

The American GARDENER[®]

The Magazine of the American Horticultural Society

January / February 2009

Vegetable Gardening *tips for success*

New Plants and
Trends for 2009

How to Prune
Deciduous Shrubs

Sweet Rewards
of Indoor Citrus



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AMERICAN HORTICULTURAL SOCIETY

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*In memoriam

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NOTES FROM RIVER FARM

WHETHER IN OUR daily lives or in our gardens, the New Year is a good time to take stock of our progress, reassess our direction, and establish new short- and long-term goals. This is something the staff and Board of the American Horticultural Society does every year, based on feedback from our members and our own evaluation of our accomplishments. As part of this ongoing process, in 2009 we are rededicating ourselves to serving you, our members, with exceptional programs, valuable benefits, practical and inspiring gardening information, and meaningful outreach.

For instance, this year we've expanded the number of gardens participating in our Reciprocal Admissions Program to more than 230. We will also be continuing our popular webinar series, exclusively for members, with online presentations from four more of America's top horticultural experts. Our 17th annual National Children & Youth Garden Symposium will be held in Cleveland, Ohio, in July and we have added several new domestic offerings to our highly regarded Travel Study Program. The annual *AHS Member Guide* included in this issue of *The American Gardener* contains an overview of these and many other AHS member benefits and programs. Be sure to read and save this guide, because your AHS membership is more valuable than ever before!

With this issue of *The American Gardener*, we continue the tradition of starting the year with a look at new plants and emerging gardening trends. Get the scoop on what to look for in 2009 starting on page 14. You can also delve into the fascinating and continually evolving science of botanical nomenclature—complete with an update on recent and potential changes in plant names—and learn how to prune a wide range of deciduous shrubs.

One of the clear trends over the past year has been the resurgence of interest in vegetable gardening as a source of healthy, locally grown food. For new as well as seasoned gardeners, this issue has practical advice on how to create, plant, and maintain a vegetable garden. And, to take your mind off winter's chill, discover why the rewards of growing citrus plants in containers are worth the challenges.

When it comes to challenges, there is no doubt we are surrounded by them in our world today. If there's one constant we are able to draw strength from during difficult times, it is the positive influence of plants and gardening in our lives and in our communities. As we enter this New Year, there is a palpable sense of optimism in the air, thanks in part to a renewed passion among Americans for environmental and social issues. As a long-standing proponent of the important role of plants and gardens in environmental stewardship, the American Horticultural Society is well positioned for these changing times. We are glad you are on this journey with us and look forward to seeing and hearing from you this coming year.

Our best wishes for a rewarding New Year, and happy gardening!

Susie Usrey, Chair, AHS Board of Directors

Tom Underwood, Executive Director



MEMBERS' FORUM

NO GOLD STAR FOR US

I thoroughly enjoyed the article on native magnolias in the September/October issue. However, I am not sure the magnolia pictured on the left hand side of page 43 in that issue is correctly identified. The caption indicates the magnolia is 'Gold Star', but that cultivar, a star magnolia cross developed by breeder Phil Savage, usually has 14 strap-shaped tepals.

Don Ridley

Cornwall, Prince Edward Island, Canada

Editor's note: We asked Paul Cappelletto, director of Yew Dell Gardens in Crestwood, Kentucky, and a member of the Magnolia Society International, to take a look at the image and he concurs with Don Ridley that it is not 'Gold Star', noting that the tepals of that cultivar rarely attain such a deep yellow color. Cappelletto suspects it is 'Butterflies'. Cappelletto sent us a photo of 'Gold Star', below, which you can see compared with the magnolia pictured in the September/October issue.



The photograph above, identified as 'Gold Star' in the September/October issue, is likely 'Butterflies'. The true 'Gold Star' is shown to the right.



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.

Member Services

We love to hear from our members! If you have questions about your American Horticultural Society membership, would like to become a member, renew your membership, give a gift of membership, or update your mailing or e-mail address with the AHS, please call (800) 777-7931 ext. 119 or e-mail us at membership@ahs.org.

New Website Password

The members-only section of the AHS website, www.ahs.org, provides convenient access to membership benefits as well as the contents of each issue of *The American Gardener* since 2001. To access the section, the user name is **ahs**. The password changes at the beginning of each year. Effective February 2, 2009, the new password will be seeds. The password will also be listed on page 4 in each magazine issue. (Both the user name and password must be entered in lowercase letters.)

PRAISE FOR AHS ADVOCACY

At 56, after a long career as a registered nurse, I am back at school completing my Bachelor of Science in Nursing degree. As part of an English composition class, I recently wrote a paper on the benefits of community gardening, and one of my nursing classes is currently discussing health promotion—as opposed to disease curing—and the US “Healthy People 2010” program. When I got your e-newsletter describing how the AHS has joined the No Child Left Inside Coalition that is seeking increased funding for outdoor education programs for children, I was delighted to know that as AHS members, we are doing our part to make individuals and communities more healthy.

I am so proud to be a part of this organization. Keep up the good work.

Eugenia Anne Cox
Toledo, Ohio

Editor's note: If you would like to receive the monthly *e-Bulletin*, the AHS's e-mail newsletter, please send a request to membership@ahs.org and include “Newsletter” in the subject line.

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THE AMERICAN HORTICULTURAL SOCIETY TRAVEL STUDY PROGRAM 2009 TOURS

TOUR SPOTLIGHT

MAKE YOUR RESERVATIONS TODAY!

Art and Gardens of the Netherlands

*with AHS host Kurt Bluemel
Tour escorted by Susie Orso*

April 24 – May 2, 2009

■ Just in time for peak spring bloom, join the American Horticultural Society to explore the historic connections between art and gardens in the Netherlands. Led by plantsman Kurt Bluemel and Susie Orso, an expert on European gardens, participants will experience the world-renowned spring bulb display at Keukenhof as well as tours of many other public and private gardens, including that of garden designer Piet Oudolf. Between garden visits, view masterpieces by some of the world's greatest artists.



Look for more details coming soon for these future destinations:

Gardens of Florence

*with AHS Host Susie Usrey
Tour escorted by Susie Orso*
May 22 – 30, 2009

Baltimore, Maryland

*with AHS Host Harry Risetto
Tour escorted by Diana Biras*
June 9 – 14, 2009

Portland, Oregon*

with AHS Host Tom Underwood
August 12 – 16, 2009

New York's Hudson Valley

*with AHS Host Katy Moss Warner
Tour escorted by Stephanie Jutila*
October 14 – 18, 2009

Chile: Gardens, Wines, and History

*with AHS Host Mac Plant
Tour escorted by Mary Kroening*
October 8 – 21, 2009

*Exclusive offering for AHS President's Council members. For more information about the President's Council, contact Stephanie Perez at (703) 768-5700 ext. 127.



For more information about the
AHS Travel Study Program, visit
www.hiddentreasuresbotanicaltours.com
or call (573) 881-6316.



Renee's Garden Helps Celebrate Seed Exchange's Golden Anniversary



FOR 50 YEARS, the American Horticultural Society's members have shared thousands of seeds through the annual Seed Exchange. This year, there are nearly 200 different varieties of annuals, perennials, shrubs, vegetables, and more to choose from, donated by 2009 Seed Exchange sponsor **Renee's Garden**, and other companies, organizations, and AHS members.

In celebration of the program's Golden Anniversary, the first 300 AHS members to submit orders for this year's seeds will receive complimentary 'Pot of Gold' Swiss chard seeds from Renee's Garden, a nationally acclaimed purveyor of heirloom and cottage garden flower, herb, and vegetable seeds. Additionally, Seed Exchange participants who donate \$25 or more to support the program will receive a complimentary copy of one of owner Renee Shepherd's cookbooks.

The catalog of available seeds and order form are available in the "members only" section of the AHS website. If you don't have access to the Internet, you can request a catalog and order form be mailed to you by calling (703) 768-5700 ext. 115 or send an e-mail to jgagliardi@ahs.org.

