

The American GARDENER®

The Magazine of the American Horticultural Society

January / February 2010

2010's New Plants

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Vegetable Gardening
on Trellises

Going "Wild"
in the Garden



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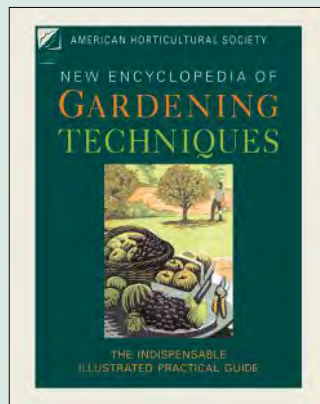
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"This is a book to turn to over a lifetime of garden misadventures."
—Dominique Browning
The New York Times



AHS New Encyclopedia of Gardening Techniques

"You'll find step-by-step instructions for pruning, watering, propagating; information about all categories of plants...sections on organic techniques and recycling; and how to treat pests and disease.... Consider it a plant-lover's mutual fund—a little of this and little of that, in a dandy investment."

—Ginny Smith
Philadelphia Inquirer

"This is a must have for gardeners and landscape designers."
—Joel M. Lerner
The Washington Post

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NOTES FROM RIVER FARM

ONE OF THE greatest joys of gardening is the opportunity to witness firsthand the natural patterns of planting, growth, and maturity. It is a rhythm that plays out before our eyes every year, fostering a sequence of events that gives rise to a range of emotions—anticipation, wonder, surprise, satisfaction, pride, and, occasionally, disappointment. We plant, we watch, we learn, and then we get a chance to do it all over again!

It was surely this fresh start that occurs in the garden each year that Thomas Jefferson, third President of the United States and an avid horticulturist, had in mind when he wrote: “But though an old man, I am a young gardener.” Jefferson was devoted to his garden and was a student of the science and art of horticulture. A keen observer, he kept detailed records of what happened in the garden, knowing that he only had to wait out the cycle of the seasons for the opportunity to start over again and apply his newly acquired knowledge.

Like Jefferson, each of us has the chance every spring to be a young gardener. The awakening garden offers a blank slate upon which to build on our past experiences, try new things, and demonstrate our horticultural prowess. With the prospect of another gardening season right around the corner, there is certainly no better time than the start of a new year to embrace a spirit of optimism and enthusiasm for things to come.

To help you get thinking about the opportunities that the New Year brings, this issue of *The American Gardener* offers an assortment of articles sure to provide inspiration. Start with a preview of some of the new plants being introduced this year and a look at emerging gardening trends observed by knowledgeable people in different sectors of horticulture and gardening. Whether you are considering adding backbone or detail to your garden, two features that will offer help with selecting the right plants are “All-American Oaks” and “Plants on the Rocks.” And don’t miss the cover story by noted landscape design consultant and author Rick Darke, who offers insights on letting nature take its course in the home garden.

As we begin a new year, we’d like to know what you, our members, are looking forward to most in your gardens for 2010. Is there a new plant you are particularly excited about? Are you planning to design a new garden or create a new border? Will you introduce a child or grandchild to the joys of gardening? Send your personal account of what makes you a “young gardener” this year—no more than 500 words, please—to us at membership@ahs.org and you will be entered in a drawing to win a brand new garden journal that will arrive just in time to record your observations on the new gardening year! Entries must be received by February 15, 2010.

We hope you enjoy this issue of the magazine and wish you a healthy, happy, and rewarding New Year in your garden!

Susie Usrey, Chair, AHS Board of Directors
Tom Underwood, Executive Director



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. 118.

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 SYMPOSIUM For information about the Society's annual National Children & Youth Garden Symposium, call (800) 777-7931 ext. 137 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. 132.

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 October. 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 (703) 650-5262, send an e-mail to ahs@mcnairtravel.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. It is also an important resource for finding out about gardening events in your area, and linking to other useful websites. To access the members-only section of the website, this year's password is **oak** (the new password for 2010 will take effect February 1). Until that date, the password is **seeds**. The username is always **ahs**.

MEMBERS' FORUM

HEALING GARDENS AROUND

I read with interest "Gardens for Recovery" (November/December), specifically in regard to the Legacy Healthcare System gardens and programs in the Northwest. The East Coast is also well represented by gardens at rehabilitation hospitals such as the Rusk Institute, Bryn Mawr, and others, which have programs run by horticultural therapists like me who are accredited by the American Horticultural Therapy Association (AHTA). We provide input on the design of these settings, which we use to help clients recover physical or emotional function. The AHTA has about 800 members in the United States, Canada, Japan, and beyond. Several universities and other organizations offer degree and certificate programs in the field.

Laurie Sexton, HTR
New York, New York

BIRCH NOMENCLATURE CORRECTION

I wanted to note that in the article about John L. Creech by Leah Chester-Davis (November/December) the scientific name of the 'Whitespire' birch was listed incorrectly. I introduced the 'Whitespire' birch in 1983 from plants thought to have been grown from seeds Creech collected in Japan. At the time of its introduction, 'Whitespire' was assumed to be a cultivar of *Betula platyphylla* var. *japonica* due to faulty records at the Longenecker Horticultural Gardens of the University of Wisconsin Arboretum. We now know that it is a cultivar of gray birch (*Betula populifolia*).

Edward R. Hasselkus
Horticulture Professor Emeritus
Curator, Longenecker Gardens
University of Wisconsin, Madison

New Password for Website

The members-only section of the AHS website (www.ahs.org), provides access to membership benefits as well as the contents of each issue of *The American Gardener* since January/February 2001. To access the section, the username is always **ahs** and the password, effective February 1 for 2010, will be **oak**. Until this date, the password is **seeds**. Both username and password must be entered in lowercase letters. As a reminder, the password is always listed on page 5 in each magazine issue.

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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CONTACT US *The American Gardener*
7931 East Boulevard Drive
Alexandria, VA 22308
(703) 768-5700

EDITORIAL E-MAIL: editor@ahs.org

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News from the AHS

January / February 2010

PROGRAMS • EVENTS • ANNOUNCEMENTS

AHS RECIPROCAL ADMISSIONS PROGRAM CELEBRATES 20TH ANNIVERSARY

THE AMERICAN HORTICULTURAL SOCIETY'S Reciprocal Admissions Program (RAP) debuted in April 1990 as an outreach program to the members of plant and horticultural societies, botanical gardens and arboreta, and native plant societies in North America. It expanded rapidly from only 11 locations and organizations the first year to 120 by 1993.

Today RAP includes more than 250 participating public gardens in 45 states as well as Canada, the Cayman Islands, and the U.S. Virgin Islands. These horticultural destinations offer special benefits such as free admission, free parking, or a discount at the gift shop to AHS members presenting a current membership card. The program's goal—part of the AHS's core mission—is to encourage members to visit public gardens and other horticultural institutions locally and on their travels.

Jay Stanton, an AHS member from Hummelstown, Pennsylvania, has been enjoying RAP's benefits as often as he can since he first joined the Society in October 1998. Last year he planned an extensive road trip around six RAP gardens he wanted to visit,



The Desert Botanical Garden in Phoenix is one of many RAP gardens Jay Stanton and his wife, Janis, have visited.

stopping at the Franklin Park Conservatory in Columbus, Ohio; Missouri Botanical Garden in St. Louis; Myriad Botanical Gardens in Oklahoma City, Oklahoma; Desert Botanical Garden in Phoenix, Arizona; Fort Worth Botanic Garden in Texas; and Memphis Botanic Garden in Tennessee. For each of these gardens, Stanton's AHS

membership card entitled him to free admission. "While visiting relatives or friends," says Stanton, "I've often taken my hosts to visit one of the many gardens in their town. It always surprises me that they never visited the garden before." Even when he's in his hometown, Stanton uses his membership card to take his visitors to nearby Hershey Gardens, a RAP participant.

New Member Password For AHS Website

On the AHS website (www.ahs.org), there is a special section available only to members, which provides convenient access to membership benefits and exclusive offerings. These include the annual Seed Exchange catalog and order form as well as content from *The American Gardener* back to the January/February 2001 issue.

The username to log in to the members-only area of the website is always **ahs**, but the password changes at the beginning of every year. The current password, **seeds**, will change to the new password, **oak**, on February 1, 2010. Both the username and password must be entered in all lowercase letters. For future reference, you can always find the password listed on page 5 of each issue of the magazine.

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Botanical nomenclature is based on *The American Horticultural Society A-Z Encyclopedia of Garden Plants*, on *A Synonymized Checklist of the Vascular Flora of the United States, Canada and Greenland* and on the *Royal Horticultural Society Index of Garden Plants*. Opinions expressed in the articles are those of the authors and are not necessarily those of the Society. Manuscripts, artwork, and photographs sent for possible publication will be returned if accompanied by a self-addressed, stamped envelope. We cannot guarantee the safe return of unsolicited material. Back issues are available at \$8 per copy.

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In celebration of RAP's 20th anniversary, the AHS has redesigned the directory of participating gardens, arboreta, and other organizations to be more eye-catching and user-friendly. Updated twice a year, in January and July, this directory is available on the AHS website (www.ahs.org). You may request a copy be mailed to you by calling (703) 768-5700 ext. 132.

2010 SEED EXCHANGE CATALOG AVAILABLE ONLINE

LOOKING FOR SOME interesting plants to start from seed this year? Then be sure to check out the AHS's 2010 Seed Exchange catalog, featuring more than 200 different plants. "The Seed Exchange program is a



'Brandywine Sudduth's Strain'

unique way to share seeds collected by AHS members throughout the United States," says River Farm Horticulturist **James Gagliardi**. "Whether you are looking for annuals, perennials, shrubs, trees, vegetables, or herbs, it is

a very affordable way to try new plants in your garden."

The deadline to submit seed orders is March 15, but AHS members who donated seeds are eligible to have first pick by sending in their orders by February 1. The first 300 members to submit orders will receive complimentary bonus seeds, donated by **Tomato Growers**. These bonus seeds are for 'Brandywine Sudduth's Strain' tomatoes, one of Tomato Growers' top-selling heirloom varieties. Fruits reach one to two pounds in weight, with "the delectably complex, rich, sweet flavor that has made 'Brandywine' justifiably famous."

While the Seed Exchange is a benefit of AHS membership and offered at no additional cost, donations are always appreciated to support the program. Those who make a donation of \$25 or more with their seed order will receive a pair of OXO

Good Grips® Garden Scissors as a thank-you gift.

To save paper and reduce printing costs, the catalog of available seeds and an order form are available in the members-only section of the AHS website. If you would prefer to have a copy of the seed catalog mailed to you, please send a self-addressed, stamped envelope to 2010 Seed Exchange Catalog, 7931 East Boulevard Drive, Alexandria, VA 22308. For questions about the seed exchange, e-mail seeds@ahs.org.

TRAVEL STUDY PROGRAM 2010

THE AHS TRAVEL STUDY PROGRAM has three exciting trips planned this year that will feature beautiful gardens and landscapes both in America and overseas. "Gardens of East Anglia" from May 22 to 31 features tours of well-known gardens in Norfolk, Suffolk, Essex, and Cambridgeshire with a particular focus on this region's rich historical legacy dating back to pre-Roman times.



Blickling Hall in Norfolk, England, will be among the many sites AHS travelers will visit during the May Travel Study Program tour.

LEFT: COURTESY OF TOMATO GROWERS. RIGHT: COURTESY OF SPECIALTOURS

Gifts of Note

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: Tom Underwood, Executive Director, at (703) 768-5700 ext. 123 or tunderwood@ahs.org.

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 October 1, 2009 and November 30, 2009.

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In Memory of Maxine Pickrel
The Southwood Garden Club

Flower and Garden Show Discounts

The AHS has established special relationships with dozens of regional flower and garden shows that offer AHS members free and discounted admission and/or present AHS awards to exhibits. Many participating 2010 flower shows are listed in "Regional Happenings" on pages 56 to 58. For a full list and details on the benefits offered, visit the Events section of the AHS website (www.ahs.org).

From June 16 to 20, a tour of "Gardens and Innovation: Chicagoland and Rockford" will explore the inspirational greening efforts of these two Illinois cities.

"Sicily: Gardens and Antiquities," taking place from October 28 to November 7, will combine visits to the Italian island's unique archaeological sites, historical monuments, and gardens, which feature both Mediterranean and subtropical plants.

For more information about upcoming tours in the AHS Travel Study Program, please visit the AHS website and click on "Travel Study," or contact our travel planner, MacNair Travel, at ahs@macnairtravel.com or (703) 650-5262.

2010 AMERICA IN BLOOM COMPETITION

EACH YEAR, America in Bloom (AIB) holds a competition to encourage communities nationwide to pursue urban beautification and community building. The deadline for entering the 2010 contest is February 28. Participating communities are categorized according to population size and a number of criteria, such as urban forestry, environmental awareness, community involvement, and floral displays. One of the awards for the eight criteria categories is the Community Involvement Award sponsored by the AHS. Winners are revealed at the annual AIB Symposium and Awards Ceremony, scheduled this year for



Kirkwood, Missouri, is one of many communities that has been recognized by the AIB for its beautification efforts.

September 30 through October 2 in St. Louis, Missouri. To learn more, call (614) 487-1117 or visit www.americainbloom.org.

ANNUAL GARDEN PHOTOGRAPHY CONTEST

THROUGH A PARTNERSHIP with the Gardeners of America/Men's Garden Clubs of America (TGOA/MGCA), AHS members may enter the organization's annual garden photog-



AHS NATIONAL EVENTS AND PROGRAMS

2010 CALENDAR

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

MAR. 3–MAY 16. **Epcot International Flower & Garden Festival.** Lake Buena Vista, Florida.

APR. 11 & 12. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.

APR. 15–17. **Spring Garden Market.** River Farm, Alexandria, Virginia. (Note: AHS Members-only preview sale is Thursday, April 15.)

APR. 15–17. **National Capital Area Garden Clubs, Inc. District II Standard Flower Show.** River Farm, Alexandria, Virginia.

APR. 17–25. **Historic Garden Week in Virginia.**

JUNE 10. **Great American Gardeners Awards Ceremony & Banquet.** River Farm, Alexandria, Virginia.

JULY 22–24. **National Children & Youth Garden Symposium.** Pasadena, California.

AUG. 20–22. **The Homestead's 12th Annual "In the Garden With the Experts" Symposium.** Hot Springs, Virginia.

SEPT. 25. **AHS Annual Gala.** River Farm, Alexandria, Virginia.

SEPT. 30–OCT. 2. **America In Bloom Symposium and Awards Ceremony.** St. Louis, Missouri.

raphy contest. Entries can be submitted in a number of categories, including roses, vegetables, wildflowers, landscapes, and arrangements in hanging baskets and containers. The \$15 entrance fee for the contest also yields a one-year membership in TGOA/MGCA. Winning photographs will be announced at the organization's National Convention in June, and will be considered for inclusion in the calendar TGOA/MGCA sells annually as a fundraiser. The deadline for entries to the competition is February 13. For contest rules, entry form, and more details, call (515) 278-0295 or visit www.tgoa-mgca.org.

COLONIAL WILLIAMSBURG GARDEN SYMPOSIUM IN APRIL

THE 64TH ANNUAL Colonial Williamsburg Garden Symposium, co-sponsored by the AHS, will take place April 11 and 12 in Virginia. With the theme, "Timeless Lessons From Historic Gardens," this year's event will focus on traditional garden design, techniques, and plant selections that are still useful and important

today. The symposium will feature speakers **Ken Druse**, a noted garden photographer and author; **G. Michael Shoup**, owner of



Symposium attendees enjoy the spring gardens at Williamsburg.

the Antique Rose Emporium; and **John Forti**, curator of historic plants at Strawberry Banke Museum. Their presentations will focus on concepts of adapting historic garden practices to modern gardening, spanning topics from floral design at Colonial Williamsburg to edible gardening. A discount is available for AHS members. For more information or to register, call

(800) 603-0948 or visit www.history.org/conted.

2010 EPCOT INTERNATIONAL FLOWER & GARDEN FESTIVAL

DISNEY WORLD isn't just for kids; it's also for gardeners. Held from March 3 to May 16, the 17th annual Epcot® International Flower & Garden Festival in Lake Buena Vista, Florida, will include presentations by Disney horticulturists and gardening celebrities from around the country, as well as a Florida Farmer's Market celebration.

This year's focus on outdoor fun and discovery will be reflected in a new "Community Garden," featuring topiaries of Disney characters Mickey and friends "tending" to vegetables

Upcoming Spring Plant Sale

Mark your calendars for the AHS's annual Spring Garden Market, taking place from April 15 to 17 at the Society's



River Farm headquarters in Alexandria, Virginia. April 15th is members-only night, during which AHS members can get first pick of the plants and other gardening goods on offer from a selection of vendors from the mid-Atlantic region. Coinciding with the Spring Garden Market, the National Capital Area Garden Clubs—District II

will hold a Standard Flower Show in River Farm's estate house; visitors are welcome to browse the show entries.

and herbs, as well as a butterfly garden, fragrance garden, bonsai exhibit, and much more. And Horticulture Manager **Eric Darden** hopes the emphasis on brilliant spring colors in the displays will inspire attendees in planning their own spring and summer gardens. The AHS is pleased to be a partnering organization for this event. For further details, call (407) 934-7639 or visit www.disneyworld.com/flower.

News written by Editorial Intern Gwyneth Evans.

LEFT: LINDA MCINTYRE / AHS ARCHIVES. RIGHT: JAMES GAGLIARDI

<p>THE AMERICAN HORTICULTURAL SOCIETY'S 18TH ANNUAL</p>	
<p>NATIONAL CHILDREN & YOUTH GARDEN SYMPOSIUM</p>  <p>THE VITALITY OF GARDENS: ENERGIZING THE LEARNING ENVIRONMENT</p> <p>JULY 22 - 24, 2010 • PASADENA, CALIFORNIA</p>	
 <p>AMERICAN HORTICULTURAL SOCIETY</p>	<p>Hosted by:</p> <ul style="list-style-type: none"> Descanso Gardens Garden School Foundation Kidspace Children's Museum The Huntington Library, Art Collections, and Botanical Gardens Los Angeles County Arboretum & Botanic Garden University of California Common Ground Garden Program
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AHS NEWS SPECIAL: Tour Participants Enjoy Hudson Valley's Autumn Glory

by Gwyneth Evans



Left: View of the Hudson River and fall colors from Olana. Above: Among the private gardens visited was that of AHS member Fred Rich.

LAST OCTOBER, with fall color blazing in New York's Hudson Valley, 30 American Horticultural Society members from 15 states spent four days experiencing some of the area's best landscapes, art, and cuisine. This special AHS Travel Study tour was "an opportunity not to be missed—and autumn was a spectacular time to visit," says tour participant **Carole Hofley**, who lives in Wyoming. In addition, it was a propitious time to visit because 2009 was the 400th anniversary of Henry Hudson's exploration of the region that bears his name.

AHS President Emeritus **Katy Moss Warner** led the travel group to many of the area's noteworthy gardens, including her family home, Lisburne Grange, a historic mansion with a landscape designed by legendary landscape architect Fletcher Steele. Other horticultural highlights included the gardens at Bellefield that were designed by Beatrix Farrand, one of America's most renowned landscape architects of the early 20th cen-

tury, and Stonecrop Gardens, a 12-acre public garden featuring enchanting woodlands, water gardens, and an extensive collection of alpine plants.

Elements of art, architecture, and history integrated nicely with gardens and landscaping at both President Franklin Delano Roosevelt's lifelong home, Springwood, and Storm King Art Center sculpture park, which featured bold, abstract pieces amid the dramatic backdrop of the Hudson Highlands.

A tour of the area made famous by the landscape paintings of the Hudson River School would not be complete without a



At Storm King Art Center, sculptures such as this Richard Serra piece adorn the landscape.

visit to Olana, the home of Frederic Edwin Church—one of the prominent figures of the mid-19th century American art movement. "I found it remarkable that one could travel through 200 years of American history full of building, creating, and gardening in a relatively small area," says **Julie Ernest**, a participant from Washington.

Between garden visits, the travelers enjoyed unique dining experiences such as a sumptuous meal at the Culinary Institute of America in Hyde Park; lunch at Glynwood Farm, a non-profit organization committed to organic farming, local food, and rural land conservation; and enjoying a menu and tableware designed by Russell Wright, America's first industrial designer, at a meal prior to visiting Manitoga, Wright's home and woodland garden.

"Overall, this was one of our most memorable excursions within the United States," says **Stephanie Jutila**, AHS director of member programs and outreach, who escorted the tour. "We will continue to offer this caliber of experience in 2010 with trips to exciting locations both in America and abroad." For more information about upcoming Travel Study tours, visit www.ahs.org, e-mail ahs@mcnairtravel.com, or call (703) 650-5262.

Gwyneth Evans is an editorial intern for The American Gardener.



THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM 2010 TOURS

MAY IN ENGLAND

Gardens of East Anglia

with AHS Host *Stephanie Jutila*
and Tour Escort *Antonia Lloyd Owen* of
Specialtours

May 22–31, 2010

■ Designed for the connoisseur of English gardens who has perhaps already visited the great houses and gardens within easy reach of London, this trip features the gardens of East Anglia—Norfolk, Suffolk, Essex, and Cambridgeshire—a region rich in history. In addition to touring private gardens in charming English villages, we will visit several celebrated sites, including Anglesey Abbey, the Beth Chatto Gardens, and Wyken Hall Gardens.



Gardens and Innovation: Chicagoland and Rockford

with AHS Host *Katy Moss Warner*

June 16–20, 2010

■ This tour will highlight the innovative gardens that have contributed to the greening of Chicago and influenced the horticultural heritage that distinguishes the surrounding communities. In Rockford, Illinois, an America in Bloom award-winning city, we will see how community spirit has fostered the creation of exceptional gardens.



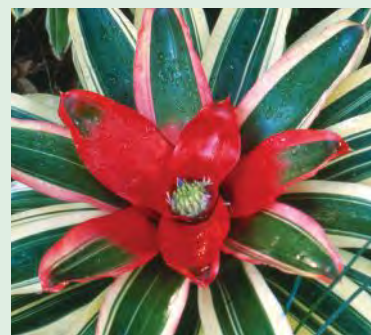
Sicily: Gardens and Antiquities

with AHS Host *Katy Moss Warner*

and Tour Escort *Susie Orso* of *Specialtours*

October 28–November 7, 2010

■ From the sparkling seascapes of Taormina to the rugged landscape of the island's interior, this tour will explore the fascinating archaeological sites, historical monuments, and fantastic gardens of Sicily. A once-in-a-lifetime opportunity awaits you.



