

The American GARDENER®

The Magazine of the American Horticultural Society

July / August 2011

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Photograph by Karen Bussolini

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Photo Credit: Alexander Armster-Wolff

Please contact **1-800-367-0003** or

Tony Richard at 301-883-8834

A copy of our annual financial report may be obtained from The Fresh Air Fund, 633 Third Avenue, 14th Floor, New York, NY 10017 (212-897-8900) or from the Office of the Secretary of State, State House, Annapolis, MD 21401 (for the cost of copies and postage) or by calling 1-888-874-0013 within Maryland. Registration does not imply endorsement. 2009 The Fresh Air Fund.



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NOTES FROM RIVER FARM



CONTACTS FOR AHS PROGRAMS, MEMBERSHIP BENEFITS & DEPARTMENTS

For general information about your membership, call (800) 777-7931. Send change of address notifications to our membership department at 7931 East Boulevard Drive, Alexandria, VA 22308. If your magazine is lost or damaged in the mail, call the number above for a replacement. Requests for membership information and change of address notification can also be e-mailed to membership@ahs.org.

THE AMERICAN GARDENER To submit a letter to the editor of *The American Gardener*, write to The American Gardener, 7931 East Boulevard Drive, Alexandria, VA 22308, or send an e-mail to editor@ahs.org.

DEVELOPMENT To make a gift to the American Horticultural Society, or for information about a donation you have already made, call (800) 777-7931 ext. 127 or send an e-mail to development@ahs.org.

E-NEWSLETTER To sign up for our monthly e-newsletter, visit www.ahs.org.

INTERNSHIP PROGRAM The AHS offers internships in communications, horticulture, and youth programs. For information, send an e-mail to education@ahs.org. Information and application forms can also be found in the River Farm area of www.ahs.org.

NATIONAL CHILDREN & YOUTH GARDEN

SYMPORIUM For information about the Society's annual National Children & Youth Garden Symposium, call (800) 777-7931 ext. 132 or visit the Youth Gardening section of www.ahs.org.

RECIPROCAL ADMISSIONS PROGRAM The AHS Reciprocal Admissions Program offers members free admission and other discounts to more than 250 botanical gardens and other horticultural destinations throughout North America. A list of participating gardens can be found in the Membership area of www.ahs.org. 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. Admission is free. For information about events, rentals, and directions, visit the 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 (800) 627-6621, send an e-mail to ahs@macnairtravel.com, or visit the Travel Study 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. To access the members-only section of the website, the user name is **garden** and the password is **ahs2011**.



Sam Levin, with his mother, Susan Engel, accepts the Jane L. Taylor Award in June.

DID YOU GET a chance to read Kelly Norris's feature on "Next-Generation Gardeners" in the May/June issue of *The American Gardener*? We regularly receive feedback from our members about the magazine, but this story in particular seemed to stir up an exceptional amount of interest. It's a thought-provoking topic that horticultural groups of all kinds are discussing these days. Through survey data and interviews with experts, the article leaves little doubt that the next generation of gardeners will be fueled by renewed environmental awareness and a passion for fresh and locally grown food. (If you missed it, you can read the article in the digital edition of the issue linked through our website at www.ahs.org.)

One personification of this next generation of gardeners that comes to mind for us is Sam Levin, a university-bound high school graduate from Massachusetts who co-founded the first student-initiated and student-run public school garden in the country. From rallying his classmates around the project to inspiring thousands of his peers to get into gardening, Sam's passion is infectious.

At the age of 18, he became the youngest recipient of the Society's Jane L. Taylor Award, given in recognition of outstanding efforts in children's and youth gardening to inspire and nurture future horticulturists. We were honored to have Sam and his mother, Susan Engel, join us at River Farm this past June to accept his award during our Great American Gardeners Awards and AHS Book Awards Ceremony.

The AHS also nurtures an interest in gardening in the next generation through our annual National Children & Youth Garden Symposium. We are proud to be the driving force behind this innovative gathering of teachers, designers, and other children's gardening advocates that have impacted tens of thousands of children across the country since its inception in 1993. We hope to see some of you at this year's symposium in Michigan from July 21 to 23.

As for this issue of *The American Gardener*, there is plenty to inspire you in your own garden. Sprinkle on some spontaneity with well-behaved self-seeding plants that star in "Gardening by Subtraction with Self-Sowers." Discover colorful and tough buckwheats and hardy ice plants that offer something beyond the usual water-thrifty options. Meet some top-performing bugbanes that can light up your beds in fall. And did you know that some plants use chemical warfare to defend their turf? You'll find a fascinating article about how this works and what effects it can have in your garden.

Happy gardening and have a wonderful summer!

Harry Rissetto, Chair, AHS Board of Directors
Tom Underwood, Executive Director

MEMBERS' FORUM

EASY-CARE ROSES

I enjoyed Patricia Taylor's article "Rethinking the Rose Garden" (May/June 2011). I have always admired roses—as long as someone else was growing and maintaining them. Pests, diseases, and lots of needed attention were, unfortunately, what came to mind when looking at most specimens. The new sustainable and hardy ones mentioned in the article offer possibilities, so kudos to the developers and the gardens who are evaluating these roses. Who knows? Perhaps a fragrant blast of color may bloom in my courtyard soon.

Steven G. Maurer
Philadelphia, Pennsylvania

PRAISE FOR GARDEN SOLUTIONS

As an avid, self-taught gardener, I thank you for the new column, "Garden Solu-

tions" by Scott Aker. While not a strict organic gardener, my petrochemical use is restricted to rare, sparing uses. I feel I have a fair grasp of fertilizers and soil-related issues that enables me to avoid petrochemicals on lawns and gardens; however, in-depth knowledge about plant growth, the effects of pH, etc. is still lacking. This column cannot be too lengthy!

Bob Hatton
Amarillo, Texas

SOIL ROCKS

We both have been gardening since we were little kids and love it. We feel that the American Horticultural Society is extremely important to our country and—when you think about it—to our survival. My dad, who grew up in the Depression, always said that no matter how bad things get with the economy, if

you know how to garden and plant a seed you can always eat, always put food on the table. Soil isn't just for walking on, it can sustain you. Thanks again for all you do to spread this message, and we look forward to visiting River Farm soon.

Paul and Marsha Fosberg
Natick, Massachusetts

CORRECTION

In the May/June issue, a supplier for the Roottrainers transplanting system described in the Green Garage column (page 52) was inadvertently left out. Lee Valley Tools (www.leevalley.com) also carries this product.

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.

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THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM 2011 TOURS



Gardens and Innovation: Chicagoland and Rockford

August 17–21, 2011

with AHS Host Katy Moss Warner and AHS Tour Escort Maren Seubert

■ Discover the horticultural abundance that the Chicago area offers during this tour of the innovative gardens that have contributed to the greening of Chicago. Among these are the Lurie Gardens in Chicago's Millennium Park, the world-renowned Chicago Botanic Garden, and Garfield Park Conservatory. We will also visit several stunning private gardens, award-winning gardens in Rockford, Illinois, and the trial gardens at Ball Horticultural Company's headquarters.



Castles and Gardens of Bohemia and Moravia

September 25–October 6, 2011

with AHS Host Kurt Bluemel and

Tour Escort Harriet Landseer of Specialtours

■ We begin this trip to the Czech Republic in the capital city of Prague, renowned for its castles and cathedrals. From there we will venture to the historic and picturesque regions of Bohemia and Moravia. Experience a wealth of gardens in styles ranging from formal Italianate, Renaissance, and Baroque to Neo-classical and modern—including several 20th-century gardens created by visionary designers.



COMING SOON! 2012 Travel Destinations

The AHS's Travel Study Program will be bound for three exciting destinations in 2012. Start planning now for next year's trips!

Late March/early April—**Gardens of San Diego**

June 26–July 6—**Midsummer Gardens and Castles of Sweden**

October 26–November 5—**Andalusian Heritage and Gardens: Seville, Cordoba, and Granada**

Full travel itineraries will be available later this summer.

Trips
filling fast!
Reserve your
space today!

For more information about upcoming tours in the AHS Travel Study Program, please contact our travel partner, MacNair Travel: • E-mail: ahs@macnairtravel.com • Call: (866) 627-6621 • Visit: www.ahs.org



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News from the AHS

July / August 2011

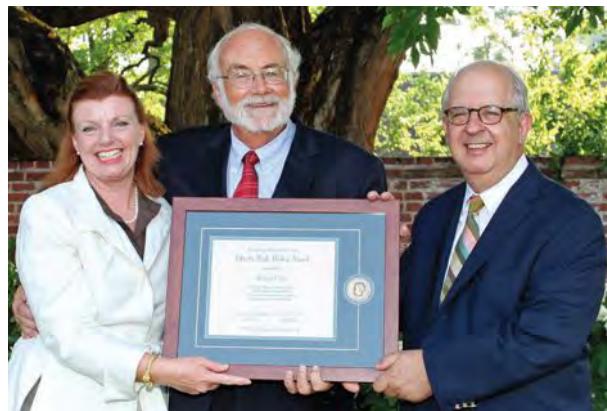
PROGRAMS • EVENTS • ANNOUNCEMENTS

CELEBRATING AMERICA'S HORTICULTURAL SUPERSTARS

THROUGH ITS Great American Gardeners Awards Program, the American Horticultural Society annually recognizes extraordinary horticultural achievements. This year's recipients, together with their families and colleagues, joined AHS Board members and staff at the Society's River Farm headquarters in Alexandria, Virginia, on June 9 to celebrate their outstanding contributions to horticulture—from communication and teaching to plant breeding and landscape design.

The Society's top honor, the Liberty Hyde Bailey Award, is reserved for those who have made significant lifetime contributions through multiple disciplines such as research, leadership, administration, art, or business. **Richard Bir** accepted this year's award for his achievements over the course of his long career as an Extension horticulturist, particularly his instrumental role in promoting native woody plants.

In addition to the Liberty Hyde Bailey Award, 11 other Great American Gardeners awards were presented throughout the evening, as well as four Book Awards for outstanding horticultural books published in 2010. For a complete list of winners, and to nominate your own horticultural hero for 2012, visit www.ahs.org/awards. Nominations will be accepted until September 30, 2011.



Awards Chair Jane Diamantis and AHS Board Chair Harry Rissetto, right, present Richard Bir with the Liberty Hyde Bailey Award.

AN INSPIRED GARDEN PARTY AT RIVER FARM

ONE OF THE AHS's main fundraising events is its annual Gala held at River Farm. It's also a chance for the Society to show off River Farm's unique beauty while celebrating gardening champions. This year, **André and Claire Viette** are the honorary co-chairs of the AHS's 18th annual Gala on September 24 with the theme, "Growing Inspirations." Known throughout the mid-Atlantic region for their first-class nursery in Virginia and gardening radio show, the Viettes are familiar faces and voices in American horticulture.

"With their amazing horticultural knowledge and production of exciting new cultivars of many varieties of plants, the Viettes are truly the embodiment of growing inspirations," says **Leslie Ariail**, chair of the gala host committee.

In addition to an elegant formal dinner and live music, this festive, black-tie evening will feature a silent auction of one-of-a-kind items. There also will be an online auction open for bidding one month prior to the gala and concluding on September 25. The online auction will include exciting opportunities to have a private



André and Claire Viette

garden tour with distinguished horticulturists around the country. To view all the offerings, visit www.ahs.org/auction.

Proceeds from the Gala and auctions will support the AHS's outreach and educational programs for gardeners across America as well as the stewardship of River Farm. For more information and to purchase tickets, contact Maren Seubert at (703) 768-5700 ext. 132 or mseubert@ahs.org.

AIB SYMPOSIUM AND AWARDS CEREMONY

IN SUPPORT OF urban beautification, the AHS has been a longtime partner of America In Bloom (AIB), a nonprofit organization dedicated to "planting pride in our communities."



This year's America In Bloom symposium will take place in Washington, D.C.

rector **Tom Underwood** serving as co-chairs of the event, the AHS will host the AIB's Criteria Awards ceremony at River Farm on October 6. Guest of honor and White House Chief Florist **Laura Dowling** will speak about the importance of flowers and their im-

This year, as AIB celebrates its 10th anniversary, the Society is excited to play a special part in "Capital Ideas," AIB's symposium and awards program taking place in Washington, D.C. from October 6 to 8.

In addition to AHS President Emeritus **Katy Moss Warner** and AHS Executive Director **Tom Underwood** serving as co-chairs of the event, the AHS will host the AIB's Criteria Awards ceremony at River Farm on October 6. Guest of honor and White House Chief Florist **Laura Dowling** will speak about the importance of flowers and their im-

Remember to Save Your Seeds

Next time you're deadheading in the garden, remember to save the seeds you're snipping for the AHS Seed Exchange, which is a great way for AHS members share plants with each other. Seeds received by November 1 will be included in our annual seed catalog available online starting in January. Members who donate seeds also get first pick from the available offerings. For more information, visit www.ahs.org/seeds.

pact on events at the White House. AIB will announce eight communities that have achieved excellence in specific categories, such as urban forestry, community involvement, and heritage preservation, as well as reveal the winner of its YouTube video contest.

In concert with the Criteria Awards program, attendees will have the opportunity to explore the gardens of the Society's River Farm headquarters and get practical ideas they can take back to their communities. The gardens will be enhanced for the occasion with colorful floral displays showcasing varieties from four of the country's premier growers—Ball, Syngenta, Proven Winners, and Ecke Ranch.

The next two days will feature educational activities, focusing on successful community and urban gardens over the last decade and offering some exceptional opportunities for attendees to sharpen their skills and increase their community impact. The agenda includes keynotes by garden television personality **Joe Lamp'l** on sustainable community beautification projects and by noted customer service expert **Dennis Snow** on how businesses and communities can raise the bar and "unleash excellence" in order to be

Gifts of Note

In addition to vital support through membership dues, the American Horticultural Society relies on grants, bequests, and other gifts to support its programs. We would like to thank the following donors for gifts received between April 1 and May 31, 2011.

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Ms. Jennifer Randle

In memory of sister Barbara Wall Bond and mother Louise Vanderburgh Wall

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In honor of the André Bluemel Meadow

Dr. and Mrs. Steven M. Still

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In honor of James Gagliardi

Silver Spring Garden Club

In honor of Charles McDougall

Ms. Stacey Hudson

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 contact development@ahs.org or call (703) 768-5700 ext. 123.

Garden Fest 2011



At the Smithsonian Garden Fest in Washington, D.C., in May, the AHS led an activity for kids to create a mini birdbath out of terracotta pots and saucers. Through a variety of activities, this annual event is designed to raise awareness about the benefits gardens provide.

more successful. The program also features an impressive line-up of specially arranged field studies in and around the National Mall, and a variety of informative sessions including panel discussions with community mayors and project funders.

AIB will conclude the event with an awards ceremony for communities based on population. Anyone with an interest in community beautification and public gardening can attend the symposium. For more information or to register call (614) 487-1117 or visit www.americainbloom.org.

UPDATED AHS PLANT GUIDE RELEASED THIS SUMMER

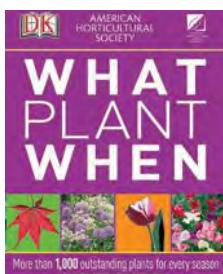
THE AHS'S acclaimed line of garden books will gain a new title this July with the release of *What Plant When* from DK Publishing.

Originally published in 2003 as *Plants for Every Season*, this updated guide organizes plants based on the time of year they are at their best. Within each section, plants are also grouped by the color of their flowers. The compact and portable reference includes descriptions of more than 1,000 plant varieties, as well as cultural requirements.

This and other AHS garden books are available wherever books are sold and may be ordered through the AHS website (www.ahs.org).

“IN THE GARDEN WEEKEND” AT THE HOMESTEAD RESORT

THE HOMESTEAD RESORT in Hot Springs, Virginia, offers the perfect summer getaway for gardeners with its annual “In the Garden Weekend.” For this year’s event from August 19 to 21, participants will enjoy seminars by gardening experts and tours of the Homestead’s gardens, while luxuriating in the resort’s sumptuous accommodations. The AHS will also provide complimentary memberships to all attendees.



AHS EVENTS AND PROGRAMS

2011 CALENDAR

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.

JULY 21–23. **National Children & Youth Garden Symposium.** East Lansing and Grand Rapids, Michigan.

AUG. 17–21. **AHS Travel Study Trip: Gardens and Innovation.** Chicagoland and Rockford, Illinois.

AUG. 19–21. **The Homestead's 13th Annual “In the Garden with the Experts” Symposium.** Hot Springs, Virginia.

SEPT. 24. **AHS Annual Gala.** River Farm, Alexandria, Virginia.

SEPT. 25–OCT. 6. **Castles and Gardens of Bohemia and Moravia.** AHS Travel Study Program. Czech Republic.

OCT. 6–8. **America in Bloom Symposium and Awards.** Washington, D.C.

OCT. 22. **Dr. Cathey Day—A Celebration of Grandparents.** River Farm, Alexandria, Virginia.



The Homestead's event will include tours of its spa garden, above.

Horticulturist André Viette, host of “In the Garden” radio show, will give a presentation about some of his favorite plants. Other speakers will present on topics such as sustainable lawn care, proper pruning techniques, and vegetable gardening.

To learn more about this event and to register, visit www.thehomestead.com.

News written by Editorial Interns Helen Thompson and Terra-Nova Sadowski, with Associate Editor Viveka Neveln.

The American Horticultural Society PRESENTS

18th Annual Gala *Growing Inspirations*

6:00 pm – 10:00 pm

Saturday, September 24, 2011

AT RIVER FARM IN ALEXANDRIA, VIRGINIA

The

American Horticultural Society's Board of Directors invites you to join us for an evening of fine dining and entertainment in the garden at our 18th Annual Gala, "Growing Inspirations." This year's event will celebrate the many inspirations that originate from our gardens.

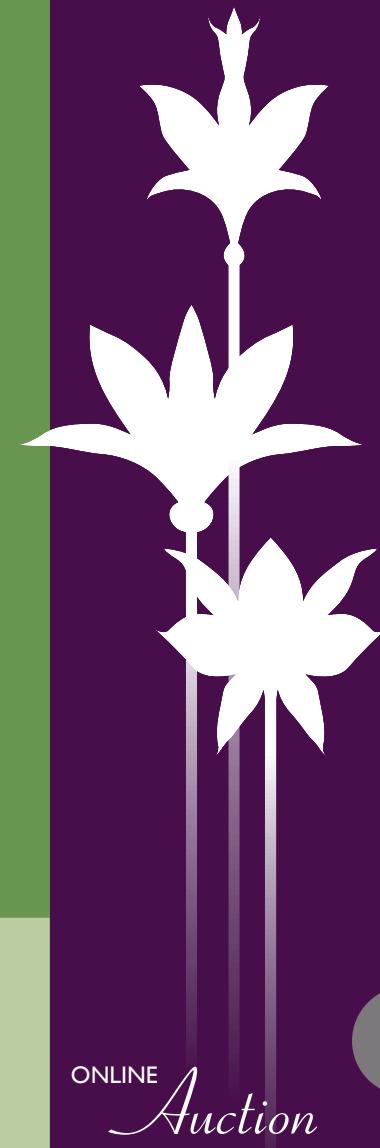
André and Claire Viette, proprietors of André Viette Nurseries in Virginia's picturesque Shenandoah Valley, will be our Honorary Co-Chairs for this year's gala. The horticultural accomplishments and generous spirit of the Viette family are legendary — please join us as we recognize this dedicated duo for their contribution to American horticulture, sharing their passion for plants and offering encouragement to gardeners across the country. The Viettes' endeavors include a weekly radio show "In the Garden with André Viette," gardening books, and special events at their nursery where visitors delight in the extensive display gardens and collections of perennial plants.

This festive evening under the stars will include an elegant formal dinner and silent auction; attire is black-tie. Advance reservations only; tables for 10 and individual tickets are available.

All proceeds from the Gala and Online Auction benefit the stewardship of River Farm and the American Horticultural Society's outreach and educational programs.

For more information about the gala or to purchase tickets, please contact Maren Seubert at 703.768.5700 ext. 132 or email mseubert@ahs.org.

Sponsorship opportunities also available.



ONLINE *Auction*

In conjunction with the annual Gala, the American Horticultural Society is proud to announce its third annual online auction, featuring a fascinating array of exclusive experiences and special offerings. The AHS online auction is your chance to bid on 'once in a lifetime' experiences that allow you to spend time "One on One with Great American Gardeners."

Visit www.bluetreemarketing.com/ahs for more information about the auction. *The deadline to bid is September 25, 2011.*



www.ahs.org

Call for Nominations

AMERICAN HORTICULTURAL SOCIETY 2012 GREAT AMERICAN GARDENERS AWARDS



It's an Honor...

Since 1953, the American Horticultural Society's Great American Gardeners Awards Program has recognized individuals and institutions that have made significant contributions to American horticulture. Nominations are now being accepted for 2012.

Nominate your "horticultural hero"—a memorable professor, a favorite garden writer, or the driving force behind an incredible community project.

For additional information and a nomination form, visit www.ahs.org/awards or call (703) 768-5700 ext. 132.

Nominations must be submitted by September 30, 2011.



HERRERA CAMPBELL PHOTOGRAPHY

2011 Professional Award

Richard Piacentini
Executive Director,
Phipps Conservatory and Botanical Gardens

2012 AWARDS

course of his or her career have cultivated widespread interest in horticulture.

Catherine H. Sweeney Award
Recognizes extraordinary and dedicated philanthropic support of the field of horticulture.

Jane L. Taylor Award
Given to an individual, organization, or program that has inspired and nurtured future horticulturists through efforts in children's and youth gardening.

Teaching Award
Given to an individual whose ability to share his or her horticultural knowledge with others has contributed to a better public understanding of the plant world and its important influence on society.

Frances Jones Poetker Award
Recognizes significant contributions to floral design in publications, on the platform, and to the public.

Professional Award
Given to a public garden administrator whose achievements during the

Liberty Hyde Bailey Award

Given to an individual who has made significant lifetime contributions to at least three of the following horticultural fields: teaching, research, communications, plant exploration, administration, art, business, and leadership.

H. Marc Cathey Award

Recognizes outstanding scientific research that has enriched the field of horticulture.

Paul Ecke Jr. Commercial Award

Given to an individual or company whose commitment to the highest standards of excellence in the field of commercial horticulture contributes to the betterment of gardening practices everywhere.

Landscape Design Award

Given to an individual whose work has demonstrated and promoted the value of sound horticultural practices in the field of landscape architecture.

Meritorious Service Award

Recognizes a past Board member or friend of the American Horticultural Society for outstanding service in support of the Society's goals, mission, and activities.

B. Y. Morrison Communication Award

Recognizes effective and inspirational communication—through print, radio, television, and/or online media—that advances public interest and participation in horticulture.