The first 300 AHS members who place orders in the 2009 Seed Exchange will receive 'Pot of Gold' Swiss chard seeds from Renee's Garden as a special golden anniversary gift.

AHS Board of Directors Updates

SIX NEW MEMBERS were recently elected to join the AHS Board of Directors. Offering a wide range of experience and expertise, they are: **Henrietta Burke** of Alexandria, Virginia; **Tom Cooper** of Watertown, Massachusetts; **Gay Estes** from Houston, Texas; **Anne Garland Farrell** of Richmond, Virginia; **Jack Lowry** from Phoenix, Maryland; and **Mary Pat Matheson** of Atlanta, Georgia.

The Society extends special thanks and appreciation to the eight board members whose terms ended last fall: **Arabella S. Dane**, **Carol C. Morrison**, **Katherine Stark Bull**, **John Alex Floyd, Jr.**, **Howard McK. Tucker**, **Jeanne Shields**, **Robert D. Volk**, and **Daryl Williams**.

"Our outgoing board members have all helped the AHS to make significant strides forward programmatically, strategically, and financially," says AHS Executive Director **Tom Underwood**, "and we look forward to continuing the Society's success and growth with our new members."

AHS Represented at Climate Change Conference

LAST NOVEMBER, nearly 100 meteorological experts, scientists, and green industry members participated in the National Oceanic and Atmospheric Administration (NOAA) conference, "Climate Change & The Plant Sector," held in Asheville, North Carolina. Among the attendees were leaders in landscape architecture, public gardens, plant nurseries, and land conservation, including AHS Executive Director **Tom Underwood**.

"Climate change is having an undeniable influence on gardening because it is altering the traditional range and garden adaptability of plants," says Underwood. "The AHS will make it a priority to stay informed on this issue and help increase awareness of how gardeners and the plant industry can play an important role in slowing the pace of climate change."

The conference also commemorated the new U.S. Climate Reference Network (USCRN), which is a network of climate observation stations established to monitor temperature and precipitation at 114 sites across the United States to track climate change trends. To learn more about the USCRN, visit www.ncdc.noaa.gov.

Upcoming Webinars

SINCE LAUNCHING in 2007, the AHS webinar program has offered seven free online seminars exclusively for its members on topics from native plants to garden design techniques.

In 2009, the AHS is planning four new webinars. Though the dates are still being finalized, these will include presentations on drought tolerant plants by garden designer, author, and plantsman **Scott Calhoun**; sustainable gardening strategies by **Doug Tallamy**, author of *Bringing Nature Home*; and creating well designed outdoor spaces by author and garden designer **Julie Moir Messervy**. For more information, or to sign up to receive webinar invitations, visit the members-only section of the AHS website (www.ahs.org).



Julie Moir Messervy

2009 National Children & Youth Garden Symposium

EACH YEAR the American Horticultural Society's National Children & Youth Garden Symposium takes place in a different city, hosted by gardens and organizations that are active in the youth gardening movement. From July 23 to 25, the 17th annual symposium, "Common Ground: Gardens for a Greener Tomorrow" will be hosted by Cleveland Botanical Garden (CBG) in Ohio.

"Without question, CBG has been a national leader in youth gardening for the past decade," says AHS Education Programs Manager **Stephanie Jutila**. "The American Horticultural Society is pleased to bring the 2009 symposium to Cleveland as a way to celebrate the 10th anniversary of CBG's Hershey Children's Garden and showcase a number of innovative programs that are engaging Cleveland's youth."

The event will include lectures, workshops, and field trips that will explore how gardens bring communities together to provide effective learning experiences for children and youth.

For more information, e-mail youthprograms@ahs.org or call (703) 768-5700 ext. 121.

AHS Receives Fruehling Bequest

THE AHS recently received a bequest of more than \$180,000 from the estate of **Louise Carolyn Fruehling**, which will be

NEW MEMBER PASSWORD FOR WEBSITE

ON THE AHS WEBSITE, there is a special password-protected section just for members that contains convenient access to membership benefits and exclusive offerings. These include access to the Seed Exchange catalog and order form, webinar registration, and discounts on AHS books as well as other gardening products. By using the password, AHS members also get complete access to the online edition of *The American Gardener*—this includes all the magazine issues since January/February 2001.

To access the members-only area of the AHS website, the username is always **ahs**. The password changes at the beginning of every year; effective February 2, 2009, the password is **seeds**. Both the username and password must be entered in all lowercase letters. In case you forget, the password is listed on page 4 of each issue of the magazine.

used to support the Society's educational programs and the stewardship of River Farm.

Born in Steger, Illinois, in 1913, Fruehling spent most of her life in Chicago, where she worked for Marshall Field's department store. After retiring, she moved to Sun City West, Arizona, where she died on January 1, 2008. A former AHS member, Fruehling had an enduring passion for flowers and gardening, according to her friend **Janice Hjelmgren**, who

go GREEN with the AHS

This summer, join the American Horticultural Society for two special programs that will focus on earth-friendly ideas and techniques for making your garden look great while reducing its environmental footprint.

Community Green

June 14, 2009
River Farm,
Alexandria, Virginia

* Enjoy festive and fun green activities and interactive demonstrations for all ages in the gardens.

For more information, or to participate as a speaker or vendor, visit www.ahs.org or call (703) 768-5700 ext. 115.



Green Garage: Sustainable and Earth-friendly Solutions for the Landscape

An AHS Garden School presented in partnership with the City of Alexandria
June 27, 2009
Lee Center, Alexandria, Virginia

* A day filled with lectures and hands-on workshops plus an exhibit hall featuring companies and organizations that offer green products, services, and tools.

For more information, visit www.ahs.org or call (703) 768-5700 ext. 137.



received many passalong plants from Fruehling when the two were neighbors in Chicago.

For more information on planned giving to the AHS, contact **Stephanie Perez** at (703) 768-5700 ext. 127 or sperez@ahs.org.

Sign Up for New Online Newsletter

IN ORDER TO KEEP members, donors, and friends better informed, this past fall the AHS launched a new e-newsletter, issued monthly. The *AHS e-Bulletin* contains the latest updates about the Society's national programs and activities as well as happenings at its River Farm headquarters. If you would like to sign up to receive the newsletter, please send an email to membership@ahs.org and be sure to put "newsletter" in the subject line.

Spring Plant Sale at River Farm

THE AHS'S annual spring plant sale will be expanded this year to include a variety of new vendors and special events. Renamed the Spring Garden Market to encompass all of this, the event will



A variety of plants and gardening items will be available during the AHS Spring Garden Market at River Farm in April.

take place at the AHS's River Farm headquarters on April 17 and 18. Plant vendors from around the Mid-Atlantic region will offer exciting new cultivars of annuals, perennials, trees, shrubs, vines, and vegetables, as well as traditional standbys. There will also be a book signing by **Jeff Kirwin**, author of *Remarkable Trees of Virginia*, presented by the Fairfax County Tree Commission.

AHS members are invited to a special preview night on April 16 from 4 to 8 p.m., which will include a silent auction of unique garden goods and a talk by **David J. Ellis**, AHS director of communications and editor of *The American Gardener* magazine.

Visit www.ahs.org or call (703) 768-5700 for more information on the plant sale.

Dr. H. Marc Cathey Day Lecture Focuses on Flowers

THE ANNUAL CELEBRATION of Dr. H. Marc Cathey Day this past October was somewhat subdued, understandably, given that the event took place only two weeks after the death



AHS NATIONAL EVENTS AND PROGRAMS

2009 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.

- MARCH 18–MAY 31.

Epcot International Flower & Garden Festival. Lake Buena Vista, Florida.



- APRIL 17 & 18.

Spring Garden Market.

River Farm, Alexandria, Virginia. (Note: AHS members-only preview sale is Thursday, April 16 from 4 p.m. to 8 p.m.)

- MAY 1. **Colonial Williamsburg Garden Symposium.**

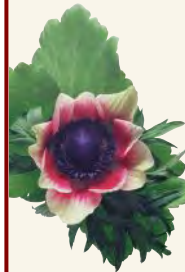
Williamsburg, Virginia.