Look for more details coming soon on
the 2010 President's Council Trip* to

Jacksonville & the Beaches of Northeastern Florida

April 21–25, 2010

hosted by *Carolyn Marsh Lindsay*

*Exclusive offering for AHS President's Council members. For more information about or to join the AHS President's Council, contact Sue Galvin at (703) 768-5700 ext. 111 or sgalvin@ahs.org.

For more information about upcoming tours in the AHS Travel Study Program, please contact our travel planner, MacNair Travel:

• E-mail: ahs@macnairtravel.com • Call: (703) 650-5262 • Visit: www.ahs.org

2010 Garden Forecast

LIKE EVERY business sector, the American gardening industry has been affected by the world's current economic troubles. Many nurseries reported lagging sales in 2009, with gardeners being more frugal about their purchases and reduced demand for plants from landscape contractors. But there is hope for the future. "Up to several years ago, there was a lot of gloom-and-doom talk about how no one wants to garden anymore," says Marty Wingate, garden columnist for the *Seattle-Post Intelligencer* and author of several gardening books. "Now there is a real surge of interest in gardening again—especially vegetable gardening."

Will gardening make a healthy comeback in America in 2010? We talked to several horticultural professionals across the country to get their perspectives.

WHAT GARDENERS ARE LOOKING FOR

All the horticultural professionals agree that the biggest trend is growing edibles—driven by people wanting to save money by growing some of their own produce or those dedicated to the "locavore" movement who grow their own food so they know where it comes from.

Sandi Hillermann McDonald, president of Hillermann Nursery & Florist in Washington, Missouri, says, "We've seen great interest in edible gardening, not only in the old-fashioned vegetable gardens of our grandparents, but in square-foot [intensive] gardening and especially combination container gardens." McDonald predicts that gardeners will be seeking compact varieties of edibles, such as bush tomatoes and cucumbers and dwarf eggplants and peppers, that can be grown in containers. She is planning to capitalize on this trend by offering pre-planted combinations of edibles in containers. "We're going to stress the ease of growing your own food by offering these to our customers, along with recipes."

This burgeoning interest in gardening has brought many beginners to garden centers. Gardening has often been viewed

as a pastime for middle-aged people, but this may be changing. "The nurseries here in the Northwest had a great spring last year," says Wingate, "and they noticed a lot of young people coming in who didn't know the difference between a petunia and a zinnia, so there was a need to educate along with making the sales."



What's in store for the new year? More choices and a return to the fundamentals.

BY MARY YEE

In addition to vegetable gardening, many gardeners want to learn more about ways to garden in harmony with the environment. Janet Carson, an Extension horticulture specialist who heads the Arkansas Master Gardener program, says, "People have been asking for more programs on sustainability or 'green' gardens. Rain gardens, rain barrels, and low-input gardening are also popular newer programs for us."

In Arizona, landscape designer Scott Calhoun uses rainwater-harvesting techniques in the gardens of clients who want to maintain vegetable gardens and citrus trees. In other parts of the gardens, he relies on plants suited to the arid conditions of the Southwest that don't require sup-

plemental watering to thrive, including cacti and other succulents.

"One of the biggest trends is the increasing availability of new hybrid American plants," says Calhoun. "A lot of our agaves, for example, were once rare collectors' plants that can now be mass-produced because of tissue culture."

Calhoun also cites a design trend of using succulents for their bold forms in gardens outside the Southwest. "This is part of another trend of integrating succulents into gardens among other plants," he says, "instead of segregating them in their own part of the garden or in containers."

Plants that provide a long period of bloom are always in demand. At Williams Nursery in Westfield, New Jersey, partner Dave Williams has noticed that woody ornamentals that have been bred to flower multiple times during the year are very popular with his customers. "This trend began with the introduction of the Endless Summer® hydrangeas and Encore® azaleas a few years ago," says Williams. "We're starting to sell more Encore azaleas, although I'm not yet totally convinced as to their winter hardiness in New Jersey."

IT'S ABOUT THE PLANTS

With so many new gardeners in the game and economic recovery likely to be slow, 2010 looks to shape up as a year of getting back to basics.

"Over the last three years, I have noticed a change in what my clients want—for the better," says Calhoun. "People used to spend a lot of money on frills like spas and bars in the garden. They have dialed back on those things and gone back to plants and solving problems with plants."

"There's going to be loads more interest in beginning gardening," Wingate predicts. "People are going to start with what interests them most—usually growing plants for their flowers. But from there they'll broaden their horizons."

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

NEW PLANTS FOR 2010

Each year the plant industry introduces a lengthy list of new plants aimed at grabbing the gardener's attention. On the following pages, we've selected a variety of promising new plants to pique the interest of both beginning and seasoned gardeners.

Edibles



Dove hybrid melon. A super-sweet melon with five- to six-inch-diameter fruits weighing three to four pounds. (Park Seeds)



Purple Pak (F1) carrot. Eight-inch-long purple carrots with yellow cores. (Johnny's Selected Seeds)



'Scarlet Empire' runner bean. A selection of a British heirloom with improved vigor and faster germination. Flavorful pods are long and stringless. (Thompson & Morgan)

More new vegetables

- **'Jumbo' green bean.** Stringless even at 10 inches. (Johnny's Selected Seeds)
- **'RSVPEA' pea.** Early variety that can grow in marginally cold regions. (W. Atlee Burpee & Co.)
- **'Skyphos' lettuce.** Heat-tolerant butterhead lettuce with attractive red leaves, grows up to eight inches in diameter. (Johnny's Selected Seeds)
- **'Sweetheart of the Patio' cherry tomato.** A determinate tomato ideal for growing in containers. (W. Atlee Burpee & Co.)



'Catalogna' garnet stem endive. Red stems with bright green leaves and savory flavor. (The Cook's Garden)



'Golden' beet. Sweet mild flesh is golden and doesn't bleed like red-fleshed beets when cut or cooked. (Renee's Garden)



Echinacea 'Heavenly Dream'. This cone-flower has fragrant, white, four-inch blooms. Compact plants grow to two feet high. Zones 4–9, 9–1. (Terra Nova Nurseries)



Above: *Agave neomexicana* 'Sunspot'. A very hardy selection of variegated agave that grows to 12 inches tall and 20 inches wide. Zones 6–10, 10–5. (High Country Gardens)

Perennials



Penstemon 'Prairie Twilight' (beardtongue). Pink-and-white flowers bloom from early to midsummer on vigorous 22-inch-tall plants. Zones 4–9, 9–5. (Blooms of Bressingham)



Left: *Andropogon gerardii* 'Mega Blue' (big bluestem grass). This selection of a North American prairie native grows to over five feet tall, with gray-blue foliage that turns coppery in autumn. Zones 3–8, 8–1. (High Country Gardens)



Hemerocallis Jersey Earlybird™ 'Cardinal'. Bred by renowned daylily hybridizer Darrel Apps, this is the first in a series of early-blooming daylilies. Red flowers start blooming in May and continue for up to nearly 100 days. Pest and disease resistant and drought tolerant. Zones 4–10, 9–1. (Centerton Nursery)



Deschampsia caespitosa 'Pixie Fountain' (tufted hairgrass). This compact selection grows only two feet tall and forms feathery blooms in June. Zones 4–8, 8–1. (Jelitto)



Monarda didyma 'Purple Rooster' (bee balm). Deep purple flowers and mildew resistant. Grows to three feet tall on strong stems. Zones 4–10, 10–1. (Walters Gardens)



Disporum cantoniense 'Green Giant' (Chinese fairy bells). Evergreen collected by plantsman Dan Hinkley in China. Plants grow to six feet tall. Pink, white, and green bamboolike shoots mature to green. Fragrant white flowers bloom in spring on new growth. Zones 6–9, 9–5. (Monrovia)

More new perennials

- *Chasmanthium latifolium* 'River Mist' (Northern river oats). Plants grow 30 inches tall; both leaves and seedheads are variegated white and green. Zones 5–9, 9–1. (Great Garden Plants)
- *Coreopsis* 'Ruby Frost'. Bright red flower petals are widely edged with white. Plants grow about two feet high and three feet wide. Zones 7–9, 9–1. (Terra Nova Nurseries)
- *Gaillardia* 'Georgia Yellow' (blanket flower). Solid yellow flowers, compact habit. Heat and humidity tolerant. Zones 4–9, 9–1. (Athens Select)
- *Leucanthemum* × *superbum* 'Banana Cream' (Shasta daisy). Four-inch-wide, lemon-yellow flowers mature to creamy yellow and white. Compact plants grow to 18 inches tall. Zones 5–9, 9–1. (Great Garden Plants/Walters Gardens)
- *Pulsatilla vulgaris* 'Perlen Glocke' (Pasque flower). Low-growing early-spring bloomer with soft-pink, cupped flowers. Zones 5–7, 7–5. (Jelitto)

Retail Sources

David Austin Roses, Tyler, TX. (800) 328-8893. www.davidaustinroses.com.
Great Garden Plants, Holland, MI. (877) 447-4769. www.greatgardenplants.com.
High Country Gardens, Santa Fe, NM. (800) 925-9387. www.highcountrygardens.com.
Jelitto, Louisville, KY. (502) 895-0807. www.jelitto.com.
Johnny's Selected Seeds, Winslow, ME. (877) 564-6697. www.johnnyseeds.com.
Park Seed, Greenwood, SC. (800) 213-0076. www.parkseed.com.
Renee's Garden, Felton, CA. (888) 880-7228. www.reneesgarden.com.
The Cook's Garden, Warminster, PA. (800) 457-9703. www.cooksgarden.com.
Thompson & Morgan, Jackson, NJ. (800) 274-7333. www.tmseeds.com.
W. Atlee Burpee & Co., Warminster, PA. (800) 333-5808. www.burpee.com.

Wholesale Nurseries

Visit these companies' websites to find retail sources for their plants.

Athens Select, www.athensselect.com.
Anthony Tesselaar Plants, www.tesselaar.com.
Bailey Nurseries, www.baileynurseries.com.
Ball Horticultural Co., www.ballhort.com.
Blooms of Bressingham, www.bobna.com.
Centerton Nursery, www.centertonnursery.com.
Conard Pyle, www.conard-pyle.com.
Gardener's Confidence, www.gardenersconfidence.com.
Monrovia, www.monrovia.com.
Plant Development Services, www.plantdevelopment.com.
Proven Winners, www.provenwinners.com.
Spring Meadow Nursery, www.springmeadownursery.com.
Terra Nova Nurseries, www.terranovanurseries.com.
Walters Gardens, Inc., www.waltersgardens.com.

Annuals & Tender Perennials



Pennisetum setaceum 'Fireworks' (purple fountaingrass). Foliage is variegated pink, red, white, and green. Plants grow to 28 inches tall and bear burgundy-colored inflorescences. (Great Garden Plants)



Ipomoea batatas Illusion™ Midnight Lace (sweet potato vine). Dark purplish, deeply lobed leaves have red venation. More compact and less aggressive than most sweet potato vines, growing eight to 10 inches in length. (Proven Winners)

More new annuals

■ *Ipomoea* Carnival™ (morning glory). Five- to six-foot vines bear a mix of large white trumpet flowers with pink or blue streaks. (Park Seed)

■ *Cyperus involucratus* Graceful Grasses™ Baby Tut™ (umbrella plant). Grasslike plant ideal for small water gardens; grows two feet tall. Zones 8–11, 12–1. (Proven Winners)

■ *Osteospermum Voltage Yellow*™ (African daisy). A cool-season plant with improved heat tolerance. Yellow flowers bloom all summer. (Ball Horticultural Co.)

■ *Phormium cookianum* 'Black Adder' (New Zealand flax). Burgundy-black spikes of foliage; grows to three feet tall. Zones 9–11, 12–1. (Anthony Tesselaar)



Pretty Much Picasso™ hybrid petunia. Hot-pink flowers have contrasting lime-green margins. (Proven Winners)



Zinnia 'Profusion Yellow'. The first yellow in the Profusion series. Compact plants grow to 15 inches high and are heat and drought tolerant. (Park Seed)



Cosmos 'Rubenza'. Deep ruby-red flowers on three-foot-tall plants. Fleuroselect's 2010 Flower of the Year. (Thompson & Morgan)



Clethra alnifolia Sugartina® ('Crystalina' sweet pepperbush). Dwarf selection with dark glossy leaves grows about 30 inches tall and wide. Fragrant white flowers bloom in late summer to fall. Zones 4–9, 9–1. (Spring Meadow Nursery)



Rosa Princess Alexandra of Kent ('Ausmerchant' rose). Large, fully double pink blooms have a strong tea fragrance. Plants are compact, growing under four feet tall. Zones 4–9, 9–1. (David Austin® Roses)



Lagerstroemia indica Berry Dazzle® ('GAMAD VI' dwarf crape myrtle). Early-blooming fuchsia-colored flowers cover plants that grow to three feet tall with similar spread. Zones 7–9, 9–6. (Gardener's Confidence)

Trees & Shrubs



Quercus nuttallii Charisma® ('Mon Powe' Nuttall oak). Deciduous native selection has attractive chocolate-colored spring foliage that matures to green. Grows to 60 feet tall. Zones 5–9, 9–4. (Monrovia)



Syringa Bloomerang® ('Penda' lilac). Grows to a compact five feet tall and four feet wide. Fragrant purple flowers bloom in spring and again in midsummer to fall. Zones 6–9, 9–4. (Spring Meadow Nursery)

More new trees and shrubs

■ *Magnolia grandiflora* Baby Grand® ('STRgra' southern magnolia). Dwarf evergreen grows to 10 feet tall and wide. Zones 6–9, 7–1. (Anthony Tesselaar/Monrovia)

■ *Prunus sargentii* First Editions® Spring Wonder™ ('Hokkado Normandale' Sargent cherry). This hardy tree provides year-round interest: red-brown bark, pink spring flowers, and purplish spring foliage that turns dark green in summer and yellow, orange, or red in fall. Zones 5–9, 9–5. (Bailey Nurseries)

■ *Rhododendron Autumn Lilac*™ (Encore® azalea 'Robles'). Lavender-colored flowers bloom from spring to fall. Zones 5–9, 9–5. (Plant Development Services)

■ *Rosa* Sunny Knock Out® ('Radsunny' rose). Vigorous, disease-resistant plants grow three to four feet tall and wide; yellow flowers bloom from spring to fall. Zones 5–9, 9–1. (Conard Pyle)



All-American Oaks

OAKS (*Quercus* spp.) are the trees of legends. They have been associated with construction, fuel, food, fodder, folklore, and spirituality for millennia because of their utility, longevity, strength, beauty, and ubiquitousness. As a measure of their popularity, in a poll conducted in 2001 by the National Arbor Day Foundation, the oak was selected as the national tree of the United States.

About 500 oak species have been identified worldwide, making oaks one of the most prevalent and important trees of the Northern Hemisphere. This diverse genus ranges from low groundcover oaks and suckering shrubs to towering forest giants, and from evergreen to deciduous.

Oaks are categorized into four sections, or subgroups, three of which are represented among the 60 odd species native to North America. White oaks

If you're looking for a classic shade tree that comes with rich cultural history, important ecological associations, and a durable constitution, look no further than one of America's many native oak trees.

BY GUY STERNBERG

and red oaks are the primary subgroups on this continent; a few members of the third group, golden oaks, are confined to the American Southwest. In the United States, they grow wild in 47 states—sorry Hawaii, Alaska, and Idaho—growing in

habitats ranging from swamps to dunes and deserts. Many species are widely adaptable under cultivation even far from their natural ranges. Oak trees are in many cases linchpins of the plant communities to which they belong, providing shade and shelter for wildlife and understory plants, and food for birds, small mammals, and insects.

At Starhill Forest, the research arboretum my wife, Edie, and I created in Petersburg, Illinois, we grow several hundred oak taxa. I have also sought out oaks throughout North America and around the world as a member of the International Oak Society and while researching books on native trees (see "Resources," page 22). Based on my experience, if you're looking for a dependable specimen or shade tree capable of anchoring your landscape, it's hard to beat one of our native oaks.

SITING AND CARING FOR OAKS

Oaks have a reputation for being slow growing, but with proper site selection, planting technique, mulching, and watering, you can coax several feet of growth per year out of many species. Some will attain enormous size eventually, so when selecting a site, be sure to account for overhead wiring and the proximity of buildings and roads. As with most other trees, oaks do best when competition from turf is minimized, so create a mulched area around the base that is continually expanded to remain about as broad as the canopy of the tree.

Ongoing care of oaks is similar to what you would provide for any other quality landscape tree. Give them supplemental watering during dry spells until they are well established. Make sure string trimmers are kept well away from the trunk when the trees are young, avoid damage to the root system through soil compaction or excavation, apply timely structural pruning, and be on the alert for invasions of gypsy moths and other scourges that can weaken or kill your trees.

You can grow oaks easily from acorns collected and planted in the fall. You also can obtain seedlings from nurseries, but make sure they have been raised using proper root-training methods. If you check with a nursery and they don't know what root-training production means, try somewhere else. Most oaks are difficult to transplant, so don't try digging them from the wild. (For more on growing oak trees from seed, visit the web special linked to this article at www.ahs.org.)

Once planted, protect oak seedlings from rabbits, deer, and landscape crews until they are large enough to be relatively impervious to abuse. For this you can use tree tubes to start, followed by sturdy wire cages.

The following oaks are ones I heartily recommend for gardens in different regions of North America (additional choices are listed in a chart on page 23). Estimated heights are based on what you can expect in garden settings; trees often grow larger in the wild.

Guy Sternberg is an author, photographer, arborist, landscape architect, and certified tree hugger living in Petersburg, Illinois.

WEST

Canyon live oak (*Quercus chrysolepis*, USDA Hardiness Zones 7–9, AHS Heat Zones 9–7). The greatest of the golden oaks, this beautiful evergreen tree is found on rocky soils in the mountains of southwest Oregon, California, and parts of Arizona. It grows 20 to 60 feet tall with a similar spread. Its oval leaves—glossy green on top and grayish blue on the undersides—can be smooth-edged or spiny. The large acorns have beautiful, furry, golden caps. This species, unfortunately, is susceptible to sudden oak death (SOD), a fungal disease that has affected many western oak species.



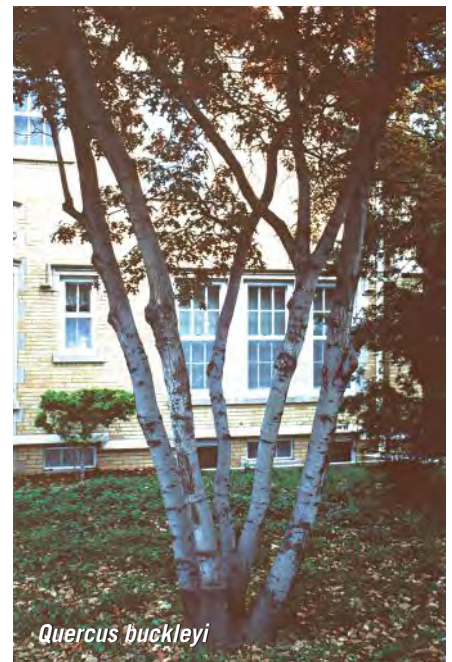
Coast live oak (*Quercus agrifolia*, Zones 8–10, 10–6). Anyone who has photographed the central California coast is likely to have captured the convoluted limbs of this majestic evergreen tree, which grows 20 to 70 feet tall with an often greater spread. Its leathery, dark green, oval leaves have serrated edges much like those of hollies. It is one of the only red oaks that produces mature acorns in a single growing season. It is susceptible to SOD and grows best where it receives regular moisture.

Garry oak (*Quercus garryana*, Zones 6–8, 8–5). The “white” oak of the Northwest, this deciduous species and its varieties can be found from British Columbia south through central California on dry, exposed sites at low and

mid elevations. It reaches 40 to 90 feet with a 30- to 60-foot spread. Its leaves are glossy green on the upper surface, reddish and downy on the undersides; fall color is red to brown. This is the only oak species found through much of its range, and is thus very important for wildlife habitat. So far it has not exhibited susceptibility to SOD.

SOUTH AND SOUTHWEST

Buckley's oak (*Quercus buckleyi*, Zones 5–9, 10–6). A fine-textured, deciduous species from central Texas, this is one of the most colorful oaks in autumn and is valuable as a medium-sized (to 30 or 40 feet)



landscape tree, often sending up multiple trunks. It is suitable for hot sites and alkaline soil. Its sharply lobed leaves are yellowish green but turn scarlet in fall. Closely related to Shumard oak (*Q. shumardii*), it has produced a stable spontaneous hybrid with that species named *Q. xsternbergii* (yes, I'm proud to acknowledge it was named after yours truly).

Gambel oak (*Quercus gambelii*, Zones 5–8, 8–4). The primary oak species of the southern Rocky Mountains in the Four Corners states, Gambel oak sometimes grows into a medium-sized tree but is more frequently shrubby (and sometimes suckering), typically reaching 15 to 30 feet. It has a pale gray or whitish bark and deeply lobed leaves that are dark green on

the top and downy, pale green beneath. Fall color, if any, is usually russet. It tolerates drought and poor soil, but will thrive in rich, well-drained garden soil.

MIDWEST

Bur oak (*Quercus macrocarpa*, Zones 2–9, 9–2). A majestic icon of the Midwest savanna, bur or mossycup oak is native from southern Ontario south to Pennsylvania and west to Manitoba and the Gulf Coast of Texas. This deciduous oak is hardy, drought tolerant, and very adaptable to different habitats. It generally tops out at 60 to 80 feet with similar spread, but can reach 90 feet on favorable sites. Its dark green, lobed leaves appear to be divided



Quercus macrocarpa

into two sections by a deep indentation in the middle; fall color is a dull tan. Its decoratively fringed acorns vary in size from a half-inch to more than two inches long.

