the “Ancient Smoothie Plant” because of its juicy, sweet fruit, and through fields of Chinese giant

bamboo (*Bambusa oldhamii*), a grass that can grow 60 feet high with a life span of hundreds of years. Then there’s *Ginkgo biloba*, a living fossil originating millions of years ago with “leaves like duck feet.” It can grow more than 100 feet tall and live for a thousand years.


Some of the most fascinating species are the toxic ones that can trip out, sicken, or even kill humans. Take, for example, Satan’s apple (*Mandragora officinarum*), a deadly nightshade family member also known as mandrake. If eaten raw, its fruit is deadly. Its root, which sometimes grows in a shape that resembles a human form, has both “narcotic and hallucinogenic effect—a possible explanation for the belief the plant could cure impotency,” Largo writes.

He carefully skirts around vicious vines such as poison ivy (*Toxicodendron radicans*), a North American native that is not an ivy at all but it certainly can cause harm when touched. Another climbing perennial vine known as *Physostigma venenosum*, Largo reveals, is the source of the “lie detector bean.” These poisonous seeds were used in ancient times to mete out a rather capricious form of justice; if the alleged criminal survived ingesting them, it was proof of innocence.

You may not be convinced to try growing many of these plants, but Largo makes it a real kick to read about them.

—Linda Yang

Linda Yang, former New York Times garden columnist, is author of several books, including *The City Gardener’s Handbook* (Storey Publishing, 2002).



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GIFTS FOR THE GARDENER

Looking for that special holiday gift for the gardeners on your list? Here are a few ideas that any horticulture enthusiast will surely appreciate.



River Farm Ornament

This cream-colored, two-and-a-half-inch ceramic ornament features the elegant estate house at River Farm, headquarters of the American Horticultural Society in Virginia. \$8 (shipping additional). (703) 768-5700. www.ahs.org.



Garden Bon Bons

A treat with a botanical twist, this box holds seed-balls instead of sweets. Each box comes with eight bon bons to disperse. "Flavor" descriptions are on the website. \$16. www.moultonology.com.

Raised-Bed Braces

Beauty and functionality combine in these metal braces to give your raised beds individual flair. Braces accommodate U- or L-shaped designs, compatible with standard two-inch lumber. Wide range of decorative cut-outs available. Made from recycled metal. \$79.99 for set of four. (530) 662-2224. www.artofthegarden.net.



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This delicate chime, made by artisans in the Philippines from bamboo and recycled aluminum, will soothe and charm garden visitors. \$54. (877) 883-8341. www.tenthousandvillages.com.



Harvest Basket

This sturdy, galvanized wire-mesh basket makes it a snap to clean freshly picked homegrown goodies. Simply wash and drain directly in the basket. Its wooden handle provides a comfortable grip for carrying heavy loads. \$34.99. (888) 784-1722. www.groworganic.com.



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This fine handcrafted shovel measures 58 inches long, comes engraved with the year, and can be monogrammed. A strong ash-wood handle and 12-gauge stainless steel blade ensure it is practical as well as decorative. \$145. www.diannebest.com.



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Give the gift of gardening to a sprout you know with this four-piece set of tools made for little hands. \$59.95. (713) 853-9624. www.kids-goods.com.



Products profiled are chosen based on qualities such as innovative design, horticultural utility, and environmental responsibility; they have not necessarily been tested by the American Horticultural Society. Listed prices are subject to change.



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

RAP NOV. 22–JAN. 4. **Christmas at Newport Mansions.** Tours. Green Animals Topiary Garden. Portsmouth, Rhode Island. (401) 683-1267. www.newportmansions.org.

RAP NOV. 28–DEC. 14. **Festival of Trees.** Display. Massachusetts Horticultural Society-The Gardens at Elm Bank. Wellesley, Massachusetts. (617) 933-4900. www.masshort.org.

RAP NOV. 28–JAN. 4. **Poinsettia Show.** Display, garden railway exhibit. Buffalo and Erie County Botanical Gardens. Buffalo, New York. (716) 827-1584. www.buffalogardens.com.

RAP NOV. 29–JAN. 5. **Christmas at Blithewold.** Tours and display. Blithewold Mansion, Gardens & Arboretum. Bristol, Rhode Island. (401) 253-2707. www.blithewold.org.

RAP DEC. 6. **Shrubs in Winter.** Lecture and field study. New England Wild Flower Society. Framingham, Massachusetts. (508) 877-7630. www.newfs.org.

RAP DEC. 7. **Holiday Greens Workshop.** New York Botanical Garden. Bronx, New York. (718) 817-8700. www.nybg.org.

RAP DEC. 13. **Holiday Table Garden.** Workshop. Tower Hill Botanic Garden. Boylston, Massachusetts. (508) 869-6111. www.towerhillbg.org.

MID-ATLANTIC

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

RAP NOV. 22–JAN. 4. **Yuletide at Winterthur.** Tour. Winterthur Museum, Garden & Library. Winterthur, Delaware. (302) 888-4600. www.winterthur.org.

RAP NOV. 28–JAN. 4. **Holiday Garden Railway.** Display. Morris Arboretum of the University of Pennsylvania. Philadelphia, Pennsylvania. (215) 247-5777. www.morrisarboretum.org.