- MAY 17. **Friends of River Farm Family Picnic.** River Farm, Alexandria, Virginia.

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

- JUNE 14. **Community Green.** River Farm, Alexandria, Virginia.

- JUNE 27. **AHS Garden School: Green Garage: Sustainable and Earth-friendly Solutions for the Landscape.** Lee Center, Alexandria, Virginia.



- JULY 23–25. **National Children & Youth Garden Symposium.** Cleveland, Ohio.

- AUG. 21–23. **The Homestead's 11th Annual "In the Garden With the Experts" Symposium.** Hot Springs, Virginia.

- SEPT. 19. **AHS Annual Gala.** River Farm, Alexandria, Virginia.

- OCT. 1–3. **America In Bloom Symposium and Awards Ceremony.** Hershey, Pennsylvania.

- OCT. 23. **Dr. H. Marc Cathey Day.** River Farm, Alexandria, Virginia.

of the former AHS President. The event, held each year on October 23 in celebration of Dr. Cathey's birthday, featured a colorful presentation on "The Science and Magic of Flowers," by AHS President Emeritus **Katy Moss Warner**. As a tribute to Dr. Cathey's life and work, Warner also shared some memories of him and his exuberant passion for plants, as did a few audience members, including renowned landscape architect **James van Sweden** and **Holly Shimizu**, executive director of the U.S. Botanic Garden.

Established in 2005 upon Dr. Cathey's retirement from the AHS and a long career of horticultural research, Dr. H. Marc Cathey Day features lectures that emphasize the science and art of horticulture.

Colonial Williamsburg Garden Symposium in May



Renee Shepherd

MAY DAY is a fitting date for one of the country's longest running gardening programs, the 63rd annual Colonial Williamsburg Garden Symposium, "The Natural Rhythm of Gardening," co-sponsored by the AHS and *Fine Gardening* magazine. This May 1 event will include presentations by noted landscape architect and author **James van Sweden**; **Renee Shepherd** of Renee's Garden seed

company; horticulturist and author **Felder Rushing**; and **David Howard**, former head gardener for the Prince of Wales and the Duchess of Cornwall.

This year's program will address ways to employ the natural cycles of plants to create beautiful and ecologically sound gardens. Optional tours of public and private gardens and national parks will be offered on April 30 and May 2. A registration discount is available for AHS members by contacting Colonial Williamsburg at (800) 603-0948. Visit www.history.org/conted for more information.

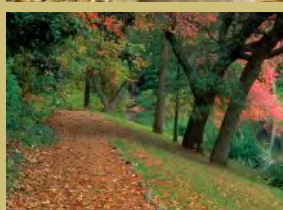
Grant to Fund Future AHS Library

THE AHS received notification in November that it is the recipient of a grant from the **Stanley Smith Horticultural Trust**. The grant will be used for the initial development stages of a planned horticultural reference library to be established at the Society's River Farm headquarters.

The library facility will house special collections of books in subject areas that include children's gardening, botany, the history of American horticulture, and related subjects. These will include autographed copies of books by noted horticultural visionaries such as Liberty Hyde Bailey and more than 1,000 books donated to the AHS from the personal collection of **Jane L. Taylor**, the founder and former curator of the Michigan 4-H Children's Garden at Michigan State University.

Established in 1970 by **May Smith**, the Stanley Smith Hor-

63RD ANNUAL COLONIAL WILLIAMSBURG GARDEN SYMPOSIUM



THE NATURAL RHYTHM OF GARDENING

May 1, 2009

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ticultural Trust “supports education and research in ornamental horticulture.”

Garden Photography Contest

IF YOU LIKE TO wander through gardens with your camera at the ready, then you may want to enter The Gardeners of America/Men’s Garden Clubs of America (TGOA/MGCA) annual horticultural photography competition. Through special arrangement, the contest is open to AHS members and the \$15 entry fee includes a one-year membership in the TGOA/MGCA. Categories range from roses to landscapes, and winning photographs may be selected for inclusion in a calendar the organization sells annually as a fundraiser. The deadline for submissions is February 13, 2009. Call (515) 278-0295 or visit www.tgoa-mgca.org for additional information and contest rules.

America In Bloom Contest

THE DEADLINE TO enter your community in the 2009 America in Bloom (AIB) competition is February 28. AIB is a national contest that encourages stronger, more beautiful communities by fostering civic pride and economic development.

Communities are rated by population size and eight special categories, such as the AHS-sponsored Community Involvement Award. Since 2001, nearly 25 million people in 160 communities nationwide have participated in the program. Winners will be revealed at the AIB symposium and awards program scheduled for October 1-3, 2009 in Hershey, Pennsylvania. To learn more, call (614) 487-1117 or visit www.americainbloom.org.

2009 Epcot International Flower & Garden Festival

THE 16TH ANNUAL Epcot International Flower & Garden Festival in Lake Buena Vista, Florida, will showcase environmentally friendly gardening techniques. Held from March 18 to May 31, 2009, it will feature a “Green Garden” to demonstrate how anyone can create an environmentally friendly garden by using less water, planting native plants, and even recycling. A “Special Environmentality Celebration” from April 24 to 26 will showcase practical methods for reducing waste and other sustainable gardening techniques. Call (407) 934-7639 or visit www.disneyworld.com/flower for more information.

News written by Editorial Assistant Caroline Bentley.

Gifts of Note

In addition to vital support through membership dues, the American Horticultural Society relies on grants, bequests, and other gifts to support its programs. We would like to thank the following donors for gifts received between October 1, 2008 and November 30, 2008.

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In memory of Frances Jones Poetker
Mr. James L. Johnson

In memory of Katherine Wimert
Ms. Karen Brown

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 commitment to charitable giving, please contact: Stephanie Perez, (703) 768-5700 ext. 127 or sperez@ahs.org.

Common Ground: Gardens for a Greener Tomorrow



The American Horticultural Society's
17th Annual

National Children & Youth Garden Symposium

July 23–25, 2009 • Cleveland, Ohio
Hosted by Cleveland Botanical Garden

For more information, visit www.ahs.org or call (703) 768-5700 ext. 121.



Plants *and* Trends for 2009

BY DOREEN G. HOWARD

I'VE BEEN a garden writer and editor for a long time, so I tend to view the annual promotional crescendo for new plants with a somewhat jaded eye. Every spring, hundreds of new plants are brought to market with great fanfare in hopes of enticing consumers. A few quickly become the "hot" plant because of their look or staying power. But many fade into oblivion, just like the pop divas who dye their hair pink and sing off-key.

This year, however, I believe more than the usual number of plants are worth gar-

Saturated color, showy flower forms, and cold-hardy tropicals will be among the plant trends gardeners will see this year.

deners' attention because of the new directions in which breeders are going. Plants are crossing genetic boundaries, resulting in colors, growth habits, and cold hardiness unimaginable even a year ago.

It's part of a horticultural revolution in which rules have changed. Drought-tolerant natives like coneflowers (*Echinacea* spp.) are no longer plain Janes, but blowsy hussies that stop traffic. Indiscriminate seeders, which responsible gardeners don't allow in their yards, have cleaned up their acts. Tropical houseplants are moving outdoors to stay and developing texture and color for landscape effect.

Plant companies send me introductions at least a year in advance of release so I can test them in my garden in Illinois (USDA Hardiness Zone 4/5, AHS Heat Zone 5). In my travels around the country, I also talk regularly with breeders and plant hunters about developing trends and what is in the pipeline for the next five years or



so. Here are some of the plants that have made an impression on me; more introductions are briefly described on page 17.

CONEFLOWER COMBUSTION

The purple coneflower (*Echinacea purpurea*, USDA Hardiness Zones 3–9, AHS Heat Zones 9–1) and the other species in the genus have exploded with new forms, fragrance, and saturated colors. It's diffi-

cult to recognize some of them as the drought-tolerant prairie natives gardeners have come to rely on in hot, dry spots. Newer cultivars are still tough but have bells and whistles like pom-pon flowerheads on 'Pink Poodle', or color-drenched red 'Tomato Soup', and heavily perfumed yellow 'Mac 'n' Cheese'—all from Oregon's Terra Nova Nurseries—or spicyscented double orange 'Hot Papaya' from Plants Nouveau.