Urban Beautification Award

Given to an individual, institution, or company for significant contributions to urban horticulture and the beautification of American cities.



AHS MEMBERS MAKING A DIFFERENCE: Phil Huey

by Terra-Nova Sadowski

PHIL HUEY knows how to throw a party. The Texas A&M floriculture alumnus recently celebrated his 80th birthday at the Dallas Arboretum with 395 friends. "Now my big project is writing a lot of thank-you letters," Huey laughs. A lifelong gardener, he also knows a thing or two about growing plants, such as the oleanders, palms, and citrus trees he cultivates in his garden in Hempstead, Texas.

"I've always been interested in plant observation: growing a plant and seeing how it reacts and adapts to its environment," says Huey. He enjoys trialing daffodils and other spring-flowering bulbs, publishing his results in statewide gardening magazines and with the American Daffodil Society. And he often tinkers with tropical plants. "Hempstead is Zone 8 or 9," says Huey, "but it still freezes, and these past couple years it's gotten into the 20s several times and damaged some things."

TRAVELING MAN

Huey first became involved with the American Horticultural Society (AHS) when he attended a national meeting in 1981 while he was the assistant director of the Dallas Parks and Recreation Department. That year, the event was held in Boston, and the timing happened to coincide with a personal trip Huey had already planned. "Every year around September the family would go to New England to see the fall colors, so I decided to head towards Boston," he explains.

Since then, he has also participated in numerous AHS President's Council trips, offered each year in different cities for AHS members who donate above a certain level. The 2011 trip this spring was so close to home, however, he didn't need a plane ticket.

"This year's tour in Houston was excellent," he says. In addition to visiting several local public and private gardens, "we got to see the garden and home of George H. W. Bush and Barbara. The thing I remember most was the azaleas. They were at the height of their bloom and were just beautiful."



A lifelong gardener, Phil Huey enjoys growing a variety of plants such as spring bulbs.

Aside from the opportunity to travel to exciting destinations, Huey values his AHS membership because "it helps educate me even further in horticulture and I think that by being a member and supporting the AHS, it's possible to help others enjoy their gardening hobby and interest in plants even more."

MIMICKING THE TROPICS IN TEXAS

One special assignment with the Department of Parks and Recreation allowed Huey to indulge both his passion for travel and interest in plants in a professional capacity. While serving as the interim manager of the Dallas Zoo, he traveled to South Africa to study indigenous flora in its natural habitats because the zoo had been struggling to grow South African plants for some of its exhibits.

"A lot of areas in South Africa are lush and tropical, but it's hard to duplicate that environment in Texas," Huey explains.

The expedition provided a better understanding of how to replicate this tropical look using Texas-adapted plants, such as hardy native palms and mimosa trees.

NEW ADVENTURES AHEAD

Whether at home in his garden or abroad, Huey is always looking for another adventure. After he finishes writing his birthday thank-yous, he won't be staying put very long. He's already looking forward to a cruise this fall through the Mediterranean, from Venice to Barcelona. This will be Huey's second cruise after returning to South Africa a few years ago to sail from Cape Town to London. After this upcoming trip, he just might be making room for a Mediterranean-inspired area in his garden.

A recent editorial intern for The American Gardener, Terra-Nova Sadowski is looking for her next horticultural adventure.



versatile and water-thrifty Buckwheats

BY CAROL BORNSTEIN

Buckwheats (*Eriogonum* spp.) are a large and diverse genus of American natives prized for their drought tolerance, wildlife value, and long season of interest.

WITH INTEREST in sustainable landscaping on the rise, gardeners nationwide are looking for plants that will thrive with minimal care. In regions where water scarcity is the norm, plants that can tolerate extended dry periods are becoming increasingly popular. Succulents are one such group. Another is buckwheats (*Eriogonum* spp.), a genus of water-thrifty

North American natives whose delicate beauty often overshadows their utility in the dry garden.

"Eriogonums are the equal of penstemons as landscape plants in western states," says Panayoti Kelaidis, senior curator at Denver Botanic Gardens. "These two genera are the backbone of native gardens in this region and are absolutely essential to any serious practitioner of 'xeriscape'."

The two dozen or so perennial species currently available through the nursery industry are useful for erosion control, edging, groundcovers, informal hedges, or focal points. Their billowy shapes work best in informal gardens, serving equally well in rock gardens, mixed borders, meadow and prairie gardens, or containers. The diminutive alpine species are particularly suited for trough gardens.

The rosy pink flowers of *Eriogonum grande* var. *rubescens* spill gracefully over rocks, alongside *Leymus condensatus* 'Canyon Prince'.

RUGGED BEAUTIES

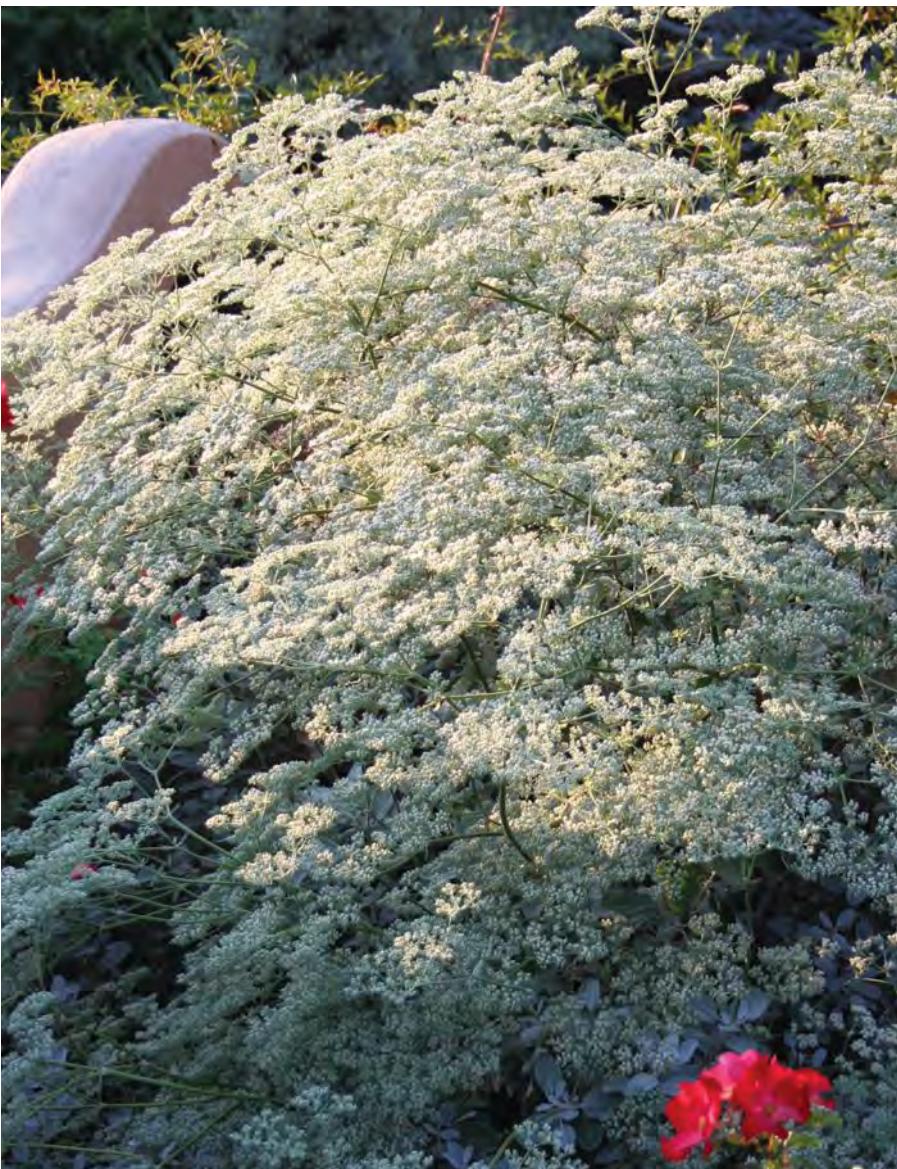
Eriogonum is a diverse genus that includes roughly 250 species of annuals, perennials, and shrubs. Approximately one-third of these are uncommon to rare in the wild. They range from prostrate, cushion-forming mats to eight-foot-tall shrubs. Buckwheats are found throughout the western states as well as south into Mexico and north into Canada, along with a few locations in the eastern United States. California is home to about 125 species, including many of the ones that have already become fairly well established in the nursery trade. Other species can sometimes be acquired through seed exchanges and native plant sales.

Buckwheats typically grow in dry, sun-drenched, rocky sites and can be found clinging to wind-whipped ocean bluffs, cascading down steep chaparral slopes, or carpeting mountain ridge tops. Some species prefer the dry, dappled shade beneath pine and oak trees. Virtually all of them grow best in well-drained rocky or sandy soils with low fertility—conditions in which more traditional garden ornamentals tend to struggle.

Buckwheats offer year-round ornamental interest, something that West Coast gardeners in particular can appreciate due to the region's exceptionally long growing season. Several species flower in summer and fall, providing welcome color

and texture at a time of year when most native plants have long finished blooming in western gardens. "Even out of bloom, they are nearly always interesting in form and foliage, and some are truly spectacular," notes Nevin Smith, director of horticulture at Suncrest Nurseries in Watsonville, California. Foliage color varies from silvery-white to bright green and, for some species, turns dark purple or maroon in winter.

It is their inflorescences, however, that truly sets buckwheats apart. Masses of tiny white, cream, yellow, or pink to red flowers are borne in wandlike spikes, dense heads, or flattened and intricately branched sprays. The display lasts for



From early summer's creamy white to autumn's reddish brown, the delicate flowers of St. Catherine's lace (*Eriogonum giganteum*) provide a spectacular, long-lasting show.

FLOWER OR FLOUR?

Those unfamiliar with the genus *Eriogonum* may wonder if these North American plants are related to the Asian buckwheat (*Fagopyrum esculentum*), whose seeds are ground into flour used for pancakes, noodles, and other foodstuffs. The connection is that both genera belong to the knotweed or buckwheat family (Polygonaceae), along with plants such as rhubarb (*Rheum rhabarbarum*) and sorrel (*Rumex* spp.).

Several Native American tribes are known to use *Eriogonum* flowers, seeds, stems, and leaves for food, but overall the American buckwheats are valued more for their medicinal and ornamental properties than their culinary ones.

—C.B.

months as the flowers age to deep pink, rusty red, cinnamon, chocolate-brown, or dark yellow. "I like using them for rusty fall color in the same manner as *Sedum 'Autumn Joy'*," says Susan Van Atta, a landscape architect based in Santa Barbara, California. As a bonus, the dried inflorescences of many species retain their shape and color for years in floral arrangements.

Buckwheats also provide valuable wildlife habitat. Their flowers and foliage are an important food source for bees, butterflies, and other beneficial insects. Birds and mammals eat the seeds and enjoy the shrub's protective cover. David Salman, owner of High Country Gardens nursery

in Santa Fe, New Mexico, calls them “an essential bee plant.”

To pick the best buckwheats for your garden, look to their natural habitats for valuable clues about their horticultural requirements, potential uses, and possible companions. Unless your garden is governed by shade, you should be able to successfully grow at least one or more of the buckwheats discussed in this article, depending upon your climate zone.

CALIFORNIA'S CHANNEL ISLANDS

The Channel Islands, located off the coast of southern California, are home to many outstanding native plants that have become garden favorites, including several buckwheat species. Among these is St. Catherine's lace (*E. giganteum*). Everything about this simultaneously delicate yet bold-textured plant is impressive. Plants quickly reach five to six feet tall and may extend even wider, bearing oval leaves that are gray-green on top and silver-gray below. By early summer, a lacy veil of creamy white flowers hovers above the foliage. These dome-shaped, two-foot-wide inflorescences eventually darken to warm reddish-brown. Judicious pruning of older plants reinforces their sculptural character. St. Catherine's lace makes a striking focal point and is useful as an informal hedge or backdrop in a dry border. Ron Lutsko, a San Francisco-based landscape architect, likes combining it with the lime green foliage of coyote bush (*Baccharis pilularis*).

More modest than St. Catherine's lace in every way, Santa Cruz Island buckwheat (*E. arborescens*) grows two to five feet tall and wide, has narrow, sage-green leaves, and smaller, yarrowlike clusters of cream to pale pink flowers in spring and summer. Some plants become treelike with age, their crooked branches and roughened bark adding textural interest. Try using this elegant shrub near a rugged boulder or weave several plants through an informal mixed border.

For a more vibrant splash of color, red-flowered buckwheat (*E. grande* var. *rubescens*) is an excellent choice. This diminutive, loosely mounded subshrub typically grows one to two feet tall and wide on coastal bluffs and rocky slopes on several islands. The rounded, wavy leaves are gray-green on top and downy white below. Its frothy, soft pink to deep rose

flowers add zing to rock gardens or the front of a mixed border from spring through early summer. Unlike other species, the flowers quickly fall apart upon turning brown. If you're lucky, some seeds will germinate to replace this relatively short-lived plant.

CALIFORNIA MAINLAND

Gardening in exposed areas near the ocean is challenging due to the seemingly constant influx of salt-laden air and buffeting winds. Many plants have adapted to this harsh environment, including the aforementioned island endemics and these buckwheat species from the California mainland.

Coast buckwheat (*E. latifolium*) is the mainland counterpart to red-flowered buckwheat. At one time, botanists considered these to be the same species and as far as horticulturists are concerned, they fulfill the same function in the garden. Coast buckwheat differs in having grayer foliage and more tightly compact flower heads that bloom in summer and fall. The pomponlike clusters are usually creamy white or light pink; deep pink forms are occasionally available.

California buckwheat (*E. fasciculatum*) is the most widespread shrubby species in the genus, extending beyond the state's borders into Baja California, Utah, Nevada, and Arizona. Occurring from the coast



A good choice for borders or rock gardens, *Eriogonum arborescens* develops an interesting, irregular form and produces cream to pale pink flowers in spring and summer.

Ashyleaf buckwheat (*E. cinereum*) is a rather understated shrub. Its rounded, light gray leaves and billowing shape blend easily with other xeric plants in the dry garden. Individual plants reach up to three feet tall and can sprawl several feet across. Large colonies spilling down steep slopes in the wild indicate this plant's exceptional erosion control capabilities. Small heads of cream to light pink flowers dot the slender, branched flower stalks in late summer and well into fall, providing months of cool color in this hot season.

to inland deserts, this durable native has a tendency to accumulate dead twigs and leaves over time, so gardeners living in high-fire zones should avoid planting this species. Periodically cutting back older plants to ground level removes this tinder and stimulates a surge of new growth from the base. California buckwheat is a variable shrub, with upright forms reaching three to four feet tall and arching forms sprawling several feet across as their branch tips take root. The latter form has yielded a number of selections—including 'Wariner Lytle', 'Bruce Dickinson', 'Theodore



Above: The loose, silvery gray foliage of Wright's buckwheat surrounds the golden blooms of saffron buckwheat. **Right:** California buckwheat blooms from spring through late summer or fall.

'Payne', and 'Dana Point'—valued as groundcovers. The needlelike, green to gray-green leaves are superficially similar to rosemary, but the resemblance ends once the creamy white flowers emerge. Plants can bloom from spring through summer and even into fall before turning copper or deep brown. Beekeepers especially prize this common buckwheat for the flavorful honey it yields.

Saffron or Conejo buckwheat (*E. crocatum*) is one of California's rarer buckwheats, occurring in a narrow area within the Santa Monica Mountains. A stunning foliage plant, this silvery subshrub forms mounds one to two feet tall and up to three feet wide. Soft white hairs coat the rounded, wavy leaves and flower stalks that begin to elongate in spring. The rust-colored buds give way to vivid yellow flowers that eventually ripen into chocolate-brown seed heads. Provided with



sharp drainage and full sun, saffron buckwheat is a beautiful informal addition to rock gardens, dry borders, containers, or as a low hedge in knot gardens.

FOR COLDER CLIMES

Gardeners in colder regions of the country, including high-elevation locations in California, have an ever-expanding palette of hardy buckwheats to cultivate. One of the most popular is sulfur buckwheat (*E. umbellatum*), a variable species

Resources

Alpine Plants of North America: An Encyclopedia of Mountain Flowers from the Rockies to Alaska by Graham Nicholls. Timber Press, Portland, Oregon, 2002.

California Native Plants for the Garden by Carol Bornstein, David Fross, and Bart O'Brien. Cachuma Press, Los Olivos, California, 2005.

Eriogonum Plant Society

(www.erio.org). Members of this new society have access to educational programs and an annual seed exchange.

High and Dry: Gardening with Cold-Hardy Dryland Plants

by Robert Nold. Timber Press, Portland, Oregon, 2008.

Native Treasures by M. Nevin Smith. University of California Press, Berkeley, California, 2006.

North American Rock Garden Society

(www.nargs.org). Members receive the Rock Garden Quarterly and have access to their annual seed exchange.

Sources

Annie's Annuals, Richmond, CA. (888) 266-4370. www.anniesannuals.com.

High Country Gardens, Santa Fe, NM. (800) 925-9387. www.highcountrygardens.com.

Jelitto Perennial Seeds, Louisville, KY. (502) 895-0807. www.jelitto.com.

Larner Seeds, Bolinas, CA. (415) 868-9407. www.larnerseeds.com.

Siskiyou Rare Plant Nursery, Talent, OR. (541) 535-7103. www.siskiyourareplantnursery.com.

found throughout the mountains of northern California and into Oregon, Colorado, and Utah. Kelaidis calls this species the workhorse of the genus. Plants range in size from prostrate mats to 18-inch-high mounds and can spread up to three feet across. The evergreen to semi-evergreen foliage varies from sage-green to gray-green and may turn purple or bronze-red in winter. The spring or summer-blooming flowers span the spectrum of yellows.

Several varieties and selections are recommended, including *E. umbellatum* var. *aureum* ‘Kannah Creek’, a groundcover with bright green leaves and huge yellow umbels that age to bronze-orange in the late summer to early fall. Another, *E. umbellatum* var. *porteri* from central Utah, is a subalpine coveted by rock gardeners for its mat-forming habit, shiny green foliage that blushes to dark bronze in winter, and brilliant yellow flowers that turn orange and scarlet as they age. For those partial to gray foliage, *E. umbellatum* var. *humistratum* is another excellent performer. ‘Shasta Sulphur’ is a densely mounded, yellow-flowered cultivar that performs reliably throughout California, whereas ‘Alturas Red’ is a more diminutive selection with white flowers that quickly turn red.

Wright’s buckwheat (*E. wrightii*) is another highly variable montane species whose range encompasses Southern California and parts of Nevada, Arizona, New Mexico, and Texas. The small, linear leaves are lightly felted, lending a silvery-gray sheen to the matted or loosely upright plants. Tiny clusters of white to pink flowers punctuate the wiry stalks in summer and fall. These potentially long-lived plants are perfect for rock or trough gardens. Closely related and similar in many respects is the pancake-flat Kennedy’s buckwheat (*E. kennedyi*), whose flowers bloom in summer in clusters on unbranched stalks. Older plants may carry hundreds of tiny rosettes.

OTHER BUCKWHEATS

The diversity of buckwheat species and cultivars available to gardeners continues to climb, thanks to adventurous growers and collectors. Crispleaf buckwheat (*Eriogonum corymbosum*), for example, occurs in several western states and typically produces clouds of white, pink, and occasionally yellow flowers in summer. ‘Henrieville Yellow’, a yellow-flowered variety from Utah, was recently introduced. Its showy, staticelike sprays, com-



Eriogonum umbellatum var. *aureum* ‘Kannah Creek’ makes a colorful groundcover with its bright yellow blooms that age to deep orange in late summer and early fall.

bined with its carefree nature and tolerance of modest irrigation, are garnering rave reviews.



Small pink flower clusters of *Eriogonum wrightii* appear above felted foliage.

Shale barrens buckwheat (*E. allenii*), is one of the few species native to the eastern United States. This rare perennial occurs on rocky slopes in oak and pine woodlands in the Appalachians of Virginia and West Virginia. The broadly oval leaves are sage-green above and covered with soft, brownish-white hairs below. This handsome foliage is upstaged in late summer by the splendid, dome-shaped inflorescences of yellow flowers. Despite its rare status in the wild, it is quite adaptable and durable in cultivation. Look for the recently named seed strain ‘Little Rascal’.

Dogtongue or sandhill wild buckwheat (*E. tomentosum*) grows in sandy soils in woodlands and grasslands of Florida, Georgia, Alabama, and the Carolinas. Although rarely cultivated, this buckwheat holds the distinction of being the first species to be called *Eriogonum*, or “woolly knees” in Greek, a reference to the swollen, hairy nodes on the stem. Depending upon future garden trends, this delicate beauty, whose white flowers bloom in late summer and fall, might just find a wider audience.

MORE BUCKWEATS TO CONSIDER

Botanical/ Common Name	Height/Spread (inches)	Ornamental Characteristics	Native Range
<i>Eriogonum caespitosum</i> (matted buckwheat)	1–4/8–30	dense mat of white felted leaves, yellow to red flowers	western U.S.
<i>E. compositum</i> (arrowleaf buckwheat)	8–30/10–15	cream to yellow umbels, sage-green leaves	western U.S.
<i>E. douglasii</i> (Douglas' buckwheat)	1–4/2–16	dense mat of whitish leaves, yellow flowers	western U.S.
<i>E. elongatum</i> (longstem buckwheat)	24–72/12–24	pink-tinged white flowers on wandlike, leafy stems	California to Baja
<i>E. gracilipes</i> (White Mountain buckwheat)	2–4/2–26	mat of white felted leaves, white to rose flowers in pompon heads	White Mountains of California and Nevada
<i>E. jamesii</i> (James' buckwheat)	2–10/12–60	mat of sage-green to gray leaves, white to yellow flowers	southwestern U.S. to Mexico
<i>E. lobbii</i> (Lobb's buckwheat)	1–6/2–16	cushion of rounded gray leaves and white to rose flowers in pompon heads	California, Oregon, Nevada
<i>E. nudum</i> (naked buckwheat)	4–60/2–12	broad, somewhat hairy leaves and white to yellow flowers on long, forked stems	western U.S. to northwestern Mexico
<i>E. parvifolium</i> (seacliff buckwheat)	12–40/20–80	matted to sprawling shrub with green leaves, white to pink or greenish-yellow flowers	coastal central and southern California
<i>E. saxatile</i> (hoary buckwheat)	4–8/2–8	loose clusters of silvery-white leaves, white to rose or pale yellow flowers	California and Nevada
<i>E. sphaerocephalum</i> (rock buckwheat)	2–16/12–24	open mats with downy leaves, yellow flowers in rounded heads	western U.S.
<i>E. thymoides</i> (thymeleaf buckwheat)	2–8/4–12	narrow, silky leaves, white to yellow flowers, low shrubby plants become gnarled with age	Washington, Oregon, Idaho

CARING FOR BUCKWEATS

Buckwheats are practically care-free plants in the garden. An inch or two of gravel or pine needle mulch will keep their crowns dry; avoid humus-rich materials that retain too much moisture. Anne Spiegel, who grows several western species in her LaGrange, New York, garden, notes that good air circulation during the hot, humid summer months is also important in the eastern United States.