Chinkapin oak (*Quercus muehlenbergii*, Zones 4–8, 8–3). Also known as yellow chestnut oak, this graceful tree is more tolerant of alkaline soil than any other large oak. It can be found over the broadest natural range of any of our oak species, in habitats ranging from Mexican mountains and desert canyons to eastern flood plains. It grows 40 to 50 feet tall with equal or

Sources

Burnt Ridge Nursery, Onalaska, WA. www.burntridgenursery.com.

Nature Hills Nursery, Omaha, NE. www.naturehills.com.

Oikos Tree Crops, Kalamazoo, MI. www.oikostreecrops.com.

Shooting Star Nursery, Georgetown, NY. www.shootingstarnursery.com.

Taylor Creek Restoration Nurseries, Brodhead, WI. www.appliedco.com.

Resources

International Oak Society, www.internationaloaksociety.org.

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

Oak: The Frame of Civilization by William Bryant Logan. W.W. Norton & Company, New York, New York, 2006.

greater spread in cultivation (larger in the wild). Its lustrous yellow-green leaves, with decorative serrated margins, turn yellow to light orange in fall. It was named the 2009 Urban Tree of the Year by the Society of Municipal Arborists.

SOUTHEAST

Post oak (*Quercus stellata*, Zones 5–9, 9–5). Native from southern New England to Florida and west to Iowa and Texas, this is one of our longest lived, most durable

deciduous oaks. Equally at home in poorly drained woodlands or thin, scorched soil over bedrock outcrops, it grows slowly, reaching 40 to 70 feet at maturity. Its lustrous green leaves are divided into two large lobes. Fall color tends to be subdued russet to orange, with leaves often staying on the tree into winter.

Southern live oak (*Quercus virginiana*, Zones 7/8–10, 10–7). The quintessential symbol of the Deep South, live oak is the



Quercus virginiana at Bok Tower Pinewood Estate in Lakewood, Florida.

MORE NOTEWORTHY REGIONAL OAK TREES

EASTERN U.S.

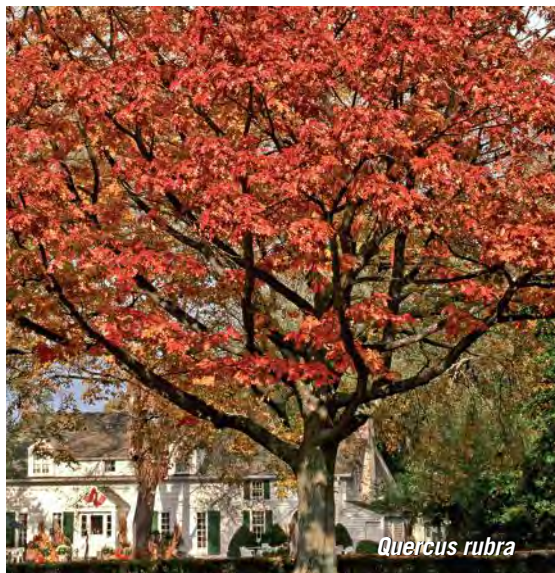
Name	Height/Spread	Notable Characteristics; Garden Needs	Native Range	USDA/AHS Zones
Black oak (<i>Q. velutina</i>)	50–70/50–70	Glossy green leaves with orange tufts on the undersides; drought tolerant, adaptable	East & Central	3–9, 9–3
Nuttall's oak (<i>Q. nuttallii</i> , syn. <i>Q. texana</i>)	50–70/40–80	Good spring (reddish purple) and fall (yellow to red) foliage, fast growing; adaptable to poor drainage and various levels pH	South Central	6–9, 9–5
Overcup oak (<i>Q. lyrata</i>)	40–70/40–70	Good spring and fall foliage color; tolerant of moist soils and flooding	Southeast & Central	5–9, 9–4
Shumard oak (<i>Q. shumardii</i>)	60–80/80	Bright red fall color, fast growing; adaptable to pH and wet or dry soil	Southeast & Central	5–9, 9–5
Swamp chestnut oak (<i>Q. michauxii</i>)	100/100	Brilliant fall color contrasts with light bark; tolerates wet soils	Southeast & Central	5–9, 9–5
Swamp white oak (<i>Q. bicolor</i>)	50–80/50–80	Two-tone green and white leaves, yellow fall color; tolerates poorly drained or compacted soil	East & Central	4–8, 8–4
Willow oak (<i>Q. phellos</i>)	40–80/30–80	Fine-textured leaves turn gold in fall, fast growing; adaptable, good cultivars available	Southeast	5–9, 9–4

WESTERN U.S.

Emory oak (<i>Q. emoryi</i>)	40–60/40–70	Sub-evergreen with intricate form, edible acorns; very drought tolerant	Southwest	6–9, 9–5
Smoky oak (<i>Q. laceyi</i>)	20–40/20–40	Blue-tinted leaves with rosy fall color; very adaptable	Southwest	5–9, 9–5
Valley oak (<i>Q. lobata</i>)	70–90/70–100	Graceful, majestic habit, sometimes weeping in old age	California	6–8, 8–5

famous sprawling evergreen monarch of plantation allées and coastal forests from Texas around the Gulf of Mexico and north along the Atlantic coast to Virginia. Trees typically grow 50 to 80 feet tall with a spread that can be more than twice that. The smooth-edged, leathery, evergreen leaves are about three inches long, lustrous dark green above and downy gray-green below. The narrow, tapered acorns are a primary food for a variety of wildlife. Live oak tolerates salt spray, heat, and humidity, but thrives mainly on the coastal plain.

Water oak (*Quercus nigra*, Zones 6–9, 9–5). One of the fastest growing of the southern oaks, water oak is often used as a street tree in the South. Native from Delaware south to Florida and west to Texas and Missouri, it grows 50 to 80 feet tall with a rounded to upright shape. Its variable leaves are often long and narrow when young, becoming shorter and broader at the top as trees mature. In some cases, the leaves remain green late in the year before turning reddish. Given ap-



propriate structural pruning while young to stimulate development of a strong branching habit, it makes a fine shade tree. It tolerates wet sites.

NORTHEAST

Northern red oak (*Quercus rubra*, Zones 3–7, 7–1). Fast-growing and adaptable, the northern red oak tolerates light shade

when young better than many other oaks. Its native range is from eastern Canada west to Minnesota and south through much of the eastern United States. One of our largest native trees, it can become immense (60 to 80 feet in height and spread) on suitable sites. Fall foliage color ranges from crimson to russet. It will thrive in a site with moist, but free-draining, soil.

White oak (*Quercus alba*, Zones 3–9, 9–1). One of our most colorful and valuable trees, the long-lived white oak is very common in eastern forests from Florida to Canada and west through Missouri. Many historic landmark trees in the northeastern states—at least those that have survived into the present century—are white oaks. Prized for its scarlet fall foliage, this shade tree is relatively slow-growing, reaching 50 to 80 feet tall with a similar or even greater canopy spread at maturity. Allow room in the garden for this tree to achieve its ultimate size and become a legacy for future generations.





RELAX. Take a walk in your garden. Or simply sit in a favorite spot and look around. Allow yourself a few moments to reflect on what is truly alive and free in your home habitat. Is everything neatly arranged according to plan, or are there beautiful accidents in the mix? Among the plantings, do you see any self-perpetuating communities, seeding freely and continuing themselves without effort on your part (without watering, fertilizing, or spraying)? Beyond beauty, do these communities also nurture other living things in the garden? If so, then the landscape surrounding you possesses something essential to real diversity and sustainability:

makes clear that his concept has “nothing to do with the old idea of the ‘Wilderness’” and this is an important, practical distinction. In recent centuries, “Wilderness” has evolved from a fearsome, dangerously wild place to be conquered, into a mythic realm where the last best things reside. It’s easy to understand the appeal of “Wilderness” if it evokes a pristine Nature untouched by humans, but as an ideal it describes no role for us in a balanced ecology.

Wildness, in contrast, refers to the freedom of living things to exist and evolve without our complete control. Just as we cherish our own autonomy, celebrating autonomy in the life of our gardens is a responsible step toward integrating the

What is Wild? ...and why it matters

ARTICLE AND PHOTOGRAPHS BY RICK DARKE

Genuine wildness. Inviting a bit of wildness into our gardens isn’t a new idea, but due to increasingly diminished natural habitats, it is more important than ever before. The good news is that wildness is a renewable resource.

ROOTS OF WILD GARDENING

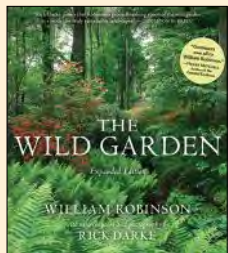
William Robinson (1838–1935) famously introduced the concept of wild gardening in his ground-breaking classic, *The Wild Garden*, first published in 1870. The book promotes an authentically naturalistic and truly low-maintenance approach based upon Robinson’s vast experience as a gardener, a botanist, and a direct observer of diverse habitats. In his foreword, Robinson

human community into an enlightened environmental model. We can begin simply, by allowing a seed to germinate.

Not so long ago, gardeners grew most of their plants from seed, and with seed comes diversity. There are many good reasons why vegetatively propagated, or cloned, cultivated varieties, are now the norm in horticulture, but there are also costs. Clonal cultivars offer predictable appearance and performance, both of which are often necessary to implement and maintain precise designs. Unfortunately, the dramatic uniformity of such plants and the static nature of highly structured plantings are at odds with biological diversity. In addition, the maintenance of

Great sweeps of ostrich fern (*Matteuccia struthiopteris*) and cinnamon fern (*Osmunda cinnamomea*) wend their way over the north-facing slope opposite the March Bank at Winterthur Museum and Country Estate in Delaware. The banks of the stream at the bottom of the slope provide habitat for naturalized moisture-loving species including sedges, ferns, and hostas. Canopy trees and a variety of indigenous and introduced shrubs self-sow freely. Some are edited to preserve views and design intent, while others remain as essential elements in the garden’s regenerative process. The garden’s founder, Henry Francis du Pont, owned a copy of William Robinson’s classic *The Wild Garden*, and his plantings at Winterthur were directly inspired by it.

This essay stems from Rick Darke's personal interest in wild gardening and his contributions to a new, expanded



edition of *The Wild Garden*, originally written by William Robinson. The new edition of the book, published by Timber Press, was

released last November. To listen to Rick Darke reading an excerpt from the book and view more images, click on the link to this article on the AHS website (www.ahs.org).

static designs usually consumes considerable resources, since the plantings have little capacity for self-renewal or repair. This inability is due in part to the limited fertility of many clonal cultivars. While some of these, both woody and herbaceous, are capable of producing viable seed, many are “self-incompatible,” meaning they require fertilization from a genetically distinct plant. Some hybrid cultivars are completely sterile.

But even if cultivars are capable of producing seedlings, rigid designs allow no place for them—the seedlings are perceived as weeds. The design is installed, and from that day forward it requires an endless cycle of maintenance and replenishment to keep it looking unchanged. To take full advantage of the low-maintenance aspects of wild gardening, both plant selection and design must evolve.

BALANCING WILDNESS AND ORDER

Artfulness is at the heart of gardening, and for artistic reasons highly ordered plantings will always have their place in gardens. Too much order, however, becomes monotony. As the art of our gardens evolves, can it also

Wildness is essential to meadow gardens, since rigid adherence to a precise design at larger scales is impractical or even impossible. The graceful flow of California poppies (*Eschscholzia californica*) wending their way through native grasses, verbenas (*Verbena lilacina*), and shrubs is the result of naturalized populations gently edited.

embrace the beauty of diversity and the drama of chance occurrence? Louis Pasteur said, “Chance favors the prepared mind,” and although his observation was intended for fellow scientists, it is equally relevant to gardeners. For example, if you can imagine the possibilities of a mature oak, its branches spreading to shelter you and provide sustenance for myriad wildlife, then an acorn germinating by chance is more likely seen as a gift, even if it is lying in a spot you might never have thought to plant an oak. You look at the acorn, evaluate the space, and say “OK, you can stay!”

Inviting wildness into your garden also increases the likelihood of serendipity: The accidental discovery of something fortunate, especially while looking for something else. For example, you might find that a favorite plant has vanished from the location you chose for it, but something equally desirable has self-sown and is thriving there, and your first favorite has established itself in another spot that better suits its needs.

Begin inviting wildness to your garden by taking stock of the ground layer. The goal is to strike a balance between keeping the ground covered, discouraging weeds, and providing opportunities for wildlings. Ideally, plants should cover most of the surface, because this is the most effective





A naturalized population of white wood aster (*Aster divaricatus* or *Eurybia divaricatus*) serves as a flowering, ground-covering matrix under a grove of sassafras trees (*Sassafras albidum*) in the author's Pennsylvania garden. The asters were originally planted when the trees were young and the space was sunny. They've thrived without watering, fertilizing, herbicides, or replanting for more than 15 years, perpetuating themselves by self-sowing. Locally indigenous flowering dogwoods (*Cornus florida*) and black oaks (*Quercus velutina*) occasionally self-sow from seeds transported from adjacent woodlands by weather or wildlife. Some of these are edited out, and others are selected to remain.

NATIVES AND EXOTICS

How does wildness in the garden relate to the choice of native or exotic plants? Today, any suggestion of naturalizing plants immediately brings up the issue of invasive species. In North America, naturalized exotics such as kudzu, multiflora rose, Japanese stilt-grass, and oriental bittersweet have proved all too well-adapted to modern conditions. Many have displaced indigenous species, severely reducing or altering diversity, especially in habitats already affected by human activity. Certainly the safest, most conservative approach to wild gardening is to restrict plantings to regionally indigenous species. At least there is empirical evidence that these plants are in relative balance with regional ecologies and will not cause mayhem if they spread beyond the garden.

In each region, however, there is also evidence of exotic species that can be naturalized in the garden but have no capacity to disrupt indigenous plant communities. William Robinson's vision of the wild garden was clearly cosmopolitan, favoring natives when practical but promoting a global mix of locally adapted plants. Robinson's England of 1870–1935 had been heavily transformed by human activity for centuries, and virtually all of the forests, ponds, and meadows in his sphere were, in fact, managed landscapes.

Robinson was less concerned about protecting long-diminished ecologies and more focused on finding ways to sustain a diversely planted garden with minimum effort and resources. In addition to locally indigenous plants, Robinson

means of retaining moisture and suppressing weeds.

Areas between plants should mostly be covered with locally derived mulch. This will conserve moisture and reduce weed growth while providing some opportunity to germinate seeds and spores of desirable species. The surface should be disturbed only when necessary to eliminate weeds, since too-frequent disturbance will prevent spontaneous germination. In temperate regions, mosses will establish naturally on moist, shaded, undisturbed surfaces. In addition to their beauty, mosses provide an ideal substrate for the germination and establishment of ferns and herbaceous and woody flowering plants.

Naturalization is the key to wild gardening, and it is more than simply planting plants in places where they will thrive for a time. True naturalization means establishing plants so successfully that they perpetuate themselves indefinitely by self-sowing or by natural vegetative reproduction. Although traditional horti-

cultural practice is to modify site conditions to match plants' needs, the most efficient strategy for naturalization is to match plants to existing conditions as much as possible. This is also the most ecological and sustainable approach.

If you would like to try this in your own garden, begin by making an inventory and evaluation of the cultural niches you can identify: These are akin to habitats. Although some garden sites are richer than others in their variety of conditions, most sites include several microhabitats. In addition, the diversity of cultural conditions usually increases as maturing plantings influence available light and moisture.

You don't need a large property to practice wild gardening. Wildness works at all scales, often finding full expression in the smallest niches in gardens of any size. Likewise, wildness can flourish within formal frameworks. The distinction is in promoting truly dynamic relationships within your garden's flora and fauna.

naturalized many North American, European, and Asian species at his West Sussex garden, Gravetye Manor, and the resiliency of Robinson's naturalized plantings there are proof of the practical value of wild gardening.

Though none of Robinson's introductions have subsequently taken over the English countryside, environmental conditions in his region are unlike those in most of North America, and his results are only partly relevant here. Robinson was particularly pleased with his success in naturalizing minor bulbs—including daffodils, crocuses, snowflakes, and glory-of-the-snow—in meadows. Bulbs of this type have proven equally suited to naturalization in North American gardens without risk of environmental harm.

EDITING AND MAINTAINING

As true wildness becomes more established, management of the garden naturally shifts from deliberate planting to editing, and there is great efficiency in this. It is far less time-consuming and resource-intensive to edit out an excess of



Pinkroot (*Spigelia marilandica*) has been naturalized in the author's Pennsylvania garden for decades, although it grows nearly everywhere except where it was originally planted. This colorful southeastern native is difficult to propagate because its seeds usually scatter before they can be collected. Once it finds the conditions it requires in the garden, however, it self-sows readily but never to the point of being a nuisance.

desired plants than it is to regularly replace plants that have died.

Similarly, it is easier to edit self-perpetuating, ground-covering plant populations than it is to continually spread truckloads of mulch. And editing can be a

supremely artful exercise. Truly naturalized plantings often have the capacity to produce dramatic sweeps and interwoven matrices. As your understanding of the dynamics of these populations grows and your eye develops, it becomes quite satis-



Patterns of indigenous grasses and showy goldenrods (*Solidago speciosa*) in the gravel hill section of the Chicago Botanic Garden's Dixon Prairie are unquestionably beautiful. Although they appear artful, they are largely the result of natural dynamics, as plants in the community respond to sunlight, soil conditions, water, and competition.

TIPS FOR MANAGING WILDNESS IN YOUR GARDEN

Lighten up on control. Inviting wildness into your garden doesn't mean inviting chaos—it just means relinquishing sufficient control to allow plants to find their ideal niches and to evolve into real communities sustained by fertile, dynamic relationships. Garden maintenance will be reduced if you let plants do more of the work for you: replacing themselves and providing natural weed suppression. Shift your emphasis from planting to editing.

Embrace observation. Be watchful. Recognize that observation is a pleasurable part of the essential work of maintaining a garden. When traveling, explore the dynamics evident in plant communities you visit for useful insights into plant behavior. Pay special attention to the ground layer, and learn to recognize plants at their youngest stages. Make a point to look for desirable seedlings and nurture them. Learn to recognize problem plants as seedlings so you can remove them before they become established.

Adapt plants to site, not site to plants. The key to a resource-conserving, sustainable landscape is to make the most of existing conditions. Evaluate the habitats and micro-habitats on your site, and choose plants matched to available growing conditions. Think twice before removing self-sown plants, since they often provide cues to where they are most likely to thrive. This managed wildness is the basis of true naturalization.

Choose plants with genetic

viability. Ensure a majority of the plants you select are capable of producing fertile seed. Some species require the presence of genetically distinct individuals for seed production. Others require the presence of male and female plants for effective pollination. Plant a mix of named cultivars and unnamed seedlings. Rely on vegetative cultivars when necessary to meet design goals but use unnamed seed-grown species whenever design allows.

Allow seeds to disperse naturally. Don't be in a hurry to neaten up the garden after flowering is finished. Allow seeds and fruits to remain on plants until they are naturally dispersed.

Be responsible with exotics. The safest approach is to work with only local or regionally indigenous species, but there are many examples of exotic plants that may be naturalized without risk to regional ecosystems. Before introducing any exotics to your garden, however, do some research to confirm they are not known to cause problems in your area. —R.D.




Above: A northern flicker feeds on viburnum berries in winter. **Above, right:** Since wildness in the garden is heavily dependent upon regeneration from seeds, it's important to allow seeds to remain on standing plants until they are naturally dispersed. These intricate white wood aster seeds are quite beautiful if closely observed, and these and many other seeds provide critical sustenance for birds and other local wildlife.

fy to employ editing to produce pleasing patterns in the matrix. Editing is equally appropriate for herbaceous and woody layers, and naturalized trees and shrubs can also be edited for pattern.

Although editing often means simple removal, spontaneous seedlings can also be transplanted elsewhere in the garden or given to friends. Seedlings thriving in your own soil and local climatic conditions typically transplant more easily and have greater survival rates than plants you purchase from a nursery or seed company.

How does wildness relate to the city? It is perhaps as important to the future of our urban spaces as anywhere else, if we intend to keep them green. Urban ecologies, especially in post-industrial regions, have been modified in the span of two centuries to the point that soils and growing conditions are often radically unlike those in which the indigenous vegetation evolved. The resiliency of wild vegetation, both native and exotic, and its ability to adapt to our modern environment makes it a critical resource. This is nothing new. The global flora has been

in flux throughout the grand scale of history, and all our present ecologies are the result of evolution and migration. Wildness has been essential to the origin and sustenance of today's species, and will remain so for tomorrow's. Wilderness may be no more than a mythic ideal; however, wildness is something tangible, knowable, and valuable. 

An award-winning author, photographer, lecturer, and landscape design consultant, Rick Darke (www.rickdarke.com) lives in Landenberg, Pennsylvania.

High-Rising Edibles

Utilizing the third dimension to grow vegetables and other edibles makes optimum use of available garden space and offers many other advantages.

BY KRIS WETHERBEE

ARE YOU crazy about cucumbers but hate how they can overrun your vegetable garden? Tempted to grow winter squash but don't have the room? Do you love the flavor of 'Brandywine' and other indeterminate tomatoes but have had to give up on them because they sprawl all over the ground?

Even when garden space is limited, you can still grow space-hungry vegetables such as squash, melons, and tomatoes. Growing vegetables and vining fruits on an arbor or vertical trellis is the most efficient way to accommodate these plants.

Necessity led me to that discovery nearly two decades ago when my husband and I were certified organic market growers. Our market garden consisted of about 8,000 square feet of space. While that may seem like a lot to someone growing vegetables for personal use, it's really not very much for a commercial operation.

Taking advantage of the vertical dimension immediately increased our yield per square foot of growing space and allowed us to diversify our offerings because we could fit more plants in a given area. Once we began refining our growing practices and integrating tips from other gardeners, we discovered even more benefits to vertical gardening.

ADDITIONAL INCENTIVES

"Trellising makes for a more orderly garden and, most importantly, brings more sun and air to the plant surfaces," say Gabriel S. Murphy, chef of Gogi's Restaurant in Jacksonville, Oregon. Owned and operated by Gabriel and brother Jonoah Murphy, much of the restaurant's produce comes from their one-acre Applegate Valley farm.