These flamboyant selections may not be to everyone's taste, but Chris Hansen of



Great Garden Plants, which sells 'Hot Papaya', raves about its fiery orange color. "When I first saw the flower, my jaw hit the floor," he says. 'Hot Papaya' was bred by Arie Blom, a Dutch breeder whose goal was not only vibrant orange double blooms, but strong stems for cut flowers that last up to 10 days. Blom's working on 20 other selections that Plants Nouveau will be releasing in the next four years, including bi-color ruffled doubles and several with frills. Also available from Great Garden Plants is *Echinacea* Green Envy, a color breakthrough developed by Pride of Place Plants in Canada. A green flower is a

novel occurrence, according to its breeder, Tom Veeder. Round jade green petals and deep green cones gradually mature to elongated petals with magenta veining near the cone, which also turns a purplish tone.

Terra Nova, known for its cutting-edge breeding and tissue culture program, is using a process called “embryo rescue” to create its unique coneflowers. The technique, briefly, involves cross-pollinating two dissimilar species by hand. Usually in such cases plants abort any seed pod that forms within two to three weeks (this mechanism apparently developed to maintain genetic purity of the species). In embryo rescue, unripe seeds are harvested about ten days after pollination and grown on in a tissue culture lab. Among the resulting plants, new colors and forms tend to appear. Terra Nova performs some 7,000 embryo rescues every year, from which about five plants are selected for development, according to Dan Heims, president. “We may have to rethink the whole *Echinacea* genus,” he says.

ENCOURAGING ZONE DENIAL

“Everybody wants a piece of paradise, even if big tropical plants end up in the compost after three or four months of enjoyment,” says Linda Guy, director of new products at Novalis, a marketing consortium that represents several plant growers. That’s why Novalis and others are busy developing tropicals with more cold-hardiness and combing the world for species that grow naturally in harsher climates.

In 2001, Guy gathered seeds from an



Bletilla ochracea Chinese Butterfly



Athyrium niponicum var. *pictum* 'Godzilla'



Colocasia esculenta 'Mojito'

exotic cold-hardy terrestrial orchid (*Bletilla ochracea*) she found on a mountainside in the Sichuan province of China. Named Chinese Butterfly (Zones 6–9, 9–5), it’s one of Novalis’s 2009 introductions. Its soft yellow flower color, willowy form, and pleated leaves add sophistication to any woodland setting.

Well-known plant hunter Dan Hinkley also is scouring the mountains of China, Vietnam, and Thailand for exotics that take the cold. Next year, he will release through Monrovia two *Schefflera* species that are hardy to USDA Zone 7. For most people, the genus *Schefflera* probably evokes images of houseplants, but these species grow into large shrubs or small trees (eight to 15 feet), making them stunning landscape plants. New growth

on one is deep burgundy and the other features white downy hairs. In colder climates, either *schefflera* makes a striking container plant that can be brought indoors for the winter.

Tony Avent of Plant Delights Nursery in Raleigh, North Carolina, introduces two plants this season that also push the boundaries. An eye-catcher in any garden is ‘Godzilla’, a six-foot-wide Japanese painted fern (*Athyrium niponicum* var. *pictum*, Zones 5–8, 8–1). The silver, gray, and purple fronds grow

over three feet tall and demand attention. It’s perfect for a shady patio as a low-maintenance focal plant. Avent also unveils another striking taro (*Colocasia esculenta*) this season, part of a series of unusual cultivars introduced in collaboration with John Cho at the University of Hawaii. ‘Mojito’ (Zones 9–11, 12–3) is a six-foot beauty that sports giant black-speckled green leaves and stems streaked with white and purple. Where it’s not hardy, the tubers can be dug up after the first freeze and stored for the next season.

STOP THE SEEDY

Certain desirable plants can turn into a gardener’s worst nightmare when they produce copious amounts of seeds that quickly sprout everywhere. One of these plants is the butterfly bush (*Buddleia* spp.), which is beloved because it draws butterflies and other desirable pollinators. Now, thanks to a breeding breakthrough, Proven Winners has developed a butterfly bush that is not only sterile, but also petite, perfect for borders, pots, and rock gardens. ‘Blue Chip’ (*Buddleia* Lo & Behold, Zones 6–9, 9–1) matures into a two- to three-foot mound that flowers continuously, putting its energy into blooming rather than setting seed. It doesn’t require deadheading, either.

Another sordid character Monrovia has tamed is Japanese barberry (*Berberis thunbergii*). According to Nicholas Staddon, Monrovia’s director of new plant introductions, orange-leaved Golden Ruby (‘Goruzam’) barberry (Zones 4–8, 8–4) produces 70 percent less seed than the



Agapanthus orientalis Baby Pete

species. It's a compact, well-behaved shrub that needs little maintenance, yet provides brilliant color. Monrovia is working on botanically sterile versions of other overly rambunctious favorites such as euonymus, maiden grass (*Miscanthus* spp.), and agapanthus. Baby Pete (*Agapanthus orientalis*, Zones 7–11, 12–5) is the first of the sterile agapanthus Monrovia offers this year. Petite 15-inch plants generate nine-inch stems that hold enormous flower heads. All the plant's energy goes into non-stop flowering instead of seed production, so seed pods aren't formed.

FLOWERING SHRUBS AND ROSES

Forget spring-only bloomers, predictable foliage color, and boring roses. Breeders have answered gardeners' prayers with plants such as Bloomerang lilac (*Syringa* 'Penda') from Proven Winners, which flowers repeatedly until frost. Mine was still in full bloom on October 27 when it snowed. The dark pink panicles are lush and fragrant, plus the tidy plant only grows to about four feet.

Honeysuckle is traditionally thought of as a southern or West Coast charmer. However, a new cultivar of southern bush honeysuckle (*Diervilla sessilifolia*), developed by the Landscape Plant Development Center in St. Paul, Minnesota and distributed by Novalis, gives northern gardeners the same flowers, plus striking variegated foliage. Named Cool Splash ('LPDC Podaras', Zones 4–8, 8–4), it features yellow trumpets held in panicles over emerald leaves edged with swaths of cream. Bushy in habit, it grows to about three feet tall and colonizes by underground suckers for mass plantings.



Diervilla sessilifolia 'Cool Splash'



Hibiscus syriacus Sugar Tip

Variegated foliage also punches up an old favorite, rose of Sharon (*Hibiscus syriacus*). Sugar Tip ('America Irene Scott', Zones 5–9, 9–4) from Proven Winners sports cream-splashed foliage and fully double pearl-pink flowers. Growing to 12 feet, the shrub blooms non-stop from the first heat of summer to frost.