RAP NOV. 28–JAN. 12. **Dominion GardenFest of Lights.** Display. Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. www.lewisginter.org.

RAP DEC. 5–14. **Gingerbread Wonderland.** Exhibit. The Frelinghuysen Arboretum. Mor-

ris Township, New Jersey. (973) 326-7600. www.arboretumfriends.org.

RAP DEC. 16–30. **Gardener's Focus: Bones of the Winter Garden.** Lecture. Hillwood Estate, Museum and Gardens. Washington, D.C. (202) 686-5807. www.hillwoodmuseum.org.

Looking ahead

JAN. 14–16. **Mid-Atlantic Nursery Trade Show 2015.** Baltimore Convention Center. Baltimore, Maryland. (800) 431-0066. www.mants.com.

SOUTHEAST

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

RAP NOV. 14–JAN. 3. **Galaxy of Lights.** Display. Huntsville Botanical Garden. Huntsville, Alabama. (256) 830-4447. www.hsvbg.org.

RAP NOV. 15–JAN. 3. **Garden Lights, Holiday Nights.** Display. Atlanta Botanical Garden. Atlanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

RAP NOV. 21–DEC. 31. **Holidays at the Garden.** Display. Daniel Stowe Botanical Garden. Belmont, North Carolina. (704) 825-4490. www.dsbg.org.

RAP NOV. 28–DEC. 22. **Enchanted Airlie.** Display. Airlie Gardens. Wilmington, North Carolina. (910) 798-7700. www.airliegarden.org.

NOV. 28–JAN. 3. **Magic Christmas in Lights.** Display. Bellingrath Gardens and Home. Theodore, Alabama. (251) 973-2217. www.bellingrath.org.

RAP NOV. 28–JAN. 4. **Poinsettia Display.** Bok Tower Gardens. Lake Wales, Florida. (863) 676-1408. www.boktowergardens.org.

RAP DEC. 5–28. **Garden of Lights.** Display. Flamingo Gardens. Davie, Florida. (954) 473-2955. www.flamingogardens.org.

Looking ahead

JAN. 23–25. **Southern Gardening Symposium.** Callaway Gardens. Pine Mountain, Georgia. (800) 852-3810. www.callawaygardens.com.

NORTH CENTRAL

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

RAP NOV. 22–JAN. 4. **High Style Holidays.** Display. Foellinger-Freimann Botanical Conservatory. Fort Wayne, Indiana. (206) 427-6440. www.botanicalconservatory.org.

RAP NOV. 25–JAN. 4. **Christmas and Holiday Traditions Around the World.** Exhibit. Frederik Meijer Gardens & Sculpture Park. Grand Rapids, Michigan. (888) 957-1580. www.meijergardens.org.

RAP NOV. 28–JAN. 4. **Wonderland Express.** Display. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

RAP NOV. 28–JAN. 2. **Deck the Hall.** Light show, Gingerbread Land, tour. Stan Hywet Hall & Gardens. Akron, Ohio. (330) 836-5533. www.stanhywet.org.

RAP NOV. 29–DEC. 28. **Christmas at Kingwood.** Tours, display. Kingwood Center. Mansfield, Ohio. (419) 522-0211. www.kingwoodcenter.org.

RAP DEC. 12–28. **Holiday Light Show.** Rotary Botanical Gardens. Janesville, Wisconsin. (608) 752-3885. www.rotarybotanicalgardens.org.

Looking ahead

FEB. 6–15. **The Great Big Home + Garden Show.** Cleveland IX Center. Cleveland, Ohio. (216) 676-6000. www.greatbighomeandgarden.com.

SOUTH CENTRAL

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

RAP NOV. 22–DEC. 31. **Holiday Lights.** Display, free concerts. Garvan Woodland Gardens. Hot Springs, Arkansas. (501) 262-9300. www.garvangardens.org.

RAP NOV. 28–DEC. 21. **Christmas in Rose-land.** Display. American Rose Center. American Rose Society. Shreveport, Louisiana. (318) 938-5402. www.ars.org.

RAP NOV. 28–DEC. 31. **Illuminations 2014.** Display. Botanica, The Wichita Gardens. Wichita, Kansas. (316) 264-0448. www.botanica.org.

RAP DEC. 6. **Holiday in the Tropics Terrarium.** Class. Powell Gardens. Kingsville, Missouri. (816) 697-2600. www.powellgardens.org.

Looking ahead

JAN. 4 & 5. **Western Nursery & Landscape Association Trade Show.** Overland Park Convention Center. Kansas City, Missouri. (888) 233-1876. www.wnla.org.

JAN. 16–18. **2015 Austin Home & Garden Show.** Austin Convention Center. Austin, Texas. (512) 404-4000. www.austinhomelandgardenshow.com.

SOUTHWEST

AZ, CO, NM, UT

RAP NOV. 28–DEC. 30. **Las Noches de las Luminarias.** Display. Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. www.dbg.org

RAP DEC. 5–JAN. 1. **Blossoms of Light.** Display. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

RAP DEC. 5–JAN. 1. **Garden of Lights.** Display. The Gardens on Spring Creek. Fort Collins, Colorado. (970) 416-2486. www.fcgov.com/gardens.