For the Murphy brothers, trellising their cucumbers, melons, beans, winter squash, and tomatoes helps bring a superior quality to the produce. Growing ver-



This handcrafted wooden trellis works well for growing scarlet runner beans. Its open framework permits good air flow to minimize disease while still lending enough support for the vines.

tically eliminates soil contact so vegetables and fruits stay cleaner and are less likely to rot. Fruits are quicker to ripen and often more flavorful due to the additional sunlight exposure. And since the veggies and fruits are more visible and not hidden beneath lush growth, they can be harvested at their peak of perfection.

Trellising helps minimize mildew and other plant diseases. "An easy way for plants to contract a disease is by getting leaves wet," says Josh Kirschenbaum, product development director for Territorial Seed Company in Cottage Grove, Oregon. "Foliage that's held off the ground is less likely to get wet from rou-



By trellising his tomatoes against a south-facing wall that provides shelter from wind and collects heat from the sun, this Oregon gardener ensures an earlier and more prolific harvest.

tine waterings and, consequently, less likely to become diseased.” When trellised plants do get wet, the added air circulation helps leaves dry out more quickly.

In addition, trellising saves strain on your back because there is minimal bending over needed to harvest crops. Compared with standard growing practices, less watering, weeding, and feeding is needed to produce the yield from vegetables grown on vertical supports. “Trellised edibles can also make a wonderful living fence or privacy screen,” adds Kirschenbaum.

GETTING STARTED

Before setting up any type of trellis system, it’s important to prepare the soil. This is essential to produce increased yields in a smaller space. Ideally the soil should be loose, free draining, and high in organic matter. Amending the soil prior to planting with lots of compost or well-rotted manure will improve the soil tilth and fertility and help get plants off to a good start.

Where and how you situate your trellis system is equally important. Keep in mind that plants growing vertically will cast a shadow. Running your trellis in an

east-to-west direction on the north side of your garden will create optimal light exposure for trellised plants while casting the least amount of shadow in the garden. Shadows cast over neighboring sun-loving crops can be minimized by running your trellis in a north-to-south direction, though vertical plants on the northern end of the trellis will receive less light than plants on the southern end.

A few shadows are inevitable, but gardeners can use these to their advantage by planting shade-tolerant crops near a plant-laden trellis. “Lettuce, spinach, and other leafy greens tend to prefer cooler temperatures and often do not perform well in the heat of summer,” Kirschenbaum explains. “A trellis oriented in an east-to-west direction will provide shade in the growing space north of the trellis.”

TRELLIS-WORTHY EDIBLES

Any vining or sprawling plant with fruits smaller than a bowling ball can be trellised as long as they are grown on a sturdy, tall structure that is strong enough to support the weight of the mature plant and resulting fruits.

Lightweight trellis structures are often adequate to support the weight of cucumbers, pole beans, and peas. Those needing sturdier support include indeterminate tomatoes (which keep growing and producing fruits until frost), non-bush vari-



When trained on a wire trellis, peas are more productive and easier to harvest.

TRELLIS TIPS

- Avoid disturbance to plant roots and emerging seedlings by installing your trellis before planting in the garden.
- For easier harvesting, choose netting or panels that have large openings.
- Set your trellis firmly in place by sinking trellis posts 24 inches deep.
- Vertical frame trellises are often set side by side in a straight row. But arranging them in a zigzag pattern, as an arbor, or with spacing between frames, will create different microclimates for integrating low-growing plants such as lettuces and herbs.
- To allow for tilling and other bed modifications, trellising should ideally be portable or relatively easy to dismantle.

—K.W.

eties of summer squash, and small-fruited winter squash. A heavy-duty trellis is required to support the weight of non-bush varieties of small melons or pumpkins (bowling ball size or smaller), determinate tomatoes, and winter squash.

Depending on the mature fruit size of the variety—a melon the size of a bowling ball can weigh up to eight pounds—you may also need to attach a sling made of nylon stockings or other stretchy material to the trellis and place the developing fruit in the sling. The added support will ensure that the fruit stays on the vine and doesn't cause the vine to break.

STANDING TALL

A variety of trellis systems can be used to grow vegetables, from cages to poles, stakes, string, trellises, and arbors. Plants are typically grown up plastic or string mesh, chicken wire, or hog panels, or by hand-strung twine or wire attached to trellis supports made of metal, wood, bamboo, plastic, or PVC pipe.

My favorite structure for trellising plants is a hog or cattle panel—these are basically sections of fencing made of galvanized heavy wire. Cattle panels are usually about five feet tall with square openings about six inches across. Hog panels are about three feet tall, with top square openings about six inches across that get progressively smaller lower to the ground.



Sources

Agri-Supply Company, Garner, NC. (800) 345-0169. www.agrisupply.com.

A.M. Leonard's Gardeners Edge, Piqua, OH. (888) 555-5676. www.gardenersedge.com.

Lee Valley Tools, Ogdensburg, NY. (800) 871-8158. www.leevalley.com.

Park Seed, Greenwood, SC. (800) 213-0076. www.parkseed.com.

W. Atlee Burpee Co., Warminster, PA. (800) 333-5808. www.burpee.com.

Resources

American Horticultural Society New Encyclopedia of Gardening Techniques. Edited by David J. Ellis, Fiona Gilson, Rita Pelczar, and Graham Rice. Mitchell Beazley/Octopus, New York, New York, 2009.

Burpee The Complete Vegetable & Herb Gardener by Karan Davis Cutler. Macmillan, New York, New York, 1997.

Designing the New Kitchen Garden: An American Potager Handbook by Jennifer Bartley. Timber Press, Portland, Oregon, 2006.

Available from farm supply stores, these provide an inexpensive way of creating a long-lasting and rust-resistant trellis. The panels work well with pole beans and peas as well as tomatoes and non-bush varieties of cucumbers and summer squash. However, vining crops such as gourds and melons may be too heavy, depending on how the panels are used.

In our garden, we use two 10-foot sections of hog or cattle panels to form an A-frame, securing them at the top. You can also run panels upright and secure them to metal posts spaced about five feet apart in a row, attaching the panel to each post with heavy-duty wire or zip ties. To raise the trellis height to six feet tall, simply attach the panel two feet off the ground.



Above left: Scarlet runner beans climb string on this “maypole” style trellis. Above right: Wire panels joined at the top to form an A-frame are an efficient way to support tomatoes, cucumbers, summer squash, and other crops that require sturdy support.

Another hog- or cattle-panel trellis can be made by bending a panel into a U-shape and then pushing the ends into the ground to form an arch. Secure the trellis in place by pounding four-foot pieces of rebar about two feet into the ground at the corners and then wiring the panel to the rebar for added strength.

Bean teepees can easily be made by securing several eight- to 10-foot lengths of bamboo or rebar together at the top. The bottom ends are then spread out in teepee fashion around the growing area. Secure the teepee by pushing each end of the pole down into the ground as far as it will go, from one to two feet. Weave garden twine through the poles or wrap and secure chicken wire around the teepee to create a surface for plants such as pole beans, pole peas, or cucumbers to climb.

AN INNOVATIVE IDEA

Trellising doesn't have to be vertical. In New Orleans, Lance Hill, executive director of the Southern Institute for Education & Research at Tulane University in New Orleans, has discovered that the best way to grow mirlitons (*Sechium edule*), also known as chayote or vegetable pear, is on a horizontal trellis. "The increased sun exposure and air circulation allows for easy access for hand pollination and greater yields," Hill explains.

Some mirliton growers construct a pergola-type trellis similar to ones designed for grapes. Plants climb up trellis posts and then grow across the top "roof" (usually made of heavy-duty wire panels), creating a canopy of vegetation. However, Hill has devised a four-foot high horizontal trellis that works well in small spaces. A series of metal posts are placed four feet out from the fence. He then uses clips to fasten a 50-foot-long-by-four-foot-wide roll of fencing wire to the existing fence and metal stakes, creating up to six times the growing space compared to growing mirlitons up a fence.

Whether you place your trellises horizontally or vertically, growing certain vegetables off the ground expands your gardening options. Either way, your garden—and the bounty it provides—will soar to new heights of satisfaction. 🌱

Author Kris Wetherbee and her husband, Rick, grow vegetables, fruits, and ornamental plants in their Oakland, Oregon, garden.

TYPES OF TRELLISING

There are many different types of trellis systems to choose from. Here's an overview of some of the most useful setups for vertical gardening.

CAGES Often used for growing tomatoes, cages can also be used to support peppers and eggplant. Cone-shaped cages can be reinforced by sinking two to three stakes on the inside of the cage. You can also make your own using concrete reinforcement wire mesh to make a circular cage or as a box cage secured to wooden posts.

METAL STAKES AND SPIRAL RODS Plants are wound around and loosely tied up a single six- to eight-foot-tall stake or rod. Fruit is easily accessible, but the plant must be pruned to one main stem for optimum support. These are best suited for growing determinate tomatoes.

TEEPEES Eight-foot poles made of bamboo, wood, or metal are typically used to make a teepee-style trellis. The frame is often wrapped in string, chicken wire, or netting to give vines additional support to climb. Teepees are ideal for pole beans, pole peas, and cucumbers.

ORGANIC OPTIONS Corn stalks can be used as support posts for growing beans (corn should be sown three to four weeks before sowing beans). Branches with twiggly growth and a stem at least two inches in diameter (sink the stem into the soil at least one foot deep) create an organic structure for supporting vigorous bush peas or beans.

A-FRAME TRELLIS Two heavy-duty wire panels or wooden frames covered with wire or plastic mesh are leaned together to form an A-frame and then secured at the top with wire or hinges. Seeds are then sown along both sides at the bottom of each frame. This type of trellis will support beans, peas, and most edible vining and non-bush crop varieties with small fruits.

ROW TRELLIS This simple system has its roots in the commercial fields but can easily be converted to small gardens. One type of row trellis is **frame-and-wire**, which is basically a wood, metal, or PVC-pipe frame with extended legs that can be sunk one to two feet into the ground. Wire or twine is then run between the upper and lower sections of the horizontal frame.

Another type of row trellis system is the **post-and-wire** or **stake-and-weave**, which consists of six- to 10-foot steel T-posts spaced four to six feet apart. Heavy-duty string, twine, or wire is stretched horizontally between posts and then attached to each post. If used as a trellis for tomatoes, each new line of horizontal twine or wire is installed and woven around plants as they grow in height. Another option is to attach trellis netting to the posts with staples or tied with wire or twine. This method is well suited to growing cucumbers, pole beans, or peas.

—K.W.



Wire cages are suitable for cherry tomatoes.

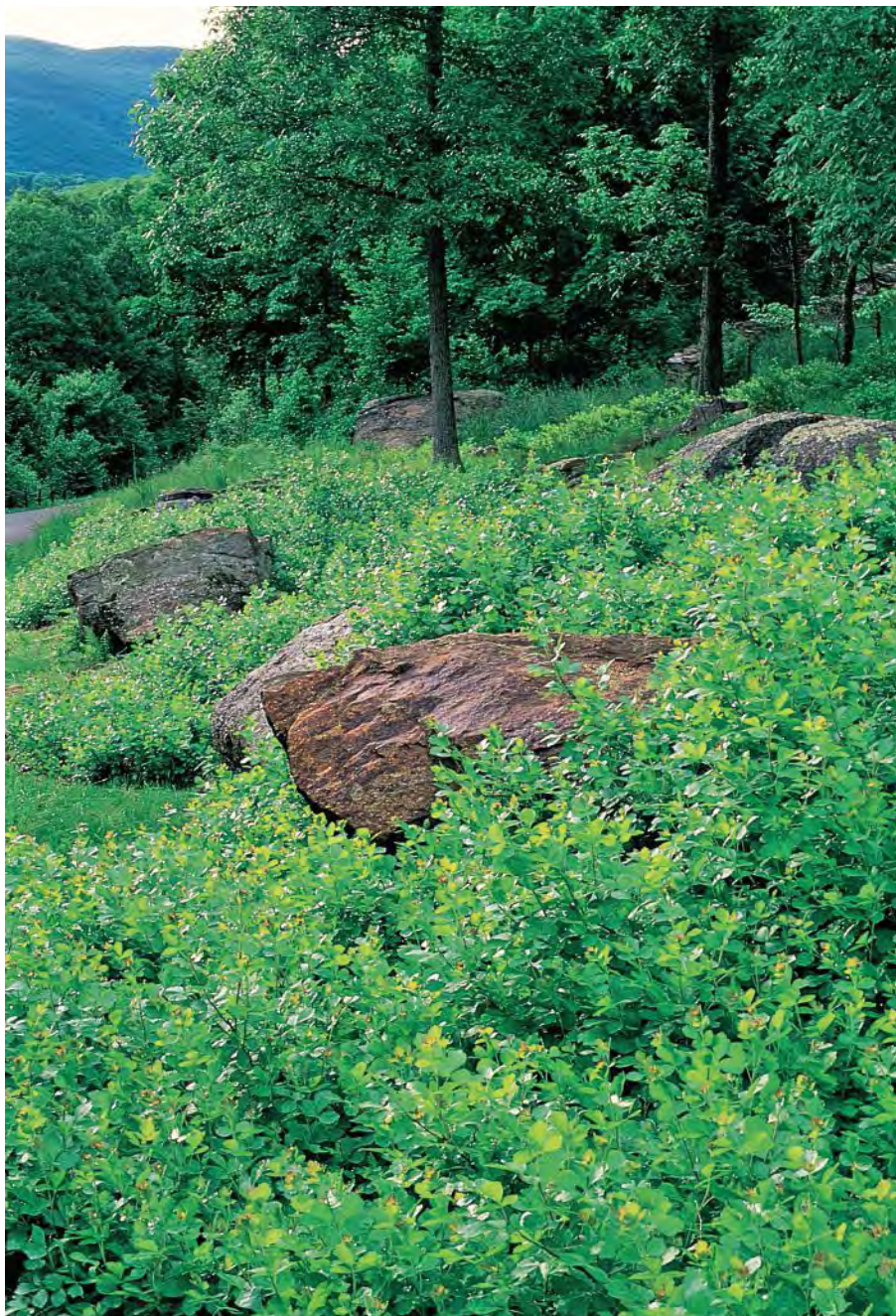


Cucumbers grow well on a stake-and-weave row trellis.

Plants *on the* Rocks

Taking inspiration from the beauty of native plants growing on and around rocks in wild places, the author offers ideas for using these plants in challenging garden settings.

ARTICLE AND PHOTOGRAPHS BY KAREN BUSSOLINI



One of the author's Connecticut neighbors encouraged the hardy fragrant sumac (*Rhus aromatica*) 'Gro-Low' to colonize this rocky slope along a hillside driveway.

HAVING SPENT a good portion of my childhood daydreaming on mossy ledges threaded with Canada mayflowers, wild strawberries, and trout lilies, I have always been drawn to rocky places inhabited by plants. When I need to calm myself from life's stresses, one of my most effective visualization techniques is to recall a weathered mountaintop in New Hampshire's White Mountains where crevices are jammed full of lowbush blueberries and three-toothed cinquefoil (*Potentilla tridentata*).

In my own Connecticut garden, the beauty of an enormous hemlock—seeded long ago into a cliff face and now painted with lichens, mosses, and polypody ferns—regularly inspires me to hoist myself up the hillside for a closer view. I treasure these volunteers that thrive in places I'd never attempt to plant, so over the last few years I have spent time investigating how—and why—these relationships work in different regions. For me, regionally native plants and rocks embody the architecture of nature and speak powerfully of place.

Throughout North America, plants enticingly colonize rocky areas of all kinds, from mountaintops to rock slides, outcrops, volcanic formations, crumbling sandstone, limestone ledges, and gravelly depressions. Counterparts to these rock formations, both natural or constructed, are found in most of our yards. Exposed bedrock and glacial rocks are unavoidable in my region. Stone also abounds in the built landscape, in sidewalks, stone terraces and steps, stone walls, and gravel driveways and paths.

Plants with the tenacity to colonize these difficult niches visually soften the hard surfaces and tie them—both aesthetically and ecologically—to the rest of

CHARACTERISTICS OF GOOD ROCK COLONIZERS

There are certain physiological characteristics that help rock-dwellers survive and squeeze out the competition. Shallow roots anchor plants and find nourishment in tiny pockets of duff or thin soil atop ledges. Rhizomes (underground stems) and stolons (horizontal stems that emerge above ground and form roots where they touch the ground) allow plants such as Canada mayflowers (*Maianthemum canadense*) and creeping phlox (*Phlox stolonifera*) to colonize thin soil. Plants with fibrous root systems, such as Christmas ferns (*Polystichum acrostichoides*), fill up the cracks with a network of fine roots.



Heuchera villosa 'Autumn Bride' and 'Atropurpurea' seeded themselves in limestone steps in this Pennsylvania garden.

In order to withstand fluctuations in temperature and soil moisture, rock dwellers often have fleshy roots or leaves to store water, leaves that are small and basally arranged, leaf surfaces covered with hairy or waxy coatings, or silver coloration. Buckwheats (*Eriogonum* spp.) and other mat-formers spread out, shading out the competition while cooling and conserving water for their own roots. Plants that sucker or self-layer, such as fragrant sumac (*Rhus aromatica* 'Gro-Low'), worm their roots or stems around obstacles to send up shoots, or set down roots wherever they find soil.

Penstemons produce great numbers of small seeds that wash into tiny cracks with rainfall. Other plants that send out airborne seeds or spores, including mosses and ferns, also utilize this winning strategy.

Some rock colonizers combine several of these adaptations, and success often runs in families. In the wild, diverse goldenrods (*Solidago* spp.), penstemons, heucheras, pussy-toes (*Antennaria* spp.), junipers, phlox, and members of the heath and saxifrage families occur in and around rocks throughout North America. Many of these plants are good choices for cultivating in the crevices of stone walls and in rocky garden sites. —K.B.

the garden and the surrounding landscape. The scenes that inspire us in nature—especially those close to home, where soil and climate are likely to be similar—can inform us about gardening in, on, and around stone.

For instance, while visiting an Arkansas mountaintop estate a few years ago, I wondered why someone had risked life and limb to plant magnificent silver filigreed American alumroot (*Heuchera americana*) on treacherous crumbling limestone ledges below the manicured lawn. Then it dawned on me that these plants, which had failed to flourish in the carefully prepared soil in my own garden, were growing where they wanted to be, not where someone had planted them.

Sometimes, as in the Arkansas garden, desirable plants colonize rocks spontaneously. But you can't count on such serendipity. Near my home, purple loosestrife, a pernicious wetland invasive, blooms in the dry joint between pavement sections on a bridge. By proactively planting appropriate native rock colonizers that get the upper hand fast,

you can prevent unwanted plants from taking root first.

REGIONAL RECOMMENDATIONS

In his fascinating book, *The Granite Landscape: A Natural History of America's Mountain Domes, from Acadia to Yosemite* (Countryman Press, 2002), ecologist Tom Wessels notes how similar plant communities form on glacier-scoured mountaintops across the country. This holds true for alpine plants from limestone regions as well. Of course, not many of the species well-adapted to grueling mountaintop conditions will tolerate the heat, humidity, competition, soil chemistry, high nutrient levels, and lack of snow cover in gardens at lower altitudes. Serious rock gardeners who cherish these alpinists construct special crevice and scree beds with just the right pH and drainage to cater to their plants' needs. The rest of us, who want to create plantings that require little maintenance, need to seek out plants that are adapted to existing garden conditions. To get recommendations for rock-dwelling plants to supplement my own ex-

perience, I spoke with several experts in different regions of the country. (Additional plant recommendations can be found in the web special linked to this article on the AHS website, www.ahs.org).

NORTHEASTERN ROCK COLONIZERS

Some of the plants Wessels observed on granite mountaintops can be seen growing naturally on rocky ledges at the Coastal Maine Botanical Garden in Boothbay. Among these are heath family members—such as lowbush blueberry (*Vaccinium angustifolium*), black huckleberry (*Gaylussacia baccata*), and bearberry (*Arctostaphylos uva-ursi*)—along with bunchberry (*Chamaepericlymenum canadense*, formerly *Cornus canadensis*) and a tapestry of mosses and lichens. These plants thrive in Maine's cool climate and acidic, nutrient-poor soil—even at sea level. Other ledge inhabitants, including hay-scented fern (*Dennstaedtia punctilobula*) and polypody ferns (*Polypodium virginianum* and *P. appalachianum*), are equally adapted to rocky areas throughout the East.

William Cullina, the botanic garden's plant and garden curator, does as much editing as planting. Cullina nurtures existing ledge communities by removing blackberries and overly aggressive bracken fern in garden areas. He plants desirable natives, including mosses, on and around raw, new stonework and unearthed ledges. Eventually, newly cultivated areas will blend seamlessly with the extraordinarily beautiful natural landscape.

Ana Hajduk, a garden designer, adopts a similar strategy in a client's more temperate, less-acidic New York woodland garden, employing unfussy eastern plants whose native range extends from the Deep South to Canada. Stone retaining walls and steps were built over and around ledge outcrops, soil was removed to expose ledge in places and added to make even paths and planting beds in others. She planted vigorous hay-scented ferns to rapidly cover areas underlain by thin soil. Dainty but tough foamflowers (*Tiarella cordifolia* 'Running Tapestry') drape over retaining walls, blooming in spring with eastern red columbine (*Aquilegia canadensis*) growing between stones. She thins and transplants the prolific foamflowers throughout the garden and scatters columbine seeds to keep the combination going. *Solidago rugosa* 'Fireworks' and white wood aster (*Aster divaricatus*, syn. *Eurybia divaricata*) naturalize in ledge fissures in dry shade and are easy to remove where they are not wanted.

PLANTS FOR THE SOUTHEAST

The Southeast is certainly not known for alpine, but Jan Midgley, an Alabama nursery owner and author of several Southern wildflower guides, says there's no lack of native rock dwellers that are well-adapted to garden settings.

Among the plants she has seen growing in sandstone glades and rocky outcrops are perennials such as native asters, greater tickseed (*Coreopsis major*), blazing stars (*Liatris* spp.), woman's tobacco (*Antennaria plantaginifolia*), azure bluet (*Houstonia caerulea*), and pineywoods dropseed (*Sporobolus junceus*), a grass she considers worthy of a spot on a rock wall.



Northeast natives such as hay-scented fern, bunchberry, and Canada mayflower mingle naturally on rocky ledges at the Coastal Maine Botanical Garden.

Woody vines such as crossvine (*Bignonia capreolata*) and yellow jessamine (*Gelsemium sempervirens*) will root into cracks and scramble over rocks.