Few pests bother buckwheats. A strong pulse of water will dislodge aphids that occasionally congregate on the new leaves or flower buds. Deer and rabbits may nibble the tender young tips. Powdery mildew can be troublesome, but adequate sunlight and good air circulation should keep this disease in check.

Buckwheats rarely need pruning other than the removal of broken branches or spent flower stalks. As plants become leggy with age, rejuvenate them by pruning back to pencil-diameter wood. This technique isn't always reliable, so eventual replacement

may be necessary. Fortunately, many species freely self-sow without becoming weedy, adding a touch of spontane-



Although rare in the wild, *Eriogonum allenii* is quite adaptable in cultivation.

ity to a garden composition. However, it's important to note that if your garden is adjacent to natural areas, there is potential for buckwheats to escape cultivation or hybridize with indigenous species, risking contamination of the local gene pool. In that case, it is best to avoid these problems by planting locally native species.

PROMISING POTENTIAL

Once beguiled by buckwheats, few gardeners can settle for growing just one kind. In addition to the ones profiled here, there are at least a dozen other commercially available *Eriogonum* species to further tempt us (see chart above). So make room for some beautiful, carefree buckwheats in your water-thrifty garden.

Carol Bornstein is a horticulturist and author based in Santa Barbara, California. Her most recent book is Reimagining the California Lawn: Water-conserving Plants, Practices, and Designs (Cachuma Press, 2011).

gardening by subtraction with Self-Sowers

ARTICLE AND PHOTOGRAPHS
BY KAREN BUSSOLINI

Whether they bloom briefly or look good year-round, easily removed self-sowing plants play many roles in the garden and can be a boon for the busy gardener.



Above: Brown-eyed Susans fill the gaps in the author's garden with splashes of sunny color.
Top right: Johnny jump-ups appear among the leaves of 'Sapphire' blue oat grass.



EVEN AS A kid I never understood why Grumble Eddy, my crabby old uncle, cursed the Johnny jump-ups (*Viola tricolor*) that popped up in his garden each spring, going after them with a hoe and a scowl. Not only did I love their cheerful purple-and-yellow faces, but because they self-seeded with abandon, they had a delightful penchant for appearing in unexpected places.

Unlike my uncle, I welcome plants that sow themselves in my garden, where they create random jazzy combinations and make themselves at home in places I would never have considered. Self-sown plants also save me from having to buy and re-plant my tried-and-true garden favorites each year. Instead, I practice gardening by subtraction—that is, I simply remove the plants where they are not wanted.

This lower-maintenance technique offers many advantages: Self-sown plants establish faster and have a greater success

rate than transplants. Also, some seeds sprout in fall or require a cold period in order to germinate, and this is easier to accomplish naturally outdoors than buried in the freezer under last summer's pesto. And allowing plants to set seeds also provides a food source for wildlife and encourages genetic diversity.

SEEDS TO HAVE—AND HAVE NOT

When it comes to which plants make the best self-seeders in a garden, trial and error are the best guides. You want plants to be not too big or too small for your space, and they should be easy to remove without digging. They should be pleasing in form and color, reliably show up when they're needed, set the right amount of seed, and disperse it without much fuss.

A handful—including Johnny jump-ups—have qualities that make them welcome wherever they appear in my garden. Other self-seeders—like *Corydalis lutea*, which has ferny leaves that provide multi-seasonal appeal—need to be kept in bounds, but their redeeming qualities justify the special attention. Teasing tiny seedlings from the crowns of neighboring perennials, then a thorough pulling and cutting back in summer keeps them under control.

Tap-rooted plants, in particular, should be thinned when small. I had an eight-foot-tall bronze fennel growing in an undesired location that took a three-foot-deep excavation and a pot of boiling water to finish off. Now I make sure to pull the volunteer seedlings when they're small and harvest more seeds for cooking.

Keep in mind that seeds of some hybrid plants may not produce plants that look like their parents, or the seeds may be sterile. Also, some plants are notorious for cross-pollinating with each other, resulting in seeds that produce very different-looking plants. After several years, the original plants will have disappeared, leaving behind an assortment of seedlings with motley traits. Diligent monitoring of plants before they form seeds may be the only way to preserve the original traits. However, allowing nature a free hand may both save effort and yield delightful variations.

BEWARE SPLIT PERSONALITIES

Some plants have a two-faced nature depending on where they are grown, so gar-

deners need to do their homework before introducing any plant into their gardens that may have a broader negative environmental impact.

For example, Japanese primrose (*Primula japonica*) is one of those self-seeding plants that can be a dream—or a nightmare. This robust wetland plant features basal leaves that emerge in April, develops eight-to nine-inch-long leaves from a central crown topped by tall-stemmed clusters of red, pink, or white flowers, and remains attractive throughout the growing season.

At the Vermont farm of landscape designers and authors Gordon and Mary

time, a dozen plants originally situated in a wet, shady trial garden adjacent to a stream have multiplied into thousands, escaping the garden and establishing themselves across the road and into natural areas. Five years after a regime of herbicides and handweeding, Cary Institute staff still pull 100 to 200 primrose seedlings a year. Planted near water that connects with a natural freshwater source, Japanese primroses are highly invasive, outcompeting and displacing native plants.

Other popular plants that are potentially invasive and banned in certain states include water forget-me-nots (*Myosotis*



Located away from a natural watercourse, this moist garden in Maine is suitable for cultivating Japanese primroses, which spread happily among other woodland plants.

Hayward, seeds from Gordon's 87-year-old garden mentor Howard Andros were scratched into moist soil under a grove of wild plums in 1984. Japanese primroses have bloomed every spring since under a canopy of fragrant white plum blossoms and now also cover the northern half of the garden. The Haywards encourage the spread of deep pink- and red-flowered plants by removing the seedheads of lighter colored flowers.

At the Cary Institute of Ecosystem Studies in Millbrook, New York, Japanese primroses are not so well-behaved. Judy Sullivan, who spent years there developing habitat gardens, relates that in over 15 years'

scorpioides), cup plant (*Silphium perfoliatum*), yellow flag (*Iris pseudacorus*), dame's rocket (*Hesperis matronalis*), and bachelor's buttons (*Centaurea cyanus*).

To find out what plants are listed as invasive in your state, check the State Noxious Weed Lists at <http://plants.usda.gov/java/noxiousDriver#state>.

REGIONAL DIFFERENCES

When gardening by subtraction, there's a colorful palette of self-sowing plants that can yield pleasing, spontaneous displays. It has been interesting comparing notes with gardeners in other parts of the country, many of whom grow the same

plants with different results due to regional climate, soil type, aesthetic preferences, and other factors.

The following are a few favorite self-seeders that have grown well for me in Connecticut, as well as for fellow gardeners across the country. (See the sidebar on page 23 for recommended self-seeders for specific regions.)

PERENNIAL FAVORITES

Brown-eyed Susans (*Rudbeckia triloba*)

Many plants don't survive in my Darwinian garden, where competition is stiff and the only water they get comes from rainfall. One that performs like a star under these trying conditions is brown-eyed Susan, a native of eastern and central North America with a lyrically airy habit.

Small first-year rosettes form almost a groundcover in spots, holding soil, contributing a green presence, and suppressing weeds. First- and second-year plants are easy to pull. Cutting back in early summer encourages a more compact form with many flowers. For a tall narrow form, thin entire stems. A final thinning at bloom time refines the composition and fills the vase. Adaptable to both sun and shade, brown-eyed Susan blooms in August, providing a big shot of color for six weeks or more. Golden one-and-a-half to two-inch daisylike flowers are touched with white as they age, and their seeds feed hungry birds such as goldfinches all winter.

Great Blue Lobelia (*Lobelia siphilitica*)

Another native to eastern and central North America, this plant thrives in wet sites. In August, the lobelias' long-lasting spikes of intense cobalt-blue tubular flowers shoot up above the strappy golden blades of Japanese sweet flag (*Acorus gramineus* 'Ogon'), creating a vibrant vision of blue and yellow in my garden. Great blue lobelia needs disturbed soil to colonize. Individuals may not live long, but if you stir up the soil, harvest ripe flower stalks, and shake their seeds over the area, the plant will spread over time.

For me, the shallow-rooted seedlings are never too numerous.

Wild Phlox (*Phlox divaricata*)

After seeing Gordon and Mary Hayward's one-and-a-half-acre Vermont garden, I'll never deadhead wild phlox again. Native to the woodlands and fields of the eastern half of North America, this perennial produces masses of fragrant lavender to pink flowers in spring. The Haywards started with 16 plants in a dry woodland garden; now wild phlox carpets a 30-foot-by-70-

foot area. Although wild phlox does spread by rooting along its creeping stems, Gordon assists the process by removing spent flowers with a string trimmer to strew ripe seeds about.

Lady's Mantle (*Alchemilla* spp.)

Gardeners coast to coast like lady's mantle for its neat clumps of wavy-edged rounded leaves emerging in early spring to charmingly catch the sparkling dew, followed by loose cymes of small chartreuse flowers that last for several weeks. Plants



Above: Chartreuse-flowering lady's mantle stands out on top of a wall. Left: Self-sown great blue lobelia flowers rise above the fine foliage of Japanese sweet flag in the author's Connecticut garden.

work in formal or informal settings, and are especially good for transitioning from full baking sun to part shade. They look good even while going to seed. Self-sown seedlings come up equally well in garden beds and between pavers.

Lungworts (*Pulmonaria* spp.)

Because lungworts have a reputation for cross-pollinating and producing seeds of plants with unpredictable traits, I used to dutifully label and deadhead all the fancy new selections with superior foliage and

Sources

Bustani Plant Farm, Stillwater, OK.

(405) 372-3379.

www.bustaniplantfarm.com.

High Country Gardens,

Santa Fe, NM. (800) 925-9387.

www.highcountrygardens.com.

Johnny's Selected Seeds, Winslow,

ME. (877) 564-6697.

www.johnnyseeds.com.

Munchkin Nursery & Gardens, De-

pauw, IN. (812) 633-4858.

www.munchkinnursery.com.

Prairie Moon Nursery, Winona, MN.

(507) 452-1362.

www.prairiemoonnursery.com.

flowers that I introduced to my garden. I must have missed some because—to my delight—assorted lungworts now emerge the instant snow melts. I have seen many striking silver variations, plants with dark crisply dotted leaves and huge purple-blue flowers hinting of the cultivar 'Blue Ensign' in their family history, and a few with pure white blooms. They nestle into pockets in mossy boulders with wild Christmas ferns and poke up through mats of *Phlox stolonifera*. I compost the wimpy seedlings and let the best do their thing.

Hellebores (*Helleborus* spp.)

Besides boxwood, hellebores are the only dark green presence in my winter garden that deer don't devour. The finely-cut chartreuse leaves of stinking hellebores (*Helleborus foetidus*) emerge in December and blossoms of the same shade open in February. In late spring, I cut back rangy old plants and let younger ones take over. I also remove seedlings that stray beyond the garden's boundaries.

Virginia Bluebells (*Mertensia virginica*)

Despite the fact that they die back to the ground by early summer, Virginia bluebells are perfect for naturalizing in wooded areas. Small rounded leaves tinged a dusky purple emerge with the early spring bulbs. "The next thing you notice," says garden writer Carole Ottesen, who has Virginia bluebells popping up everywhere in her Maryland garden, "is they turn a remarkable pale green color, and then—all of a sudden—the plants are in bloom."

ENCOURAGING ANNUALS AND TENDER PERENNIALS TO SELF-SOW

For years I never understood why spider flower (*Cleome hassleriana*), California poppy (*Eschscholzia californica*), flowering tobacco (*Nicotiana* spp.), sweet alyssum (*Lobularia maritima*), and countless classic grown-as-annual self-sowers flourished for gardeners everywhere but failed to reproduce in my Connecticut garden. Sometimes at summer's end a seedling would appear in the middle of a stone path or my front steps, too late to set seed.



Spider flower is a prolific self-seeder.

On one late summer visit to Bob Hyland and Andrew Beckman's Loomis Creek Nursery in Hudson, New York, I noticed a gorgeous jewels of Opar (*Talinum paniculatum* 'Kingswood Gold')—the same plant that was just then flowering in my home garden—was here already spilling seed everywhere by a gravel parking area. I wondered aloud at the difference, and Bob said, "Oh, everything seeds in gravel." (For a list of his top picks for the gravelly edges of walkways, see the sidebar on page 23.)

It turns out the soil conditions in my garden were not conducive to encouraging proper germination for the seeds of some plants.

I'd already noticed that many native plants readily germinate in moss and learned from Pennsylvania landscape designer Larry Weaner that others only proliferate in disturbed soil or gravel. Ian Caton, a horticulturist who works with Weaner, adds that plants with small seeds that need light to germinate require thin substrates free of leaf litter. Because my garden is covered with mulch and disturbed only by careless footsteps on stepping stones or is shaded by plants that stabilize steep slopes, these seeds don't have what they need to germinate. Although I don't have this option, gardeners on flatter ground could forgo mulch or try mulching with sand or fine gravel, making sure to pull weeds that appear to create disturbance and reduce competition for the seedlings of the desired plants.

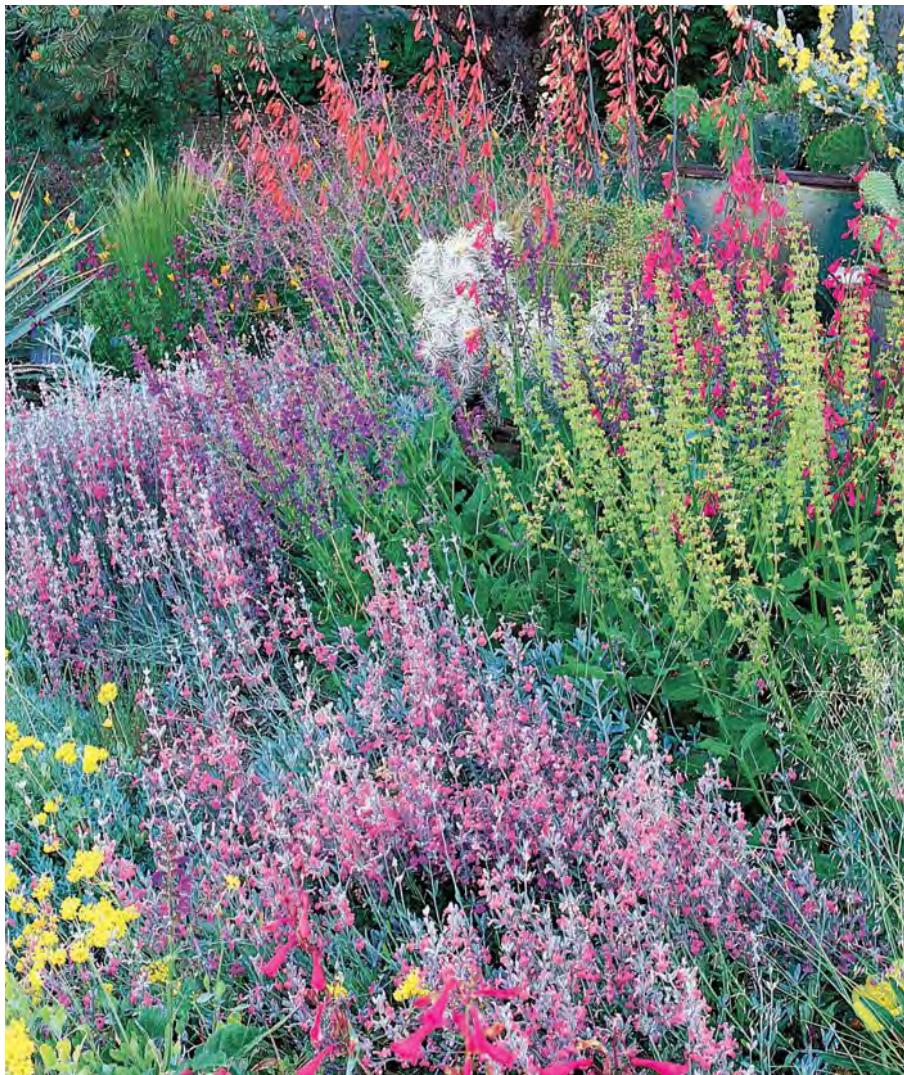
Furthermore, most of the annuals and tender perennials we grow come from South and Central America, Mediterranean areas, or Africa. In northern climates, they need the heat absorbed and radiated by stone to get going. The soil in my garden just takes too long to warm up. Northern gardeners will have better luck with warm-climate plants with gravel mulch, at the edge of gravel paths, between stones or dry-laid bricks in areas that get full sun. I have my eye on cracks in the southwest-facing driveway that sprout heat-loving weeds and an occasional seedling from last year's containers. A little pickaxe work to enlarge cracks where nobody drives and some fine gravel might work wonders.

—K.B.

The small blue or blue-pink, bell-shaped flowers of this North American woodland native last several weeks, after which time the plants begin to go dormant—not a pretty sight. Plants grow two feet tall and a foot wide and produce zillions of seeds. Taking a cue from the cycle of growth in its natural habitat, Ottesen plants ferns and tall perennials that emerge as the Virginia bluebells' decline, engulfing the mess. She controls the spread of the bluebells by pulling out most of their seedlings.

Euphorbias (*Euphorbia* spp.)

There are over 2,000 species in the genus *Euphorbia*; some are noxious weeds, others are well-behaved, self-perpetuating garden citizens in the right conditions. Nan Sterman, a low-water gardening expert, author, and designer in Encinitas, California, grows *Euphorbia rigida*, a fleshy blue-green-leaved evergreen sprawler, and *E. characias* ssp. *wulfenii*, a taller, more shrub-like plant with chartreuse flowers and contrasting deep green foliage in her small



Top: *Euphorbia rigida* softens the edges of a walkway in Nan Sterman's California garden.

Above: At Denver Botanic Gardens, red-flowering desert beardtongue and scarlet bugler share a bed with a variety of colorful, drought-tolerant plants in the Water-Smart Garden.

front yard. From a handful of each, she now has dozens, thanks to self-sowing. "They went from being a little feature in the garden to being the background," says Sterman. "They're like a carpet and everything else is like rose petals sprinkled across the carpet." She also notes that the foliage is fabulous from the end of May until December, when flowering begins. The seedlings are easy enough to pull, but it's a good idea to wear gloves and cover arms and legs when weeding or deadheading to protect skin from the caustic milky sap.

Golden Lace (*Patrinia scabiosifolia*)

Despite its see-through, open framework, golden lace still packs a punch. Roger Gossler, of Gossler Farms Nursery in Springfield, Oregon, says "you can plant all kinds of things behind it and still see them." Compact basal foliage keeps its good looks all season and turns dusky purple in fall. Seven-foot-tall, red-tinted stems bear large panicles of long-lasting mustard-yellow flowers. "We've had it for 25 years. Seedlings move around but stay within about a 30-by-150-foot space, and unwanted plants are very easy to pull out," says Gossler. "They give great late-season color when a lot of things are quiet after the big flush of summer color."

Beardtongues (*Penstemon* spp.)

Denver Botanic Gardens' Water-Smart Garden bursts with colorful flowering plants that require poor, dry, gravelly soil. Panayoti Kelaidis, director of outreach and senior curator, highly recommends beardtongues—especially desert beardtongue (*Penstemon pseudospectabilis*) and scarlet bugler (*P. barbatus*). Both are native to the southwest and attract hummingbirds. Desert beardtongue grows to three feet tall and produces spikes of tubular red flowers above large, toothed, gray-green leaves. Growing two to three feet tall, scarlet bugler's tubular red flowers feature yellow hairs on the lower lip.

Jewels of Opar (*Talinum paniculatum*)

Mississippi horticulturist Felder Rushing, co-author of *Passalong Plants*, is a fan of easy-to-grow, old-fashioned, plain green jewels of Opar. This two-foot-tall, fleshy-leaved relative of portulaca produces airy sprays of pink flowers resembling baby's breath. "It's a

FAVORITE SELF-SOWERS FOR EVERY REGION

I asked garden experts from different parts of the country to recommend self-sowing plants that are particularly suited to their regions, and here are their favorites.

—K.B.

SOUTH CENTRAL

Steve Owens, owner of Bustani Plant Farm in Stillwater, Oklahoma, suggests:

Ceratostheca triloba

(South African foxglove)

Collinsia violacea (blue-eyed Mary)

Delphinium carolinianum

(Carolina larkspur)

Euphorbia marginata, syn. *E. variegata*

(snow on the mountain)

Gaillardia aestivalis var. *flavovirens*

(prairie gaillardia, blanket flower)

Tetragonotheca ludoviciana

(Louisiana nerveray)

Thymophylla tenuiloba, syn. *Dyssodia tenuiloba* (Dahlberg daisy)

Verbena bonariensis (Brazilian verbena)

MOUNTAINS/SOUTHWEST

Panayoti Kelaidis, director of outreach and senior curator at the Denver Botanic Gardens recommends:

Aquilegia chrysanthra (yellow columbine)

Buxiniczia cabulica (variegated statice)

Collomia grandiflora (grand collomia)

Eremurus spp. (desert candle, foxtail lily)

Eschscholzia californica

(California poppy)

Eriogonum umbellatum

(sulphur-flower buckwheat)

Penstemon barbatus (scarlet bugler),

P. pseudospectabilis (desert beard-tongue), *P. strictus* (Rocky Mountain penstemon, stiff beard-tongue)

Phacelia campanularia

(California bluebell)

Salvia xsyvestris, syn. *S. deserta*

(woodland sage), *S. transylvanica*

(Transylvanian sage)

Verbascum bombyciferum, syn.

V. broussa (Turkish mullein),

V. roripifolium (roripa mullein)

NORTHEAST

Bob Hyland, owner of Loomis Creek Nursery in Hudson, New York, recommends these plants for the gravelly, edgy transitions from paths/walkways to garden beds:

Amaranthus cruentus 'Hot Biscuits'

Digitalis grandiflora, syn. *D. ambigua*

(yellow foxglove), *D. lutea* (small yellow foxglove)

Eschscholzia californica

(California poppy)

Impatiens glandulifera

(Himalayan balsam)

Linum perenne (blue flax)

Nigella damascena (love-in-a-mist)

Papaver atlanticum (Atlas or

Atlantic poppy)

Salvia argentea (silver sage), *S. pratensis*

(meadow clary)

Verbascum chaixii (nettle-leaved mullein)

DEEP SOUTH

Some favorite reseeders of Mississippi horticulturist and author Felder Rushing are:

Celosia cristata (ockscomb)

Cleome hassleriana (spider flower)

Cosmos bipinnatus (cosmos),

C. sulphureus (orange cosmos)

Consolida ajacis (larkspur)

Coreopsis tinctoria (Plains coreopsis)

Gomphrena globosa (globe amaranth)

Mirabilis jalapa (four o'clock)

Perilla frutescens and *P. frutescens*

'Atropurpurea' (beefsteak plant, shiso)

Zinnia elegans (zinnia)

CALIFORNIA

Landscaper designer and author Nan Sterman of Encinitas, California, likes:

Clarkia spp.