RAP DEC. 5–JAN. 3. **Glow–Winter Lights In the Garden.** Santa Fe Botanical Garden. Santa Fe, New Mexico. (505) 471-9103. www.santafebotanicalgarden.org.

RAP DEC. 6 & 7. **Holiday Open House.** Red Butte Garden and Arboretum at the University of Utah. Salt Lake City, Utah. (801) 585-0556. www.redbuttegarden.org.

Looking ahead

JAN. 16–18. **Maricopa County Home & Garden Show.** Arizona State Fairgrounds. Phoenix, Arizona. (602) 485-1691. www.maricopacountyhomeshows.com.

WEST COAST

CA, HI, NV

RAP NOV. 13–APR. 12. **Aquascapes: The Art of Underwater Gardening.** Display. Conservatory of Flowers. San Francisco, California. (415) 831-2090. www.conservatoryofflowers.org.

RAP DEC. 6–30. **Garden of Lights.** San Diego Botanic Garden. Encinitas, California. (760) 436-3036. www.sdbgarden.org.

Bartram Exhibit Ends Run in California

THE AMERICAN SOCIETY of Botanical Artists (ASBA) and Bartram's Garden in Philadelphia, Pennsylvania, have collaborated to produce "Following in the Bartrams' Footsteps: Contemporary Botanical Artists Explore the Bartrams' Legacy." After a nationwide tour, the show is making its final stop at University of California Botanical Garden at Berkeley from December 15 to February 15. The 44 works in the exhibit, chosen from more than 200 submissions from around the world, interpret native plants discovered and documented by 18th-century American botanist John Bartram and his son, William, a naturalist and plant explorer.



Celosia argentea by artist Carrie DiConstanzo

Demonstrating the profound influence the Bartrams continue to exert on the horticultural world, the show anchors several special programs at UC Botanical Garden. On December 19, Carol Woodin, director of exhibitions for ASBA, explores the lives of the two Bartrams and the legacy they left to the fields of horticulture, botany, and art. On January 3 will be a lecture, "Fathers and Sons: A Journey with the Bartrams, Hookers and Other Famous Families in Western Botanical Science, Art and Exploration." For young audiences, "Kid's Corner: The Venus Fly Trap and Other Amazing Carnivorous Plants" on January 10 will focus on the Venus flytrap (*Dionaea muscipula*), which John Bartram first brought into cultivation.

For more information about the exhibit, visit <http://botanicalgarden.berkeley.edu>.
—Mary S. Chadduck, Editorial Intern

RAP DEC. 14. **An Old-Fashioned Holiday at the Queen Anne Cottage.** Display. Los Angeles County Arboretum & Botanic Garden. Arcadia, California. (626) 821-3222. www.arboretum.org.

RAP DEC. 16. **Designing the Oak Woodland.** Lecture. Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org.

Looking ahead

RAP JAN. 9. **Designing and Planting a Small-scale Succulent Garden.** Workshop. Lyon Arboretum. Honolulu, Hawaii. (808) 988-0456. www.hawaii.edu.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP NOV. 27–JAN. 4. **Winter Garden aGlow.** Display. Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

RAP NOV. 29–DEC. 22. **Christmas in the Garden.** Light display. The Oregon Garden. Silverton, Oregon. (503) 874-8100. www.oregongarden.org.

RAP NOV. 29–JAN. 3. **Garden d'Lights.** Display. Bellevue Botanical Garden. Bellevue, Washington. (425) 451-3755.

www.bellevuebotanical.org.

RAP DEC. 1. **Vermicomposting.** Lecture. Washington Park Arboretum. Seattle, Washington. (206) 325-4510. www.arboretumfoundation.org.

RAP DEC. 19 & 21. **Solstice Stroll.** Kruckeberg Botanic Garden. Shoreline, Washington. (206) 546-1281. www.kruckeberg.org.

Looking ahead

JAN. 22–25. **The Tacoma Home & Garden Show.** Tacoma Dome. Tacoma, Washington. (253) 756-2121. www.otshows.com.

CANADA

RAP NOV. 15–JAN. 4. **Holiday Traditions.** Display. Royal Botanical Gardens. Burlington, Ontario. (905) 527-1158. www.rbg.ca.

RAP DEC. 14. **North Pole Christmas.** Display, music. Muttart Conservatory. Edmonton, Alberta. (780) 496-8737. www.muttartconservatory.ca.

Looking ahead

JAN. 7–9. **Landscape Ontario Congress Trade Show and Conference.** Toronto Congress Centre. Toronto, Ontario. (800) 265-5656 ext. 353. www.locongress.com.