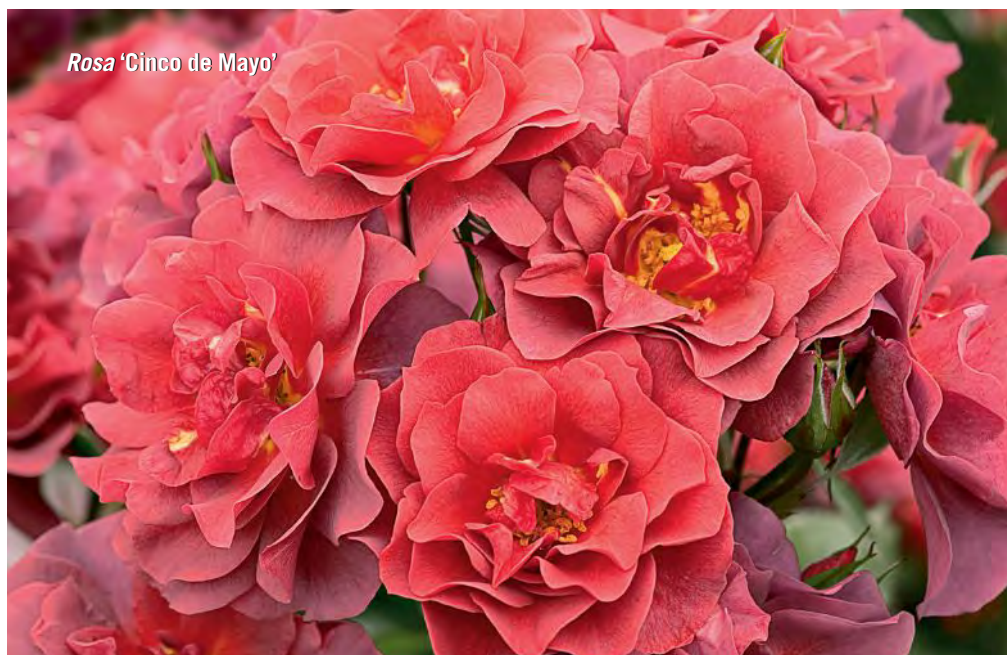
Rose breeders have given us disease-resistant, no-fuss cultivars in recent years,

but frankly many of them are boring. That's why 'Cinco de Mayo', White Out, and Amber Flower Carpet excited me with their appearance and performance. As a bonus, all were unattractive to Japanese beetles in my Midwest garden.

'Cinco de Mayo' (Zones 5–9, 9–5) is a 2009 All-America Rose Selection for good reason. The smoky lavender and rusty orange color of the flowers is stunning, and blooms smell like fresh-cut apples. I have this floribunda next to my front door in a bed of nine roses, and every visitor asks about 'Cinco de Mayo'. Bred by Tom Caruth of Weeks Roses, the well-behaved rose is very disease resistant and requires no pruning to maintain an attractive round shape throughout the season.

Bill Radler built his reputation breeding the Knock Out® series of roses, but his newest offering White Out ('Radwhite', Zones 5–9, 9–5) goes well beyond the disease-resistant non-stop flowering that marked that series. Single pure white flowers blanket a compact shrub continuously. The contrast between thick, dark green foliage and white blooms is dramatic. Like all of Radler's creations, White Out needs no deadheading, and, in fact, blooms better if spent flowers are not removed.

Flower Carpet roses, from Anthony Tesselar Plants have been around for more than a decade and are reliable landscape additions. However, Flower Carpet Amber (Zones 5–10, 10–5) finally offers color complexity, worthy of inclusion in formal settings, along with the series' reputation for dependable performance. Clusters of multi-colored blooms (up to 45 per bunch) in a complex mix of burnt orange,



Rosa 'Cinco de Mayo'

MORE NEW PLANTS TO LOOK FOR IN 2009

■ ANNUALS / BIENNIALS / TENDER PERENNIALS

***Dahlia variabilis* 'Black Beauty'** (USDA Zones 9–11, AHS Zones 12–1). Thompson & Morgan (www.tmseeds.com). Deep burgundy-colored ray petals around yellow cones bloom in late summer on 18- to 24-inch plants.

***Lobularia maritima* 'Summer Peaches'** (Zones 10–11, 12–1). Renee's Garden (www.reneesgarden.com). Fragrant masses of flowers in peachy tones bloom on four- to six-inch plants.

***Rudbeckia hirta* 'Cherry Brandy'** (Zones 3–8, 10–1). Thompson & Morgan. Cherry-red ray petals around dark cones appear on two-foot plants that are great for containers or sunny borders.

***Setcreasea pallida* 'Blue Sue'** (Zones 7–11, 12–1) Athens Select (www.athensselect.com) and Southern Living Plant Collection. Foliage is blue-tinged with purple margins, topped by pink flowers on this six- to eight-inch-tall, heat-loving tender perennial.



■ PERENNIALS / GRASSES

***Eriogonum allenii* 'Little Rascal'** (Zones 5–10, 9–5). Jelitto (www.jelitto.com). Drought-resistant shale barren buckwheat, native to Northeast U.S., grows to just over a foot tall with golden-yellow summer flowers.

***Luzula sylvatica* 'Solar Flair'** (Zones 5–8, 8–4). Jelitto. Clumping evergreen grass grows to 12 inches tall, with golden twisting leaves that have fringed, hairy edges.



Muhlenbergia reverchonii

(Zones 5–9, 9–4). High Country Gardens (www.highcountrygardens.com). A clumping plains muhly grass, it grows two to three feet tall and produces a showy mass of reddish flower heads in fall.

***Penstemon* 'Sweet Joanne'** (Zones 5–9, 9–5). Blooms of Bressingham (www.bloomsofbressingham.com). This drought-tolerant penstemon has tubular, lavender-pink flowers that bloom from late May through June. Grows two feet tall and wide.

■ SHRUBS

***Chamaecyparis pisifera* Soft Serve ('Dow Whiting')**, Zones 4–8, 8–1). Proven Winners (www.provenwinners.com). Grows six to 10 feet with a compact, graceful conical shape and fernlike branching.

***Clethra alnifolia* Vanilla Spice** ('Caleb', Zones 3–9, 9–3), Proven Winners. Its fragrant white flowers are nearly double the size of typical summersweet flowers.

***Spiraea* Sundrop** ('Bailcarol', Zones 4–8, 8–3). Bailey Nurseries (www.baileynurseries.com). This dwarf spiraea grows 12 to 15 inches tall and two to three feet wide with lemon-colored foliage and pink flowers.

■ TREES / VINES

***Celastrus scandens* Autumn Revolution** ('Bailumn', Zones 3–8, 8–1). Bailey Nurseries. Cultivar of native American bitter-sweet climbs to 25 feet and produces extra-large red-orange berries.



Fraxinus cuspidata

(Zones 5–9, 9–5). High Country Gardens. This western flowering ash is a small Southwest native tree that grows to 12 feet with fragrant white flowers in spring.

***Lonicera* x *brownii* Honeybelle** ('Baillelle', Zones 3–8, 8–3). Bailey Nurseries. A tough, long-blooming honeysuckle that grows to 20 feet with yellow-orange blooms.

***Prunus serrulata* Angel's Blush** ('Taizo', Zones 5–8, 8–5). Monrovia. A dwarf flowering cherry that grows to six feet tall. Pink buds open to double white flowers.

■ VEGETABLES / HERBS

Corn 'Oaxacan Green'. Johnny's Selected Seeds (www.johnnyseeds.com). This ornamental corn with emerald green kernels is great for ornamental use or ground as corn meal.



Mustard Greens 'Ruby Streaks'

Botanical Interests (www.botanicalinterests.com). The beautiful red leaves are great for eating fresh in salads, steamed, or stir-fried.

Parsley 'Italian Giant'. Thompson & Morgan. A flat-leaved parsley suitable for containers.

Tomato 'Basket Boy Yellow'. Grimes Horticulture (www.grimes-hort.com). Sweet two-inch, three-ounce, yellow tomatoes on compact plants that are perfect for containers and hanging baskets. Disease resistant.

Compiled by Editorial Assistant Caroline Bentley.



Rosa Flower Carpet Amber

apricot, peach, and amber shades blanket the spreading bush all season long. Sweet notes of fragrance are a bonus and good reason to plant Flower Carpet Amber near outdoor seating or an open window.

FABULOUS FLOWERS

‘Tiger Eye’ gloriosa daisy (*Rudbeckia hirta*, Zones 3–9, 10–1), from Goldsmith Seeds, performed better than any other annual in my garden. The 18-inch plants branched without pinching and were covered with large golden daisies from planting until the first hard freeze. No deadheading was needed, disease wasn’t a problem, and the plants tolerated drought. The only maintenance I did was to add compost to the soil before planting. ‘Tiger Eye’ rewarded my minimal efforts with brilliant color, cut flowers, and landscape magnetism.