Eschscholzia californica

(California poppy)

Hunnemannia fumariifolia (Mexican tulip poppy)

Lathyrus odoratus (sweet pea)

Papaver somniferum (bread seed poppy)

MIDWEST

Gene E. Bush, owner of Munchkin Nursery & Gardens, LLC, in Depauw, Indiana, offers the following top reseeders for Midwestern shade gardens:

Actaea americana, syn. *Cimicifuga americana* (American bugbane)

Arisaema triphyllum (Jack-in-the-pulpit), *A. dracontium* (dragon root)

Asarum canadense (Canadian ginger)

Athyrium niponicum (Japanese painted fern)

Corydalis spp.

Delphinium exaltatum (tall larkspur), *D. tricorne* (dwarf larkspur)

Geranium maculatum (spotted geranium), *G. phaeum* 'Samobor' (mourning widow geranium)

Helleborus foetidus (stinking hellebore)

Spigelia marilandica (Indian pink)

Stylophorum diphyllum (wood poppy)

great texture plant for pots and shaded borders," says Rushing. "I've never seen a single insect or disease on it, and it needs little or no water."

Less familiar native large-flowered rock pink (*T. calycinum*) is listed as rare and endangered at its extreme northeastern range in Illinois. But Steve Owens, owner of Bustani Plant Farm in Stillwater, Oklahoma, describes it as easy to grow and heat tolerant. "It's very short, four inches if it's

standing on its toes, with flowers taller," he says. "In Oklahoma, it blooms around 4 to 5 p.m., so it greets you at the end of the work day." In the wild, it grows in sandy, shallow soil over rock, so Owen uses it in raised beds and rock walls where there's good drainage.

LESS CONTROL, MORE ENJOYMENT

Self-sowing plants are for observant people who are open to change. Those who

simply dump a thick layer of mulch and walk away miss all the fun. All you need to do is learn to recognize the seedlings, which often look very different from mature plants, give them some space, then see what beautiful surprises pop up in your garden.

Karen Bussolini is a photographer, freelance writer, and garden coach based in South Kent, Connecticut.



Bugbanes *for* American Gardens

BY RICHARD HAWKE

BUGBANES ARE delightful denizens of shady woodlands, where their late-season flowers and lush, fine-textured foliage enliven the shadows. They are big perennials—many are three to four feet tall, some reach nearly seven feet when in bloom.

Previously known as *Cimicifuga*, the 28 or so species of bugbanes have been reclassified into the genus *Actaea*, which already contained doll's eyes or white baneberry (*A. pachypoda*) and red baneberry (*A. rubra*). The change has not been universally accepted, however, so if you look for bugbanes in a reference or at a nursery, check both genera. They also go by a variety of common names, including black cohosh, snakeroot, and fairy candles. (For more about *Actaea* classification and nomenclature see “Bugbane Taxonomy,” page 31).

Bugbanes hail from a broad geographical range in North America, Europe, and Asia. Several attractive species are native to

These statuesque, late-season bloomers brighten up shade and woodland gardens at a time when little else is flowering.

clematis, hellebores, anemones, delphiniums, and globeflowers (*Trollius* spp.). On close inspection, the familial resemblance can be seen in the boss of white, cream, or pink-tinged stamens and the petallike sepals, which often fall away upon opening. True petals may be absent or reduced to cupped nectaries; this often helps distinguish one species from the next.

MORE THAN JUST A PRETTY FLOWER

Bugbanes grow from thick, slow-spreading roots to form dense mounds of basal leaves with flowering stems rising well above. Unlike baneberries, which bloom in spring and early summer, most bugbanes bloom in fall—September and October in the Chicago area, where I live (for more about baneberries, see the web special linked to this article on the AHS

pleasant or offensive depending on the species and the observer, and they attract a great number of pollinators. The fruits are typically dry pods, which are ornamental in their own right.

In colder regions, the autumnal blooms of most species may come almost too late in some years. But bugbanes are valued as much for their leaves as for their distinctive floral displays; their handsome, fernlike foliage provides an attractive backdrop to ferns and lower-growing, shade-loving perennials throughout summer. Their ternately compound leaves—that is, each leaf is divided multiple times into groups of three—impart a fine, lacy aspect to the leaf as a whole. The quantity and shape of the leaflets vary by species.

MIDWEST EVALUATION

Beginning in 2000, the Chicago Botanic Garden (CBG) established a trial to evaluate and compare 18 different *Actaea* species. As the garden’s manager of plant evaluations, I observed their ornamental qualities, cultural adaptability, disease and pest problems, and winter hardiness.

The bugbanes grew in beds partially shaded by mature maples and oaks. In the sixth year of the trial, the felling of a large red oak plunged much of the trial beds into full sun. Keeping the site moist enough became a challenge, so the plants suffered in the unrelenting sunlight. Many plants performed admirably in the following years despite the less-than-favorable conditions, but this incident affirmed that bugbanes should never be allowed to dry out.

Among the plants that stood out in the trial were *Actaea racemosa*, *A. dahurica*, *A. japonica*, and *A. simplex*, along with its purple-leaved cultivars. (For information on selections suited for other regions of the country, see “Regional Recommendations,” page 29.)

TOP PERFORMERS

Stately black cohosh, (*Actaea racemosa*, USDA Hardiness Zones 3–8, AHS Heat Zones 8–1) is native to northern Quebec, south to Georgia, and west to Missouri and Arkansas. Providing a striking focal point in shade gardens and woodlands, it



Above: A relative of bugbane, doll's eyes (*Actaea pachypoda*), bears ornamental, but poisonous fruit. Opposite: *Actaea racemosa* blooms in midsummer, earlier than other native bugbanes.

the United States, but the purple-leaved selections of branched bugbane (*A. simplex*)—indigenous to China, Japan, Korea, and Russia—are probably the most popular bugbanes in gardens today.

Individual flowers of *Actaea* are not as bold or colorful as many of their buttercup family (Ranunculaceae) relatives, such as

website at www.ahs.org). Black cohosh (*Actaea racemosa*) is an exception; it is the earliest bugbane to bloom in our area, with flowers appearing in July.

The pearl-shaped, often short-stalked flower buds are borne on elongated spikes above the foliage. The fluffy flowers often exude a fragrance that may be

features sparkling candelabras of creamy white flowers on tall, wiry stems in July and August; the flower stalks may be arrow-straight or curved and twisted. Black cohosh was a bit of a shy bloomer for us, taking three years to flower for the first time. To me the fetid odor of the flower is disagreeable, yet others find it pleasant. The green leaves are deeply cut and divided into multiple groups of three leaflets. Black cohosh averaged three feet tall and five feet wide in our trial garden, with flower spikes adding an extra two feet to the height.

Titanic dahurian bugbane (*A. dahurica*, Zones 3–8, 8–1) rises head and shoulders above other bugbanes. Long spires of white blossoms soar skyward on stems to almost seven feet tall in September. The lightly fragrant flowers are bountiful even in an almost fully shaded garden. Its big and bold green leaves form a robust mound up to four feet tall and wide. Moist, rich soil will ensure that it attains its full glory. Despite its large size, no staking was required to keep the flowers standing tall in our trial garden.

Japanese bugbane (*A. japonica*, Zones 4–8, 8–1) sports a simpler leaf than other bugbanes. Its silvery green leaves are composed of three large leaflets, each lobed and maplelike in outline. Among our plants, the new leaves ranged from glossy green to bronze, or green rimmed in red; such variability can be expected from a seed-grown species. Japanese bugbane forms a low foliar mound, typically about a foot tall without flowers and two-and-a-half feet wide. White flowers open from globose pink buds on stems to three feet tall beginning in early to mid-September. Surprisingly, plants we grew in full sun were more robust than plants in partial shade.

The purple-leaved cultivars of branched bugbane (*A. simplex*, Zones 4–8, 8–1) have surpassed all other bugbanes in

popularity. Their lacy, purple leaves provide striking contrast with surrounding greenery. Atropurpurea Group is a catchall for seed-grown selections with purple leaves. The named cultivars of *A. simplex* must be propagated by tissue culture to ensure their traits remain true; unfortunately, inferior seedlings are sometimes passed off under cultivar names.

The plants we originally received as ‘Atropurpurea’, were the greenest of the



Actaea dahurica is an Asian species that can reach seven feet tall when in bloom.

purple-leaved selections in the trial. Leaf color ranged from dark green with purple margins to entirely purple, but their stems were always deep wine-red. White flowers with pink sepals opened from purple buds in mid-September to mid-October. They were by far the tallest and most robust of our purple-leaved selections, reaching five feet tall and almost three feet wide.

‘Hillside Black Beauty’, introduced by the late nurseryman Fred McGourty and his wife Mary Ann of Hillside Gardens in Norfolk, Connecticut, is truly the dark-

est of all. It is intensely purple in full sun and retains most of its purple in full shade. However, it was not as robust as some of the other cultivars in our trial. At its peak it was about four feet tall with flowers and two feet wide, although in most years it was considerably smaller. Gently curved flower spikes bear white flowers with pink sepals from early September into early October.

The differences between the purple-leaved cultivars of *A. simplex* are subtle. At three feet tall with flowers, ‘Brunette’ was the shortest cultivar in this group. It was indistinguishable from ‘Atropurpurea’ (also known as Atropurpurea Group) until the third year when stronger purple coloring developed. ‘Brunette’ is much the same color as ‘Black Negligee’ but darker than ‘James Compton’. Like the others, ‘Brunette’ blooms in September and October and its fragrant, white, scimitar-shaped clusters of flowers appear pink from a distance because of the purple-red stems.

The lacy leaves of ‘Black Negligee’ were a mix of green and purple in its early years but matured to a sultry deep purple. Beginning in September, white flowers were prolifically borne on arching

purple stems. Near the top end of the size range at about four feet tall and nearly three feet wide, it was decidedly more robust than ‘Hillside Black Beauty’ but not as darkly colored. ‘Black Negligee’ is a selection introduced by Terra Nova Nurseries in Canby, Oregon.

‘James Compton’, named in honor of the man responsible for reclassifying *Cimicifuga*, features lighter bronze-purple foliage. Small white flowers in bottlebrush clusters top the three-and-a-half-foot-tall stems.

‘Pink Spike’ is a newer cultivar with chocolaty-purple leaves. Despite the name, the flowers are actually white but

REGIONAL RECOMMENDATIONS

The results of our trials at the Chicago Botanic Garden are most helpful for selecting and growing bugbanes for the Midwest, so I asked experts from other parts of the country to offer some perspective on growing bugbanes in their regions. —R.H.

NORTHEAST

Thomas E. Clark, collections and grounds manager at the Polly Hill Arboretum in Martha's Vineyard, Massachusetts, reports that a wide range of bugbanes perform well in the Northeast. "So long as they have consistent moisture throughout the growing season, the foliage—a primary asset of most—remains full and healthy," says Clark.

Among his favorites is Japanese bugbane (*A. japonica*), which he likes to combine with *Allium thunbergii* and *Tricyrtis 'Sinonome'*. "I value the bold, maplelike leaves, which hold up well into the fall, and the September-to-October bloom time," he says. Clark recommends two native species: *A. racemosa*, "whose midsummer candles are indispensable for illuminating the woodland edge," and the less vigorous, and sometimes hard-to-find, Appalachian bugbane (*A. rubifolia*, syn. *A. cordifolia*), a three-foot-tall, late-summer-blooming species native to scattered woodland locations from the lower Midwest south into Alabama.

Clark also likes *A. simplex* Atropurpurea Group "for its vigor and stalwart nature. The late-season flowers make a great combination emerging amongst the fruit-laden branches of *Viburnum dilatatum*, mingling with the indigo blooms of climbing monkshood (*Aconitum sinomontanum*), and softened by the feathery plumes of *Calamagrostis brachytricha*—simply sumptuous!"

SOUTHEAST

Tony Avent, owner of Plant Delights Nursery in Raleigh, North Carolina, is an outspoken critic of the bugbane taxonomic reclassification. "We don't follow the ridiculous combining of *Actaea* and *Cimicifuga*," he says. Among Avent's recommendations for the Southeast are the native Appalachian bugbane and black cohosh (*A. racemosa*, syn. *C. racemosa*). "Japanese bugbane is another favorite that is fantastic here," he adds.



the southern edge of their range, and our warm nights are believed to be the limiting factor," she says. "The best of the bunch is *A. racemosa*. Planted in well-drained soil amended with organic matter and sited with morning sun, it can become a sizeable clump and even self-seed on occasion."

MOUNTAIN WEST

Ebi Kondo, senior horticulturist at Denver Botanic Gardens, favors *A. matsumurae* 'White Pearl', which "grows beautifully with white flower spikes every year in the shady part of our Rock Alpine Garden." Another favorite of his is *A. racemosa*. "I have seen black cohosh grow happily in shade gardens around Denver," he says, "but I do not recommend it for the eastern plain or higher elevations since the climate is too severe." For these areas, Kondo instead recommends spring-to-early summer-blooming red baneberry (*A. rubra*), "which is a native of montane and subalpine areas of Colorado. It produces white flowers followed by reddish berries in late August and September."

PACIFIC NORTHWEST

Rizaniño "Riz" Reyes, owner of RHR Horticulture & Landwave Gardens in Shoreline, Washington, has observed that the purple-leaved selections of *A. simplex* are by far the most popular bugbanes in the Pacific Northwest. "'Hillside Black Beauty' is the overwhelming favorite with the darkest, longest-lasting foliage color and good vigor," says Reyes. "'Brunette' and 'Black Negligee' are robust but inconsistent in maintaining their dark leaves. 'James Compton' has a shorter habit and holds its color well, making it a worthy candidate for containers for both its foliage and flowers." He notes that all have sweet-scented, late-summer flowers followed by ornamental seedheads that can be used for dried floral arrangements.

Resources

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Digging Dog Nursery, Albion, CA. (707) 937-1130.

www.diggingdognursery.com.

Lazy S's Farm & Nursery, Barboursville, VA. www.lazyssfarm.com.

Romence Gardens & Greenhouse, Grand Rapids, MI. (616) 451-8214. www.romencegardens.com.

look pink due to the deep purple buds and stems. The serrated leaves form a mound up to two-and-a-half feet tall and one-and-a-half feet wide, with flower spikes rising to just over three feet tall.

'Chocoholic' is the new kid on the block and is just starting its trial at the CBG. With one year under its belt, the future looks promising for this introduction from the Netherlands. It boasts deep purple-black leaves, pink flowers that eventually fade to white, and a smaller size than 'Hillside Black Beauty' or 'James Compton'.

'Prichard's Giant' represents the greener side of *A. simplex*. There is no hint of purple here—just green stems and leaves. 'Prichard's Giant' is a robust plant to four feet tall in flower and two-and-a-half feet wide. Deliciously fragrant white flowers crown the lofty stems in September and October.

GROWING REQUIREMENTS

Most *Actaea* species grow successfully in USDA Hardiness Zones 5 to 7 or 8, with many cold hardy to Zone 3. Bugbanes can



Like all cultivars of *Actaea simplex*, the flowers of 'Hillside Black Beauty' are sweetly scented.

be challenging, however, where summer nights are very warm; plants may be stunted and flower sparsely.

Keeping bugbanes healthy and happy requires little beyond correct placement. All prefer moist, but not wet, well-drained soil in light to dappled shade. Morning sun is beneficial to the purple-leaved selections. Sunny locations are acceptable if consistent moisture is provided. Neutral to acidic soils are ideal,

although most of the plants in our trial tolerated our alkaline soils. Few insect pests or diseases bother bugbanes.

Bugbanes are slow-growing and can take three or more years to flower for the first time. The wiry stems are usually sturdy enough to support the flowers, but staking may be needed at peak bloom, particularly after rainstorms. If needed, stake each flower stalk individually to preserve the plant's gracefulness.

BUGBANE TAXONOMY

Until 1998, bugbanes were classified as members of the genus *Cimicifuga*.

But taxonomists like to keep us on our toes, sometimes moving plants from one genus to another or inventing new tongue-twisting botanical names. In 1998, taxonomists reclassified *Cimicifuga* based on DNA analysis and fruit structure, lumping all species into *Actaea*. *Actaea racemosa* is the genetic link between the two groups because its fruit is intermediate between the fleshy berries of *Actaea* and the dry capsules of the former *Cimicifuga*.

Botanical and common names are often helpful in describing plant traits, acknowledging historical or cultural uses, or indicating native habitats. When classified as *Cimicifuga*, the common name of bugbane made sense because in translation, *cimex* means “a bug” and *fugo* means “to drive away,” referring to the use of some species to repel biting insects. *Actaea* is likely derived from the Greek word for “elder tree,” a nod to the resemblance of its leaves to elderberries (*Sambucus* spp.). Fairy candles is a whimsical common name that describes the frothy plumes; whereas, snakeroot, another common name for black cohosh, refers to its use by Native Americans as an antidote to snake bites. In fact, black cohosh has a long history of medicinal use for a variety of ailments.

Although some horticulturists have not embraced the nomenclatural change from *Cimicifuga* to *Actaea*, it seems to be gaining fairly wide acceptance in nursery catalogs and gardening references.

—R.H.



Left: The fall blooms of *Actaea simplex* 'Atropurpurea' complement the red fruit of *Viburnum dilatatum*. Above: The dark foliage of *A. simplex* 'Brunette' provides a lush backdrop for plumes of *Astilbe* 'Visions in Pink' intermingled with *Tricyrtis* 'Sinonome'.

DESIGN TIPS

Bugbane's size, elegant flowers, and lush, lacy leaves all show off well at the woodland edge. In a mixed border—especially at the back—its height adds a dramatic element, particularly when in bloom, and the leaves provide a lush background for lower-growing plants.

Bugbanes pair well with other strongly vertical plants or contrast nicely with rounder, softer shapes. Great garden partners include fall-blooming anemones, Solomon's seal (*Polygonatum* spp.), ferns,

heucheras, hellebores, phloxes, hostas, and cranesbills (*Geranium* spp.). The purple-leaved selections also make striking container plants.

During a visit to Boerner Botanical Gardens in Hales Corners, Wisconsin, I observed a lush planting of black cohosh nestled in the shade of a grove of paper birches, their airy spires of white flowers echoing the crisp white trunks of the trees in an enchanting midsummer spectacle. It was a brilliant sight to be sure—especially since Wisconsin is one of the few states east

of the Mississippi River where black cohosh does not grow naturally.

For me, this sublime display reinforced that bugbanes are surprisingly adaptable. With a wide variety of native and non-native species to choose from, these plants are an excellent way to brighten shade gardens in most regions of the country.

Richard Hawke is manager of plant evaluations at the Chicago Botanic Garden in Glencoe, Illinois.

Certain plants use allelopathy, a form of chemical defense, to keep competitors at bay.

BY KATHRYN LUND JOHNSON

Plant Wars

WE TEND TO perceive our gardens as retreats from the frenetic demands of life. After all, what turmoil could be going on amid the wafting fragrances, buzzing bees, and sensually swaying trees? What turmoil, indeed: Within that lush and deceptively languid landscape is a perpetual struggle for life!

Perhaps azaleas seemed the perfect choice to tuck beneath a majestic walnut tree. You figured they would appreciate the shade, and the blossoms' color would complement the fresh green of the tree's spring foliage. You planted the shrubs carefully, only to watch them mysteriously struggle, then die. What could possibly have gone wrong? Like many other gardeners, you have observed the effects of a biochemical defensive process known as allelopathy. The walnut tree has, in effect, used chemical warfare to prevent competition for precious nutrients and water.

AN EDGE TO SURVIVAL

Despite their passive appearances, plants are constantly adjusting in response to external variations, and each species has developed ways to give it a survival "edge." For some, this is the chemical advantage of allelopathy. Derived from the Greek words *allelo* (mutual) and *pathy* (suffering), this term was coined by German plant physiologist Hans Molisch in 1937. The International Allelopathy Society defines it as "any process involving secondary metabolites produced by plants, microorganisms, viruses, and fungi that influence the growth and development of agricultural and biological systems"—more simply stated, "the biochemical impact one living thing has upon another."

Allelopathy documentation has a rich history. In the first century B.C., Roman scholar and naturalist Pliny the Elder recorded the negative impact of walnut trees on the growth of nearby plants, referring to them as "toxic" to other plants. Theophrastus, who lived from 372 to 285 B.C., noted the inhibitory effects of pig-

weed on alfalfa and wrote that chickpea "exhausts" the soil. Alexander Fleming's serendipitous discovery in 1928 that the fungus *Penicillium* produces an allelopathic chemical that attacks bacteria is considered one of the major medical advances in history.

So what does allelopathy mean to the gardener? In fact, quite a lot! Understanding the process of allelopathy and knowing what plants are responsible for or susceptible to allelopathic damage helps us create

environment, while allelopathy involves the addition of a chemical compound or compounds to the environment. Allelopathic interactions may occur microorganism to microorganism, plant to plant, or between plants and microorganisms, affecting either the plant or the microorganism. The organism producing the chemical is referred to as the "conveyor." The affected organism is the "receiver."

Allelotoxins impair the life processes of receivers. For example, they may inhibit



Above: Juglone-tolerant plants thrive beneath a massive black walnut tree in this Ferndale, Washington, garden. Opposite: While honeysuckle grows wild beneath the tulip poplars in the background, its growth is inhibited among the black walnuts in the foreground.

and maintain healthier gardens and lawns. Furthermore, research indicates that some allelopathic plants may be utilized for weed control, potentially reducing the use of synthetic herbicides (see "Tapping Allelopathy for Weed Control," page 35).

CHEMICAL INTERFERENCE

Allelopathy and competition are forms of interference. Competition is a non-chemical process that involves the removal or reduction of some factor, such as moisture or nutrients, from the envi-

the uptake of water and nutrients, impair photosynthesis and respiration, or prevent germination. The toxins may be present in any part of a plant and can leave the conveyor in any or all of three ways: through volatilization, leaching, and/or exudation.