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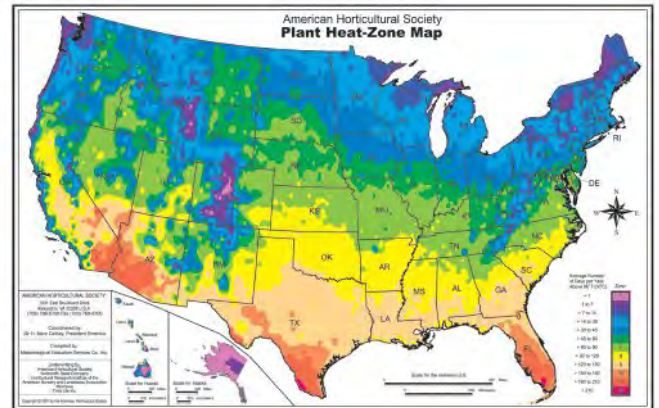
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PRONUNCIATIONS AND PLANTING ZONES

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.

Acer japonicum AY-ser jah-PON-ih-kum (USDA Hardiness Zones 5–7, AHS Heat Zones 7–1)

Actaea simplex ack-TEE-uh SIM-pleks (4–8, 8–1)

Agastache foeniculum ah-guh-STAH-she fee-NICK-yoo-lum (4–11, 12–5)

Arisaema consanguineum air-ih-SEE-muh kon-san-GWIN-ee-um (5–9, 9–7)

Asclepias speciosa as-KLEE-pee-us spee-see-O-suh (3–9, 9–1)

A. syriaca A. sih-rih-AY-kuh (3–9, 9–2)

Cavanillesia platanifolia kah-van-ih-LEE-see-uh pluh-tan-ih-FO-lee-uh (11–11, 12–11)

Cercis canadensis SUR-siss kan-uh-DEN-siss (4–9, 9–2)

Chionanthus virginicus ky-o-NAN-thus vir-JIN-ih-kus (4–9, 9–1)

Claytonia virginica clay-TOH-nee-uh vir-JIN-ih-kuh (4–9, 6–1)

Cornus controversa KOR-nus kon-tro-VER-suh (6–9, 9–6)

Corylus avellana KOR-ih-lus ah-vel-LAN-uh (4–8, 8–1)

Dichorisandra thyrsiflora dy-kor-ih-SAN-druh theer-sih-FLOR-uh (11–11, 12–9)

Ficus racemosa FY-kus ras-eh-MO-suh (10–11, 12–1)

Hamamelis vernalis ham-uh-ME-liss vur-NAL-iss (4–8, 9–5)

Helleborus xericsmithii hel-eh-BOR-us eh-rik-SMITH-ee-eye (7–9, 9–6)

H. xhybridus H. HY-brih-dus (5–9, 9–5)

H. lividus H. LIV-ih-dus (7–9, 9–6)

H. multifidus H. mul-TIF-ih-dus (8–9, 9–8)

H. niger H. NY-jur (3–8, 8–1)

H. xsternii H. STERN-ee-eye (6–8, 8–5)

Hepatica acutiloba heh-PAT-ih-kuh

ak-yew-tih-LO-buh (4–9, 9–3)

Lagerstroemia fauriei lag-ur-STRO-me-uh FAR-ee-eye (7–9, 9–7)

L. indica L. IN-dih-kuh (7–9, 9–6)

Lonicera sempervirens lah-NISS-er-uh sem-pur-VY-renz (4–9, 9–1)

Mahonia japonica mah-HO-nee-uh

jah-PON-ih-kuh (6–8, 8–6)

Panicum virgatum PAN-ih-kum veer-GAY-tum (4–9, 9–1)

Phyllostachys nigra fil-lo-STAY-kiss NY-gruh (7–11, 12–4)

Polygonatum odoratum pah-lih-GO-nay-tum o-doh-RAY-tum (3–8, 9–1)

Quercus virginiana KWER-kus vir-jin-ee-AN-uh (7–11, 11–7)

Rudbeckia maxima rood-BEK-ee-uh

MAKS-ih-muh (4–8, 8–1)

Salix discolor SAY-iks DIS-kul-ur (4–8, 8–2)

Salvia officinalis SAL-vee-uh oh-fiss-ih-NAL-iss (5–8, 8–5)

Sanguinaria canadensis san-gwi-NAIR-ee-uh kan-uh-DEN-siss (3–9, 9–1)

Thalictrum thalictroides thal-IK-trum thal-ik-TROY-deez (5–9, 9–5)

Tilia americana TIL-ee-uh uh-mair-ih-KAN-uh (2–8, 8–1)

Xanthocyparis nootkatensis zan-tho-SIP-uh-riss noot-kuh-TEN-sis (4–7, 7–1)

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—David J. Ellis, Editor

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2014 MAGAZINE INDEX

AUTHORS

Aker, Scott. Composting's Dual Benefits, N/D, 42. Controlling Slugs in the Garden, M/A, 44. Late Blight's Toll on Tomatoes, M/J, 44. The Lowdown on Lawn Care, S/O, 34. Sustainable Rose Gardening, J/A, 38. Understanding Cold Tolerances and Microclimates, J/F, 40.

Baumle, Kylee. 2014 National Children & Youth Garden Symposium, S/O, 30.

Bunting, Andrew. Humbler Hydrangeas, M/J, 20.

Chadduck, Mary S. America In Bloom Community Involvement Award, N/D, 12. Flamingo Gardens, N/D, 48.

Chase, Nan K. Foolproof and Flavorful Crabapples, M/J, 48.