From her observations of plants growing on or near limestone outcrops, she suggests that wild petunia (*Ruellia humilis*), American alumroot (*Heuchera americana*), fragrant sumac (*Rhus aromatica*), native prickly pear cactus (*Opuntia humifusa*), the annual *Sedum pulchellum*, and bird's-foot violet (*Viola pedata*) would make themselves equally at home in neutral to alkaline garden

Resources

Chasing Wildflowers by Scott Calhoun. Rio Nuevo Publishers, Tucson, Arizona, 2007.

The Encyclopedia of Grasses for Livable Landscapes by Rick Darke. Timber Press, Portland, Oregon, 2007.

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Native Ferns, Moss & Grasses by William Cullina. Houghton Mifflin Co., Boston, Massachusetts, 2008.

Rock Gardening: A Guide to Growing Alpines and Other Wildflowers in the American Garden by H. Lincoln Foster. Timber Press, Portland, Oregon. Reprinted 1982.

Sources

Eastern Plant Specialties, Rahway, NJ. (732) 382-2508.
www.easternplant.com.

High Country Gardens, Santa Fe, NM. (877) 811-2700. www.highcountrygardens.com.

Prairie Moon Nursery, Winona, MN. (866) 417-8156.
www.prairiemoonnursery.com.

Prairie Nursery, Westfield, WI. (800) 476-9453. www.american-natives.biz.

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

settings such as a limestone terrace or along a cement foundation or marble-chip walk.

SOUTHWESTERN ROCK DWELLERS

While exploring the dry west for his book, *Chasing Wildflowers*, Tucson garden designer and author Scott Calhoun thought the breathtaking beauty of the wild plant communities he saw might make it harder to design gardens. Instead, he gained a



Dudleya hassei, a California native succulent, sprawls happily over a rock outcrop at the San Diego Botanic Garden.

new appreciation for stone in the designed landscape, an expanded palette of plants to try in garden settings, and a refined sensibility of what sustainable gardening in the desert is all about.

Desert wildflowers are mostly annuals; their survival strategy is to lie dormant until winter rains allow them to germinate, bloom extravagantly, set seed, and disappear. The ability of these plants to thrive in poor, rocky, often alkaline, soil recommends them for use in unimproved soil with gravel or decomposed granite mulch, and in places where digging is impossible.

Calhoun points out that while we think of rocky places as dry, rocks actually create microclimates by holding water in their fissures. Throughout the dry West he spotted cacti and yuccas in rocky places and noticed that agaves, *Echeveria* spp., and *Dudleya* spp.—rosette-forming succulents that look like a cross between agaves and *Echeveria*—grow almost exclusively on rock.

Penstemons and buckwheats (*Eriogonum* spp.) inhabit rocky niches throughout the West. Both genera grow

best on poor, dry soil. Calhoun recommends rock penstemon (*Penstemon baccharifolius*), a two-by-three-foot South Texas native that has leathery green leaves and coral pink tubular flowers in summer; Eaton's penstemon (*P. eatonii*) found on scree slopes in Utah canyons, but just as happy in hot Tucson gardens; and canyon penstemon or desert beardtongue (*Penstemon pseudospectabilis*), a shrubby, upright plant that bears rosy to purple flowers. Calhoun likes to combine canyon penstemon with yellow-flowered buckwheat varieties such as selections of *E. wrightii*. Another yellow-flowered selection, *E. umbellatum* var. *aureum* 'Psdowns' (Kannah Creek®) is recommended for colder Rocky Mountain gardens.

NORTHWESTERN ROCK COLONIZERS

People often think that it rains all the time in the Pacific Northwest, but rain is rare all summer, and mountain ranges create huge rain shadows in areas to the east, making conditions there more comparable to drier desert regions. Throughout the Northeast, geology and climate have conspired to foster astonishing plant diversity, which in turn has attracted adventurous gardeners who seem to grow everything beautifully, even on rocky ground.

On a recent drive through the Columbia River Gorge, I spotted glossy evergreen creeping mahonia (*Mahonia repens*), red flowering currant (*Ribes sanguineum*), and snowberries (*Symphoricarpos* spp.) adorning a crumbling moss-covered cliff. These familiar garden shrubs seem like ideal choices to colonize rocky, hard-to-dig slopes in home landscapes not only in this region but possibly in sections of the Rockies and the Northeast.

The West Coast is home to hundreds of rock-colonizing manzanitas (*Arctostaphylos* spp.), most of which, according to Sean Hogan, owner of Cistus Nursery in Portland, Oregon, are only suitable for gardens in western Oregon and California. One ex-



Eriogonum allenii and 'Thai Silk' California poppies, California fuchsias, and variegated yuccas combine well in this gravel garden at Northwest Garden Nursery in Oregon.

ception is bearberry, or kinnikinnick (*A. uva-ursi*), a species that also thrives in upper New England and adjacent eastern Canadian provinces. Many fine cultivars of this plant are available. Bearberries are hardy to USDA Zone 2, but will sulk or waste away if not provided with very acidic soil and good drainage.

I also found inspiration at the wholesale Northwest Garden Nursery, west of Eugene, Oregon, where Marietta and Ernie O'Byrne's gardens overflow with

cultivars such as 'Select Mattole', which has silver leaves, and the green-leaved selection, 'Dublin'.

TIPS FOR SUCCESS

Rocky places can be challenging to plant and maintain. The key to naturalizing natives in the garden—getting them to not just live, but to reproduce—is to put them where they want to be, and give them what they need, but to avoid pampering them. If they prefer nutrient-poor,

sustaining colonies. When building a rock wall, planting between stones as you go gives roots a firm foothold.

Experimenting often yields unexpected successes. For example, Pennsylvania-based designer Larry Weaner likes to plant a few prodigious self-seeders such as *Penstemon hirsutus* at the top of a rock outcrop and let seeds wash down into cracks where seedlings will out-compete everything else.

One of my Connecticut neighbors planted a few small 'Gro-Low' fragrant



In this Connecticut landscape designed by Larry Weaner, *Penstemon hirsutus* thrives on a dry ledge and ostrich ferns fill damp pockets in the rock.

color and dramatic contrasts. The dry garden's fast-draining, rock-studded raised beds are edged with chunks of an old concrete sidewalk and mulched with gravel. Smooth river rocks embellish and serve as place markers for small dormant bulbs. Delicate 'Thai Silk' California poppies dance lightly among the stiff upright blades of various variegated yuccas. Mounds of silver-leaved *Eriogonum umbellatum* and *E. allenii* are at home in the rocks, along with well-behaved low-growing California fuchsia (*Epilobium canum*, formerly *Zauschneria californica*)

gritty, acidic substrate, fill the cracks with fast-draining decomposed granite; give woodlanders rich, water-retentive leaf mold. Water to establish, but don't overdo water or fertilizer.

Finding the right plants can be a challenge, but make sure you purchase plants from responsible nurseries; don't dig plants from the wild however tempting that may seem. If you have any moss inhabiting your rocks, ferns are likely to appear, so avoid dislodging the moss. In tight spaces use small plants—nursery plugs are ideal—to encourage development of self-

sumacs in full baking sun on almost solid rock and loose blasting debris beside his mountaintop driveway. He discovered that if you break off a branch tip and stick it into the ground, or if you skin some bark from the bottom of the branch and weigh it down with a rock, it will root. The sprawling stems trap leaves and debris that improve the soil—just the way they do in those wild rocky places near and far. 🌿

Garden photographer, author, and lecturer Karen Bussolini gardens on a rocky mountainside in Connecticut.

Making Space for Garden Spiders

by Kathryn Lund Johnson



I READ MANY books as a child, but the one that had the greatest lasting impact is *Charlotte's Web*, E.B. White's charming tale of the relationship between a spider and a pig. But while the fictional Charlotte is quite amazing, the real live "Charlottes" are even more remarkable—and plentiful. With a whopping 40,000 spider species worldwide, gardeners are certain to cross paths with many of them regularly, so it's important to understand their role in the garden ecosystem.

Spiders are opportunistic feeders, indulging in a smorgasbord of both "good" and "bad" invertebrates, including butterflies, moths, caterpillars, worms, praying mantises, ants, mites, beetles, flies, bees, wasps, and even other spiders. Though they don't discriminate regarding prey, spi-

ders play an important role in biological control due to the immense variety and quantity of their consumption. Their presence indicates a healthy garden ecosystem and should be encouraged.

SILK AND VENOM

Spiders are not insects; rather they are members of Arachnida, a class that also includes the scorpions, pseudoscorpions, ticks, mites, and harvestmen. A universal feature of spiders is the ability to produce silk, a substance comprised of both rigid and flexible proteins created in glands within the spiders' abdomen. Silk is used for many purposes, including the construction of webs, retreats, egg sacs, and drag- and balloon-lines that help spiders get around.

Most spiders have six spinnerets located at their back end, the "spigots" through which silk is secreted. Each pair of spinnerets produces silk of a different composition—sticky or non-sticky—for specialized functions. As the silk is extruded through the spinnerets, the spider uses its legs to pull on and position it.

With the exception of the hackled orbweavers (Uloboridae), all spiders produce venom, a toxic substance manufactured and stored in glands at the bases of the chelicerae, jawlike appendages located just in front of their mouths. When a spider bites, muscles circling the poison glands squeeze venom into the prey through ducts in the fangs. Common garden spiders offer no threat to humans—the ones to avoid are species such as black widows (*Lactrodectus*

Spiders commonly encountered by gardeners include the black-and-yellow garden spider (*Argiope aurantia*), above left, which weaves a distinctive zigzag pattern into its web, and orbweavers such as *Araneus diadematus*, above right, lurking in a tickseed blossom.

spp.), which spin their webs in wood piles and seldom used outdoor structures, not in the open garden.

Because spiders have very narrow digestive systems, they are unable to consume food in other than liquid form. Some families, including the crab spiders and cobweb weavers (Theridiidae), regurgitate digestive enzymes into the fang wounds to liquefy the prey's tissue, allowing it to be drawn into the spider's digestive system by the unique pumping action of its "sucking stomach."

Other spiders, such as wolf spiders (Lycosidae), nursery web spiders (Pisauridae), and sheetweb weavers (Linyphiidae) employ a messier method of consumption. The razor-sharp teeth on their chelicerae lacerate and mash the prey. With the help of regurgitated enzymes, the prey becomes a more digestible soup.

MODES OF CAPTURE

Spiders' capture methods are family specific. There are ambushers, trappers, and hunters. Crab spiders (Thomisidae) are ambushers with exceptional vision provided by their four pairs of eyes. The spiders are tiny, approximately two-fifths-of-an-inch long. Their legs curve forward, crab-like, allowing for movement forward, backward, and sideways; their flat bodies enable them to hide in small crannies of bark, flowers, and leaves where they sit motionless, often for hours, awaiting their prey. When prey nears, the crab spider grabs it with its powerful front legs, then quickly immobilizes it by injecting it with venom.

The female goldenrod crab spider, *Misumena vatia*, and its cousin the northern crab spider, *Misumenops asperatus*, are capable of camouflage, using hues of yellow, white, or light green to help them blend into their surroundings. The transverse-banded crab spider, *Xysticus transversatus*, gives an almost transparent illusion with its cream, gray, and brown coloring. It usually lurks under the bark of trees, among stones, or in leaf litter.

Spiders that construct webs to snare their prey are called trappers. The members of the orbweavers (Araneidae), ranging in size from one-fifth-inch to one inch, spin intricate webs in just 30 to 45 minutes. The spider begins by spinning several overlaid silk strands called the bridge. It then lowers itself from the bridge on a vertical



An unlucky rose chafer beetle becomes a meal for this goldenrod crab spider (*Misumena vatia*).

thread and builds a hub. The spokes, or radii, are spun of non-sticky silk that will allow the spider unimpeded travel to the trapped prey. The threads spun spoke to spoke are woven with sticky silk. Despite the complexity of their webs, many orbweavers dismantle and consume them nightly, recycling today's proteins into tomorrow's snares.

Among the most commonly seen garden spiders are orbweavers in the genus *Ar-giope* that incorporate a zigzag pattern, called a stabilimentum, into the hub.

While research has not conclusively established the purpose of the pattern, its presence is a definitive tool for the identification of these spiders. Because orbweavers have poor vision, they rely on web vibrations to signal that a meal is imminent. They position themselves upside down on or near the web, until the entrapment of an unsuspecting—and usually winged—insect. Then they dart out, seize the prey, and immediately begin a process of rotating it with their front legs as their back legs swathe it in silk. An in-



Camouflaged on a rock, the elegant crab spider (*Xysticus elegans*), above, waits in ambush. An orbweaver spider, right, sits patiently in its dew-spangled web.





Wolf spiders (*Schizocosa* sp.) are commonly found in leaf litter or mulch.

jection of venom further helps immobilize the prey, which they carry into the hub. Two species widely distributed in North America are the banded garden spider (*Argiope trifasciata*) and the black-and-yellow garden spider (*A. aurantia*).

Wolf spiders are hunters that actively roam in search of prey. These spiders range in size from a half-inch to two

inches. They use their coloring as camouflage, varying by species and habitat. Four pairs of eyes allow wolf spiders to identify their victims from a distance as they scurry along the ground in pursuit of quarry—some during the day, others at night. Prey is pounced on, bitten, then crushed by the spiders' powerful chelicerae.

The female wolf spider is notable for the way she cares for her young. She wraps her

newly laid eggs in a large silken sac, attaches it to her spinnerets and carries it around beneath her body. When the tiny spiderlings hatch, they climb onto their mother's back where they live off their yolk sacs for one to two weeks until they are mature enough to go off on their own.

ENCOURAGING SPIDERS

So how can you encourage different types of spiders to take up residence in your garden? Mulch affords protection and helps

Resources

Spiders of the North Woods by Larry Weber. Kollath-Stensaas Publishing, Duluth, Minnesota, 2003.

The World of the Spider by Adrienne Mason. Sierra Club Books, San Francisco, California, 1999.

maintain a level of humidity crucial to spiders' existence. Leaving some plants in place at the end of the gardening season provides excellent overwintering habitat for spiders and other wildlife. Most important, however, is to avoid indiscriminate use of pesticides, which will either kill spiders or discourage their presence because their potential prey has been eliminated.

Inviting spiders into your garden will give you an excellent opportunity to observe your very own Charlottes and to find out, firsthand, what truly fascinating creatures they are!

Kathryn Lund Johnson is a freelance writer based in Middleville, Michigan.

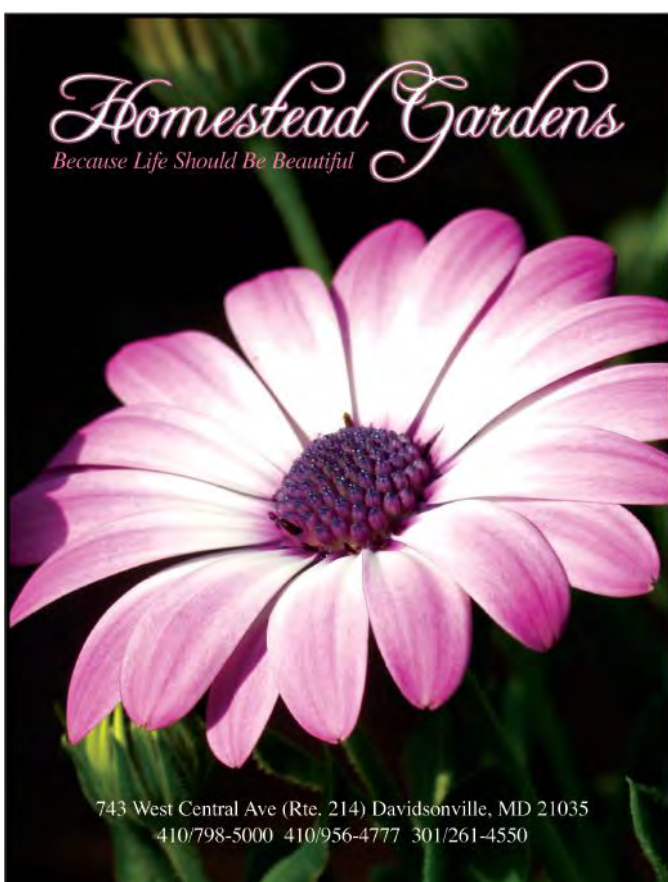
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Shiitake Mushrooms: Delicious and Easy to Grow

article and photographs by Barbara Pleasant

WE WINCED as we did it, but last winter my husband and I harvested a sturdy young oak from our woods to start a new crop of shiitake mushrooms. Because the sugars and other nutrients that shiitakes need to grow are most abundant in live, dormant wood, they must be started on fresh logs. Our tree was the perfect specimen with a five-inch-diameter trunk and flawless, healthy bark.

However, you don't need to sacrifice a live tree to grow outdoor shiitakes. A local tree service can help you to find appropriate logs. Then, once you see how easy and rewarding these delicious and healthful mushrooms are to grow, they may become your favorite edible crop.

GROWING GUIDELINES

Unlike plants that run on sun and soil-borne nutrients, shiitakes (*Lentinula edodes*), native to eastern Asia, are the fruiting bodies of a long-lived fungus. In nature, the shiitake's job is to speed decay of fallen forest trees. To grow shiitakes in your yard, simply mimic this process by placing your logs in a moist, shady spot. Shade prevents the logs from drying out, which will stop the fungi from growing. But even with shade, supplemental water is usually needed to keep logs from getting too dry. Shiitakes can be grown outdoors throughout the United States as long as supplemental water is available.

Shiitakes grow better on certain types of wood than others. White or red oak

logs are the best—*shiitake* translates to “oak mushroom” in Japanese—with sugar maple running a close second. These woods provide good nutrition for shiitakes and retain their bark—which serves as a barrier to competing fungi—for a long time.



Homegrown shiitake mushrooms are easy to grow outdoors in any garden.

Research from the University of Missouri's Center for Agroforestry indicates that three-foot-long logs between three and five inches in diameter are the best producers. Longer logs produce for a longer time (we have some five-footers

that are still bearing after 10 years), but shorter logs are easier to handle.

PREPARING THE LOGS

The simplest way to inoculate shiitake logs is to use dowel or plug spawn—wood dowels that are white with mycelium (the shiitake's vegetative form). Loose sawdust spawn and bullet-shaped “thimble” spawn are also available. (Spawn and other mushroom-growing supplies are available through mail-order; see “Sources” on opposite page.)

I like dowel spawn because it gives a tight “graft” when the dowels are pounded into one-and-a-quarter-inch-deep holes drilled into the logs, six inches apart. I use a regular drill with a five-eighth-inch drill bit, but if you're doing a lot of logs, upgrade to a high-speed drill with a screw-tip bit. To make sure the holes are the correct depth, I use paint to mark one-and-a-quarter-inch drilling depth on my drill bit; you can also use a bit with a collar stop to avoid drilling too deep. As you drill, be careful to avoid excess damage to the bark.

After the holes are drilled, use a hammer to tap a piece of dowel spawn into each one. The finishing touch is a coat of food-grade cheese wax (available from mushroom suppliers), dabbed over the filled holes to seal in moisture and keep out invading fungi. I use a clean metal food can from the recycling bin for melting wax, and apply it with an inexpensive disposable paint brush.

PRODUCING SHIITAKE MUSHROOMS AT A GLANCE

New shiitake mushroom logs can be started any time from fall to late winter using freshly cut three- to five-inch-diameter sections from oak or sugar maple trees.

Allow inoculated logs to rest in a moist, shady spot near an accessible water source for a year.

After a year, you can begin checking for mushrooms after rainy spells. Or, if you don't want to wait for rain, you can induce fruiting by soaking logs in water. A good log will produce three flushes per year for three to 10 years.—B.P.



First-year logs in a shady part of the author's garden bear a fall crop of mushrooms. Some logs can be productive for a decade.

Now the logs are ready to be stashed in the shade. I arrange them close together on a bed of leaves, but they can also be stacked. During periods of dry weather, be sure to thoroughly water the logs to keep the mycelium growing.

PRODUCTION CYCLE

In some climates, certain strains of shiitake will begin fruiting after six to eight months, but most begin bearing about a year after logs are inoculated. You can allow the logs to fruit naturally, which they often do a few days after a soaking rain.

The first signs of fruiting are rounded “buttons”—the caps of the mushrooms—emerging from the logs. These develop into the beautiful brown-capped shiitakes that are a gourmet delight. In my USDA Zone 6 climate, the first flush comes in late spring, with others during the summer and fall. Individual logs fruit on 10- to 12-week cycles. Production stops in late fall, once temperatures drop into the 40s.

You also have the option of “forcing” mature logs to fruit by soaking them in cool (50–55 degrees F) water for 20 hours or so. Mushrooms will appear about five days after soaking.

In colder climates, where low temperatures delay fruiting in spring, you can bring a mature log into a cool room

in late winter to let the mycelium become active. After six to eight weeks, soak the log to induce fruiting and place it outdoors again.

PEST AND DISEASES

Slugs, snails, beetles, fungus gnats, and even mice will feed on shiitakes left outside too long, so it is best to harvest them promptly. Also, avoid keeping your logs too wet. The bark will last longer as a protective barrier if it is allowed to dry out between waterings.

RECOMMENDED VARIETIES

A few shiitake strains have earned variety names, for example ‘West Wind’, which grows especially well on red oak, and widely-adapted ‘MM510’, which fruits in a wide temperature range. But the best way to choose spawn is to buy a regionally-adapted strain from a producer based in your area.

ENJOYING THE HARVEST

Harvest shiitakes when they have developed rounded caps three or more inches across by twisting them off the log with their stem attached. Brush off dirt and debris with a damp cloth, but wait until just before cooking to wash shiitakes. Meanwhile, store them in the refrigerator in a paper bag.

Sources

Everything Mushrooms, Knoxville, TN. (865) 329-7586.
www.everythingmushrooms.com.

Field & Forest Products, Peshtigo, WI. (800) 792-6220.
www.fieldforest.net.

Gourmet Mushrooms and Health Products, Graton, CA. (800) 789-9121.
www.gmmushrooms.com.

Mushroom People, Summertown, TN. (931) 954-4400. www.mushroompeople.com.

A list of mushroom suppliers in other areas of the country and a comprehensive bibliography on growing shiitakes are available at www.mushroomcompany.com.