Another profuse bloomer is Big begonia (*Begonia* spp., Zones 10–11, 12–1) from Benary. The cherry-red blossoms are over three inches in diameter, covering plants so completely that it’s hard to see the waxy deep green leaves. They perform perfectly in any exposure, from full shade to bright sun. Another spectacular Benary introduction is ‘Joey’, a cultivar of the wonderfully named pink mully mully (*Ptilotus exaltatus*, Zones 9–10, 10–3). The improved Australian native produces large fuzzy, lavender flower spikes in hot, dry conditions and thrives anywhere.

The last fabulous flower I tested in my garden is the first to flower, ‘Onyx Odyssey’ Lenten rose (*Helleborus* Winter Jewels series, Zones 5–9, 9–5). Its three-inch-diameter double flowers are inky purple, almost black, with ivory stamens. The new foliage opens purple then fades to green. ‘Onyx Odyssey’ was hand-hybridized by Marietta O’Byrne, a renowned

EXPERTS FORECAST GARDENING TRENDS

Plants bred for specific regions, succulents, minimalism, and large, dramatic plants are some trends horticulturists and plant hunters say will dominate the gardening world in the next five years. Dan Hinkley feels that plant development is going more regional. “This country is too big and diverse for that not to happen,” he says. Novalis has already capitalized on climate clamor with perennials that take the heat and humidity of the Deep South such as a *Camellia sasanqua* which will be released in 2010. One trend where the United States has taken the lead is succulents, the “got-to-have” plants now dazzling Europe. “It’s a craze that isn’t going away,” Linda Guy from Novalis says. Dan Heims of Terra Nova Nurseries agrees and is releasing a “ground-breaking” (pun intended) groundcover succulent in 2010.

With time precious and space limited in many townhouse and apartment yards, the minimalist garden is emerging. Nicholas Staddon of Monrovia identified the trend several years ago and has incorporated it into Monrovia’s plant development. An architectural plant accented with hardscape becomes an instant garden. One of Staddon’s favorite combinations is lofty *Cordylone* ‘Burgundy’ in a large blue-glazed ceramic pot set on a layer of black or gray pebbles. “It has a Zen feel to it that draws the eye and relaxes you,” he says. “The smoothness of the rocks takes away the sharp edges of the plant.” Rick Schoellhorn, Proven Winners’s new products director, sees simplicity as a trend, too, along with larger plants. “Plants with stature, even bananas in the North used as an annual, are popular.” The emphasis is moving to the landscape, Schoellhorn feels, where large plants dominate. Hinkley agrees. “I’m hoping we get away from super dwarf and compact and bring grace and stature back into landscape shrubs.” As Tony Avent of Plant Delights Nursery in Raleigh, North Carolina, explains, containers are falling from favor as landscape plants come back into vogue. “It’s a 30-year cycle we see again and again,” he says. “Besides, containers aren’t sustainable.”

Other trends in plant breeding include thicker leaves that are more pest resistant, according to Heims, and three season interest. Guy explains, “Our focus is on how we can add another season of interest with features like colored foliage or berries to shrubs.” Plants that use less water and fertilizer are a priority for Proven Winners, says Schoellhorn. “A well maintained garden does not mean excessive water and fertilizer. It means sound maintenance practices.” —D.H.



Rudbeckia hirta ‘Tiger Eye’



Ptilotus exaltus ‘Joey’



Helleborus 'Onyx Odyssey'

hellebore breeder based in Eugene, Oregon (available through Great Garden Plants). The black blooms look spectacular paired with green-flowering hellebores.

LAGGARDS

Several outstanding plants were released before 2009, but weren't available widely until now. Terra Nova is out with a vivid geum called 'Eos' (*Geum coccineum*, Zones 5–8, 8–5) that features bright orange flowers nestled in a thick mat of solid gold foliage. Plants will rebloom if deadheaded.

Lastly, Skagit Gardens in Mount Vernon, Washington, issued a limited release of the Commotion series blanket flower



Geum coccineum 'Eos'

(*Gaillardia* spp.) in 2008, so watch out for these beauties. Hardy to -20° Fahrenheit, flowers of 'Frenzy', a yellow-tipped red, and 'Tizzy', deep russet red, are fluted with a semi-double appearance. They need little care and bloom non-stop until temperatures consistently dip into the 30s during the day. The ones in my garden provided cut flowers for Halloween displays. ☺

A former editor for Woman's Day, Doreen Howard is a freelance editor and writer who lives in Roscoe, Illinois.

Retail Sources

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

Big Dipper Farm, Black Diamond, WA. (360) 886-8133.
www.bigdipperfarm.com.

Bluestem Prairie Nursery, Hillsboro, IL. (217) 532-6344.
www.prairie.net.org/gpf/nurseries.php.

Botany Shop Garden Center, Joplin, MO. (417) 781-6431.
www.knockoutroses.com.

Great Garden Plants, Holland, MI. (877) 447-4769. www.greatgardenplants.com.

Green Thumbs Galore, Chattanooga, TN. (423) 596-4588.
www.greenthumbsgalore.com.

Klehm's Song Sparrow Farm and Nursery, Avalon, WI. (800) 353-9516.
www.songsparrow.com.

Johnny's Selected Seeds, Winslow, ME. (207) 861-3900.
www.johnnyseeds.com.

Northwest Garden Nursery, Eugene, OR. (541) 935-3915.
www.northwestgardennursery.com. (Reopens in March 2009.)

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

RareFind Nursery, Jackson, NJ. (732) 833-0613. www.rarefindnursery.com.

Thompson & Morgan, Jackson, NJ. (800) 274-7333. www.tmseeds.com.

Touch of Nature, Lawrenceville, GA. (800) 438-9309. www.touchofnature.com.

Willow Creek Gardens, Oceanside, CA. (760) 721-7079.
www.willowcreekgardens.com.

Wholesale Nurseries

The following companies supply plants to retail outlets only. Visit their websites to locate retail nursery sources in your area.

Anthony Tesselaar Plants, www.tesselaar.com.

Benary, www.benary.com.

Goldsmith Seeds, www.goldsmithseeds.com.

Knock Out Rose, www.theknockoutrose.com.

Monrovia, www.monrovia.com.

Novalis, www.novalis.com.

Plants Nouveau, www.plantsnouveau.com.

Pride of Place Plants, www.prideofplaceplants.com.

Proven Winners, www.provenwinners.com.

Terra Nova Nurseries, www.terranovanurseries.com.

Skagit Gardens, www.skagitgardens.com.

Weeks Roses, www.weeksroses.com.

What's in a Name?



THEN
Sophora japonica

Plant nomenclature is an important tool used by gardeners and horticulturists, but sweeping changes to major ornamental plant groups have some in the plant industry concerned.

BY JOHN FRIEL

WHEN DISCUSSING garden plants, nothing cuts through the clutter like proper usage of the appropriate Latin name. Yet at the same time nothing—not beetles, blights, borers, or the U.S. tax code—inspires more anger, dread, and confusion among gardeners and even professional horticulturists than Latin names.

Many of us take pride and pleasure in learning, using, and occasionally understanding scientific nomenclature, while others literally cover their ears when someone says “*Tradescantia*” or “*Ceratostigma*.” Even *Rosa* is a four-letter word. This is not news; it’s just the status quo.

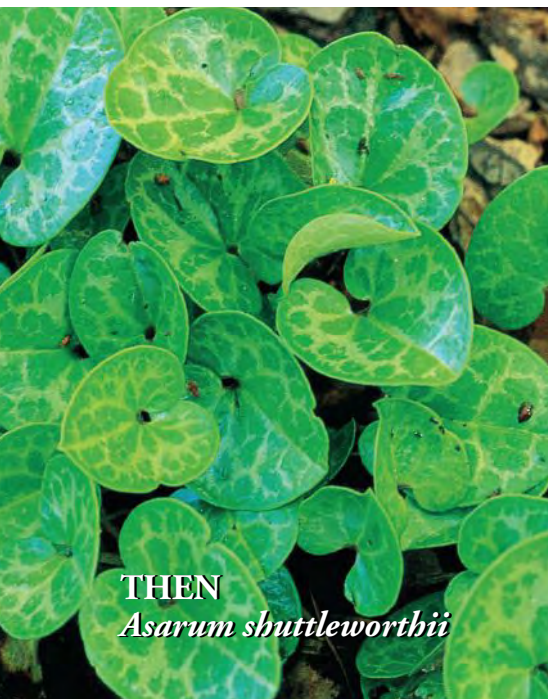
So why is it that now, more than ever, trying to keep track of plant names often leaves you feeling that everything you know, or think you know, is wrong? There are reasons. You’re not paranoid, and you’re not alone.