Conlon, Hugh. Four-Season Trees, M/J, 34.

Cutler, Karan Davis. Turnips and Rutabagas, S/O, 36.

Ellis, David J. In Memoriam: Kurt Bluemel, J/A, 51. Spectacular Salvias, J/A, 12.

Embry, Paige. *Saruma henryi*, M/A, 62.

Erler, Catriona Tudor. Virginia's "Professor Apple," S/O, 18.

Guagliumi, Susan. Terra-cotta Transformation, J/A, 28.

Haapoja, Margaret A. 50th Anniversary for National Tropical Botanical Garden, J/A, 42.

Hines, Susan. Thoroughly Modern Messervy, J/A, 32.

Hough, Geoff. The Sensory Lives of Plants, J/F, 18.

Howe, Carol. Clematis with American Roots, J/A, 22.

Hucek, Margene Whitler. Edamame, M/A, 46.

Katner, Missy. Devastating Disease Causes Citrus Crisis, J/F, 46.

Keith, Jessie. Gardening for Native Bees, N/D, 34.

Kidd, Charlotte. A Larger Perspective on Poison Ivy, S/O, 24.

Knox, Gary W. "Just-Right" Crapemyrtles, N/D, 14.

Lawton, Barbara Perry. Parsley's Showy Siblings, J/F, 22.

Lee, Rand B. Charming Nicotianas, M/J, 14. Oddly Beautiful

Contorted Hazelnut, N/D, 62.

Long, Jim. 11 Up-and-Coming Herbs, M/J, 25. American Elderberry, J/F, 38.

Melchior, Caleb. Cuphea Fever, J/F, 33.

Mickey, Thomas. Firecracker Vine, J/A, 62.

Millard, Elizabeth. Give Shoots a Shot, N/D, 30.

Miller, Sarah. Bellingrath Gardens and Home, S/O, 38. AHS Members Making a Difference: Rick Sherman, N/D, 13.

Mohan, Suruchi. California Inspiration Ruth Bancroft's Garden, M/A, 24.

Neveln, Viveka. Cultivating Ideas and Innovation, M/J, 40.

Ottesen, Carole. Ornamental Alliums, S/O, 12. Pre-emptive Pruning, M/A, 40. Think Twice, Plant Once, M/J, 30.

Pelczar, Rita. Cooperative Extension Service: 100 Years of Horticultural Help, S/O, 45. Green Garage, J/F, 48; M/A, 54; M/J, 55; J/A, 52; S/O, 48; N/D, 50.

Pokorny, Kym. Hooked on Hellebores, N/D, 24.

Popkin, Gabriel. Plight of the Butterfly, M/A, 18.

Rice, Graham. Foxgloves for American Gardens, M/A, 29.

Singer, Carolyn. *Helianthus angustifolius*, S/O, 56.

Stanford, Hunter. AHS Members Making a Difference: Carole Teja, M/A, 13. Joan Calder, M/J, 12. Bonnie Plants: Growing for Nearly a Century, M/A, 58. Horticultural News and Research Important to American Gardeners, M/A, 50; M/J, 52. Rotary Botanical Gardens, M/J, 46.

Sterman, Nan. Heavenly Ceanothus, M/A, 34.

Taylor, Patricia A. Shade-Loving Mona Lavender *Plectranthus*, M/J, 62. *Waldsteinia fragarioides*, J/F, 62.

Thompson, Helen. Washington Park Arboretum, J/F, 52.

Wetherbee, Kris. The Basics of Vermicomposting, J/F, 28. The Beet Grows On, J/A, 40. Growing Herbs for Tea, J/A, 17. Sage Advice, N/D, 40.

Yee, Mary. New for 2014, J/F, 12. Straw Bale Gardening, N/D, 20.

SUBJECT

Allium: See *Bulbs*.

Annals: Charming Nicotianas, M/J, 14. New for 2014, J/F, 14. Shade-Loving Mona Lavender *Plectranthus*, M/J, 62.

Bulbs: Ornamental Alliums, S/O, 12.

Children and Youth Gardening: 2014 National Children & Youth Garden Symposium, S/O, 30. Cultivating Ideas and Innovation, M/J, 40.

Clematis: Clematis with American Roots, J/A, 22. New for 2014, J/F, 16.

Crapemyrtles: "Just-Right" Crapemyrtles, N/D, 14.

Design: California Inspiration Ruth Bancroft's Garden, M/A, 24. Four-Season Trees, M/J, 34. Terra-cotta Transformation, J/A, 28. Think Twice, Plant Once, M/J, 30. Thoroughly Modern Messervy, J/A, 32.

Edible Plants: 11 Up-and-Coming Herbs, M/J, 25. American Elderberry, J/F, 38. The Beet Grows On, J/A, 40. Devastating Disease Causes Citrus Crisis, J/F, 46. Edamame, M/A, 46. Foolproof and Flavorful Crabapples, M/J, 48. Give Shoots a Shot, N/D, 30. Late Blight's Toll on Tomatoes, M/J, 44. New for 2014, J/F, 15. Parsley's Showy Siblings, J/F, 22. Turnips and Rutabagas, S/O, 36. Virginia's "Professor Apple," S/O, 18.