Resources

Growing Shiitake Mushrooms in an Agroforestry Practice, University of Missouri. www.centerforagroforestry.org/pubs/mushguide.pdf.

Producing Shiitake Mushrooms: A Guide for Small Scale Cultivation on Logs, North Carolina State University. www.ces.ncsu.edu/nreos/forest/woodland/won-20.html.

Like other mushrooms, shiitakes release their juices after about five minutes of cooking time, and then begin shrinking into more toothsome bites. Try cooking shiitakes in a little olive oil and sea salt, and then add them to soups, risottos, omelets, or other dishes.

One cautionary note: While many people enjoy eating uncooked shiitakes, they have been known to trigger allergic reactions. Experts recommend cooking all mushrooms before eating to destroy hydrazines and other toxic compounds. ☞

Barbara Pleasant is a freelance garden writer based in Floyd, Virginia. Her most recent book, with coauthor Deborah Martin, is The Complete Compost Gardening Guide (Storey Books, 2008).

Amy P. Goldman: Heirloom Fruit and Vegetable Advocate

by Viveka Neveln

THE AUTHOR OF three award-winning books on heirloom melons, squash, and tomatoes, Amy P. Goldman has been growing fruits and vegetables for nearly 40 years. As she puts it, “This is no casual acquaintance. We’re talking true intimacy here.” Not only does this passion shine through in her books—for which she personally field- and kitchen-tested thousands of varieties—but also in her efforts to preserve the “best of the past for the future.”



A strong proponent of growing one’s own food in general, Goldman is particularly interested in protecting the biodiversity represented in heirloom fruit and vegetable varieties that have been passed down through the generations. Many of these varieties are in danger of disappearing forever because they are no longer being handed down or they are being replaced with new hybrids. Through the Seed Savers Exchange (SSE), a nonprofit organization based in Decorah, Iowa, that works to conserve heirloom plant varieties, Goldman, who has served on its board of directors since 2007, hopes to slow this “genetic erosion” and safeguard the rich horticultural legacy heirlooms represent.

Associate Editor Viveka Neveln caught up with Goldman to talk about her views on edible gardening, her inspiration for writing her books, and why she believes it is so important to preserve heirlooms.

Viveka Neveln: You were a practicing clinical child psychologist at the beginning of your career. How did you become interested in gardening?

Amy P. Goldman: Psychology and horticulture both involve the nurturing of growth, so there’s a logical career progression. My love for plants dates back to my earliest childhood on the north shore of Long Island. I was a tomboy who loved to play in our orchard’s large, old apple trees. Later, at about the age of 17, I had my first vegetable garden. My family life centered on food. We loved to eat and cook, so I got lots of positive reinforcement for supplying fresh veggies for the table!

There are many definitions of the term “heirloom.” What’s yours?

An heirloom is an open-pollinated plant of value that breeds true from seed and thus can be handed down to the



A sample of the varieties Goldman grew while researching and writing *The Heirloom Tomato*.

next generation. Many are oldies but goodies; some are of more recent vintage—all are keepers, worth preserving.

Why do you think heirlooms are important to preserve?

Our farming and gardening ancestors—who, over the course of the last 11,000 years, domesticated all of our major food crops—have passed the seeds of these plants to us through the generations.

Contrast this with modern F1 hybrids whose saved seed do not breed true. This is more profitable for the seed companies that develop and market them, because customers must return each year to buy new seeds. However, in order to create a more bountiful future—to breed crops that can cope with climate change and resist disease, we need to preserve the vast genetic reservoir that is our heritage. By some accounts, it’s disappearing at the rate of about two percent per year.



Above, left: To ensure that seeds from her heirloom tomato varieties breed true to type, Goldman places mesh cages over them when they are flowering to prevent insects from cross-pollinating them. Above, right: At harvest time, Goldman's shed is filled with squash of all varieties.

What is your garden in New York's Hudson Valley like, and what are you planning for 2010?

I have two plots: one an acre in size and another measuring 40 feet by 60 feet. Last season, I took a break from growing vegetables for research and publication purposes and grew what I love most: tomatoes, squashes, melons, potatoes, carrots, parsnips, string beans, lettuces, and other leafy greens. In 2010 I'll be trialing various plants again for possible new books.

What inspired you to write the books you have on melons, squash, and tomatoes, and how did you decide which varieties to include?

I'm definitely biased towards the luscious, savory, mouth-filling, and juicy fruits. I started with my favorites and let the varieties increase until the gardens were full. My aim was to find a representative sample of the most beautiful, delicious, unusual, and celebrated varieties.

Seeds for some heirloom varieties can be hard to find. Where did you get yours?

Lots of material came from Seed Savers Exchange members and its gene bank. Oth-

ers came from commercial seed sources here and abroad. And I have been known to take seeds off dinner plates in restaurants or filch a tomato for its seeds from someone else's garden!

You have been involved with the SSE for many years. What are some of the most important things the organization does to protect heirlooms from extinction?

Seed Savers Exchange's mission is to preserve the world's diverse but endangered garden heritage for future generations by building a network of people committed to collecting, conserving, and sharing heirloom seeds and plants. With a membership of more than 11,000 worldwide, the SSE has been very successful over the last 35 years in developing this network of gardener conservationists and spreading the

good word about heirlooms. We promote on-farm, in-garden conservation. And we run a gene bank as a back-up for members. Since 1975, SSE members have passed along approximately a million samples of rare seeds to each other.

What would you say is key to the SSE achieving its goals?

A large part of our mission is teaching others about the value of genetic and cultural diversity. Key to that is educating a new generation of gardeners on how to grow heirlooms and save seeds. This is what our SSE board member and noted cookbook author Deborah Madison likes to call "garden literacy."

How can gardeners help to preserve heirlooms?

The best thing gardeners can do is join the SSE (www.seedsavers.org) and other organizations that preserve the earth's heritage, and become actively involved in conservation. By growing, buying, and eating heirlooms, gardeners can keep them alive. 🌱

Viveka Neveln is associate editor of The American Gardener.

Amy P. Goldman's Books

Melons for the Passionate Gardener (Artisan, 2002).

The Compleat Squash (Artisan, 2004).

The Heirloom Tomato (Bloomsbury USA, 2008).

Horticultural News and Research Important to American Gardeners

NEW ENGLAND WILD FLOWER SOCIETY TO CREATE ONLINE PLANT DATABASE

The New England Wild Flower Society (NEWFS) has big plans that will certainly help horticulture keep up with technology. The organization has recently been awarded a \$2.49 million grant by the National Science Foundation for its Go-Botany project that involves creating an online New England plant identification database. NEWFS's vision is that while people are working in the field, gardening in their yards, or walking in local green spaces, they can access the database via cell phones or other mobile devices with Internet capabilities to learn about the plants around them.

"Building an interactive field guide designed to teach botany opens the world of scientific inquiry to a generation that favors the richness and immediacy of online learning," says Debbi Edelstein, NEWFS executive director. "It will also begin the work within the botany community to create a national online flora, usable throughout America on portable handheld devices."

Another goal of Go-Botany—expected to develop over the next four years—is to increase public interest in botany, as well as knowledge of local plants, and thereby promote plant conservation. Along with the database, the project also will include a book to be published within the next year, and botanical lesson plans that would make use of both resources. For more information about NEWFS, visit www.newfs.org.

AWARD-WINNING PLANTS FOR 2010

In addition to *Viola* 'Endurio Sky Blue Martien', which was covered in the November/December issue of *The American Gardener*, All-America Selections (AAS) has announced three other award-winning plants for 2010. These new varieties were chosen for their unique characteristics and outstanding performance in trials across the country.



'Mesa Yellow' blanket flower



'Twinny Peach' snapdragon

Judges gave high marks to 'Mesa Yellow' blanket flower (*Gaillardia x grandiflora*) for its neat, mounded plant habit and prolific, three-inch, daisylike flowers. It grows up to 22 inches tall in full sun. Bred by PanAmerican Seed Company, this new variety blooms two to three weeks earlier than other blanket flowers.

'Twinny Peach', bred by HEM Genetics, is the first double-flowered snapdragon (*Antirrhinum majus*) with a compact habit. Its blooms also sport colors no other snapdragon does—a blend of pastel peach, yellow, and orange. This easy-to-grow bedding plant reportedly exhibited good heat tolerance during the AAS trials, too.

Also showing good heat and drought tolerance, 'Zahara Starlight Rose' zinnia (*Zinnia marylandica*) is the first rose and white bicolor zinnia. This new variety,



'Zahara Starlight Rose' zinnia

bred by PanAmerican Seed Company, also has proven resistances to leaf spot and mildew—two common diseases that affect this sun-loving annual.

For more information, visit the AAS website at www.all-america-selections.org.

BIRD SEED MIXES MAY CONTAIN INVASIVE WEEDS

Many people enjoy feeding birds in their yards but may not enjoy all the weeds that tend to crop up beneath feeders after feathered visitors—or perhaps marauding squirrels—drop seeds to the ground. More than just being a nuisance, these uninvited sprouts could be invasive weeds, according to studies done by researchers at Oregon State University.

A survey of 10 brands of wild bird feed



Bull thistle

commonly sold in retail stores showed that all contained weed seeds, including ones considered noxious. The samples contained more than 50 different weed species, such as both bull (*Cirsium vulgare*) and Canada thistle (*Cirsium arvense*), common ragweed (*Ambrosia artemisiifolia*), and parasitic dodder

(*Cuscuta* spp.). When researchers planted the seed mixes to simulate what happens when birdseed falls to the ground, about 30 different weed species sprouted in just 28 days. Between three and 17 weed species grew from each of the 10 brands of feed tested.

While it may be easy enough to curtail weeds springing up in your own yard with a quick swipe of a hoe, birds may still carry seeds elsewhere. To minimize the spread of invasives through birdseed, the Weed Science Society of America recommends selecting seed mixes that have been baked to prevent sprouting, or putting out foods such as suet, sunflower hearts, and raisins as alternatives to seed mixes.

A SAMPLE OF SMITHSONIAN'S HISTORIC GARDEN IMAGES GO ONLINE

If you're a garden or landscape history buff, now you can view a selection of images from the Smithsonian's Archive of American Gardens (AAG) online. In celebration of American Archives Month in October, the AAG posted a set of 25 historic garden images from glass lantern slides made in the 1920s and '30s to the online photo sharing community, Flickr. The photos feature



This 1930 photograph of a garden designed by Francis T. Underhill in Santa Barbara, California, is from the Smithsonian's archives.

private estate gardens that were designed by a number of renowned landscape architects of the time, including Beatrix Farrand and Jens Jensen.

These images on Flickr, however, are a small sampling of AAG's full collection of photographs, many of which are cataloged in the Smithsonian's Collections Search Center, www.collections.si.edu. Documenting both historic and contemporary gardens, this collection provides a visual record of the ever-changing

and evolving gardening styles that define our home settings, public green spaces, and the American landscape. According to the Smithsonian, the AAG "preserves important resources for investigating this significant aspect of U.S. cultural and ecological history." For more information, visit www.gardens.si.edu.

NEW DATABASE FOR CULTURALLY SIGNIFICANT LANDSCAPES

The Cultural Landscape Foundation (TCLF), based in Washington, D.C.,

launched an online database of parks, gardens, and a wide variety of other landscapes across America called "What's Out There" in November. A decade in the making, the database contains hundreds of entries from all 50 states, including some of the most important designed landscapes that span more than two centuries of American landscape design.

According to TCLF, the goal of this database is to "raise public awareness of the rich diversity and interconnectedness of our shared designed landscape heritage."

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The hope is that a wide range of users—from tourists to historians to landscape architects and the general public—will find this database a useful reference. What's Out There is searchable by landscape name, type, and/or style, landscape architect and/or designer, and location.

"What's Out There is the only searchable web feature covering the nation's landscape legacy," says Charles A. Birnbaum, TCLF founder and president. "We have a growing database of landscapes and their designers, but integral to this sites' success is public input." Designed as a Wiki-style database, anyone can submit information, which TCLF staff will review before adding it to the database. For more information, visit www.tclf.org/landscapes.

GARDENS ALIVE! ACQUIRES THOMPSON & MORGAN U.S.

Gardens Alive!, a mail-order purveyor of environmentally friendly garden pest management products based in Lawrenceburg, Indiana, has recently acquired the U.S. operations of Thompson & Morgan Seeds-



men, based in Jackson, New Jersey. Thompson & Morgan was founded in 1855 in Ipswich, England, and entered the North American market in 1982. The company offers 1,500 varieties of annual, perennial, vegetable, and herbal seeds.

"With Thompson & Morgan's long history and reputation for quality seed, they match our own brands' legacy in the seed and nursery business," says Gardens Alive! Founder Niles Kinerk. "Customers know that our brands offer only the best products—and that these companies have survived the test of time because they've always done right by their customers."

Other brands owned by Gardens Alive! include Breck's, Gurney's Seed and Nursery Co., Henry Field's Seed & Nursery

Co., Michigan Bulb, Spring Hill Nurseries, New Holland Bulb, and Audubon Workshop horticultural catalogs.

GREEN THUMB CHALLENGE FOR KIDS

Gardening provides an effective way to teach kids about environmental stewardship and promote their interaction with the natural world. In an effort to get more kids gardening, the Green Education Foundation (GEF) based in Walpole, Massachusetts, has launched the Green Thumb Challenge. This campaign calls on schools and youth groups across the country to plant 10,000 gardens between February and August. The gardens can be indoors or outdoors, in pots or in the ground, as long as the project involves hands-on gardening activities.

"A significant goal of the Green Education Foundation is to promote creative and effective ways for schools and teachers to incorporate the outdoors into their curricula," says Victoria Waters, GEF president. "The Green Thumb Challenge, where students plant and maintain gardens, is a perfect solution."



PHOTO BY DEBRA KAVATA FROM 2010 GARDENER'S CALENDAR

2010 "Gardener's" Calendar

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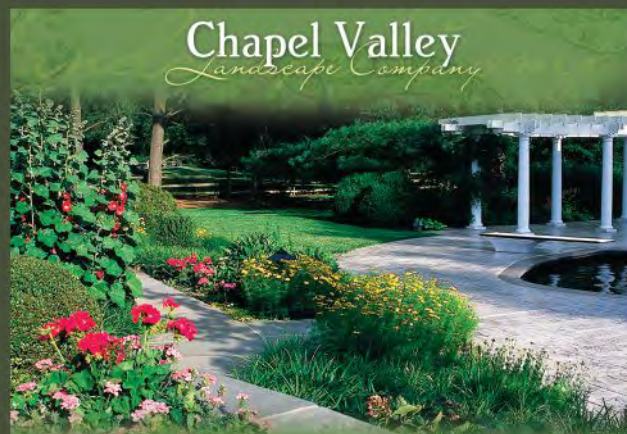
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PEOPLE and PLACES in the NEWS

AAS and NBG Executive Director Retires



Nona Koivula

After 25 years of service, Nona Wolfram Koivula retired in December as the executive director of All-America Selections, North America's oldest plant variety testing organization, and the National Garden Bureau, a nonprofit that promotes growing flowers and edibles from seed. The two organizations operate out of a joint office in Downer's Grove, Illinois. The new executive director for both organizations is Diane Blazek, who previously was publisher at Ball Publishing Company for 15 years and is very familiar with the horticulture industry.

Name Change for California Pack Trials

Since 1965, nursery and landscape professionals from around the world have flocked to the annual California Pack Trials held throughout the state to get a



Inside a greenhouse full of annuals during the Pack Trials

glimpse of the latest plant varieties coming onto the market. It will now be known as the California Spring Trials, according to the National Garden Bureau, which organizes the event. This slight name modification better represents what the event is about, since the green industry now produces plants in pots as well as "packs." Previously scheduled in late

March, this year the trials will be held April 10 to 17 to allow participating companies extra time to produce better-quality plant material for visitors. Visit the National Garden Bureau website at www.nbg.org for more details.

—V.N.

GEF will provide a variety of resources for teachers, including fundraising tips and "grade-appropriate standards-based environmental lessons relating gardening and composting to science, math, language arts and more." GEF will also provide ideas for garden projects, plant lists, and growing guidelines. Participants can interact with each other through GEF's online community. For more information, visit www.geenthumbchallenge.com.

NEW PLANT DISEASE RESEARCH SITE AT DOMINICAN UNIVERSITY OF CALIFORNIA

Thanks to a nearly \$1 million grant from the 2008 Farm Bill awarded last fall, a new National Ornamentals Research Site will be established at the Dominican University of California.

It will be the first research site in the United States dedicated to the study of ornamental plant diseases in a simulated nursery setting. This facility will conduct research that aims to minimize the introduction and spread of plant diseases in the nursery trade as well as other areas of agriculture. One of the main focuses of research will be on *Phytophthora ramorum*, the pathogen that causes sudden oak death and ramorum blight. These two diseases have the potential to devastate not only nursery stock, but forests and agriculture in the United States.

News written by Associate Editor Viveka Neveln and Editorial Intern Gwyneth Evans.

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④ TREES	To GET 'TWO YEARS' GROWTH IN ONE'?		
⑤ BULBS	To START THEM VIGOROUSLY, Beating Soil-rot, Hastening Better BLOOMING		
⑥ SEEDS	To Help GERMINATION Percentage and SPEED EARLIER, BETTER YIELDS, including Vegetables		
⑦ LAWNS	To Make QUICKER, deeper, TOUGHER TURF from SEED, SOD, Stolons, Sprigs, HYDRO-seeding		
⑧ FRUITING	For EARLIER, HEAVIER, BEARING?		
⑨ XMAS TREES	12 REFORESTATION	17 HYDROSEEDING	22 FLOWERING PLANT COMPETITIONS
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Starting Seeds Indoors

by Rita Pelczar

FOR MOST OF US, January and February are too early to do much outdoors in the garden, so it's the perfect time to think about sowing flower and vegetable seeds indoors. Starting plants from seeds increases your selection, since the variety you can get from seed suppliers is significantly broader than the plants you can find at local nurseries. You will also have the satisfaction of growing your plants from start to finish.

Starting plants indoors requires some time, effort, and dedication; your seedlings will need regular attention for several weeks if they are to develop into healthy garden plants. Then, when it's finally time to move your seedlings outdoors, particular care must be taken to acclimate them to their new growing environment.

SPACE, LIGHTING, AND TEMPERATURE

Little space is needed to sow a few varieties of seeds, but as the seedlings develop and are transplanted to larger containers, their space requirements increase significantly. A sunny, south-facing window may seem like the perfect spot, but windows at night are often the coldest places in your house. And rarely is window light alone sufficient to grow robust seedlings.

Supplementing natural light with fluorescent light or specifically designed "grow lights" can make the difference between weak and sturdy seedlings. Hydrofarm's energy-efficient **T5 Grow Light System**, available from Planet Natural, provides full-spectrum light. Fixtures for either 24- or 48-inch bulbs are equipped to hold between two and eight bulbs each, depending on your lighting needs. Many other systems are available. Supplemental lights should be placed two to four inches above the tops of plants, so it is important that the lights you select remain relatively cool, and a fixture that can be raised to accommodate plant growth is helpful. Lights should remain on for 12 to 16 hours per day, so consider an automatic timer for convenience.

Soil temperature for seed germination varies somewhat among species, but for most annual flowers and vegetable



like the one available from Planet Natural that delivers bottom heat to seed flats. Seeds not only germinate much more quickly, but evenly maintained bottom heat also helps prevent damping-off, a fungal disease that causes young seedlings to topple over and die. Many heat mats are equipped with thermostats; otherwise a soil thermometer is helpful to maintain the correct temperature. The heat mat should be on all the time, so don't plug it into the timer for your lights.

GROWING MEDIA AND CONTAINERS

Because garden soil may harbor disease organisms, a sterile soilless growing medium is best for starting seeds. Many quality mixes are available; select one that has good water-holding capacity and excellent drainage. Since many seeds are tiny, aim for a fine-textured mix.

seeds, the optimal soil temperature for germination ranges between 70 and 80 degrees Fahrenheit. One of the most effective tools I have used for starting seeds indoors is a waterproof electric heat mat



Sources

Drip Depot, Medford, OR.
www.dripdepot.com.

Gardener's Supply, Burlington, VT.
800-427-3363. www.gardeners.com.

Lee Valley Tools, Ogdensburg, NY.
(800) 871-8158.
www.leevalley.com.

Planet Natural, Bozeman, MT. (800)
289-6656. www.planetnatural.com.

Moisten your growing mix thoroughly prior to planting. Use a clean bucket—or better yet—a **Portable Potting Tray**, available from Gardener's Supply. This molded plastic container helps avoid mess when moistening your growing mix, filling containers, and transplanting seedlings.



Portable Potting Tray

Seeds can be started in any container that holds sufficient soil and allows for good drainage. Recycled pots such as milk or yogurt cartons with drainage holes added work well. Plastic or wooden seed flats are excellent for sowing rows of seeds that will be transplanted into larger containers. Molded plastic cell flats come in a variety of sizes and provide efficient use of space; seeds can be sown directly into the cells or young seedlings can be transplanted to cells from a germinating flat.

A variety of space-saving seed-starting kits are available. The **Beginner's Seed Starting Kit** from Gardener's Supply includes two 12-cell trays, two clear plastic covers, water reservoirs with capillary mats to ensure even moisture, a bag of organic seed-starting mix, and wooden labels.

The **Self-Watering Propagator Set** from Lee Valley Tools offers seven indi-

SOWING SEEDS AND HANDLING SEEDLINGS

If seeding directly into cells or other individual containers, sow two or three seeds into each. After the seedlings have grown a few leaves, select the strongest seedling in each cell or container and use scissors to remove the others.

Starting seedlings in germination flats is an efficient use of space and heat mats but requires an extra transplanting step. Use a pencil tip to create a straight impression in the growing mix and thinly sow the seed into it. Follow the directions on the seed packet for sowing depth. Keep the medium moist—a spray bottle works well.

After seedlings have developed their third pairs of leaves, transplant them into individual containers or cell flats. A spoon is a useful tool for digging up your seedlings. Always handle seedlings by their roots or leaves, never by their stems, which can be easily crushed. Once planted, water carefully to settle the growing mix around the roots. —R.P.

vidual propagation trays that have vented covers. Because you can adjust the humidity of individual trays, these are handy for germinating different kinds of seeds. This kit, which includes a water reservoir and capillary mat, also works well for rooting plants from small cuttings.