BLACK WALNUT: A POTENT CONVEYOR

All three methods of chemical release occur in the black walnut (*Juglans nigra*), an allelopathic conveyor. All parts of the tree produce the non-toxic chemical hydrojuglone which, when exposed to

and Turf Defense



oxygen, is converted to an allelopathic toxin called juglone. Volatilization occurs when this compound escapes from tree parts via stomata (microscopic openings in leaves) and lenticels (air vents in the bark) and ultimately permeate the soil. Leaching is a passive process whereby juglone is liberated from decomposing leaves, twigs, roots, bark, and other plant material. Rainwater—or a garden sprinkler—expedites the leaching process. Exudation occurs when the tree releases juglone through its roots. Since the tree's roots

may extend far beyond its drip line, plants that are sensitive to juglone can be affected for more than a tree-height's distance from the tree. Plants attempting to grow beneath the tree's canopy receive a triple-whammy of toxins from leaching, exudation, and volatilization.

Juglone affects many plants, including pine, birch, and apple trees; rhododendrons and azaleas; and members of the nightshade family, including tomatoes, eggplants, potatoes, and green peppers. All respond to varying degrees, displaying

symptoms such as leaf wilting, puckering, drooping or twisting, and yellowing. Azaleas are particularly susceptible and may live for only one or two months post contact. (For more information on this, see the web special “Black Walnut Toxicity” linked to this article on the AHS website, www.ahs.org.)

Juglone is also toxic to some animals, notably horses, which are at high risk for laminitis, or “founder,” when black walnut or butternut shavings are included in their bedding material. Horses can also be affected when exposed to the pollen of these trees or if they consume the nuts.

MORE CHEMICAL AGGRESSORS

Other allelopathic trees include sugar maples, oaks, junipers, cottonwoods, black cherry, hackberry, and sassafras. But trees are not the only allelopathic plants. Rhododendrons, elderberries, sumacs, laurels, Kentucky bluegrass, bracken ferns, and the exotic invasives garlic mustard (*Alliaria petiolata*) and spotted knapweed (*Centaurea maculosa*) also employ chemicals to impair the growth of plants in their vicinities (for a list of more allelopathic plants see the chart on page 34).

Allelopathy occurs in some crop plants, too. For example, the residue of broccoli has a persistent toxic effect on subsequent cabbage family crops planted in the same plot. And have you ever noticed that only sunflowers seem to thrive under your bird feeder? Allelopathy strikes again! The residue from sunflower seeds contains chemicals that affect many plants. There is no need to call a halt to feeding your feathered friends; instead, rake up the hulls regularly to discourage the toxins from building up in the soil. The hulls may be used in compost, since the toxin concentrations are broken down by heat and microorganisms during the composting process. Alternatively, you can avoid the toxins completely by using hull-less sunflower seeds or blends that do not contain whole seeds.

OTHER COMMON ALLELOPATHIC CONVEYORS AND RECEIVERS

Allelopathic Conveyors	Receivers
Asters (<i>Sympyotrichum</i> spp.) and goldenrods (<i>Solidago</i> spp.)	Tulip poplar (<i>Liriodendron tulipifera</i>), red pine (<i>Pinus resinosa</i>), sugar maple (<i>Acer saccharum</i>), black cherry (<i>Prunus serotina</i>)
Black cherry (<i>Prunus serotina</i>)	Red pine (<i>Pinus resinosa</i>), red maple (<i>Acer rubrum</i>)
Bracken fern (<i>Pteridium aquilinum</i>), elderberry (<i>Sambucus racemosa</i>), fragrant red sumac (<i>Rhus aromatica</i>), and rhododendrons (<i>Rhododendron</i> spp.)	Douglas fir (<i>Pseudotsuga menziesii</i>)
Junipers (<i>Juniperus</i> spp.)	Grasses
Kentucky bluegrass (<i>Poa pratensis</i>)	Azaleas (<i>Rhododendron</i> spp.), forsythias, flowering dogwood (<i>Cornus florida</i>)
Manzanita (<i>Arctostaphylos</i> spp.), hackberries (<i>Celtis</i> spp.), and oaks (<i>Quercus</i> spp.)	Grasses and herbs
Perennial rye (<i>Lolium perenne</i>)	Apples (<i>Malus</i> spp.), forsythias, flowering dogwood (<i>Cornus florida</i>)
Red fescue (<i>Festuca rubra</i>)	Flowering dogwood (<i>Cornus florida</i>), yews (<i>Taxus</i> spp.)
Sassafras (<i>Sassafras albidum</i>)	Boxelder (<i>Acer negundo</i>), silver maple (<i>Acer saccharinum</i>), American elm (<i>Ulmus americana</i>)
Sugar maple (<i>Acer saccharum</i>)	White spruce (<i>Picea glauca</i>), yellow birch (<i>Betula alleghaniensis</i>)

MITIGATING FACTORS

The concentration and movement of toxins in the soil is influenced by drainage, soil composition, temperature, aeration, and the presence of microbes. Heavy clay soils trap and hold toxins for long periods, while lighter, aerated, and well-drained soils allow the toxins to oxidize and percolate deeper into the soil where they are less damaging. Lighter soils, too, promote healthy microbial activity.

"Many organisms, such as fungi and bacteria, respond quickly to an allelopathic attack by breaking up toxins and using them for energy or transforming them into non-damaging forms," says Kim Coder, professor of community forestry and tree health at the University of Georgia, Athens. "Some microorganisms, however, can facilitate the release of allelochemicals into the soil by utilizing non-toxic components of the chemicals, then leaving the toxin behind."

Another important factor influencing a receiver's reaction to an allelotoxin is environmental stress. "Stressed plants are particularly susceptible to the effects of allelotoxins," says Coder. "As stress of the receiver intensifies, so does its vulnerability."

MINIMIZING DAMAGE IN THE GARDEN

With all this chemical warfare going on



Some invasive weeds such as garlic mustard (*Alliaria petiolata*), left, and spotted knapweed (*Centaurea maculosa*), above, use allelopathy to out-compete surrounding vegetation.

in our gardens, what can we do to minimize the damage to our plants? One obvious solution is to avoid growing vulnerable plants near their allelopathic conveyors. Your local Cooperative Extension office can often provide you with information about allelopathic plants specific to your geographical area, and online resources are abundant.

Companion planting is a viable and practical option. This involves combining allelopathic plants with those tolerant of their chemicals. Plants that tolerate juglone, for example, include lilacs (*Syringa*

spp.), eastern redbuds (*Cercis canadensis*), hostas, hibiscuses, coral bells (*Heuchera* spp.), bee balms (*Monarda* spp.), asters, and hollyhocks (*Alcea rosea*). And susceptible plants needn't be entirely excluded from a garden containing an allelopathic conveyor. Vulnerable plants can often be grown in containers without damage.

A number of turf grasses are vulnerable to the effects of allelopathic trees—and vice versa. Additionally, competition for moisture and nutrients can create stress on both trees and turf, making them more susceptible to allelopathic injury. So when



Eastern redbud is one of several plants that tolerate toxins produced by the black walnut.

planning your landscape, allow adequate space between trees and lawn, establishing the lawn well beyond the trees' drip lines. In an existing landscape, substitute tolerant plants for vulnerable turf beneath trees, or replace the turf with a porous mulch such as bark chips.

Since healthy, robust plants are less vulnerable to allelotoxin damage than those that are weak, keep your plants stress-free. Make sure their moisture, nutrient, and other cultural needs are met. And adding organic matter or sand to improve drainage helps hasten the percolation of allelopathic chemicals deeper into the soil where they can do less harm. Proper drainage also encourages oxygen-loving

microbial activity, which promotes the destruction of many toxins.

Because allelochemicals persist in the residues of the plants that produce them, thoroughly compost the residues in an active pile—one that is turned regularly and kept moist. This will neutralize the toxins. If you're not sure whether the composting is complete, test it by planting a seedling of a receiver plant in the pile to see if it thrives. And use allelopathic plants as mulch only if your goal is to suppress a receiver.

COMPROMISES WITH NATURE

An awareness of allelopathic relationships among plants may help you avoid or diagnose perplexing problems in your landscape. But if you suspect that a tree in your yard is an allelopathic conveyor and a likely culprit for nearby plant health problems, resist the temptation to cut it down. Even if you were to remove it, its allelochemicals would remain in the soil for some time to come. Instead, keep in mind the benefits of a tree: shade, oxygen, reduction of carbon dioxide, and food and shelter for birds and other wildlife, and look for tolerant plants to replace those that were damaged. ☀

Resources

Allelopathy: How Plants Suppress

Other Plants by James J. Ferguson and Bala Rathinasabapathi.

<http://edis.ifas.ufl.edu/hs186>.

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Reaching for the Sun: How Plants Work by John King. Cambridge University Press, United Kingdom, 1997.

TAPPING ALLELOPATHY FOR WEED CONTROL

Allelopathic plants have a positive side too. Some may provide alternatives to synthetic herbicides. Corn gluten meal, a natural byproduct of the corn wet-milling process, contains allelopathic chemicals that inhibit seed germination. It is used as a pre-emergent herbicide, but because of its significant nitrogen content, doubles as a fertilizer. Recent studies have explored the use of allelopathic turfgrasses as weed suppressants along highways and roadsides, and incorporating allelopathic plants to inhibit the growth of trees near power lines, thus reducing the need for pruning or applying synthetic herbicides, both expensive processes.

Field studies have shown the advantages of including allelotoxins in integrated weed management programs. Eric Westra, a soil and crop sciences graduate student at Colorado State University in Fort Collins, explains, "When allelopathic plants, such as rye, mustard, hairy vetch, and red clover, are used as cover crops, toxins are released from the decaying plant material and diffuse into the soil. The use of allelopathic species as natural herbicides in some cropping systems could ultimately reduce the dependency on synthetic herbicides."

However, there are challenges that hinder widespread use of allelopathy in agriculture. "Unlike synthetic herbicides, allelopathic plants may be inconsistent in their production and release of chemicals, leading to unpredictable results," says Westra. "In addition, the allelopathic crop must be grown, something that large-scale farmers might not want to take on."

What is the future of allelopathic weed control? "While allelopathy shows promise in greenhouse and field trials, incorporating it into crop farming to replace synthetic herbicides is not cost effective or practical," Westra acknowledges. The approach could be realistic, however, for small-scale growers, such as organic or specialty farmers." —K.L.J.

warming up to Hardy Ice Plants

With brilliant flowers and a long season of bloom, ground-covering succulents in the genus *Delosperma* are starting to find a home in more American gardens.

BY PANAYOTI KELAIDIS

LIKE MOST American gardeners at the time, I had never grown a hardy ice plant (*Delosperma* spp.) when I arrived at Denver Botanic Gardens (DBG) in 1980 as the curator of the new Rock Alpine Garden. Among the thousands of plants I used to fill this one-acre space were three small pots labeled “Mesembryanthemum species Basutoland.” The pots contained bright green tufts of a succulent that had an unusual, almost plastic texture. By summer’s end, these plants had grown together to form a mat about a foot-and-a-half across, tumbling picturesquely down a slope.

The summer color was a bright emerald green, but in winter they turned a deep, glowing purple-red. At first I thought they had died spectacularly, but the chubby leaves were still turgid. By mid-April of the following year, the mat once again turned bright green. Soon the plants were studded with hundreds of buds that opened to reveal iridescent yellow flowers. I was smitten, so I did a little more research and eventually confirmed these plants were actually *Delosperma nubigenum*, a hardy ice plant. Its species name translates to “of the clouds,” which I’m sure alludes to the plant’s lofty native home in the mountains of South Africa.

ATTRACTIVE AND ADAPTABLE ALPINES

The genus *Delosperma* is part of the ice plant family (Mesembryanthemaceae is the older name for this family, which is now called Aizoaceae, but you may still

see ice plants referred to as “mesembs”). This large and intriguing family contains many other genera that have drawn the attention of mainstream American

come indispensable for those of us who live in sunny, warm areas of the country.

Yet, hardy ice plants also hold great promise for gardens in temperate regions.

One trait that distinguishes this genus from others in the family is its cold hardiness—many species will grow in USDA Zones 4 and 5. Another important factor is that many hardy ice plants hail from the Drakensbergs, a mountain range in temperate southeastern South Africa, and thus tolerate—and even thrive in—climates with summer rain and humidity. Coming as most of them do from the summer rainfall parts of South Africa, most hardy ice plants bloom throughout much of the growing season, whereas most of the other genera in the family are native to the drier Western Cape region, where they bloom for a few weeks in spring.

In my travels, I have seen *D. basuticum* ‘Gold Nugget’ thriving in Calgary, Canada, as well as in gardens from the Pacific Northwest to New England. And I have come across *D. Mesa Verde®* thriving in garden centers in Portland, Oregon, as well as in gardens in Michigan, and as part of a green roof at the Atlanta Botanical Garden. Given this wide adaptability, I suspect there is a hardy ice plant that will grow in just about every state and province of North America!

CULTURE AND COMPANIONS

Hardy ice plants superficially resemble sedums, but generally form even thicker



Delosperma nubigenum cascades over large boulders in this Long Island, New York, rock garden designed by Conni Cross.

horticulture over the last few decades.

There are about 150 species of hardy ice plants, distributed in the wild from Saudi Arabia to the very tip of South Africa. Although only a fraction of the species are in cultivation, selections of hardy ice plants have become top-selling groundcovers in the Rocky Mountain region and have be-



Above: Quick-spreading, magenta-flowered *Delosperma* 'John Proffitt' makes an excellent edging plant, adding a layer of color beneath the hot-pink blooms of desert beardtongue (*Penstemon pseudospectabilis*), yellow sulphur buckwheat (*Eriogonum umbellatum*), and other drought-tolerant plants in this mixed border. Left: *Delosperma* 'Carlile Pink' is prized for the pearly pink hue of its flowers.

mats that offer greater weed suppression. In nature, hardy ice plants almost always grow among rocks, so they can offer the same sort of spectacle in the rock garden as spring workhorses such as pinks (*Dianthus* spp.), phlox, alyssum, or *Aubrieta* spp., but with the advantage of a much longer season of bloom. They are often used as edgings in front of borders, in rock gardens, and in rock walls. And a number are good options for living roofs or walls.

You may assume, because they are succulent, that hardy ice plants are drought tolerant; this is true to a point. *Delosperma cooperi* can endure surprisingly dry conditions, but remember that these plants are native to high mountains rather than desert. The Drakensberg mountains often



DIFFERENT NAMES IN DIFFERENT PLACES

Mesembryanthemum crystallinum was one of the first of the ice plant family to be widely grown in gardens in the 19th century. The crystalline exudations on its leaves resemble ice crystals, hence its common name. This phenomenon occurs on other members of the family (and in a less obvious way even on some *Delosperma* such as *D. cooperi*). The name was extended to any plant in the family over time.



Mesembryanthemum crystallinum showing icelike exudations on its leaves.

Ice plants are only referred to this way in North America and Britain. This common name is not used in South Africa, where they are simply called "mesembs" or often "vygies" (Afrikaans for "small fig" because one of the common species there produces a very tasty fruit that resembles a little fig). If you call them "ice plants" in the nation where most of them grow, people will not understand what you are referring to! —P.K.

receive 30 or more inches of rain a year, mostly in summer. Winters in the region, however, are dry. Consequently, a well-drained site is vital, and during dry spells, these plants appreciate deep watering.

In Colorado, ice plants can grow in almost any soil, provided the site is never waterlogged, but in wetter climates a slope and a topdressing of gravel is beneficial. Most ice plants require full sun, but in regions with extended periods of triple-digit temperatures or in Zone 6 or warmer, give them a little shade.

I have found that planting in early spring is ideal for ice plants, giving them



In full bloom, the daisylike flowers of *Delosperma basuticum* 'White Nugget' almost obscure the plant's low-growing foliage. It is one of the best white-flowered hardy ice plants in cultivation.



Plant Select® has introduced several hardy ice plants to the garden world, such as Mesa Verde®, top, and *Delosperma floribundum*, above. Both bloom all summer long.

time to establish well before the summer heat arrives. However, you can plant them throughout most of the growing season and expect good results if fresh transplants are kept well-watered.

Under ideal conditions, some of the larger sorts like *D. cooperi* can spread almost a foot or more a year. Half that is more typical, and the tiny tufted ice plants and smaller species are small and slow-growing enough to make well-behaved additions to a rock garden.

If they are properly sited, ice plants can last for many years. In fact, I have had a few clumps persist for more than two decades in the same spot! If the soil is overly fertile, they tend to spread quickly and often do not last as long. These plants can easily be rooted from cuttings, and they do fairly well if you want to dig up small pieces to plant elsewhere—provided they are given a bit of shade and kept from drying out while they reestablish. As for pests and diseases, they are fairly problem-free.

Collectors may be tempted to set aside beds of ice plants by themselves, and certainly one selection massed together can make a spectacle of color, but I prefer to tuck them in here and there among taller plants. For example, spring bulbs can provide color weeks before the ice plants bloom. Other drought tolerant plants, including penstemons, buckwheats (*Eriogonum* spp.), hummingbird mints (*Agastache* spp.), and salvias provide a fabulous foil for the bright colors, and a contrast in foliage texture, not to mention blooming later in the season when the ice plants are not as floriferous.

BEST BETS FOR GARDENS

Unfortunately, the nomenclature of this genus is still rather muddled, and many plants are being sold under incorrect names. Until a researcher takes on the challenge of bringing some order to this genus, we'll do the best we can with what we have.

As noted earlier, the first hardy ice plant to gain wide currency in the United States was *Delosperma nubigenum*. ‘Lesotho’, which covers itself with yellow daisylike flowers in spring, is likely a sterile hybrid, as it has never been known to produce seed. It has been successfully grown into USDA Zone 4, especially in drier areas of the country. It loves summer moisture and can grow up to 25 inches across.

Delosperma cooperi has become a garden mainstay all over America. It produces 30-inch, dark blue-green mats with an almost constant succession of bright purple to magenta two-inch flowers all summer. It is reliably hardy only to Zone 6 and warmer, but it grows well in Zone 5 in the drier parts of western states. Higher altitude forms have recently been introduced that promise much greater cold tolerance, and its first hybrids are emerging. Among these is *Delosperma 'Kelaidis'* (often sold under the trademarked name, Mesa Verde), a striking hybrid that popped up at Denver Botanic Gardens in some test beds

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

Siskiyou Rare Plant Nursery, Talent, OR. (541) 535-7103. www.siskiyou rareplantnursery.com.

Resources

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Sunset's Western Garden Book. Sunset Publishing, Menlo Park, California, 2007.

I managed at the time. It appears to be a cross between a yellow-flowered species and *D. cooperi*. Its iridescent flowers are salmon-pink with hints of orange.

Delosperma basuticum 'Gold Nugget' is a clump-former that grows up to a foot wide and produces two-inch yellow flowers with a white eye in very early spring. Hardy to USDA Zone 4, it has overwintered as far north as Canada, and at 8,000 feet in the Colorado Rockies. There is also the white-flowered selection, 'White Nugget'. You may see these both listed as varieties of *D. congestum* as well.

Another stunning *Delosperma* was identified only after I had propagated and



distributed it as *Sphaeralanthus* sp. My mistake is immortalized in the correct name of this miniature gem: *D. sphaeralanthoides*. It forms dense, six- to eight-inch clumps of tubular, blue, tufted foliage that is completely obscured in early spring with shining hot-pink flowers. It is hardy to Zone 5.

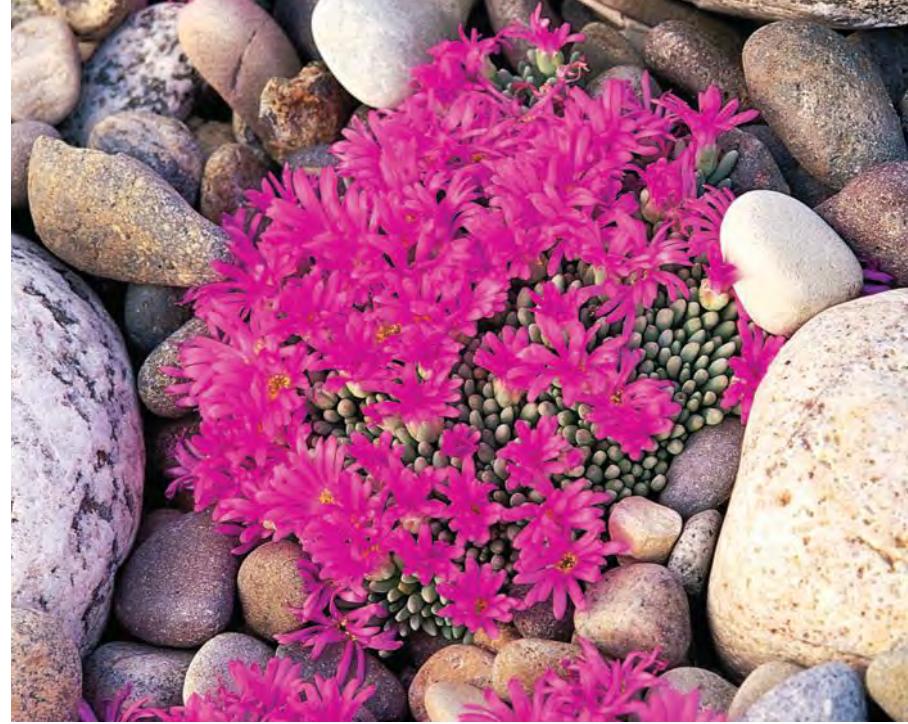
Delosperma 'Carlile Pink' produces the purest pink flowers of any hardy ice plant. Its habit is very compact, making dense mats up to a foot across. It blooms heavily in June with repeat bloom till frost. Bill Adams, owner of Sunscapes Rare Plant Nursery in Pueblo, Colorado, where this plant appeared 10 years ago, has found this to be the hardiest ice plant he has grown. He notes that it has survived in pots outdoors where other species perished.

A few other spectacular ice plants are gaining wide currency through Plant Select®—a cooperative program between Denver Botanic Gardens and Colorado State University designed to research, test, and market new plants suitable for the

Rocky Mountain region. The first plant introduced by this program was *D. floribundum*, an almost shrubby, pink-and-white-flowered species I collected in the plains just west of the Drakensbergs. Trademarked Starburst®, it has petals with an almost metallic sheen and blooms all summer. Although it is listed as hardy to Zone 5, I have found that it is not reliably hardy in this zone.

Delosperma 'John Proffitt' (Table Mountain®) is a selection of a species from the eastern face of the southern Drakensbergs with tremendous vigor—spreading two feet in three years—and vibrant magenta flowers. It has an especially attractive winter habit and color and seems particularly well adapted to gardens in the eastern states to Zone 4.

'John Proffitt' has produced a sport with remarkable pale lilac-colored flowers that has subsequently been introduced by Plant Select as 'Lavender Ice'. This is the closest hue to blue among hardy ice



plants, strikingly different than the other species and cultivars currently available.