Gardens, Public: 50th Anniversary for National Tropical Botanical Garden, J/A, 42. Bellingrath Gardens and Home, S/O, 38. Cleveland Botanical Garden and Holden Arboretum Merge, S/O, 43. Railroad Park (Birmingham, Alabama), M/A, 16. Rotary Botanical Gardens, M/J, 46. Flamingo Gardens, N/D, 44. See also *Regional Happenings*.

Herbs: 11 Up-and-Coming Herbs, M/J, 25. Growing Herbs for Tea, J/A, 17. New for 2014, J/F, 16. Sage Advice, N/D, 40.

Hellebores: Hooked on Hellebores, N/D, 24.

Hydrangeas: Humbler Hydrangeas, M/J, 20. New for 2014, J/F, 16.

Insects: Controlling Slugs in the Garden, M/A, 44. Gardening for Native Bees, N/D, 34. Plight of the Butterfly, M/A, 18.

Lagerstroemia: See *Crapemyrtles*.

Native Plants: American Elderberry, J/F, 38. Clematis with American Roots, J/A, 22. *Helianthus angustifolius*, S/O, 56. A Larger Perspective on Poison Ivy, S/O, 24. New for 2014, J/F, 16. Ornamental Alliums, S/O, 12. Spectacular Salvias, J/A, 12. *Waldsteinia fragarioides*: A Great Native Groundcover, J/F, 62.

Nicotianas: Charming Nicotianas, M/J, 14.

People: (also see *AHS Members Making a Difference*). Bachman, Dale L., M/A, 15. Bancroft, Ruth, M/A, 24. Bluemel, Kurt, J/A, 51. Brown, Richard, M/A, 16. Burford, Tom, S/O, 18. Creasy, Rosalind, M/S, 15. Eames-Sheavly, Marcia, M/A, 16. Estes, Gay, M/A, 16. Floyd, John Jr., M/S, 15. Hinkley, Dan, M/J, 54. Janick, Jules, M/A, 15. Messervy, Julie Moir, J/A, 32. Meyer, Paul W., M/A, 14. Mitchell, Shelley, M/A, 16. Novy, Ari, S/O, 42. O'Byrne, Ernie and Marietta, N/D, 24. Olin, Laurie, M/A, 15. Pellett, Harold, S/O, 42. Tenenbaum, Frances, J/F, 45.

Perennials: Cuphea Fever, J/F, 33. Foxgloves for American Gardens, M/A, 29. *Helianthus angustifolius*, S/O, 56. Hooked on Hellebores, N/D, 24. New for 2014, J/F, 12. Ornamental Alliums, S/O, 12. Parsley's Showy Siblings, J/F, 22. *Saruma henryi*, M/A, 62. Spectacular Salvias, J/A, 12. *Waldsteinia fragarioides*: A Great Native Groundcover, J/F, 62.

Plant Science: A Larger Perspective on Poison Ivy, S/O, 24. Sensory Lives of Plants, J/F, 18.

Salvias: Spectacular Salvias, J/A, 12.

Techniques: Basics of Vermicomposting, J/F, 28. Controlling Slugs in the Garden, M/A, 44. The Lowdown on Lawn Care, S/O, 34. Pre-emptive Pruning, M/A, 40. Straw Bale Gardening, N/D, 20. Sustainable Rose Gardening, J/A, 38.

Tomatoes: Late Blight's Toll on Tomatoes, M/J, 44. New for 2014, J/F, 16.

Vines: Clematis with American Roots, J/A, 22. Firecracker Vine, J/A, 62.

Woody Plants: American Elderberry, J/F, 38. Foolproof and Flavorful Crabapples, M/J, 48. Four-Season Trees, M/J, 34. Heavenly Ceanothus, M/A, 34. "Just-Right" Crapemyrtles, N/D, 14. New for 2014, J/F, 16. Oddly Beautiful Contorted Hazelnut, N/D, 62. Virginia's "Professor Apple," S/O, 18.

COLUMN INDEX

AHS Corporate Member in Focus:

Bonnie Plants: Growing for Nearly a Century, M/A, 58.

AHS Members Making a Difference:

Teja, Carole, M/A, 13. Calder, Joan, M/J, 12. Sherman, Rick, N/D, 13.

AHS News Specials: 2014 AHS Book Award Winners, M/A, 17. AHS 2014 Great American Gardeners National Award Winners, M/A, 14. America In Bloom Community Involvement Award, N/D, 12.

Book Reviews:

J/F: What's Wrong with My Fruit Garden?, 50. Vegetable Literacy: Cooking and Gardening with Twelve Families from the Edible Plant Kingdom, 50.

M/A: Apples of North America, 17. Contemporary Designers' Own Gardens, 48. The Four Season Farm Gardener's Cookbook, 17. The Resilient Farm and Homestead, 17. Royal Horticultural Society Encyclopedia of Conifers, 49. Wildlife-Friendly Vegetable Gardener, 48.

M/J: Groundbreaking Food Gardens, 50. A History of the Garden in Fifty Tools, 51. An Infinity of Graces, 50.