Growing seedlings in fiber pots made from pressed peat, shredded wood, or cow manure allows you to transplant the seedling “pot and all” into the garden without disturbing roots. This is particularly helpful with difficult-to-transplant crops such as cucumbers and squash. When transplanting, be sure to remove any exposed portion of the fiber pot above the soil line to avoid drying the roots from the wicking action of the fiber. Also re-

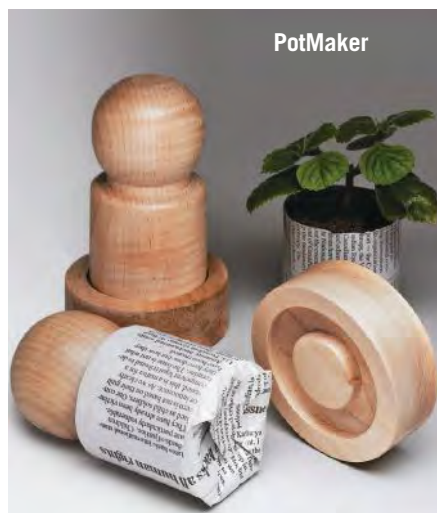
move the bottom of the pot to encourage rapid root expansion. Newspaper can be efficiently recycled into biodegradable seedling containers using a clever tool called the **PotMaker**, available from Lee Valley.

Like newspaper and fiber pots, **Rapid Rooter Plugs** from Planet Natural also help reduce disturbance to plant roots when transplanting. Made of composted organic material held together by natural plant polymers, they contain beneficial microbes that promote root growth and nutrient absorption.

HARDENING OFF SEEDLINGS

Before transplanting your seedlings into the garden in spring, they need to be gradually acclimated or “hardened off” to protect them from sudden exposure to cold or sunlight. This is best accomplished by taking your seedlings outside for a couple of hours a day and placing them in a partly shaded area that is protected from wind. Gradually increase the time they are left outside, as well as the duration of sun exposure they receive. After about two weeks they should be ready to transplant into the garden.

Alternatively, a cold frame provides a sheltered location for hardening off seedlings. If you are handy, you can construct one yourself. Or you can purchase ones like the **Single** or **Double Cold Frame** from Drip Depot. If temperatures are likely to drop below 50 degrees Fahrenheit at night, close the lid, but be careful to vent the top on sunny days or your seedlings may bake.



PotMaker

Rita Pelczar is contributing editor for The American Gardener.

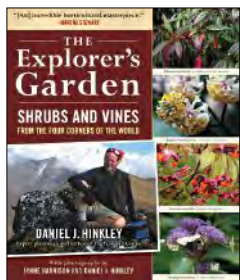
Recommendations for Your Gardening Library

The Explorer's Garden:

Shrubs and Vines from the Four Corners of the World

Daniel J. Hinkley. Timber Press, Portland, Oregon, 2009. 352 pages. Publisher's price, hardcover: \$39.95.

IN THIS second installment of *The Explorer's Garden* (a long-awaited sequel to his earlier book, *The Explorer's Garden: Rare and Unusual Perennials*, Timber Press, 1999), plantsman Daniel J. Hinkley takes an in-depth look at some of the newest and most desirable shrubs and vines available for North American gardens. This carefully crafted book provides detailed information about the author's international plant exploration trips and the wonderful species of plants that have been brought back and introduced into



American horticulture. Hinkley gives the text a personal touch by including excerpts from his daily travel logs. Stunning photos Hinkley took on his journeys help add context to the plants. Additional plant photographs are provided by Lynne Harrison.

Shrubs and vines are presented either by genus, or in groups by families with chapter titles such as "Glorybower and Beautiful Berries: *Clerodendrum* and other Verbenaceae." Within each genus or plant group, detailed plant descriptions that include plant origin and ornamental virtues are followed by practical information on cold hardiness, care and culture, and propagation tips. Overall, the plant descriptions—and especially the depictions of the native habitat in which these plants grow—offer an enlightening background for each plant group.

Many other garden books focus on new and improved cultivars of common, tried-and-true species, but this volume goes a step further. In addition to covering unusual and beautiful species from well-known genera such as *Buddleia*, *Callicarpa*, *Euonymus*, *Hydrangea*, and *Viburnum*, Hinkley includes enticing descriptions of plants from new, exotic, and little known genera such as *Azara*, *Rostrinucula*, and *Helwingia*.

Through his poetic writing, Hinkley's passion for discovering great garden plants and facilitating their introduction to mainstream horticulture is evident on each page. *The Explorer's Garden* is an ideal book for any serious gardener who enjoys learning about and acquiring select, rare, and unusual woody plants. It is a must-have for plant collectors who seek the newest horticultural treasures to enhance their gardens.

—Vincent A. Simeone

Vincent A. Simeone is director of Planting Fields Arboretum in Oyster Bay, New York. He has written four gardening books, including *Great Landscape Evergreens* (Ball Publishing, 2007).

Manual of Woody Landscape Plants (6th Edition)

Michael A. Dirr. Stipes Publishing, Champaign, Illinois, 2009. 1325 pages. Publisher's price, softcover: \$76.80; hardcover: \$96.80.

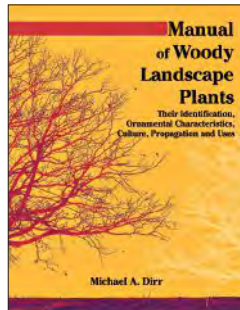
A STAPLE FOR academics, nursery professionals, and avid gardeners alike, Michael Dirr's well-known *Manual of Woody Landscape Plants* is now in its 6th edition, arriving 11 years after the previous edition. Reviewing a book that needs no introduction presents quite the challenge. Thus, because too often new editions are scantily revised, I approached this one with a crucial question in mind: Should a person who already owns the 5th edition also purchase the 6th?

In answer to that question, I recommend the new edition because of the substantive amount of new information in the tome. Much of this was acquired during the author's six-month residency at Sir Harold Hillier Gardens and Arboretum in the United Kingdom in 1999 and visits to more than 100 public and private gardens and nurseries. When the observations are not his own, Dirr diligently cites the work of others. The introduction includes updated content, and there are many new species (the rare *Corylus fargesii*, for instance) added—not to mention countless new cultivars that have proliferated over the previous decade. This makes the book as comprehensive as possible—to the point that it has practically become the "Yellow Pages" of trees and shrubs. Without going online, no other single reference comes close.

Nearly all of the descriptions have been reworked to include new information, such as cultural requirements, noteworthy specimens, and occasional notes on potential for becoming invasive. Revisions in taxonomy and nomenclature are included throughout the book, although, with more research, cultivar names could have been included for a few of the plant marketed solely by their trademarks.

Of course, this edition still contains the colorful commentary we have grown to expect from Dirr. Despite their subjective nature, these remarks are among the most salient and idiosyncratic elements of this book. While at times we may quibble over his verdicts, it is important to remember that the author provides his expert opinion based upon decades of growing and observing plants. These accounts are invaluable as we strive to learn about—and love—these woody plants as much as Dirr does.

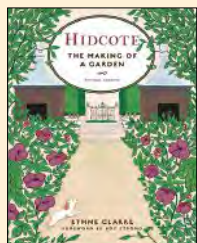
—Michael S. Dosmann



Michael S. Dosmann is curator of living collections at the Arnold Arboretum of Harvard University in Jamaica Plain, Massachusetts.

Books in Brief

What moves us to create gardens? In the new edition of her book, **Hidcote: The Making of a Garden** (W.W. Norton, 2009,



\$45), Ethne Clarke explores the influences that led Lawrence Johnston to create Hidcote, one of the most influential Arts and Crafts landscapes of the 20th century. American expatriates Johnston and his mother moved to the Cotwolds village of Hidcote Bartrim in England in 1907, and Johnston (at first with his mother) began what he would not finish

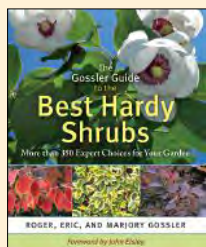
until 1948. That was the year he signed a deed of gift that handed over Hidcote to the National Trust—the first garden it acquired and which it still maintains today.

Recently unearthed information led to Clarke's new edition, which delves more deeply into Johnston's life and times than did the original addition, published in 1989. It's an enjoyable read, sort of a gossipy tell-all but factual, and with a good bit of garden design history thrown in, including the battle at the time between formal and naturalistic design.

—Marty Wingate

Marty Wingate is a garden book author and garden columnist for the Seattle-Post Intelligencer.

For more than 40 years, the Gossler family has been making new, exciting trees and shrubs from around the world available



to gardeners through their retail, mail-order nursery based in Springfield, Oregon. Now Roger and Marjory Gossler, along with their son, Eric, bring their garden, nursery, and four-plus decades of experience growing these plants to the pages of **The Gossler Guide to the Best Hardy Shrubs** (Timber Press, 2009, \$34.95).

This book profiles more than 350 trees and shrubs, many uncommon, that the Gosslers feel "represent the best of each genus." Though the selections, understandably, represent a regional bias for the Northwest, many of the plants could be considered marginally hardy in USDA Zone 4 regions of the country. This is especially true for an era in which winter low temperatures in most regions are trending higher than historical averages. For example, *Magnolia sieboldii*, described in the book as a Zone 6 tree, actually grows and thrives in several locations in Zone 4 Minnesota! Many other gems described in this book should serve to stimulate adventuresome gardeners everywhere to experiment with new and seldom-seen plants.

—Stan Hokanson

Stan Hokanson is director of the woody landscape plant breeding and genetics program at the University of Minnesota.



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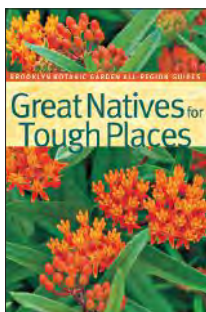
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TA4

Problem-Solving Plants

I HAVE YET TO meet a gardener whose landscape is without at least a few problem areas—the hot spot, the wet swale, or the steep slope, for example. I myself struggle with the space in one corner of my yard beneath some large red maples whose fibrous roots choke out all but the most stalwart interlopers. Or you might be trying to find just the right plant for a particular purpose—say, to create a hedge or squeeze into a limited amount of space. The good news is that for just about every situation, there are plants that are perfectly suited to them. Here are some recently published books that can help you find appropriate plants for your needs.

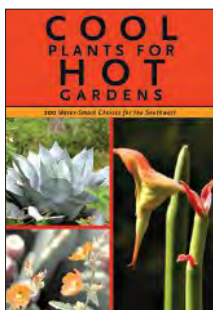
One strategy for dealing with less-than-ideal growing conditions is to choose plants that are indigenous to your region. In



Great Natives for Tough Places (Brooklyn Botanic Garden, 2009, \$12.95) editor Niall Dunne points out that native plants have “evolved over thousands of years to handle soils and seasonal variations in temperature and rainfall of your local climate.” The book describes more than 120 trees, shrubs, vines, and perennials from the continental United States and Canada that are adaptable without being invasive, not to mention they are low-maintenance and beautiful, to

boot. This concise handbook also discusses eight common challenging conditions, such as compacted soils and shady, dry locations, and provides design ideas for transforming these types of sites into harmonious gardens.

A desert may seem like one of the most inhospitable places to attempt to garden, but ***Cool Plants for Hot Gardens*** by Greg

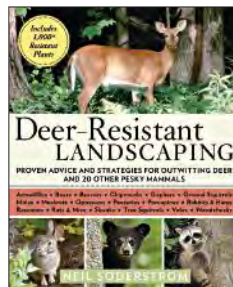


Starr (Rio Nuevo Publishers, 2009, \$24.95) makes it clear that it's really all about making wise plant choices. This book focuses on species that thrive in the arid conditions of the southwestern United States and neighboring areas of Mexico. Most are southwestern natives, some come from areas with similar soils and climate, but all “will grow happily in this region without huge amounts of extra water,” explains Starr. For each of the 200

plants the author includes—listed by botanical name—he provides notes about the conditions of the plant's natural habitat, a brief description, maintenance tips, landscape uses, and a color photograph (most of which were taken by Starr).

For many suburban and country gardeners, a prerequisite for choosing plants for their gardens is resistance to deer. A helpful resource in this arena is ***Deer-Resistant Landscaping*** by Neil Soderstrom (Rodale, 2009, \$23.95). Along with some general in-

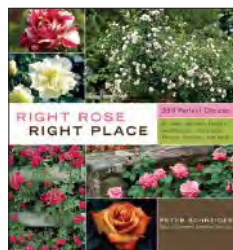
formation about deer and tactics to use if they become a nuisance in your garden, this book devotes several chapters to more than



1,000 plants these animals find unpalatable. Though Soderstrom bases these recommendations on “a consensus of regional authorities,” he notes that these “resistant” plants should not be “considered ‘deer-proof’ in all stages of growth or all growing conditions.” The book provides both a simple list of the plants categorized by type (herbs, shrubs, etc.) and an encyclopedic listing

alphabetized by botanical name, with color photos and a brief description of attributes. Strategies for dealing with several other mammalian garden pests are also covered in this book.

In ***Right Rose, Right Place*** (Storey Publishing, 2009, \$29.95), author Peter Schneider asks, “What other genus offers examples



that can grow tidily in a pot on your deck, provide months of nonstop color in the perennial border, form an impenetrable hedge, or send a cascade of bloom down from the tree it has been trained to climb?” For these and other gardening situations, Schneider asserts that “roses provide colorful, fragrant solutions.” His book could well change any notions you might have of these plants being fussy and frail. Schneider highlights more than 350 roses—organized by garden uses—that have proven reliable for him over more than 30 years of growing them in his Ohio garden. Chapters on caring for roses, such as pruning and controlling pests, round out the book.

Sometimes space itself is a limiting factor, but even small gardens need good “bones.” ***400 Trees and Shrubs for Small Spaces***



by Diana M. Miller (Timber Press, 2008, \$29.95) provides lots of ideas for selecting woody plants that will lend structure without being overpowering. Some of the included plants are naturally smaller, some need pruning or training to keep them in bounds, and others are newer cultivars bred to be more compact than the species. Each useful genus is discussed in a brief paragraph, followed by succinct descriptions of recommended species and cultivars. At the end of the book, charts of plants listed by characteristics such as flower color or attractive fruits make it even easier to find the right tree or shrub for your needs.

—Viveka Neveln, Associate Editor

Protecting One of Your Most Valuable Assets

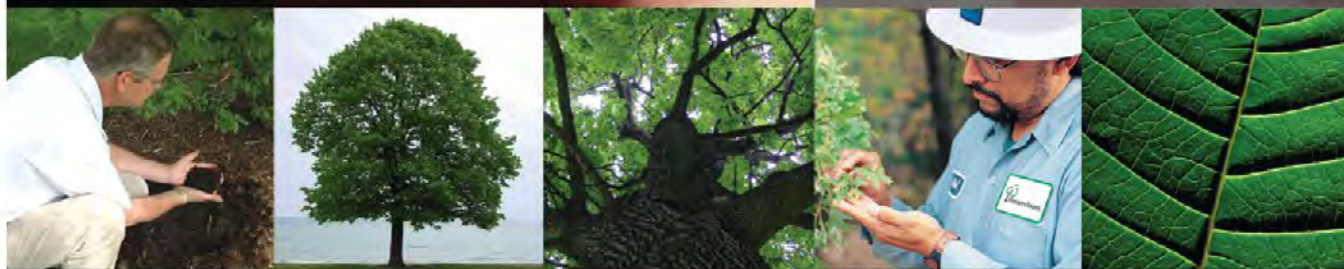
Soil is the Key

When working with landscape trees and shrubs, the most important component of health is the soil. It is estimated that 80% of the problems related to landscape plantings originate with soil issues. That includes pest problems! Because the condition of the soil is so important for your landscape trees and shrubs, The Care of Trees places a major focus on Plant Health Care activities that effect the soil.

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REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

RAP JAN. 23. **Pruning in Winter.** Class. The Arnold Arboretum of Harvard University. Jamaica Plain, Massachusetts. (617) 384-5209. www.arboretum.harvard.edu.

RAP JAN. 25. **Espalier Fruit Plants and Specialty Pruning.** Lecture. Blithewold Mansion, Gardens and Arboretum. Bristol, Rhode Island. (401) 253-2707. www.blithewold.org.

RAP JAN. 30. **Rooftop Gardening.** Class. Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. www.bbg.org.

✿ FEB. 18–21. **Rhode Island Spring Flower & Garden Show.** Rhode Island Convention Center. Providence, Rhode Island. (401) 272-0980. www.flowershow.com.

✿ FEB. 18–21. **Connecticut Flower & Garden Show.** Connecticut Convention Center. Hartford, Connecticut. (860) 844-8461. www.ctflowershow.com.

✿ MAR. 3–7. **CNY Blooms Flower & Garden Show.** Oncenter Complex. Syracuse, New York. (800) 979-1879. www.cnyblooms.com.

MID-ATLANTIC

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

JAN. 31. **Berries, Bark, and Buds.** Tour. The Scott Arboretum of Swarthmore College. Swarthmore, Pennsylvania. (610) 328-8025. www.scottarboretum.org.

✿ FEB. 5–7. **Mid-Atlantic Home & Flower Show.** Virginia Beach, Virginia. (757) 523-4737. www.vahort.org.

FEB. 18. **Land Ethics Symposium: Creative Approaches for Ecological Landscaping.** Bowman's Hill Wildflower Preserve. New Hope, Pennsylvania. (215) 862-2924. www.bhwp.org.

✿ FEB. 18–21. **Maymont Flower & Garden Show.** Greater Richmond Convention Center. Richmond, Virginia. (804) 358-7166. www.maymont.org.

✿ FEB. 18–21. **New Jersey Flower & Garden Show.** New Jersey Convention Center. Edison, New Jersey. (732) 449-4004. www.njflowershow.com.

Flower and garden shows that offer free or discounted admission to AHS members or present AHS awards are designated by a ✿ symbol. For details on the specific benefits offered, visit www.ahs.org/events/index.htm and click on "Flower and Home and Garden Shows."

Events hosted by 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 or discounted admission to the garden or other benefits. Special events may not be included; contact the host site for details or visit www.ahs.org/events/reciprocal_events.htm.

FEB. 26. **Green Matters 2010: Food for Thought.** Symposium. Brookside Gardens. Wheaton, Maryland. (301) 962-1400. www.brooksidegardens.org.

RAP FEB. 27. **Understanding Your Garden's Life Cycle.** Symposium. Green Spring Gardens. Alexandria, Virginia. (703) 642-5173. www.greenspring.org.

✿ FEB. 28–MAR. 7. **Philadelphia International Flower Show.** The Pennsylvania Horticultural Society. Pennsylvania Convention Center. Philadelphia, Pennsylvania. (215) 988-8899. www.theflowershow.com.

Looking ahead

MAR. 5. **People, Plants, Collections: Making the Connection.** Symposium. Longwood Graduate Program in Public Horticulture. Kennett Square, Pennsylvania. (302) 831-2517. www.udel.edu/longwoodgrad.

SOUTHEAST

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

JAN. 22 & 23. **Gulf States Horticultural Expo.** Auburn, Alabama. (334) 502-7777. www.gshe.org.

RAP JAN. 23. **Orchid Basics.** Class. Bonnet House Museum & Gardens. Fort Lauderdale, Florida. (954) 563-5393. www.bonnethouse.org.

JAN. 29. **Southern Gardening Symposium.**

Callaway Gardens. Pine Mountain, Georgia. (706) 663-5153. www.callawaygardens.com.

✿ FEB. 4–6. **Southeastern Flower Show.** Cobb Galleria Centre. Atlanta, Georgia. (404) 351-1074. www.flowershow.org.

FEB. 11–13. **The Antiques and Garden Show of Nashville.** Nashville Convention Center. Nashville, Tennessee. (800) 891-8075. www.antiquesandgardenshow.com.

RAP FEB. 20. **Southern Garden Heritage Conference.** State Botanical Garden of Georgia. Athens, Georgia. (706) 542-6156. www.uga.edu/botgarden.

FEB. 26–28. **Miami International Orchid Show.** South Florida Orchid Society. Doubletree Miami Mart/Airport Hotel and Convention Center. Miami, Florida. (305) 255-3656. www.sforchid.com.

FEB. 27. **Joy of Gardening Symposium.** York County Master Gardeners. Rock Hill, South Carolina. (803) 324-9777. www.mastergardenerofyorkcounty.org.

NORTH CENTRAL

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

✿ JAN. 22–31. **Home & Garden Show.** Great Lakes Expo Center. Cleveland, Ohio. (216) 529-1300. www.homeandflower.com.

JAN. 23. **Gardening Show.** Porter County Expo Center. Valparaiso, Indiana. (219) 465-3555. www.pcgarden.info.

JAN. 23. **Spirit: Garden Inspiration.** Symposium. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-8261. www.chicagobotanic.org.

JAN. 30. **Toward Harmony With Nature Conference.** Fox Valley Area Chapter of Wild Ones. Oshkosh Convention Center. Oshkosh, Wisconsin. (920) 987-5587. www.for-wild.org.

FEB. 12–14. **Garden Expo.** Alliant Energy Center. Madison, Wisconsin. (608) 262-5256. www.wpt.org/gardenexpo.

✿ FEB. 25–28. **Fort Wayne Home and Garden Show.** Memorial Coliseum. Fort Wayne, Indiana. (260) 432-1705.

www.home-gardenshow.com.

Looking ahead

MAR. 14. **Green Gardening from the Ground Up.** Symposium. Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

MAR. 6–14. **Chicago Flower & Garden Show.** Navy Pier. Chicago, Illinois. 773-868-3010. www.chicagoflower.com.

SOUTH CENTRAL

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

JAN. 23. **Gardens: The Spirit of Your Home.** Symposium. Hilltop Arboretum. Louisiana State University. Baton Rouge, Louisiana. (225) 767-6916. www.lsu.edu/hilltop.

RAP FEB. 3. **Ethnobotany—Historic Uses of Texas Plants.** Lecture. South Texas Botanical Gardens & Nature Center. Corpus Christi, Texas. (361) 852-2100. www.stxbot.org.

✿ FEB. 26–28. **Arkansas Flower & Garden Show.** Statehouse Convention Center. Little Rock, Arkansas. (501) 821-4000. www.arflowerandgardenshow.org.