DON'T BLAME LINNAEUS

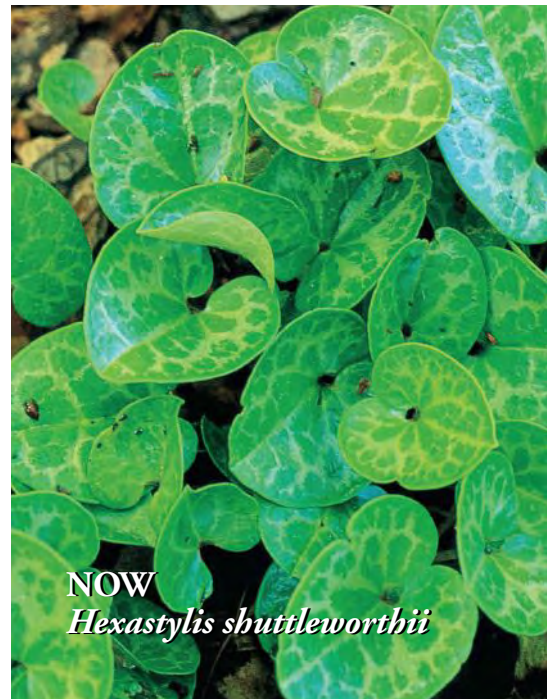
Botanical nomenclature is undergoing perhaps the most radical and sweeping changes since the 18th-century heyday of Carolus Linnaeus (1707–1778), the Swedish doctor credited with inventing nomenclature as we know it. Linnaeus popularized a system of binomials—two-part names comprised of a genus



NOW
Styphnolobium japonicum



THEN
Asarum shuttleworthii



NOW
Hexastylis shuttleworthii

name and species name, like *Semprevivum arachnoideum*, hen and chicks, or *Dianthus caryophyllus*, the common carnation—to succinctly categorize plants and animals.

Linnaeus represents a dividing line in the sands of time: The oldest botanical names accepted today are those he coined, like the two examples above, and published in his landmark *Systema Naturae*. His work is like Greenwich, where the day begins; it compares to that theoretical instant when B.C.E. clicked over to C.E.

Linnaeus's efforts were not limited to plants. He was among the first to group whales with mammals rather than fishes, and, more daringly, humans with apes. These relationships are obvious to scientists today, but not so in the 18th



Eighteenth-century scientist Carolus Linnaeus devised a binomial system that revolutionized nomenclature for plants and animals.

century. Nor was it obvious, or even acceptable to many, that plants have a sex life. But that scandalous fact, a given today, was precisely the basis for Linnaeus's classifications: He grouped plants according to the number and arrangement of their stamens, the pollen-bearing male flower parts.

The good doctor seems to have had a sense of humor. He called stamens “husbands,” pistils “wives,” and the flower “the marriage bed.” Not all were amused. “Nothing,” fulminated the Bishop of Carlisle “could equal the gross prurience of Linnaeus’s mind.” A rival botanist, Jo-

ORGANIZATION OF THE PLANT KINGDOM

As a refresher to those of us whose high school biology class is a distant memory, here’s the organizational breakdown for the plant kingdom, using purple coneflower (*Echinacea purpurea*) as an example. For the most part, gardeners have no reason to concern themselves with anything above the family level. If you’d like to brush up on other basic concepts in plant nomenclature, the online version of this issue on the AHS website (www.ahs.org) contains a link to an article published in an earlier edition of *The American Gardener*.



Kingdom: Plantae (plants)
Subkingdom: Tracheobionta (vascular plants)
Superdivision: Spermatophyta (seed plants)
Division: Magnoliophyta (flowering plants)
Class: Magnoliopsida (dicotyledons)
Subclass: Asterales
Order: Asterales
Family: Asteraceae (aster family)
Genus: *Echinacea* (coneflowers)
Species: *E. purpurea* (purple coneflower)

—The Editors

hann Siegesbeck, decried *Systema Naturae* as “loathsome harlotry!”

History does not record whether Linnaeus parried the Bishop’s thrusts. He did, however, exact a gleeful vengeance on poor Johann by naming a European weed *Siegesbeckia*, the name it still bears.

Linnaeus did not create his system *ex nihilo*. Known species of plants and animals already had Latin names—some more than one. But no single approach dominated, and it was common for plant names to follow a chaotic “polynomial” scheme. The aforementioned carnation, pre-Linnaeus, was known as *Dianthus floribus solitariis, squamis calycinis subovatus brevissimis, corollis crenatus*.

That’s a blend of Greek and Latin describing a “divine flower” with separate (not clustered) blossoms, scaly calyx, and scalloped petal edges. Names were actually descriptive phrases limning a plant’s characteristics. It may come as a surprise to those who struggle with binomials, but, in fact, Linnaeus made life easier. His great gift to mankind was not Latin names *per se*, but a simplified template for creating new names and organizing existing ones.

MODERN TAXONOMY

Before and long after Linnaeus, scientific names and groupings have been based

on observable morphological characteristics—characteristics that can be identified with the naked eye, hand lens, or simple microscope. But with the advent of more powerful tools, scientists have shifted their focus from what anyone could see to what no one can see; from grouping plants by structural similarities to organizing them by DNA evidence along theoretical evolutionary pathways, family trees if you will, often unprovable even by fossil records.

This brave new world is known variously as cladistic, node-based, or phylogenetic nomenclature. “Cladistic” (rhymes with ‘sadistic’, coincidentally) means based on “clades,” or plant groups, not unlike species. “Node-based” uses the analogy of nodes or branching-off points along the limbs of those family trees. “Phylogenetics” is defined as the study of evolutionary relatedness, with the goal of making classification reflect descent. Cladistic plant groups are sometimes depicted as clusters emanating from a theoretical central starting point, a group of unknown organisms called the “ancestral complex.” It’s sort of a Big Bang theory of life forms evolving from a common source.

Ellen Wells is an editor with *Green Profit*, a horticultural trade magazine aimed at garden centers and nurseries.

Degrees in plant biology and horticultural ecology give her a solid grasp of the scientific basis for plant names. Constant contact with retailers makes her keenly aware of the frustration professionals and gardeners feel when dealing with plant name changes.

“The problem lies with grad students looking for projects,” Wells says. “A professor says, ‘Why don’t you tease out some of these silly Compositae? There are way too many.’ So they get out their DNA testing equipment and the electro scanning micrograph thingamabobs...”

The results can bewilder and discourage even seasoned professional horticulturists. For example, in recent years, taxonomists have taken most of the members of the genus *Aster* and relabeled them *Symphotrichum* or *Eurybia*; they’ve taken *Dicentra spectabilis* and renamed it *Lamrocapnos*; they’re even squabbling over mainstays such as *Hosta* and *Hemerocallis*, with dueling theories on which of three families they belong in (more on this last item later).

HOW NAME CHANGES OCCUR

Invariably someone snaps back, exasperated, “Who are THEY?” Good question. Who, indeed, are the mysterious ivory tower types who deal out new names, like Moses descending from on high with the commandments?

Here’s roughly how it works: Any horticultural scientist can propose changing the name of a known plant species or genus, in a scientific paper or via a regional Flora. Such proposals are reviewed by specialist groups operating under the umbrella of the International Society for Horticultural Science (ISHS). For flowering plants, such tasks fall to the Committee for Spermatophyta. If the argument is found worthy, the change is accepted and published and the new name begins a slow journey to the outside world.