J/A: Deep-Rooted Wisdom, 46. Improving Your Soil, 47. Rodale's 21st Century Herbal, 46.

S/O: Gardens in Detail, 40. The Living Landscape, 40. Trees of

Eastern North America/Trees of Western North America, 41.

N/D: Taming Wildflowers, 50. Apples of Uncommon Character, 50. Big Bad Book of Botany, 51.

Gardener's Notebook:

J/F: Breadfruit's Mosquito-Repelling Ability Confirmed, 42. Cornell University's Climate Change Information, 43. Crapemyrtle Collection Achieves NAPCC Accreditation, 44. Higher-Yielding Habanero, 45. Monrovia Debuting Online Retail Ordering Option, 45. Promising Native Shrubs, 42. **M/A:** Crop Plants' Wild Cousins Inventoried, 51. Engineering Better Tomatoes?, 50. Free Plants Entice Students to Pursue Horticulture, 51. Fungal Foe Goes Bananas, 50. Plant-napping at Kew Gardens, 52. Recent Merger of Horticulture Industry Groups, 52. Stellar Switchgrass, 50.

M/J: Caution Advised When Gardening in Urban Soil, 53. Florida's Endangered Native Orchids Begin Comeback, 53. Heronswood Homecoming for Dan Hinkley, 54. Keep an Eye on Ethanol, 52. Tickseed Trials at Mt. Cuba Center, 52.

J/A: Aphid Saliva Protects Plants, 50. Creating Buzz for Pollinators' Plight, 49. Garden Club of America National Award Winners, 49. Joe-Pye Weeds Shine in Study, 48. New Online Resource for Locating Local Blooms, 50. Peter Raven Receives U.S. National Arboretum's Medal of Excellence, 48. Prolonged Drought Causes Massive Grasshopper Swarm, 50. Stevia-Based Sweetener Shows Insecticidal Properties, 48.

S/O: American Rose Center Celebrates Four Decades, 44. Cleveland Botanical Garden and Holden Arboretum Merge, 43. Colorful New Canna Wins International Award, 43. Concern About Harmful Impacts of Neonicotinoid Insecticides Spurs Bans and Restrictions, 42. In Memoriam: Harold Pellett, 42. New Executive Director at U.S. Botanic Garden, 42.

N/D: Alternative Host for Emerald Ash Borer Discovered, 46. Prize-winning Plants for 2015, 48. Scent of Cut Grass May Be Linked to Drought Tolerance,

46. Top Landscape Architecture Awards Announced, 47.

Garden Solutions: Composting's Dual Benefits, N/D, 42. Controlling Slugs in the Garden, M/A, 44. Late Blight's Toll on Tomatoes, M/J, 44. The Lowdown on Lawn Care, S/O, 34. Sustainable Rose Gardening, J/A, 38. Understanding Cold Tolerance and Microclimates, J/F, 40.

Green Garage: J/F, 48. M/A, 54. M/J, 55. J/A, 52. N/D, 50.

Homegrown Harvest: American Elderberry, J/F, 38. The Beet Grows On, J/A, 40. Edamame, M/A, 46. Foolproof and Flavorful Crabapples, M/J, 48. Sage Advice, N/D, 40. Turnips and Rutabagas, S/O, 36.

News from AHS:

J/F: 2014 America in Bloom Competition, 11. 2014 AHS Members-Only Seed Exchange, 10. 2014 Great Gardens and Landscaping Symposium, 10. 2014 Travel Study Program Destinations, 8. Colonial Williamsburg Garden Symposium, 11. New Collaboration Aims to Increase Awareness of Horticulture, 8. Save the Date: Spring Garden Market, 11. Smithsonian Herbarium Needs You, 10.

M/A: 2014 National Children & Youth Garden Symposium in Ohio, 9. AHS President's Council Trip, 10. Historic Garden Meeting at River Farm in May, 8. Spring Garden Market, 8.

M/J: New Fellowship Honors Generosity of Former AHS Member, 8. Save the Date: 2014 AHS Gala, 9.

J/A: AHS Online Auction Opens in September, 11. America in Bloom Symposium and Awards Ceremony, 11. Amy Bolton Becomes New Board Chair, 6. Coalition of American Plant Societies Meets at River Farm, 8. Gardening Symposium at the Homestead, 10. Honoring Horticultural Giants, 10. Join the Conversation on Twitter, 6. Save Seeds to Share, 11.

S/O: AHS President's Council Tour Program Visits Seattle, 11. Garden Book Discount for AHS Members, 10. "Growing Good Kids" Children's Book Award Winner Revealed, 8. Honeybees Get New Homes at River Farm, 9. Photography Contest Winner,

8. Straw Bale Garden Experiment Yields Bounty, 10.

N/D: AHS Receives Spirit Award from America In Bloom, 8. Corporate Volunteers Help Out at River Farm, 10. Gearing up for 2015 Members-Only Seed Exchange, 9. River Farm Meadow in New Federal Pollinator Resource, 8.