RAP FEB. 27 & 28. **Gardening Blitz.** Classes on several topics. Missouri Botanical Garden. St. Louis, Missouri. (314) 577-9400. www.mobot.org.

Looking ahead

✿ MAR. 3–7. **Wichita Garden Show.** Century II Civic Center. Wichita, Kansas. (316) 946-0883. www.wichitagardenshow.com.

MAR. 5–7. **Azalea Trail.** Home and garden tour. River Oaks Garden Club. Houston, Texas. (713) 523-2483. www.thehomeandgardenmarket.com.

MAR. 5–7. **Dallas Home & Garden Market.** Show. Dallas, Texas. (713) 529-1616. www.thehomeandgardenmarket.com.

SOUTHWEST

AZ, NM, CO, UT

JAN. 28 & 29. **Think Trees.** Sustainable tree care conference. Think Trees New Mexico. Albuquerque, New Mexico. (505) 243-1386. www.thinktreesnm.org.

RAP FEB. 17. **Sustainable Landscape Design.** Class. Desert Botanical Garden. Phoenix, Arizona. (480) 481-8188. www.dbg.org.

RAP FEB. 25. **Planting the Spring Kitchen Garden.** Class. Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

FEB. 25–28. **Water Conservation/Xeriscape Conference & Expo.** Xeriscape Council of New Mexico. Albuquerque, New Mexico.

Golden Anniversary for Cheekwood

CHEEKWOOD BOTANICAL GARDEN & Museum of Art in Nashville, Tennessee, is celebrating its 50th anniversary with various programs and events throughout 2010. To start with, from March 13 through September 12, there will be an exhibit, “The American Impressionists in the Garden,” which will explore the “theme of the garden in American art and society of the late 19th and early 20th centuries.” Paintings by American Impressionists depicting European and American gardens, along with several bronze sculptures created by American artists, will be on display.



The Museum of Art building at Cheekwood

Cheekwood features 10 gardens of different styles and periods spread over 55 acres, along with an art collection of more than 7,000 American and British pieces. Opened to the public in 1960, the property was originally established by the Cheek family in the early 1930s. The entrepreneurial family made its fortune from a wise investment in a cousin's Maxwell House coffee blend (then called Cheek-Neal Coffee).

Now on the National Register for Historic Places, Cheekwood receives thousands of visitors every year to enjoy its grounds, art, and programs. As a participant in the American Horticultural Society's (AHS) Reciprocal Admissions Program, Cheekwood offers AHS members with a current membership card free admission. For more information call, (615) 356-8000 or visit www.cheekwood.org.

Endangered Plant Exhibit in Chicago

IN COLLABORATION with the Smithsonian's National Museum of Natural History and the Center for Plant Conservation, Chicago Botanic Garden (CBG) in Glencoe, Illinois, is presenting an art exhibit called “Losing Paradise? Endangered Plants Here and Around the World” from January 16 to April 4. This exhibit, designed to call attention to global conservation issues, features illustrations by members of the American Society of Botanical Artists (ASBA) depicting plants that are endangered or threatened in the United States and abroad.



Dianne McElwain's painting of *Tetraneuris herbacea* is part of the art exhibit.

A companion book, featuring all 44 pieces of artwork, information about the endangered plants, and the artists' stories about the creation of their illustrations, will also be available. And for those inspired to try their hand at drawing and painting their own botanical pieces, CBG's Joseph Regenstein Jr. School is offering a class titled, “Rare and Endangered Species,” which will be held on Mondays in February. For more information, call (847) 835-5440 or visit www.chicagobotanic.org.

—Gwyneth Evans, Editorial Intern

(505) 468-1021. www.xeriscapenm.com.

Looking ahead

MAR. 5-7. **HBA Home and Garden Show.** Phil Long Expo Center. Colorado Springs, Colorado. (719) 592-1800. ext. 14. www.cshba.com.

✿ MAR. 5-7. **Southwest Flower & Garden Show.** University of Phoenix Stadium. Phoenix, Arizona. (602) 485-1691. www.swflowershow.com.

WEST COAST

CA, NV, HI

JAN. 25. **Pruning and Care of Landscaping Fruit and Nut Trees.** Class. University of California, Davis Extension. Davis, California. (800) 752-0881. www.extension.ucdavis.edu/agriculture.

FEB. 8. **Meadows by Design.** Presentation. The San Diego Horticultural Society. Del Mar Fairgrounds. Encinitas, California. (760) 295-7089. www.sdhortsoc.org.

FEB. 11. **What's Bugging Your Garden.** Presentation. Friendship Auditorium. Los Angeles, California. (818) 567-1496. www.socalhort.org.

RAP FEB. 20-27. **Golden Age of the Camellia Festival.** Descanso Gardens. La Cañada Flintridge, California. (818) 949-4200. www.descansogardens.org.

FEB. 26-28. **Pacific Orchid Exposition.** San Francisco Orchid Society. Fort Mason Center's Festival Pavilion. San Francisco, California. (415) 665-2468. www.orchidsanfrancisco.org.

Looking ahead

MAR. 12-14. **Santa Barbara International Orchid Show.** Santa Barbara, California. (805) 687-0766. www.sborchidshow.com.

RAP MAR. 13. **African Violet Show & Sale.** South Coast Botanic Garden. Palos Verdes Peninsula, California. (310) 544-1948. www.southcoastbotanicgarden.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

✿ JAN. 27-31. **Tacoma Home & Garden Show.** Tacoma Dome. Tacoma, Washington. (253) 756-2121. www.otshows.com.

✿ FEB. 3-7. **Northwest Flower & Garden Show.** Washington State Convention Center. Seattle, Washington. (800) 596-2832. www.gardenshow.com.

✿ FEB. 18. **Evergreens.** Lecture. Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

FEB. 24-28. **Portland Spring Home & Garden Show.** Portland Expo Center. Portland, Oregon. (503) 246-8291. www.otshows.com.

Looking ahead

MAR. 12. **Spring Ephemeral Plant Sale.** Northwest Horticultural Society. Center for Urban Horticulture. Seattle, Washington. (206) 780-8172. www.northwesthort.org.

CANADA

RAP FEB. 16. **Bonsai: An Introduction.** Class. Royal Botanical Gardens. Hamilton, Ontario. (905) 527-1158. www.rbg.ca.

RAP FEB. 20. **Soil, Nutrients, and Amendments.** Class. Glendale Gardens & Woodland. Victoria, British Columbia. (250) 479-6162. www.hcp.bc.ca.

Looking ahead

MAR. 17-21. **Canada Blooms.** Flower and garden festival. The Direct Energy Centre. Toronto, Ontario, Canada. (800) 730-1020. www.canadablooms.com. ∞

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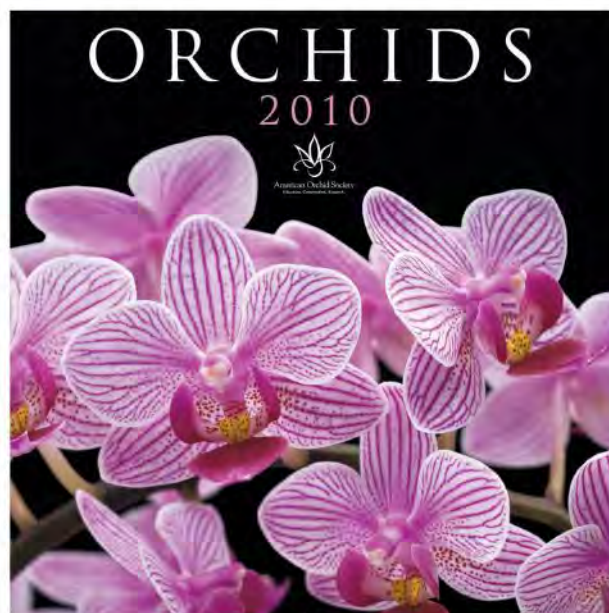
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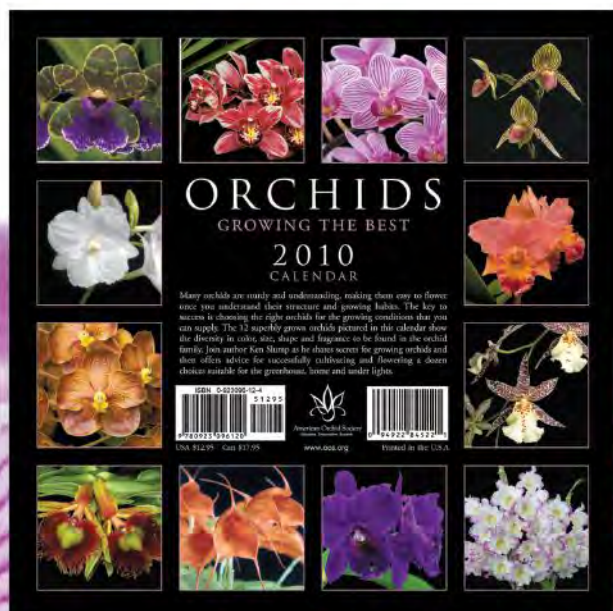
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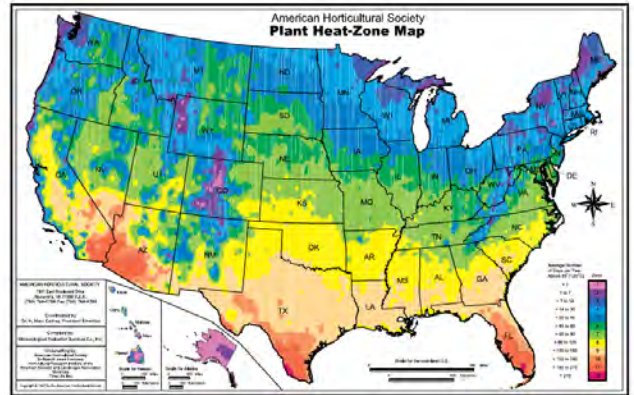


PRONUNCIATIONS AND PLANTING ZONES

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

While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The codes 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.

To purchase a two-by-three-foot glossy AHS Plant Heat Zone Map for \$9.95, call (800) 777-7931 or visit www.ahs.org.



A-G

Agave neomexicana uh-GAH-vee nee-o-mex-ih-KAN-uh (USDA Zones 6-10, AHS Zones 10-5)
Andropogon gerardii an-dro-PO-gon jeh-RAR-dee-eye (3-8, 8-1)
Antennaria plantaginifolia an-ten-AIR-ee-uh plan-tuh-jih-nee-FO-lee-uh (4-9, 9-4)
Aquilegia canadensis ah-kwi-LEE-juh kan-uh-DEN-siss (4-9, 9-1)
Arctostaphylos uva-ursi ark-toh-STAFF-ih-loss YOO-vuh-UR-sy (2-6, 6-1)
Aster divaricatus ASS-ter dih-vair-ih-KAY-tus (4-8, 8-1)
Bignonia capreolata big-NO-nee-uh kap-ree-o-LAY-tuh (6-9, 9-5)
Buxus sempervirens BUCKS-us sem-pur-VY-renz (6-8, 9-6)
B. sinica var. **insularis** B. SIH-nih-kuh var. in-sue-LAIR-iss (6-9, 8-6)
Chamaepericlymenum canadense kam-ee-pair-ih-KLY-meh-num kan-uh-DEN-see (2-7, 7-1)
Chasmanthium latifolium chas-MAN-thee-um lat-ih-FO-lee-um (5-9, 9-1)
Clethra alnifolia KLETH-ruh al-nih-FO-lee-uh (4-9, 9-1)
Coreopsis major kor-ee-OP-sis MAY-jer (5-9, 9-5)
Cornus florida KOR-nus FLOR-ih-duh (5-8, 8-3)
Cyperus involucratus sy-PEER-us in-vol-yew-KRAY-tus (8-11, 12-1)
Dennstaedtia punctilobula den-STET-ee-uh punk-tih-LO-bew-luh (3-8, 8-1)
Deschampsia caespitosa deh-SHAMP-see-uh sez-pih-TOH-suh (4-8, 8-1)
Disporum cantoniense DIS-por-um kan-toh-nee-EN-see (6-9, 9-5)
Dudleya hassei dud-LAY-uh HAS-see-eye (9-11, 12-9)

Epilobium canum eh-pih-LO-bee-um KAY-num (8-11, 12-8)
Eriogonum allenii air-ee-OG-o-num ah-LEN-ee-eye (5-10, 9-5)
E. umbellatum E. um-bel-LAY-tum (3-8, 8-4)
E. umbellatum var. **aureum** E. um-bel-LAY-tum var. AW-ree-um (3-8, 8-4)
E. wrightii E. RITE-ee-eye (6-10, 10-7)
Eschscholzia californica es-SHOLTZ-zee-uh kal-ih-FORN-ih-kuh (8-10, 9-2)
Gaylussacia baccata gay-loo-SAK-ee-uh buh-KAY-tuh (3-7, 7-1)
Gelsemium sempervirens jel-SEE-me-um sem-pur-VY-renz (7-9, 9-1)

H-P

Heuchera americana HYE-wur-uh uh-mair-ih-KAN-uh (4-8, 8-1)
H. villosa H. vih-LO-suh (4-9, 9-1)
Houstonia caerulea hyews-TOH-nee-uh see-ROO-lee-uh (3-9, 9-1)
Ipomoea batatas ih-po-ME-uh buh-TAH-tus (11-11, 12-1)
Lagerstroemia indica lag-ur-STRO-me-uh IN-dih-kuh (7-9, 9-6)
Leucanthemum ×superbum loo-KAN-theh-mum soo-PUR-bum (5-9, 9-1)
Magnolia grandiflora mag-NOLE-yuh gran-dih-FLOR-uh (6-9, 7-1)
Mahonia repens mah-HO-nee-uh REP-enz (4-8, 8-3)
Maianthemum canadense my-AN-theh-mum kan-uh-DEN-see (3-8, 8-3)
Matteuccia struthiopteris muh-TEW-key-uh strew-thee-OP-tur-iss (2-8, 8-1)
Monarda didyma muh-NAR-duh DID-ih-muh (4-10, 10-1)
Opuntia humifusa o-PUN-shuh hyew-mih-FEW-suh (11-11, 12-9)

Osmunda cinnamomea ahz-MUN-duh sin-uh-MO-mee-uh (3-9, 9-1)
Pennisetum setaceum pen-ih-SEE-tum seh-TAY-see-um (8-11, 12-8)
Penstemon baccharifolius PEN-steh-mon bak-uh-rih-FO-lee-us (8-10, 10-8)
P. eatonii P. ee-TONE-ee-eye (4-9, 9-1)
P. hirsutus P. her-SOO-tus (3-8, 8-1)
P. pseudospectabilis P. soo-doh-spek-TAB-ih-liss (5-10, 10-5)
Phlox stolonifera FLOKS sto-lon-IF-ur-uh (4-8, 8-1)
Phormium cookianum FOR-mee-um koo-kee-AN-um (9-11, 12-1)
Polystichum acrostichoides pah-LIS-tih-kum uh-kros-tih-CHOY-deez (3-8, 8-1)
Polypodium appalachianum pawl-ee-PO-dee-um ah-puh-LACH-ih-an-um (3-8, 8-1)
P. virginianum P. vir-jin-ee-AN-um (5-8, 8-5)
Potentilla tridentata po-ten-TIL-luh try-den-TAY-tuh (2-8, 8-1)
Prunus sargentii PROO-nus sar-JEN-tee-eye (5-9, 9-5)
Pulsatilla vulgaris pull-suh-TIL-uh vih-GAIR-iss (5-7, 7-5)

Q-R

Quercus agrifolia KWER-kus ag-rih-FO-lee-uh (8-10, 10-6)
Q. alba Q. AL-buh (3-9, 9-1)
Q. buckleyi Q. buck-LEE-eye (5-9, 10-6)
Q. chrysolepis Q. krih-so -LEP-iss (7-9, 9-7)
Q. gambelii Q. gam-BEL-ee-eye (5-8, 8-4)
Q. garryana Q. gah-ree-AN-uh (6-8, 8-5)
Q. macrocarpa Q. mak-ro-KAR-puh (2-9, 9-2)

Q. muehlenbergii Q. mew-len-BUR-gee-eye (4-8, 8-3)
Q. nigra Q. NY-gruh (6-9, 9-5)
Q. nuttallii Q. nuh-TAL-lee-eye (6-9, 9-5)
Q. rubra Q. ROO-bruh (3-7, 7-1)
Q. shumardii Q. shoo-MAR-dee-eye (5-9, 9-5)
Q. stellata Q. stel-LAY-tuh (5-9, 9-5)
Q. ×sternbergii Q. sturn-BUR-jee-eye (4-9, 9-1)
Q. velutina Q. vel-oo-TEEN-uh (4-8, 8-1)
Q. virginiana Q. vir-jin-ee-AN-uh (7-10, 10-7)
Rhus aromatica RUS ah-ro-MAT-ih-kuh (2-8, 8-1)
Ribes sanguineum RY-beez san-GWIN-ee-um (6-8, 8-6)
Ruellia humilis roo-EL-ee-uh HEW-mih-lys (4-9, 9-1)

S-Z

Sassafras albidum SASS-uh-frass AL-bih-dum (4-8, 8-3)
Sechium edule SEK-ee-um ed-YEW-lee (9-10, 12-9)
Sedum pulchellum SEE-dum pul-KEL-um (5-9, 9-1)
Solidago rugosa sol-ih-DAY-go roo-GO-suh (5-9, 9-1)
S. speciosa S. spee-see-O-suh (5-9, 8-4)
Spigelia marilandica spy-JEE-lee-uh mair-ih-LAN-dih-kuh (5-9, 9-2)
Sporobolus junceus spor-OB-o-lus JOON-see-us (8-10, 11-8)
Tiarella cordifolia tee-uh-REL-luh kor-dih-FO-lee-uh (3-8, 7-1)
Vaccinium angustifolium vak-SIN-ee-um ang-gus-tih-FO-lee-um (2-8, 8-1)
Verbena lilacina ver-BEE-nuh lie-LASS-ih-nuh (10-11, 12-5)
Viola pedata VY-o-luh peh-DAY-tuh (3-8, 8-1)

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'Justin Brouwers' Boxwood

by Dean Norton

UNTIL RECENTLY, the predominant boxwood used in American gardens was the dwarf English boxwood (*Buxus sempervirens* 'Suffruticosa'). In the mid-Atlantic and South, this boxwood was often planted in inappropriate sites—exposed to full sun and winter winds and/or poorly drained soils—and subjected to poor cultural practices. Because of the combination of overplanting and poor site selection, starting in the 1960s, dwarf English boxwoods began succumbing to a fungal disease called boxwood decline.

ENTER 'JUSTIN BROUWER'

For gardeners and growers in desperate need of alternatives for dwarf English boxwood, one good option emerged in 'Justin Brouwers' (USDA Zones 6–9, AHS Zones 8–6), a selection of dwarf Korean boxwood (*Buxus sinica* var. *insularis*). Introduced prior to 1972, this selection is as hardy as English boxwood, tolerates sites in sun or shade, and has a slow to medium growth rate of one to three inches per year. After 15 years, it will reach approximately two-and-a-half feet in height and spread with a mounded shape. Best of all, it is adaptable, resilient, and easy to grow.

The plant was originally selected as a seedling by the late Justin B. Brouwers, a former landscape gardener at Colonial Williamsburg in Virginia. According to an article in the *The Boxwood Bulletin*, Brouwers liked the selection so much that he planted seedlings around the grave of one of his favorite cats; before the plant received its current name—which was offi-



'Justin Brouwers' boxwood makes a neat, low-growing hedge in the garden.

cially registered in 1989—it was generally known as the "Cat's Grave Seedling" and as "Brouwers' Seedling No.1."

'Justin Brouwers' came on the scene at a time when many historic sites were dealing with the need to replace declining English boxwoods. Among the mid-Atlantic gardens that benefited from it were the White House and Mount Vernon Estate and Gardens, where I work. 'Justin Brouwers' was introduced in several gardens at both sites and so far has performed admirably.

The cultivar requires little attention, responds well to pruning and shearing, and has shown resistance to root rot diseases. As with most boxwoods, 'Justin Brouwers' is susceptible to spider mites and boxwood leaf miner. Plants should be regularly monitored to check for these pests, which are relatively easy to control.

WORTH A TRY

While there are many good new boxwood cultivars now available, 'Justin Brouwers' is definitely worth incorporating into the landscape. It is versatile enough to be used as a specimen plant, as a low hedge, or for edging. It is also suitable for bonsai and topiary. In the National Boxwood Trials coordinated by Paul Saunders of Saunders Brothers Nursery in Piney River, Virginia, 'Justin Brouwers' consistently rates highly for overall qualities. Many of my colleagues who have grown the plant say it is a winner, and I can vouch for that from my own experience. If you like the look of dwarf English boxwood, 'Justin Brouwers' offers a smaller, easier-to-care-for option. 🌿

Dean Norton is director of horticulture at Mount Vernon Estate and Gardens in Alexandria, Virginia.

Sources

Avant Gardens, Dartmouth, MA.
(508) 998-8819.
www.avantgardensne.com.

Heronswood Nurseries, Warminster, PA. (866) 587-7948.
www.heronswood.com.

For more information about the National Boxwood Trials, visit the Saunders Brothers Nursery website (www.saundersbrothers.com).

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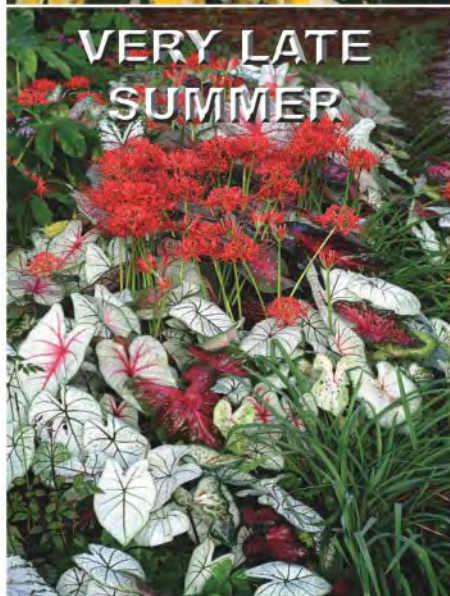
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