Delosperma dyeri, which can spread up to 18 inches and is hardy to Zone 5, has possibly the most true red flowers of any hardy ice plant. A selection of this species has been introduced as Red Mountain™, and although it is not quite as tough or fast-spreading as the common yellow- or purple-flowered ice plants, it does extend the color palette for the genus.

In 2012, Plant Select will introduce a new ice plant that has startling orange-and-purple bicolored flowers. This selection from South Africa is known as 'PoorF', trademarked as Fire Spinner. It appears to be one of the most vigorous of all, with mats spreading over 24 inches in just two years. Flowering is concentrated in late spring and early summer and is truly show-stopping.

A TASTE OF SOUTH AFRICA

I have been growing hardy ice plants for

Top: *Delosperma sphalanthoides* is a compact species that resembles a sea anemone when in bloom. **Above:** Next to red corn poppy (*Papaver rhoeas*), yellow-flowered *D. nubigenum* 'Lesotho' drapes over a wall while *D. cooperi* on the ground below it sports purplish-pink blooms. **Opposite:** Red Mountain™ is one of the most red-flowered cultivars of hardy ice plant available.

more than three decades now, yet whenever I see the first flowers open each spring, I am astonished once again by the intensity of their color and the shimmering iridescence of their petals. As the flowers close in the evening, I am equally enthralled by the colorful staining on the undersides of their petals—these are plants that seem to pulse and breathe and dream.

Whether they are tucked in the front of a border, spilling over rocks in a rock

garden, or forming a small-scale ground-cover on a hill, hardy ice plants seem to bring a bit of the South African veldt into the garden. If you have never grown ice plants, I hope you will give them a try. Perhaps you will come to appreciate them as much as I do.

Panayoti Kelaidis is senior curator and director of outreach at the Denver Botanic Gardens in Colorado. He is currently working on a book about ice plants.

Dealing with Drought

by Scott Aker



GAZING INTO the crystal ball to see what the future holds for gardeners, one thing is for sure: All of us, no matter where we live, need to begin adapting our gardening practices to conserve that most precious of resources—water. The environmental benefits of conservation are not only in preserving the diminishing reserves in streams, lakes, and groundwater, but in reducing the energy and other resources used to pump and treat water.

Having gardened in both arid and temperate regions of the United States, I understand the limitations drought and water conservation place on a garden. But by being strategic with planting schemes and watering systems, it's still possible to have an abundant and exuberant garden without watering around the clock, paying exorbitant water bills, or violating community water restrictions.

RATIONING AND PRIORITIZING

Let's first consider the edible garden. Most vegetables and fruits need a consistent supply of water throughout the growing season

to ensure good yields. A thick layer of organic mulch will protect the soil from excess water loss. Water in the coolest part of the day—early morning—to reduce evaporation. If the drought does in some of your plants, plan to grow some quick-maturing or cool season crops in their place when the rain returns. If you can't bear the thought of going without water-thirsty plants such as tomatoes or beans, consider limiting your plantings to your favorite, must-have crops. Or invest in a drip irrigation system to efficiently deliver water where needed.

When it comes to perennials, some cope beautifully with drought, while others require a consistent supply of moisture. When planting your garden, it's a good idea to group those that need more water together and in areas that tend to dry out last. In prolonged droughts, note those plants that maintain themselves through dry times and recover quickly afterwards. Divide those and use them to fill in gaps left by plants killed by drought.

Trees and shrubs are more of an investment in both time and money than annuals and perennials, so it is a good

idea to budget some water for them, even though these woody plants may not exhibit the most drastic outward signs of drought stress. And of course, younger or newly planted woody plants will have a greater need than more established ones.

Finally, consider using containers for annuals, vines, perennials, and even vegetables. The advantage here is that any water you apply to the soil in the container will stay in that soil until it evaporates or is used by the plants. In the garden, water applied to the soil around the same plants will be drawn away by surrounding parched soil, so a much greater volume of water is needed. There are a number of ways to improve the efficiency of container plantings, including using self-watering containers, adding water-retaining gels to the soil mix, and installing drip irrigation systems.

EVERY DROP COUNTS

According to the Environmental Protection Agency, typical suburban households use at least 30 percent of their water outdoors for irrigation, and as much as half of that is lost to evaporation or runoff. To increase the efficiency of your outdoor water usage, the important thing to remember is that your garden will benefit most from *infrequent and thorough watering*—something on the order of several inches of water over a period of several hours or even a few days, depending on your soil type. Frequent, shallow watering encourages the development of shallow roots that don't cope as well with temperature extremes. Plus, if you water thoroughly, you may not have to water again for two or three weeks.

With heavy or compacted soil, water may pool or run off before it can percolate into the soil. To avoid this problem, use a timer to cycle your watering system on and off every half hour until the water reaches at least eight inches into the soil. An easy way to check the depth of water penetra-

tion is to stab a screwdriver into the ground. It will slide easily through moist soil but will encounter resistance when the tip reaches dry soil.

If you have an automated watering system, be sure to set it to come on during the overnight hours, when less water will be lost to evaporation. The problem with most automated systems is that they are programmed to water the entire yard daily for a short period of time. If you are investing in a new irrigation system, select one that will allow you to set up different zones. That way, you can conserve water by reducing the frequency or even cutting off individual zones if you need to. Also, set up your system to water a given zone for a longer period of time, with a week or more before the zone is watered again.

Use rain barrels and cisterns to harvest rainwater that you can use later during

dry spells. Be sure to place your barrels as high as possible so that gravity can deliver the water to thirsty plants at a lower elevation in your garden. Soaker hoses offer an easy way to mete out moisture to plants only where it is needed, at their root zones. In some regions of the country, "graywater"—waste water from laundry, dishwashing, and bathing—can be recycled into the garden.

So embrace drought as a creative challenge. You can keep the most important parts of your garden going by setting your priorities and using water carefully. And when the rain returns, you will appreciate it all the more.

Scott Aker is a Washington, D.C.-based horticulturist. For 10 years, he wrote the "Digging In" gardening column for The Washington Post.

Gardening Q&A with Scott Aker

DWINDLING DAFFODILS

This year, only two out of about 18 of my daffodil bulbs bloomed. They are in their third year, and though they grow under trees, they get sun until the trees leaf out.

While they tolerate light shade, daffodils bloom best in full sun. It's very important to maintain the foliage as long as possible. Some daffodils don't go dormant until the middle of July, and the slow yellowing of the leaves may drive tidy-minded gardeners to braid the foliage or remove it entirely. If bulbs don't have adequate time to manufacture carbohydrates, flower buds will not set. Apply some bulb fertilizer or compost around the bulbs in spring and early fall. Different tree species cast different amounts of shade. Daffodils will generally prosper under trees that create dappled shade, such as white oaks or tulip poplars, but will gradually die out in the dense shade of trees like beeches or maples. Try moving the bulbs to a sunnier location after the foliage goes dormant.

A SPOTTY MYSTERY

*I live in Upstate New York and have a small jacaranda tree (*Jacaranda mimosifolia*) that grows outdoors in summer and grows in my greenhouse in winter. In the spring, when it really gets growing, the main trunk starts to get dots of clear, white, or crystalline material on the green growth; eventually the stems growing from the main trunk are coated with a crystalline material. Last year, the bottom leaves where this happened dropped off. If left alone, this substance eventually dries out and turns brown. Do you know what might be causing this?*

I don't think the symptoms you describe can be attributed to any pest or disease organism. It's likely that the change in humidity, sunlight, and soil moisture encountered in the move from indoors to outdoors may be causing cells in the stems to burst. This happens when the moisture taken up by the roots far exceeds that lost by the foliage. Sap may exude from the burst cells and carbohydrates in the sap may crystallize to form the deposits that you see. Jacarandas do not appreciate excess moisture in general, so avoid overwatering the tree, particularly before it starts growing rapidly in spring. —S.A.

E-mail your gardening questions to Scott Aker at saker@ahs.org.

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7 SEEDS	To Help GERMINATION Percentage and SPEED EARLIER, BETTER YIELDS, including Vegetables
8 LAWNS	To Make QUICKER, deeper, TOUGHER TURF FROM SEED, SOD, Stolons, Sprigs, HYBRID-seeding
9 XMAS TREES	17 HYDROSEEDING 22 FLOWERING PLANT COMPETITIONS
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Flavorful Fennel

by Karan Davis Cutler

IN SPORTS LINGO, fennel is a triple threat: an herb, an ornamental, a vegetable. Maybe a quadruple threat, if your interests run to things medicinal. Once touted as able to restore eyesight, stop hiccups, and ward off witches, fennel is no longer a big-league herbal remedy.

In the garden, however, it still deserves a prominent place in the lineup. Or, more accurately, *they* deserve, for there are three fennels. Most familiar to home gardeners is common, or sweet, fennel (*Foeniculum vulgare*), a culinary herb grown for its blue-green leaves, stems, flowers, seeds, and pollen. Second are ornamental cultivars of *F. vulgare*, called copper fennels, which have bronze-hued foliage. Third is Florence fennel, or finocchio (*F. vulgare* var. *azoricum*), which is cultivated as a vegetable for its bulb. All have an aniselike scent and flavor.

A native of Asia Minor and southern Europe, fennel was an early immigrant to North America, one John Josselyn included in his list of “Garden Herbs...as do thrive” in his *New-Englands Rarities Discovered* (1672). Its feathery leaves look like dill’s, and it grows much like celery does. All fennels are part of the carrot family (Apiaceae). Their tiny yellow flowers are held in six-inch terminal, inverted umbrellalike clusters and attract a host of beneficial insects.

GROWING GUIDELINES

How you grow fennel depends on where you are and which type you grow. All varieties prefer full sun. They are broad-minded about pH, from slightly acidic to slightly alkaline, but adamant about needing well-drained soil.

Common and ornamental fennels are happy with average soil and need extra water only during extended droughts. They grow four to six feet tall and may need support in a windy site. Plants can spread to three feet.



Top: Common fennel has many culinary uses. Above: ‘Rubrum’ is an ornamental selection.

Both are short-lived perennials, but they are commonly grown as annuals in cold regions. All parts of fennel can be used to flavor foods. The delicate leaves, upright form, and height make either of these fennels a fine choice for herbaceous borders.

In USDA Zone 6 and warmer, fennels are “weedy reseeders,” which means that their self-sown offspring are unpredictable. Some will be identical to their parent but many will be less flavorful, and bronze types may revert to green.

Because plants are pulled at harvest, gardeners treat Florence fennel as an annual or, in mild climates, as a biennial. Plants need fertile, organically rich soil, even moisture, and cool weather to form good-size bulbs. And they benefit from a mid-season dose of fish emulsion or compost tea. Plants reach two to three feet and can be set 10 to 12 inches apart.

Drought, root disturbance, and temperatures over 75 degrees Fahrenheit cause premature flowering, or bolting, and arrest bulb growth. You can harvest leaves and stems while the bulb is form-

Sources

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

www.johnnyseeds.com.

Richters Herbs, Goodwood Ontario, Canada. (800) 668-4372. www.richters.com.

The Well-Sweep Herb Farm, Port Murray, NJ. (908) 852-5390.

www.wellsweep.com.

Resources

American Horticultural Society Homegrown Harvest: A Season-by-Season Guide to a Sustainable Kitchen Garden, Rita Pelczar, editor in chief. Mitchell Beazley/Octopus, New York, New York, 2010.

Burpee—The Complete Vegetable & Herb Gardener: A Guide to Growing Your Garden Organically by Karan Davis Cutler. Wiley, New York, New York, 1997.

ing, but removing too many will check bulb development. If flower stalks form, remove them.

GETTING STARTED

Start plants indoors a month before your last-frost date in individual pots and transplant while they are small to avoid disturbing their taproots. Or sow common or ornamental fennels outdoors after the last-frost date. Gardeners with mild winters can sow into late summer. Sow seeds a quarter-inch deep and cover. They will germinate in seven to 10 days in 65-degree-Fahrenheit soil. Plants flower about 90 days from sowing. Mature plant stems become woody, so it's helpful to make successive plantings.

Timing is more complicated for Florence fennel, which bolts in hot weather. Where summers are cool, sow in early spring for summer harvest and in mid-summer for a fall harvest. Where summers are hot, start fennel in midsummer for a fall harvest; in frost-free regions, sow in late summer or early fall for a spring harvest. The time from sowing seeds outdoors to harvest is 90 to 120 days, 70 to 95 days from transplanting.

RECOMMENDED VARIETIES

Common fennel Despite informal names like "Italian" or "Roman," you're buying seeds of *Foeniculum vulgare*. 'Grosfruchtiger', an open-pollinated (OP) selection, is the only variety widely sold and is similar to the species.

Ornamental fennel These have slightly less flavor and scent than common fennel. Selections include 'Bronze' and 'Rubrum',

which are red-bronze, and the purple-bronze 'Purpureascens' and 'Smokey'.

Florence fennel The biggest difference between cultivars is not flavor but the shape of the bulb (elongated or round) and pedigree (OP or hybrid). OP 'Zefa Fino' has elongated bulbs and is the standard by which other finocchios are judged. Other



Harvest Florence fennel bulbs when they are about three inches across.

elongated choices include hybrids 'Solaris', 'Victorio', and 'Trieste'. Round-bulb choices include OPs 'Perfection' and 'Romy' and hybrids 'Orion' and 'Rondo'.

PESTS AND DISEASES

Diseases and pests rarely trouble fennel, but in some places it can be a pest itself.

Thanks to its horde of pollinators and to animals that spread its seeds, fennel naturalizes easily—too easily in parts of Washington, Oregon, and California, where it has "noxious weed" status. Gardeners in other mild-weather states should check with local authorities to see if fennel is problematic. If so, remove flower heads on common and ornamental fennel plants before they set seeds. Florence fennel does not naturalize.

Despite claims to the contrary, fennel does not cross-pollinate with dill or other members of the carrot family. From commercial growers Francesco DeBaggio of Virginia and Rose Marie Nichols McGee of Oregon to Delaware State University research professor Art Tucker, herb experts all agree that it doesn't happen. Any change in flavor or appearance over time is due to fennels crossing with each other, not with another genus.

ENJOYING THE HARVEST

Fennel is now a trendy ingredient in upscale restaurants, which would have pleased Thomas Jefferson, who wrote that he preferred Florence fennel "to every other vegetable, or to any fruit." Chefs mine all parts of the plant—from the seeds, which are technically fruit—to the bulbs, which are actually the plant's fleshy leaf base.

Leaves and stems from common and ornamental fennels can be harvested throughout the garden season; refrigerate in plastic bags for three to five days. To harvest the pungent seeds, which can be used to flavor meat and baked goods, cut entire flower heads as soon as the seeds begin to turn brown and store in a paper bag. Once ripe, the seeds will shake loose. Store in an airtight container in a cool, dark place for up to six months.

Florence fennel—which is often sold as "anise" in produce departments—can be used raw in salads, or baked, boiled, braised, caramelized, fried, grilled, marinated, roasted, sautéed, and simmered. Harvest bulbs when they are about three inches across, before the plant sends up a flower stalk. Either pull the plant or cut just below the bulb. Remove tops and store in plastic bags in the refrigerator for up to five days.

Vermont resident Karan Davis Cutler blogs for The Christian Science Monitor.

Horticultural News and Research Important to American Gardeners

INTERNATIONALLY ACCLAIMED FLOWER VARIETIES

Fleuroselect, an international organization that tests and promotes new ornamental plants, awards its Gold Medal to the best of the best each year. For 2011, two stand-outs joined the ranks: *Zinnia marylandica* Double Zahara™ Fire is the first disease-resistant zinnia cultivar with truly double, reddish-orange flowers; and *Lathyrus odoratus* 'Villa Roma Scarlet' is a sweet pea boasting deep red blooms on compact plants.



'Villa Roma Scarlet' sweet pea



Phantom petunia

Additionally, Fleuroselect gave its new FleuroStar Award to Phantom, a new petunia introduction from Ball Horticultural's Simply Beautiful® line. This distinction recognizes exceptional innovation in plant breeding by spotlighting varieties with an off-the-charts "wow factor." Described as show-stopping and one-of-a-kind, Phantom dazzled judges with its dark, nearly black flowers with a vibrant yellow star.

Visit www.fleuroselect.com for additional information.

CITIZEN SCIENCE TAKES ON INVASIVE SPECIES IN TEXAS

Ordinary citizens can have a tremendous impact on conservation efforts by helping scientists collect data on everything from migrating birds to changing weather patterns. One highly successful program that is making headlines is Invaders of Texas, which has mobilized a small army of volunteers all over the Lone Star State to keep track of invasive plants.

While the program is the product of a "Texas-sized partnership" of numerous governmental, academic, and conservation organizations, the Lady Bird Johnson Wildflower Center in Austin oversees the training of participants—more than 1,100 in the last five years. Together they've noted more than 12,000 observations during more than 4,000 hours of data collection, saving an estimated \$71,000 in labor costs.

According to the Wildflower Center, among the important contributions of this work involves the federally listed noxious weed, cogon grass (*Imperata cylindrica*). A reported sighting in an uninfested region enabled Texas Forest Service staff to remove it before it could spread further. Additionally, all the citizen scientist observations are collected in an online database accessible to other researchers and conservation agencies around the country.

To learn more about Invaders of Texas, visit www.texasinvasives.org.

HORTICULTURE'S CARBON FOOTPRINT

Agriculture is well-known as a major source of climate-changing greenhouse gases—carbon dioxide, methane, and nitrous oxide—around the world, but as a sector of this industry, how does horticulture specifically stack up?

"No one has ever determined what role horticulture plays—is it a good guy or a bad guy?" says Steve Prior, a plant physiologist with the United States Department of Agriculture's Agricultural Research Service National Soil Dynamics Lab in Auburn, Alabama. "We wanted to look at whether it's a carbon source or a sink, and right now it looks like it's a sink."

The fact that horticulture is good for the earth is hardly a news flash for gardeners, but it's nice to have science behind it. According to the report Prior and his team published in the February 2011 issue of the research journal *HortScience*, several factors resulted in this conclusion. First, the pine-bark and other wood-based media in plant containers are carbon rich and return a lot of carbon to the soil when the plant and media both go into the garden. Trees, shrubs, and perennials themselves capture large quantities of carbon. And the fact that ornamental horticulture doesn't rely as heavily on emission-producing machinery as row crops is a plus. Also, simple tasks like mulching and composting return carbon to the soil, and using nitrogen fertilizers efficiently can reduce the nitrous oxide released into the atmosphere.

BEST DISEASE-RESISTANT BLUEBERRIES

July is national blueberry month, coinciding with peak season for this summer fruit. But one thing that can put a damper on celebrations is mummy berry, a disease that occurs "almost everywhere blueberries are grown and affects all cultivated species," says research plant pathologist James Polashock at the USDA's Agricultural Research Service Marucci Center for Blueberry and Cranberry Research & Extension in Chatsworth, New Jersey.



USDA researchers James Polaschock, left, and Mark Ehlendfeldt examine blueberry bushes to determine their resistance to mummy berry disease, which shrivels and discolors fruit, above.

Caused by the fungus *Monilinia vaccinii-corymbosi*, the disease affects blueberries in two phases: first it attacks the new growth and foliage, and then when fruit appears, it causes the berries to shrivel and turn white until they appear mummified. During a multi-year trial, Polashock and his colleagues evaluated scores of cultivars to find the most resistant ones.

Overall, among highbush cultivars 'Bluejay' appeared to be the most resistant

to mummy berry, and 'Brunswick' ranked best for lowbush cultivars. While this research was aimed at helping commercial growers choose better varieties to cultivate, home gardeners may also want to seek out these less susceptible options.

USDA MODIFIES REGULATIONS FOR IMPORTING NON-NATIVE PLANTS

Effective as of June 27, the USDA has made a slight alteration to importation

regulations for plants used in gardening and landscape design by adding a new category called "Not Authorized for Importation Pending Pest Risk Analysis," or NAPPRA. Although it might seem like an inconsequential tweak, it adds another layer of protection for gardeners and growers from pests and invasive plants and the economic and environmental damage they could do.

The USDA's Animal and Plant Health Inspection Service will evaluate plants entering the country for their invasive potential, based on whether or not research has deemed the species a pest carrier or a pest itself. Potential threats are placed on the NAPPRA list, but this status can be appealed with new scientific research demonstrating they are not invasive or likely to carry destructive pests or diseases. The idea behind this new regulation is to keep out harmful pests and pathogens species while allowing some flexibility.

MOTH-FREE MOVES

"Before you bust-a-move...BUST-A-MOTH!" So goes the slogan of a campaign to raise awareness about the risk of

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A photograph of a woman wearing a straw hat and a blue shirt, bending over to tend to a garden filled with purple flowers. To her left is a bag of Espoma Bio-tone Starter Plus All Natural Plant Food.

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PEOPLE and PLACES in the NEWS

In Memoriam: Dutch Bulbsman Jan Ohms

Dutch bulbsman Jan Ohms passed away in May at the age of 85. Over the course of his six-decade career, he is credited with supplying nearly a billion flower bulbs to botanical, public, and private gardens across the United States.

Born in Connecticut to Dutch parents, Ohms grew up in the Netherlands working in his family's bulb fields and nurseries. He studied ornamental horticulture while participating in the Dutch resistance during World War II. After the war,

Ohms returned to the United States to attend the University of Connecticut, where he earned a degree in landscape architecture and agricultural economics.



ers in 1994, and in 2002, John Scheepers Kitchen Garden Seeds was launched.

"Our business not only represents my father's legacy, it's his vision," says van den Berg-Ohms. "We will continue to run the three companies with the high standards and ethical practices my father would expect."

Garden Club of America's National Award Winners

Each year, the Garden Club of America (GCA) awards 10 national medals to "organizations and individuals who have shown outstanding achievement" in fields related to its mission.

Among the honorees this year is William Cullina, director of horticulture and plant curator at the Coastal Maine Botanical Gardens in Boothbay, who received

the Sarah Chapman Francis Award for outstanding literary achievement. An expert on North American native plants and their propagation, he has written five award-winning books on these subjects.

The GCA's Distinguished Service Medal went to Kris Jarantoski, executive vice president and director of the Chicago Botanic Garden in Glencoe, Illinois, in recognition of his efforts to make this public garden into a world leader in plant conservation research, teaching gardens, and plant collections over the last 30 years.

The Jane Righter Rose Medal for "outstanding achievement in rose culture through the propagation of new roses" was awarded to William J. Radler of Milwaukee, Wisconsin, who developed the best-selling Knock Out® rose, which was introduced in 2005.

For its "outstanding achievement in environmental protection and the maintenance of the quality of life," the Pollinator Partnership based in San Francisco, California, received the Cynthia Pratt Laughlin Medal. This nonprofit organization works to promote and protect North American pollinators and the essential role they play in the environment.

For a complete list of medal winners, visit www.gcamerica.org.