Plant in the Spotlight: Firecracker Vine Offers an Explosion of Color in Late Summer, J/A, 62. Helianthus angustifolius: A Glow in the Autumn Light, S/O, 56. Saruma henryi: The Intriguing History Behind Its Name, M/A, 62. Oddly Beautiful Contorted Hazelnut, N/D, 62. Shade-Loving Mona Lavender Plectranthus, M/J, 62. Waldsteinia fragaroides: A Great Native Groundcover, J/F, 62.

Regional Happenings:

J/F: Chicago Botanic Garden to Host Its First Major Orchid Show, 55. Dallas Blooms Celebrates 30th Anniversary, 56. Restored Conservatory Opens at the Birmingham Botanical Garden, 55.

M/A: Swamp Creatures Invade San Francisco, 56. Thanksgiving Point's 10th Annual Tulip Festival, 56.

M/J: Family Garden Opens at Wildflower Center, 58. NYBG Exhibition Focuses on Influential Women, 57. Raising Awareness of Pollinators, 57.

J/A: Gardening Symposium in North Carolina, 57. LEGO Exhibit Tours Nation's Public Gardens, 57. Webinar Series on Sustainable Landscape Practices, 58.

S/O: Florida Festival Celebrates Fall Migrations and Autumn Blooms, 50. Greater Des Moines Botanical Garden Opens Outdoor Gardens, 51. "Lost Hollow" Unearthed at Daniel Stowe Botanical Garden, 51.

N/D: Bartram Exhibit Ends Run in California, 57.

Traveler's Guide to Gardens: 50th Anniversary for National Tropical Botanical Garden, J/A, 42. Bellingrath Gardens and Home, S/O, 38. Flamingo Gardens, N/D, 44. Rotary Botanical Gardens, M/J, 46. Washington Park Arboretum, J/F, 52.

Index compiled by AHS Volunteers Katherine Hoffman and Caroline Bristol.

Oddly Beautiful Contorted Hazelnut

by Rand B. Lee

MANY YEARS AGO, while visiting my mother in the west of Ireland one winter, I found in her back garden a curious little tree, growing by itself in a broad patch of lawn. Its bark was a light gray, peeling in places; its branches, which still had a few leaves upon them, were pleasingly contorted, and looked particularly attractive against the expanse of snow around it. This was my first encounter with *Corylus avellana* 'Contorta' (USDA Hardiness Zones 4–8, AHS Heat Zones 8–4), a selection of European hazelnut or filbert that I think is one of the most interesting deciduous shrubs for the winter landscape.

TWISTED APPEAL

First discovered in the mid-19th century growing in a British hedge-row, 'Contorta' soon amassed a number of common names, including contorted hazelnut, contorted filbert, corkscrew hazel, and my favorite, Harry Lauder's walkingstick, a reference to the trademark twisted cane brandished by a hugely popular 19th- and early 20th-century Scottish music hall entertainer.

My mother's specimen had been trained into a six-foot-tall, single-trunked standard with corkscrewing branches



Dangling catkins festoon the curiously twisted branches in late winter to early spring.

at the top. Left to its own devices, however, the contorted hazelnut tends to mature slowly into a dense, multistemmed shrub six to 15 feet tall and wide, and that is how it is most often grown.

From late winter to early spring, contorted hazelnut bears strikingly different male and female flowers. The male blossoms are dangling, yellow, pollen-shedding catkins held in clusters of two to five. Above each catkin is the tiny nubbin of the female flower that extrudes wee neon-red styles. Woody plant guru Michael Dirr reports that nuts rarely form on this selection. Spring also brings numerous roundish, twisted, slightly hairy, tooth-edged, scalloped green leaves about three inches long, which tend to hide the twisty branches. These leaves turn yellowish-green to

gold as the season progresses, before finally dropping to unveil the writhing beauty of the plant.

A hybrid selection called 'Red Dragon' was developed and released by the Oregon Agricultural Experiment Station at Oregon State University in Corvallis. 'Red Dragon' has the twisty branches of its ancestor, but it bears pinkish catkins in late winter to early spring, and its spring and summer leaves start out burgundy, changing to green and then gold as autumn approaches.

CULTURE AND LANDSCAPE USES

Contorted hazelnuts can grow in full sun or part shade, and are not fussy about soil as long as it drains freely. They are also deer resistant. Some selections are sold grafted onto rootstock of a related, straight-stemmed species. Such plants can send up straight suckers from their bases, and these shoots must be pruned out promptly to prevent them from crowding out the curly stems. Recently some commercial nurseries have begun to propagate contorted hazelnuts by layering rather than grafting. Equipped with their own roots, such plants remain beautifully weird and require little care once established.

Contorted hazelnuts are best used as specimen plants or integrated with perennials and other shrubs in mixed borders. They adapt readily to urban landscapes, and can be grown in large tubs on decks or patios.

Unfortunately, they are not suited to the climate in Santa Fe, New Mexico, where I currently reside. I sustain myself with the memory of the one that grew in my late mother's garden.

Rand B. Lee is a freelance writer based in Santa Fe, New Mexico.

Sources

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(732) 833-0613.

www.rarefindnursery.com.

Sooner Plant Farm, Park Hill, OK.
(918) 453-0771.

www.soonerplantfarm.com.

Whitman Farms, Salem, OR.
(503) 585-8728.

www.whitmanfarms.com.

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