Kris Jarantoski

spreading gypsy moths during a move. Introduced to Massachusetts in 1869 from Europe, this pest has spread throughout the northeast corridor despite rigorous quarantines and other control measures. As a caterpillar, this insect can devour the foliage of entire trees and bushes in short order, weakening and eventually killing them if leaves are repeatedly stripped. Gypsy moths plague more than 300 tree and shrub species and can defoliate up to 13 million acres of trees in one season.



Top: Gypsy moth caterpillars like this one feed voraciously on leaves for several months. Adult moths appear in July and August, with females laying tan-colored egg masses, above, that overwinter.

Female gypsy moths aren't picky about where they lay their fuzzy-looking egg masses—anything outdoors is fair game. Because of this, if you live in a quarantined area and are moving to a non-infested state, you are required by law to inspect any household items stored outside that you plan to take with you, and destroy any egg masses you may find.

For more information about gypsy moths and proper inspection techniques visit www.yourmovegypsymothfree.com.



GRANT ENABLES NATIVE PLANT HABITAT RESTORATION IN GEORGIA

Thanks to a two-year federal grant from the Institute of Museum and Library Services, the State Botanical Garden of Georgia (SBGG) in Athens will begin restoring five acres of a degraded flood-

plain habitat along the Middle Oconee River on its property. This area's native plants, such as pawpaw (*Asimina triloba*), river oats (*Chasmanthium latifolium*), and winterberry (*Ilex verticillata*), have been choked out by invasive Chinese privet (*Ligustrum sinense*). The \$135,575

SBGG has already cleared paths like this one through the privet understory on five acres of floodplain and eventually plans to restore an additional 27 acres.

grant will allow the garden to clear the privet, then reintroduce native species, modeling the new habitat after other floodplains in the area.

"This process will be used to generate a set of recommendations for floodplain restoration for landowners and land managers who wish to address the habitat devastation caused by Chinese privet," says Jim Affolter, the garden's Director of Research and Conservation.

SBGG will also use the grant to improve a greenhouse already used to store and grow natives, put in a deer fence for an outdoor cultivation area, and run educational programs about native plants and how to re-introduce them.

To learn more about the SBGG, visit www.uga.edu/botgarden.

Written by Editorial Interns Helen Thompson and Terra-Nova Sadowski with Associate Editor Viveka Neveln.

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Photo © Robyn Churchill

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GREEN GARAGE®

by Rita Pelczar

With so many tools and products to choose from, what's a gardener to do to select those that will make indoor and outdoor chores easier, safer, and more efficient? How about getting the scoop from another gardener? Contributing editor Rita Pelczar reports on products she has found useful or innovative in her garden, with an emphasis on earth-friendly products and supplies. Here are a few products you may want to stock in your own "green garage" or garden shed.

OUTDOOR PROTECTION

Summer's here and so are mosquitoes, chiggers, flies, and ticks. If you'd rather not apply—and reapply—insect repellent directly to your skin, Sloggers (www.sloggerstore.com)



offers **hats and bandanas with Insect Shield® technology**, which bonds the insect repellent permethrin to the fabric. Its **Wide-Brimmed Braided Hat** also provides UPF 50+ sun protection; I particularly like the leather chin strap that keeps the hat in place when it gets windy. The bandanas—which can be used for dogs as well as gardeners—can be washed at least 70 times without losing their effectiveness.

Don't forget to protect your hard-working hands with gardening gloves. Wells Lamont (www.wellslamont.com) **Garden Tips™** are nitrile-coated to keep out moisture, while providing excellent gripping ability. Its **Ultra Comfort Suede Garden Gloves** are very sturdy, durable, and provide good flexibility—they're great for preventing blisters while digging, raking, staking, and other heavy chores. Their stretchy back and adjustable wrist closure ensure a comfortable fit.



RECYCLED RAISED BED SYSTEM

There's still time to start a new vegetable or flower garden this season. If your space is limited, a raised bed is a good option. Filled with rich soil and compost, a raised bed can be intensively planted so you can produce quite a bit in a limited area. **Greenland Gardener Raised Bed Garden Kit** (www.greenlandgardener.com) is made from recycled sawdust, shopping bags, and milk jugs, and the attractive com-

posite has the appearance of wood. The kits are easy to assemble and are available in a range of sizes and components that allow for both horizontal and vertical expansion.

HANDS-FREE GARDENING

The **Gardener's Hollow Leg** (www.TheGardenersHollowLeg.com) is a handy way to collect your clippings while cutting back herbaceous plants, deadheading blooms, and pulling weeds. The fabric bag attaches to a belt and can be worn on either your right or left side. It holds more than five gallons and best of all, both your hands are still free to work. It's also helpful for harvesting crops from a ladder—like apples and hops. The 10-inch-wide ring opening and a strap handle at the bottom of the bag make for easy emptying.



CAMOUFLAGE FOR DOWNSPOUTS

I have never liked the downspouts that flank my front porch—they detract from the entrance. This year, however, I was pleased to discover the **Downspout Trellis** available from Lee Valley (www.leevalley.com). The kit consists of three semi-circular sections, each eight inches wide and three feet long, that are placed one on top of the other to cover a downspout and provide a framework for the vine of your choice to climb. I'm growing cathedral bells (*Cobaea scandens*) on mine.



A contributing editor for *The American Gardener*, Rita Pelczar lives in North Carolina. She is the editor-in-chief of the AHS's *Homegrown Harvest* (Mitchell Beazley/Octopus USA, 2010).



AMERICAN
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SOCIETY

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“BY THE FOOT” CAMPAIGN

THE CHALLENGE AT HAND

Thanks to the vision and generosity of philanthropist Enid A. Haupt, the American Horticultural Society has been headquartered for nearly 40 years at River Farm – 25 picturesque and historic acres on the Potomac River just a few miles from our nation’s capital. River Farm has brought tremendous pride to the AHS and enhanced our national outreach capabilities. It has also entailed significant repairs and maintenance that are inevitable with an aging and much used property like River Farm. And we need your help.

AN INVESTMENT IN TODAY AND TOMORROW

While the AHS annually dedicates resources to the day-to-day operation and maintenance of River Farm, we are currently facing the urgent need to modernize the property’s water and sewer system and upgrade the technological platform. These projects will require an investment of one million dollars, which is far outside the scope of our routine annual operating budget, and we need everyone’s help to reach that goal. When this project is completed, River Farm will have better fire protection, our environmental footprint will be reduced, and we will be better equipped to carry out our mission.



Inch by inch,
foot by foot...You
can help gardening grow!

Inch by inch, foot by foot, you can help make a difference for the AHS, River Farm, and our community of gardeners across the country. We need 4,000 feet of pipe and cabling to complete our project. For \$250, you can underwrite a foot of progress and help us in our efforts to maintain and improve the Society’s River Farm headquarters for future generations. **With a contribution of \$250 or more, you will receive a special certificate recognizing your support of the AHS’s By the Foot Campaign.**

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To appreciate your generous support of the By the Foot Campaign and the stewardship of the Society’s National Headquarters at River Farm.



December 15, 2010



Doug Underwood
AHS Board Secretary

Harry Bissell
Chair, AHS Board of Directors
December 15, 2010

Doug Underwood
AHS Board Secretary
December 15, 2010

Making America a Nation of Gardeners, a Land of Gardens

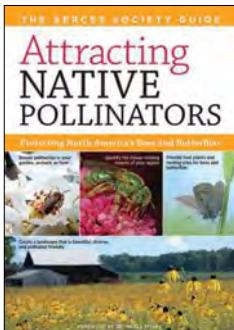
To underwrite a foot (or feet!), please use the “Help Gardening Grow” envelope included with this issue of *The American Gardener* and note “By the Foot Campaign.” You may also contact the AHS by phone at (703) 768-5700 ext. 119 or e-mail development@ahs.org. Special recognition is available for gifts of 20 feet or more.

Recommendations for Your Gardening Library

Attracting Native Pollinators: Protecting North America's Bees and Butterflies

Eric Mader, Matthew Shepherd, Mace Vaughan, Scott Hoffman Black, and Gretchen LeBuhn. Storey Publishing, North Adams, Massachusetts, 2011. 384 pages. Publisher's price, softcover: \$29.95.

IT IS well known that insects pollinate the majority of flowering plants, but few of us realize that more than a third of our food supply results directly from such pollination. Obviously it is in our own self-interest to protect and encourage pollinators, a task this comprehensive book takes seriously.



Attracting Native Pollinators is published under the auspices of the Xerces Society, which is dedicated to the protection and understanding of invertebrates. Covering beetles, flies, wasps, and bees, this book is divided into four well-illustrated sections, the first of which discusses the role of pollinators in broad terms, how pollination is achieved, life histories of exemplary pollinators, and factors influencing their decline and conservation both in natural and manmade environments.

The second section is devoted to managing habitats for pollinators ranging from homes, schools, farms, wildlife management areas, urban parks, and even green roofs. The third section is a bee primer, pointing out that bees are the most important of all pollinators, discussing their biology, and illustrating dozens of species. The authors admit—and truthfully so—that identifying bees is definitely not as easy as identifying birds, but they provide several key traits for at least telling them apart from wasps and flies.

The last section provides illustrated garden plans, regional plant lists, color photographs of pollinator-attracting plants, and a list of larval host plants for particular butterflies. There's also an appendix that includes a glossary, index, and helpful resources for more information.

Providing a thorough introduction to the interactions of plants and their essential insect partners, *Attracting Native Pollinators* is suitable for novices, advanced gardeners, and those interested in the pursuit of sustainable horticulture or agriculture. It also serves as an important reminder of how much we depend upon the natural world for our own survival.

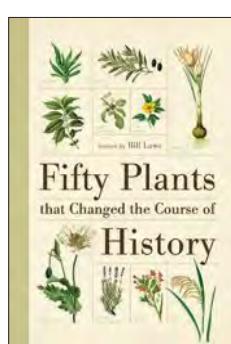
—Eric Grissell

Eric Grissell is a retired USDA entomologist and author of *Insects and Gardens as well as Bees, Wasps, and Ants, The Indispensable Role of Hymenoptera in Gardens* (see page 54).

Fifty Plants that Changed the Course of History

Bill Laws. Firefly Books, Buffalo, New York, 2010. 224 pages. Publisher's price, hardcover: \$29.95.

IS IT POSSIBLE that a mere 50 plants changed history? I won't argue because this is a terrific book that will keep you on the edge



of your seat. Zippy prose masks an extraordinary amount of spellbinding facts and anecdotes about these plants—among them crabapple, bamboo, and lavender—that humans enjoy for seemingly limitless purposes, mostly taken for granted. Included are some we also fear: opium poppy and coca (that's cocaine—not to be confused with cacao, or chocolate, also included).

For example, sunflowers started their cultivated life among North American Indians, but were improved in Russia when Stalin realized their many commercial potentials (mostly for cooking, but also for life belts—its stem pith has “a lower specific gravity than cork”). Yet sunflower's ultimate fame came from Vincent van Gogh's golden flowers that “lifted his depression” as he sought to capture their essence in the late 1800s. A century later, the sale of one of his sunflower paintings set an art world record.

Then there is the tale of the Peruvian Indians who used the bark of a tree they called “quina quina,” the source of quinine, to treat malaria. Their discovery ultimately led to “fantastic fortunes” for some, and a history of “love, deceit, corruption, and inter-governmental conspiracy,” that could rival “any work of fiction.”

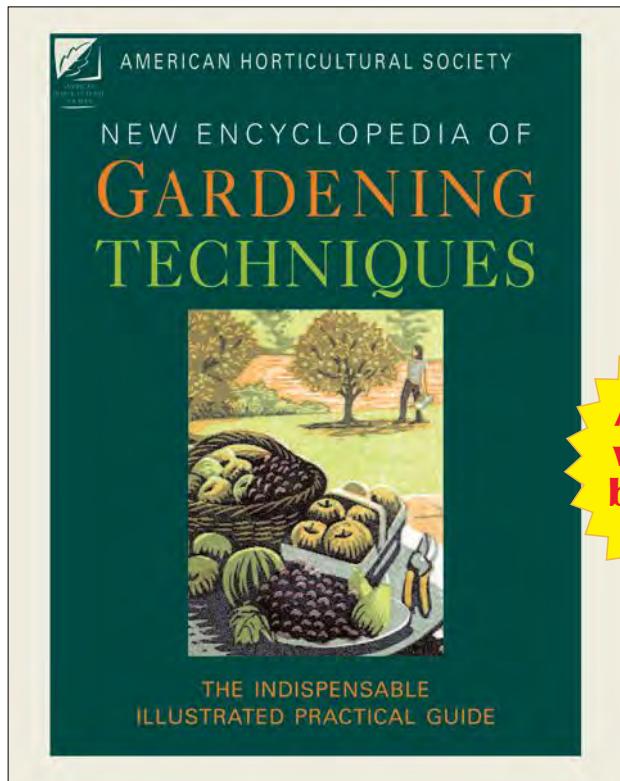
In between these fascinating yarns, a serious conservationist's voice is unmistakable. For instance, author Bill Laws notes how “King Cotton” was not only a mainstay of the slave trade in the 18th and 19th centuries, but also led to forced migrations of Native Americans who occupied the land. And while mid-19th century America exported millions of bales per year, the growing methods were “killing the soil.” To this day, “more chemicals are sprayed on cotton than any other crop,” Laws writes. Cotton uses less than three percent of farmed land but is treated with “a quarter of the world's pesticides.”

All the illustrations are from other works, but, honestly, I hardly looked at them because the prose packed such a wallop. This book will mesmerize plant-lovers and non-gardeners alike.

—Linda Yang

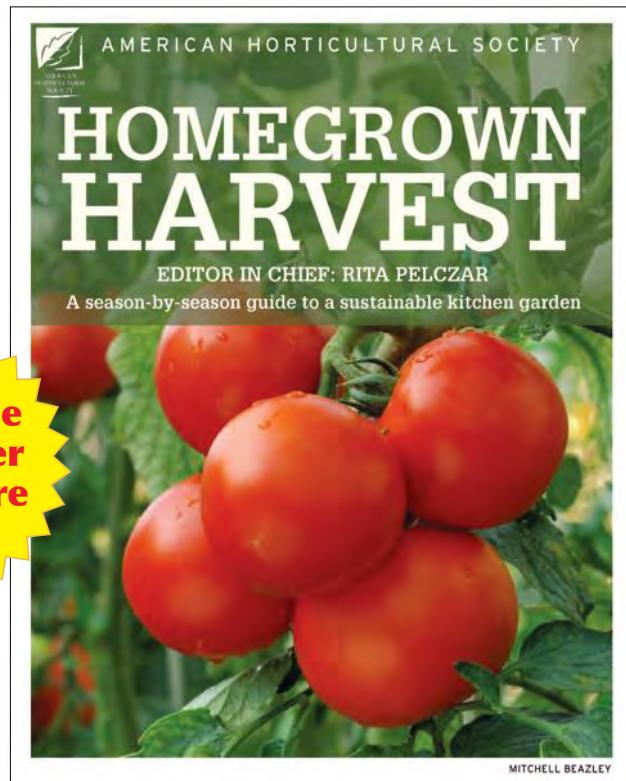
Linda Yang is author of *The City Gardener's Handbook* (Storey Publishing), now in its 21st year of publication, and a former garden writer for The New York Times.

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For more information on these and other AHS books, visit www.ahs.org/books.

"The book's sumptuous tone, instructive photographs, and detailed directions should give beginning gardeners the enthusiasm and confidence to get started and organizationally challenged old-timers a sigh of relief that they won't have to figure out what to do next."

—Publisher's Weekly



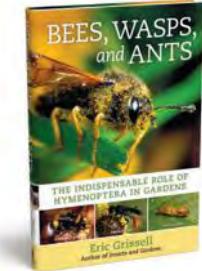
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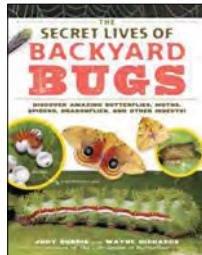
View an excerpt from *Homegrown Harvest* at www.ahs.org.

GARDENER'S BOOKS The Good, the Bad, and the Buggy

WHEN I was a kid, creepy-crawlies of all sorts fascinated me. I was particularly fond of keeping earwigs, spiders, and mantids as pets to watch them dispatch hapless victims. Today, I am happy to simply observe these creatures outdoors, busily going about their short lives. However, now that I'm a gardener, there are some that I am not so happy to find on my plants. Good or bad, bugs are part of any garden so it behooves us to learn more about them. Here are a few helpful books to check out.

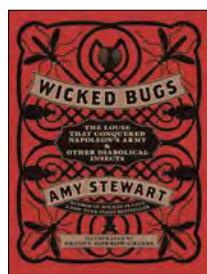


Bees, Wasps, and Ants by entomologist/gardener Eric Grissell (Timber Press, 2010, \$27.95) is an introduction to the myriad species of these insects and all they do in your garden. Even if you fancy yourself fairly well-versed in the affairs of these bugs, this book will give you new appreciation and a deeper understanding of their vital roles on this planet. I found the color plates especially riveting since many of these insects are too small, quick, or intimidating for me to admire up close.



The Secret Lives of Backyard Bugs by Judy Burris and Wayne Richards (Storey Publishing, 2011, \$14.95) delves further into the world of diminutive garden denizens, spotlighting insects and spiders gardeners are likely to encounter. Large print and a simple layout will also entice

curious kids. Close-up color photographs throughout the book depict each bug in its various life stages from egg to adult. Even the baddies look beautiful, or at least interesting enough to stay your bug-squashing impulses next time you encounter them. You might even be inspired to purposely search these creatures out, to see them in all their splendor for yourself.



Speaking of baddies, **Wicked Bugs** by Amy Stewart (Algonquin Books, 2011, \$18.95) focuses on insects and other arthropods on the more fiendish end of the spectrum. While there is a section on garden pests, the book includes creatures that nosh on everything from books to livestock to humans themselves. Warning: Not advised for the squeamish—the facts and anecdotes in this book are guaranteed to give you the heebie-jeebies!

—Viveka Neveln, Associate Editor



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REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

RAP THROUGH NOV. 13. **Native New Yorkers.** Exhibit. Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. www.bbg.org.

JULY 20–23. **Nantucket Garden Festival.** The Nantucket Lighthouse School. Nantucket, Massachusetts. (508) 228-0427. www.nantucketgardenfestival.com.

RAP JULY 28. **Building Simple Water Features.** Class and demonstration. New York Botanical Garden. Bronx, New York. (718) 817-8700. www.nybg.org.

RAP JULY 31. **Pines.** Lecture. The Arnold Arboretum of Harvard University. Boston, Massachusetts. (617) 524-1718. <http://arboretum.harvard.edu>.

RAP AUG. 13. **Hay Day Family Festival.** The Fells Estate and Gardens. Newbury, New Hampshire. (603) 763-4789. www.thefells.org.

RAP AUG. 14. **Native Plants and the Civil War.** Lecture. The New England Wildflower Society. Garden in the Woods. Framingham, Massachusetts. (508) 877-7630. www.newfs.org.

AUG. 25. **Grassy Weed Identification Work-**

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

shop. University of Massachusetts Extension Landscape, Nursery, and Urban Forestry. Amherst, Massachusetts. (413) 545-0895. www.umassgreeninfo.org.

Looking ahead
SEPT. 10. Gathering of Gardeners: Fall Symposium. Master Gardeners of Cornell Cooperative Extension, Monroe County. Rochester Museum & Science Center. Rochester, New York. (585) 461-1000 ext. 225. www.gatheringofgardeners.com.

SEPT. 23–25. Common Ground Country Fair. Maine Organic Farmers and Gardeners Association. Unity, Maine. (207) 568-4142. www.mofga.org.

MID-ATLANTIC

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

RAP THROUGH AUG. 28. **Becoming a Bonsai.** Exhibit. U.S. National Arboretum.

Washington, D.C. (202) 245-4526. www.usna.usda.gov.

THROUGH OCT. 2. **Green Genes: Mapping the Plant World.** Garden exhibit. U.S. Botanic Garden. Washington, D.C. (202) 225-8333. www.usbg.gov.

JULY 30 & 31. **Native Orchid Conference.** Mt. Cuba Center. Hockessin, Delaware. (302) 239-4244. www.nativeorchidconference.org.

RAP AUG. 6. **Made in the Shade.** Garden crafts and activities. Morris Arboretum of the University of Pennsylvania. Philadelphia, Pennsylvania. (215) 247-5777. www.business-services.upenn.edu/arboretum.

RAP AUG. 13. **Butterfly Walk.** Guided tour. New Jersey Botanical Garden. Ringwood, New Jersey. (973) 962-9534. www.njbg.org.

RAP AUG. 27. **Asters, Goldenrods, and Other Composites.** Field class. Adkins Arboretum. Ridgely, Maryland. (410) 634-2847. www.adkinsarboretum.org.

Looking ahead

RAP SEPT. 10. **Fall Gardening Festival.** Virginia Beach Master Gardener Association. Virginia Tech Agricultural Research Station. Virginia Beach, Virginia. (757) 385-4769. www.vbmg.org.

International Master Gardeners Conference

AMID VIBRANT fall color, the International Master Gardener Conference will take place from October 11 to 14 in Charleston, West Virginia. With the theme, "Color It Green in a Wild and Wonderful Way," the conference's focus will be on sustainability, not only when it comes to gardening, but also in terms of the entire event, down to reducing and recycling the paper waste it generates and using local and fair trade produce in refreshments as much as possible.

"It's a real honor," says Delores Barber, Master Gardener and conference co-chair, "to have gardening enthusiasts from all over come and experience a part of the country they might never have seen before and also to hear wonderful speakers." Featured speakers include Ball Horticultural CEO Anna Ball, green gardening guru Joe Lamp'l, and regional landscape design and conservation expert Rick Darke.

Master gardeners and their guests can attend lectures and breakout sessions on everything from gardening techniques that increase biodiversity to dealing with weeds to gardening with native plants. There will also be a trade show and tours of local horticultural and cultural sites including Heritage Farm Museum and Village, the Huntington Museum of Art's orchid conservatory and rose garden, and a ginseng and medicinal plant garden at Left Fork Farm.

For more information or to register, visit <http://imgc.ext.wvu.edu>.

—Helen Thompson, Editorial Intern

SEPT. 16 & 17. **Heritage Harvest Festival.** Monticello. Charlottesville, Virginia. (434) 984-9880. <http://heritageharvestfestival.com>.

RAP SEPT. 24. **Fall Garden Festival.** Pennsylvania Horticultural Society. The Philadelphia Navy Yard, Philadelphia, Pennsylvania. (215) 988-8800. [www.pennsylvaniahorticulturalsociety.org](http://pennsylvaniahorticulturalsociety.org).

SOUTHEAST

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

JULY 27-30. **The Cullowhee Native Plant Conference.** Western Carolina University. Cullowhee, North Carolina. (828) 227-7397. www.wcu.edu/5033.asp.

RAP JULY 30. **Orchid Care 101.** Class. Mounts Botanical Garden. West Palm Beach, Florida. (561) 233-1757. www.mounts.org.

RAP AUG. 5. **Planting to Support Winter Migrants.** Breakfast and lecture. The State Botanical Garden of Georgia. Athens, Georgia. (706) 542-1244. www.uga.edu/botgarden.

RAP AUG. 19. **Ikebana Floral Design.** Class. Memphis Botanic Garden. Memphis, Tennessee. (901) 576-4100. www.memphisbotanicgarden.com.

RAP AUG. 20. **Winterizing Your Beehive.** Workshop. Smith-Gilbert Gardens. Kennesaw, Georgia. (770) 919-0248. www.smithgilbertgardens.com.

Looking ahead

RAP SEPT. 15. **Preparing Gardens, Orchards, Lawns & Landscapes For Winter.** Class. Boone County Extension Service Office. Burlington, Kentucky. (859) 586-6101. <http://ces.ca.uky.edu/boone>.

RAP SEPT. 22. **Fall for Hatcher.** Garden walk. Hatcher Garden and Woodland Preserve. Spartanburg, South Carolina. (864) 574-7724. www.hatchergarden.org.

RAP SEPT. 24. **Herb Day.** Seminar, lunch, outdoor activities. Mobile Botanical Gardens. Mobile, Alabama. (251) 342-0555. www.mobilebotanicalgardens.org.

NORTH CENTRAL

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

RAP THROUGH SEPT. 4. **David Rogers' Big Bugs.** Outdoor exhibit. Reiman Gardens. Ames, Iowa. (515) 294-2710. www.reimangardens.iastate.edu.

RAP THROUGH OCT. 1. **For the Birds.** Outdoor birdhouse exhibit. Cleveland Botanical Garden. Cleveland, Ohio.

(216) 721-1600. www.cbgarden.org.

RAP JULY 23. **Killers in Green: Carnivorous Plants of North America.** Class. Fernwood Botanical Garden & Nature Preserve. Niles, Michigan. (269) 695-6491. www.fernwoodbotanical.org.

JULY 28. **Pollinator Conservation Planning Workshop.** The Xerces Society for Invertebrate Conservation. Walkerton, Indiana. (855) 232-6639. www.xerces.org.

RAP AUG. 5. **Garden Day 2011.** Seminars, workshops, food, vendors. Michigan State University Horticulture Gardens. East Lansing, Michigan. (517) 355-5191 ext. 1359. www.hrt.msu.edu.

AUG. 20 & 21. **Flower Fest and Family Fun Weekend.** Flower show, activities, photo contest. Minnesota Landscape Arboretum. Chaska, Minnesota. (952) 443-1400. www.arboretum.umn.edu.

RAP AUG. 21. **Birdscaping in the Midwest.** Class. Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP AUG. 27 & 28. **Heirloom Tomato Weekend.** Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org/chef/tomato.

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Looking ahead

RAP SEPT. 9-11. **Roadside Flower Sale.** Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

RAP SEPT. 12 & 13. **Urban Tree Growth Symposium.** The International Society of Arboriculture. The Morton Arboretum. Lisle, Illinois. (630) 719-2468. www.masslaboratory.org/urbantreegrowth.htm.

SOUTH CENTRAL

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

RAP THROUGH AUG. 21. **Extreme Tree-Houses.** Outdoor exhibition. Missouri Botanical Garden. St. Louis, Missouri. (314) 577-5100. www.mobot.org.

RAP JULY 24. **Tomato Fest.** Botanical Garden of the Ozarks. Fayetteville, Arkansas. (479) 750-2620. www.bgozarks.org.

RAP JULY 27. **Pollinators in Kansas.** Lecture. Botanica, The Wichita Gardens. Wichita, Kansas. (316) 264-0448. www.botanica.org.

RAP JULY 30. **Wildflower Identification and Ecology.** Shaw Nature Reserve. Gray Summit, Missouri. (636) 451-3512. www.shawnature.org.

RAP AUG. 1. **Gardening Green—Low Input/High Output.** Lecture. Burden Horticulture Society. Burden Center. Baton Rouge, Louisiana. (225) 763-3990. www.burdenhorticulturesociety.com.

AUG. 6. **Fall Vegetable Gardening Workshop.** Travis County Master Gardener's Association. Zilker Botanical Garden. Austin, Texas. (512) 477-8672. www.zilkergarden.org.

AUG. 18-21. **Nursery Landscape Expo.** Texas Nursery & Landscape Association. Dallas Convention Center. Dallas, Texas. (800) 880-0343. www.nurserylandscapeexpo.org.

Looking ahead

RAP SEPT. 17 & 18. **Cacti and Succulent Society Show and Sale.** Tulsa Garden Center. Tulsa, Oklahoma. (918) 746-5125. www.tulsagardencenter.com.

SOUTHWEST

AZ, NM, CO, UT

JULY 29. **Monsoon Madness Plant Sale.** Tohono Chul Park. Tucson, Arizona. (520) 742-6455. www.tohonochulpark.org.

AUG. 12. **Southwestern Horticulture Annual Day of Education (SHADE).** Arizona Nursery Association. The Renaissance Glendale. Glendale, Arizona. (480) 966-1610. <http://azna.org/shade>.

Southern Garden Restoration Conference

STEP BACK into the 18th century and learn about the adventures of our country's first naturalists, botanists, and gardeners who flocked to the south to explore and study its flora and fauna. Taking place September 22 to 24 in Winston-Salem, North Carolina, the 18th Conference on Restoring Southern Gardens and Landscapes will focus on the theme, "A New World: Naturalists and Artists in the American South." Jointly organized by Old Salem Museums and Gardens, Reynolda House Museum of American Art, and the Southern Garden History Society, the conference will take a fascinating look at the impact of Colonial gardeners on the southern landscape.



Dressed in 18th-century-style attire, a reenactor tends a vegetable garden at Old Salem Museums and Gardens in Winston-Salem, North Carolina.

Andrea Wulf, award-winning author of *Brother Gardeners* and *Founding Gardeners*, will be the conference's keynote speaker, and several other experts will speak about the lives and work of early American gardeners, such as father and son William and John Bartram. Participants will also have the opportunity to visit historic Old Salem and tour local gardens.

"I think it's just going to be amazing to look at these people who lived and traveled in the south in the 18th and 19th centuries," says Sally Gant, director of programs and education at Old Salem Museums and Gardens. "They not only collected plants but sent them all over the world, so they were influencing gardens not only in the south but everywhere."

—Helen Thompson, Editorial Intern

AUG. 13. **Edible Plants of the Sonoran Desert.** Class. Tucson Botanical Gardens. Tucson, Arizona. (520) 326-9686. www.tucsonbotanical.org.

RAP AUG. 15. **Sustainable Edible Gardens.** Class. Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. www.dbg.org.

RAP AUG. 20. **Crenshaw, Casaba and Cantaloupe.** Workshop. Red Butte Garden. The University of Utah. Salt Lake City, Utah.

(801) 585-0556. www.redbuttegarden.org.

RAP AUG. 27 & 28. **African Violet Show.** BioPark Botanic Garden. Albuquerque, New Mexico. (505) 768-5300. www.cabq.gov/biopark.

Looking ahead

RAP SEPT. 10. **Putting Your Rose Garden to Bed.** Lecture. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

RAP SEPT. 23 & 24. **Fall Bulb and Native Plant Sale.** Red Butte Garden. The University of Utah. Salt Lake City, Utah. (801) 585-0556. www.redbuttegarden.org.

RAP SEPT. 24. **Harvest Festival.** Produce tastings, marketplace, children's activities. The Gardens on Spring Creek. Fort Collins, Colorado. (970) 416-2486. www.fcgov.com/horticulture/events.php.

WEST COAST CA, NV, HI

RAP THROUGH SEPT. 5. **Exploring Trees Inside and Out.** Exhibit. The Gardens at the Springs Preserve. Las Vegas, Nevada. (702) 822-7700. www.springspreserve.org.

JULY 29. **Kaimuki Orchid Society Show.** Kaimuki Orchid Society. Aina Haina Elementary School. Honolulu, Hawaii. E-mail: kaimukiorchidsociety@hotmail.com.

RAP AUG. 7. **Geranium Lecture.** South Coast Botanic Garden. Palos Verdes Peninsula, California. (310) 544-1948. www.southcoastbotanicgarden.org.

AUG. 18-21. **American Dahlia Society National Show.** Pacific Southwest Dahlia Conference. Santa Clara, California. (415) 826-6214. www.ads2011.org.

AUG. 28-30. **Plant Exploration and Importation.** Conference. American Public Gardens Association. Quarryhill Botanical Garden. Glen Ellen, California. (610) 708-3010. www.publicgardens.org.

Looking ahead

SEPT. 3 & 4. **Hawaiian Plumeria Festival.** Southern California Plumeria Society. Balboa Park. San Diego, California. www.plumeriafestival.com.

RAP SEPT. 11 & 12. **Salvia Spectacular.** Plant sale. Fullerton Arboretum. Fullerton, California. (657) 278-3407. www.fullertonarboretum.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP AUG. 2. **Annual Trillium Celebration.** Lecture. Bellevue Botanical Garden Society. Bellevue, Washington. (425) 452-3755. www.bellevuebotanical.org.

RAP AUG. 6 & 7. **Mystical Garden Creatures.** Flower show. Anchorage Garden Club. Alaska Botanical Garden. Anchorage, Alaska. (907) 770-3692. www.alaskabg.org.

RAP AUG. 20. **Garden Walk.** Cheyenne Botanic Gardens. Cheyenne, Wyoming. (307) 637-6458. www.botanic.org.

AUG. 25-27. **Farwest Show.** Oregon Association of Nurseries. Oregon Convention Center. Portland, Oregon. (800) 342-6401. www.farwestshow.com.

AUG. 28. **Fern Tables and Tiny Shade Gardens.** Workshop. Joy Creek Nursery. Scappoose, Oregon. (503) 543-7474. www.joycreek.com.

Looking ahead

SEPT. 10. **Dugout Gulch Botanical Area Walk.** Great Plains Native Plant Society. Black Hills National Forest. Black Hills, Wyoming. (605) 745-1149. www.gpnps.org.

CANADA

AUG. 12-SEPT. 25. **Zimsclupt.** Outdoor sculpture exhibit. VanDusen Botanical Garden. Vancouver, British Columbia. (604) 257-8335. www.vandusengarden.org.

RAP AUG. 25. **Ferns & Allies ID Workshop.** Field class. Royal Botanical Gardens. Hamilton, Ontario. (905) 527-1158. www.rbg.ca.

Looking ahead

SEPT. 10. **Arboretum Auxiliary Plant Sale.** University of Guelph. Guelph, Ontario. (519) 824-4120 ext. 52113. www.uoguelph.ca/arboretum/Upcoming_events.htm.

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PRONUNCIATIONS AND PLANTING ZONES

Most of the cultivated plants described in this issue are listed here with their pronunciations, USDA Plant Hardiness Zones, and AHS Plant Heat Zones. These zones suggest a range of locations where temperatures are appropriate—both in winter and summer—for growing each plant.

While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The zones tend to be conservative; plants may grow outside the ranges indicated. A USDA zone rating of 0–0 means that the plant is a true annual and completes its life cycle in a year or less.

A–D

- Aconitum sinomontanum*** ak-o-NY-tum
sih-no-mon-TAN-um (USDA Zones 5–9,
AHS Zones 7–2)
- Acorus gramineus*** AK-or-us grah-MIN-ee-
us (6–9, 9–5)
- Actaea dahurica*** ak-TEE-uh duh-HOOR-ih-
kuh (3–8, 8–1)
- A. japonica*** A. jah-PON-ih-kuh (4–8, 8–1)
- A. matsumurae*** A. mat-su-MUR-ee
(3–8, 12–1)
- A. pachypoda*** A. pak-IH-po-duh (3–8, 8–1)
- A. racemosa*** A. ras-eh-MO-suh (3–8, 8–1)
- A. rubifolia*** A. roo-bih-FOH-lee-uh
(4–8, 12–1)
- A. rubra*** A. ROO-bruh (4–8, 8–1)
- A. simplex*** A. SIM-pleks (4–8, 8–1)
- A. spicata*** A. spy-KAY-tuh (4–8, 8–1)
- Alcea rosea*** AL-see-uh ro-ZAY-uh
(2–9, 9–2)
- Allium thunbergii*** AL-ee-um thun-BER-jee-
eye (5–9, 9–5)
- Astilboides tabularis*** uh-stil-BOY-deez
tab-yew-LAIR-iss (5–7, 7–5)
- Baccharis pilularis*** BAK-uh-riss
pil-yew-LAIR-iss (8–10, 12–1)
- Calamagrostis brachytricha*** kah-luh-mah-
GROS-tiss brak-ih-TRY-kuh (5–9, 9–5)
- Centaurea cyanus*** sen-TAW-ree-uh
SY-an-us (0–0, 7–1)
- Cercis canadensis*** SUR-siss kan-uh-DEN-
siss (4–9, 9–2)
- Chilopsis linearis*** ky-LOP-siss lih-nee-
YAR-iss (6–10, 10–6)
- Corydalis lutea*** kuh-RID-uh-liss LEW-tee-
uh (5–8, 8–4)
- Delosperma basuticum*** del-o-SPER-muh
buh-SOO-tih-kum (6–8, 9–6)
- D. congestum*** D. kon-JES-tum (4–8, 8–4)
- D. cooperi*** D. KOO-per-eye (7–10, 10–7)
- D. dyeri*** D. DYE-ur-eye (5–10, 10–5)
- D. floribundum*** D. flor-ih-BUN-dum
(5–9, 9–6)
- D. nubigenum*** D. noo-BIJ-en-um
(6–9, 9–6)
- D. sphaeranthoides*** D. sfal-man-THOY-
deez (5–8, 8–6)

E–L

- Eriogonum allenii*** air-ee-OG-o-num
ah-LEN-ee-eye (4–9, 9–4)
- E. arborescens*** E. ar-bo-RES-enz
(10–11, 11–8)
- E. cinereum*** E. sih-nuh-REE-um
(7–10, 11–2)
- E. corymbosum*** E. ko-rim-BO-sum
(4–9, 11–2)
- E. crocatum*** E. kro-KAY-tum (9–10, 10–9)
- E. fasciculatum*** E. fas-sik-yew-LAY-tum
(8–10, 10–8)
- E. giganteum*** E. jy-GAN-tee-um
(8–10, 10–7)
- E. grande var. rubescens*** E. GRAN-day
var. roo-BES-enz (8–11, 10–2)
- E. latifolium*** E. lat-ih-FO-lee-um
(8–11, 10–8)
- E. kennedyi*** E. ken-nuh-DEE-eye
(5–8, 8–5)
- E. tomentosum*** E. toh-men-TOH-sum
(7–10, 11–7)
- E. umbellatum*** E. um-bel-LAY-tum
(5–8, 8–4)
- E. umbellatum var. aureum*** E. um-bel-LAY-
tum var. AW-ree-um (5–8, 8–4)
- E. umbellatum var. humistratum***
E. um-bel-LAY-tum var. hew-mih-STRAY-
tum (6–9, 8–4)
- E. umbellatum var. porteri*** E. um-bel-LAY-
tum var. PORT-ur-eye (4–8, 8–4)
- E. wrightii*** E. RITE-ee-eye (6–10, 10–6)
- Euphorbia rigida*** yew-FOR-bee-uh
RIH-jih-duh (7–11, 12–7)
- E. characias* ssp. *wulfenii*** E. chuh-RAY-
see-us ssp. wool-FEN-ee-eye
(7–10, 10–7)
- Foeniculum vulgare*** fee-NICK-yew-lum
vul-GAY-ree (4–9, 9–1)
- F. vulgare* var. *azoricum*** F. vul-GAY-ree
var. ay-ZOAR-ih-kum (4–9, 9–1)
- Hakonechloa macra*** ha-kon-ee-KLO-uh
MAK-ruh (5–9, 9–2)
- Helleborus foetidus*** hel-eh-BOR-us
FEE-tih-dus (6–9, 9–6)
- Hesperis matronalis*** HES-pur-iss
mah-tro-NAY-liss (4–9, 9–1)

Iris pseudacorus

EYE-ris soo-DAK-or-us
(5–8, 8–3)

Juglans nigra JOO-glanz NY-gruh
(5–9, 9–5)

J. regia J. REE-jee-uh (3–7, 7–1)

Lobelia siphilitica lo-BEEL-yuh sih-fih-
LIH-tih-kuh (4–7, 9–2)

M–Z

Mertensia virginica mur-TEN-see-uh
vir-JIN-ih-kuh (3–8, 7–1)

Mesembryanthemum crystallinum

mes-em-bry-ANTH-eh-mum
kris-TAL-in-um (8–11, 10–2)

Myosotis scorpioides my-o-SO-tis
skor-pee-OY-deez (5–9, 9–5)

Patrinia scabiosifolia pah-trin-EE-uh
skay-bee-o-sih-FO-lee-uh (5–8, 8–5)

Penstemon barbatus PEN-steh-mon
bar-BAY-tus (4–9, 9–2)

P. pseudospectabilis P. soo-doh-spek-
TAB-ih-liss (5–10, 10–5)

Phlox divaricata FLOKS dih-vair-ih-KAY-
tuh (3–9, 8–1)

P. stolonifera P. sto-lon-IF-ur-uh
(4–8, 8–1)

Primula japonica PRIM-yew-luh
jah-PON-ih-kuh (4–8, 8–1)

Rudbeckia triloba rood-BEK-ee-uh
try-LO-buh (3–11, 12–1)

Silphium perfoliatum SIL-fee-um
per-fo-lee-AY-tum (4–9, 9–5)

Talinum calycinum tuh-LY-num
kal-ih-SY-num (5–9, 9–5)

T. paniculatum T. pan-ik-yew-LAY-tum
(0–0, 12–10)

Viburnum dilatatum vy-BUR-num dih-luh-
TAY-tum (5–8, 8–5)

Viola tricolor VY-o-luh TRY-kul-ur
(3–9, 12–1)

GARDEN MARKET

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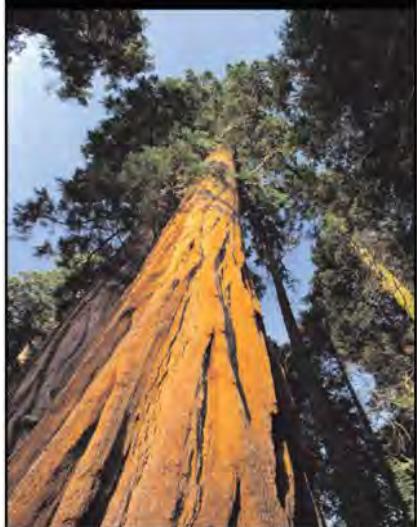


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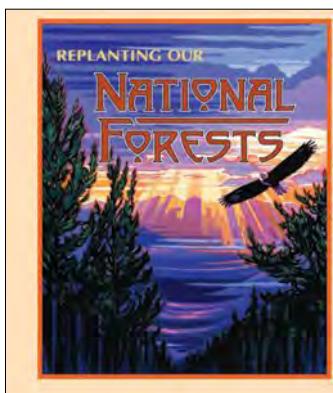
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PLANT IN THE SPOTLIGHT

Desert Wonder Tree

by Anne Galer

STARTING IN late May, the dry arroyo in back of my house in Albuquerque, New Mexico, is studded with desert willow trees exploding into white, pink, and purple bloom. This welcome show of color will last for all the arid summer when even native grasses go dormant to beat the heat. Amid rabbit brush and spiky gray succulents, desert willow (*Chilopsis linearis*) almost looks like something from the tropics.



A TREE OF MANY VIRTUES

Despite its willowlike leaves, the desert willow, also known as *flor de mimbre*, is of the trumpet creeper (Bignoniaceae) family, not the true willow's *Salix* clan. Growing in USDA Hardiness Zones 6 to 11 and adaptable to high elevations, this southwest-native wonder plant thrives in desert washes and high oak-juniper woodlands on as little as 10 inches of water a year.

For a desert plant, the tree is a surprisingly fast-grower, especially when young. With a fragrance akin to violets or vanilla beans, its showy flowers are dead ringers for *Cattleya* orchids. Dangling in hand-sized clusters, colors range from white with pale yellow throats, to pink with deep red accents, and light and dark purples.

Bees and hummingbirds love these long-throated blooms. The flat, winged



Left: Desert willow is a tough, versatile tree for dry landscapes. **Above:** Its fragrant flowers resemble those of *Cattleya* orchids.

seeds feed a variety of birds during the winter, after the tree has shed its leaves. Native Americans used to make bows from desert willow, and settlers used them for fence posts. Not surprisingly, xeric landscapers embrace this tough beauty from California to Texas. (Texas even has a favorite tall cultivar named 'Bubba'.)

Sources

High Country Gardens, Santa Fe, NM.

(800) 925-9387.

www.highcountrygardens.com.

Mountain States Wholesale Nursery,

Litchfield Park, AZ. (Retailers are listed on website). (800) 840-8509. www.mswn.com.

Sooner Plant Farm, Park Hill, OK.

(918) 453-0771.

www.soonerplantfarm.com.

CARE AND CULTIVARS

Desert willow requires sandy, well-drained soil and plenty of sun. In *New Mexico Gardener's Guide* (Thomas Nelson, 2005), Judith Phillips suggests deep watering every two weeks when temperatures are high, with watering optional once the tree is well established. Do not fertilize. This stimulates faster growth, making the tree more susceptible to wind and insect damage. Desert willow can be pruned to grow as a small tree up to 25 feet tall. Untrained, it assumes a shrubby shape ideal for shading small patios.

Widely available in southwestern nurseries, desert willow is easily propagated from seed or cuttings. Jeff Grass of Mountain States Wholesale Nursery in Litchfield, Arizona, likes Art's Seedless™ for its prolific pink-rose blooms. High Country Gardens founder David Salman in Santa Fe, New Mexico, recommends another seedless cultivar, Timeless Beauty®, for its extended blooming season. I prefer the slightly shorter May-to-August bloom period of the plain old seeded species so I can enjoy long, curving pods that rustle and swing back and forth in winter breezes. Cultivars such as white-flowered 'Hope' and deep purplish-red 'Burgundy' represent opposite ends of the color spectrum.

Walking the path up my arroyo in late summer, I often come across our local librarian reading a book on a bench under a big desert willow during his lunch hour. I'm always tempted to ask him to move over so I, too, can enjoy the fragrant shade and parade of hummingbirds.

Anne Galer is a freelance writer who gardens in Virginia and in New Mexico.



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