The eruption of new names for many former asters began with DNA studies in 1994, but didn’t filter down to the industry’s consciousness until about 10 years later. It was promptly dubbed the “Aster Disaster.” A much earlier change in the



For red-hot poker, gardeners were slow to adopt the name change from *Tritoma* to *Kniphofia*, made before the Civil War.

name of red hot poker or torch lily, from *Tritoma* to *Kniphofia*, was still a hot topic in the 1980s even though botanists actually settled on the latter name before the American Civil War.

A common shorthand for those who try to keep nomenclature straight is to generalize that all taxonomists fall into one of two groups: lumpers or splitters.



The New England aster is now called *Symphotrichum novi-belgii*.

Lumpers look for similarities, and when they are in the majority peace reigns in the plant world. Genera such as *Chrysanthemum* and *Aster* may swell to epic proportions, with species by the score, but at least we have order.

Splitters seek differences. When they prevail, those massive genera are rapidly plundered and scattered. When the news breaks, the wailing and gnashing of teeth begins among seething plant industry types who see their catalogs, reference books, websites and point-of-purchase materials rendered obsolete. That stuff costs money!

Like most shorthands, the lumpers/ splitters analogy is overly simplistic and even beside the point. It is a scientist’s obligation to question the status quo. That may annoy or even infuriate the rest of us, but that’s the nature of science: Everything is subject to change; every theory is a string to tug on to see if it breaks. And it is neither fair nor accurate to blame all nomenclature problems on horticultural scientists when a great deal of confusion in plant names originates with the plant industry itself, as companies promote made-up, marketing-friendly brands and trademarks at the expense of existing, accepted taxonomy.

That doesn’t let science off the hook. Latin nomenclature is supposed to be our touchstone, a point of reference where scientists, gardeners, and professional plant-mongers can find common ground. When changes come so fast and furious that even professionals are dazed and confused, the system stops working. How bad is the situation? It’s like this: At the 2008 symposium of the Perennial Plant Association (PPA), in Philadelphia, I participated in a meeting of the association’s Nomenclature Committee, a group of self-proclaimed plant nerds who pride themselves on getting names right.

The tone of that meeting could be summed up as more wailing and gnashing of teeth. The consensus was that name changes are too frequent for anyone to keep up with. When THAT group can’t stay abreast, *Houstonia*, we have a problem.

NOTABLE NAME CHANGES

In addition to the nomenclature changes discussed by John Friel, here are a few other revisions that gardeners should be aware of. Some of these plants are still listed under their old names in catalogs and books. There is still quite a difference of opinion among horticulturists and botanists about the use of *Buddleja* instead of *Buddleia*, so you will see both forms still in use in many places.

Old Name

Andropogon scoparius
Asarum shuttleworthii
Chamaecyparis nootkatensis
Cimicifuga spp.
Coleus × *hybridus*
Leucothoe populifolia
Leucothoe racemosa
Pennisetum setaceum 'Rubrum'
Polygonum spp.
Sophora japonica

New Name

Schizachyrium scoparium
Hexastylis shuttleworthii
Xanthocyparis nootkatensis
Actaea spp.
Solenostemon scutellarioides
Agarista populifolia
Eurobotrys racemosa
Pennisetum × *advena*
Pericaria spp.
Styphnolobium japonicum



Pending reclassification, the genus *Hosta* may end up in a new plant family.



Xanthocyparis nootkatensis



Persicaria bistorta

COULD HOSTAS AND DAYLILIES BE NEXT?

Stumping the PPA is bad enough, but consider this: It has been proposed that *Hosta* should move from the lily family (Liliaceae), where it has resided for many years, to either its own family, Hostaceae, or to the agave family (Agavaceae). I asked Kevin P. Walek of the American Hosta Society what family the genus should be considered part of. His answer was not encouraging: "This is a current argument, better yet an uncharted morass."

Hemerocallis is in a similar nomenclatural limbo, yanked by warring factions between Liliaceae, Hemerocallidaceae, and

even Xanthorrhoeaceae, a race of desert-dwellers. When Walek asked Alan Leslie where daylilies belong, the head of nomenclature at the ISHS replied, "there is no 'correct' answer to this question."

Leslie pinpointed the problem that confronts horticulture at large: "If we adopt too much change too quickly, we are at risk of reducing, not improving, a clear understanding." Which is exactly what the PPA's Nomenclature Committee observed: Too much, too fast. And it's going to get worse before it gets better because taxonomy is presently a sort of construction zone, as taxonomists and plant

societies warily switch to a new set of plant organizing and naming protocols known as APG II, created by the Angiosperm Phylogeny Group (APG) in 1998 and revised in 2003. Some have embraced it, while others stick with the Cronquist System, published by botanist Arthur Cronquist in 1981.

When there is a large change, like the "Aster Disaster" or the dismantling and partial restoration of *Chrysanthemum*, havoc ensues in the plant industry, especially among perennial growers. Other sectors of the plant industry are less concerned by changes. Most nurseries specializing in woody shrubs are conscientious about proper names, but growers of cut flowers and herbs prefer "common" names (a misnomer if ever there was one), and annual growers have little use for Linnaeus's system.

IN NEED OF A 21ST CENTURY LINNAEUS

A passage in *Guide to Standard Floras of the World* by D.G. Frodin (Cambridge University Press, 2001) explains why Linnaeus was so important, and why his work was eventually accepted even if some very influential people didn't like it, or him. Frodin writes, "By the 1730s the world of botany was in some disorder, ripe for new proposals in management of its information."

It seems the stars are aligned for the return of those disordered times. If every actor secretly longs to play Hamlet, and every politician sees the Presidential seal in

Resources

The American Horticultural Society A-Z Encyclopedia of Garden Plants by Christopher Brickell and H. Marc Cathey, editors-in-chief. DK Publishing, New York, New York, 2004.

Guide to Flowering Plant Families by Wendy B. Zomlefer. University of North Carolina Press, Chapel Hill, 1994.

List of Names of Perennials and **List of Names of Woody Plants**, M.H.A. Hoffman, editor. Applied Plant Research, Boskoop, Netherlands, 2005. (To order either book, visit www.ppo.wur.nl.)

Mabberley's Plant-Book: A Portable Dictionary of Plants, Their Classification and Uses by D. J. Mabberley. Cambridge University Press, New York, New York, 2008.

The Plant Locator: Western Region, compiled by Susan Hill and Susan Narizny. Timber Press, Portland, Oregon, 2004.

Sunset Western Garden Book, Kathleen Norris Brenzel, editor. Sunset Publishing, Menlo Park, California, 2007.

Websites

These websites provide useful information about plant names. Additional websites are listed in the online version of this magazine issue at www.ahs.org.

International Society for Horticultural Science, www.ishs.org.

Oregon State University Department of Horticulture, <http://oregonstate.edu/dept/ldplants/index.htm>.

Royal Horticultural Society Plant Finder, www.rhs.org.uk/rhsplantfinder/plantfinder.asp.

The USDA PLANTS Database, <http://plants.usda.gov>.

their future, does every botanist and taxonomist hope to become the new Linnaeus? We could use one. As legendary Cornell horticulturist Liberty Hyde Bailey observed in *How Plants Get Their Names*, Linnaeus “brought confusion into symmetry.” Would that we had such a person among us, but modern taxonomists seem determined to restore good old-fashioned pre-Linnaean chaos instead.

At the 2002 ISHS Symposium, the assembled scientists heard a presentation from John Valleau of Valleybrook Gardens, a Canadian wholesale perennial grower, outlining the problems that new names cause nursery owners, growers, and other plant industry professionals. Valleau made a modest plea: Would horticultural science PLEASE consider the horticultural industry's needs? The audience listened politely, and went right back to their wrecking ball.

for the plants most people know by that name, especially the ubiquitous garden mum (*Chrysanthemum ×morifolium*). Over some European taxonomists' protests, the ISHS went along, and the industry heaved a collective sigh of relief.

Another Linnaeus is probably too much to hope for, but we could use more Trehanes—reasonable individuals, capable of compromise, who recognize that names are not merely strings of symbols. When laying out college campuses and public parks, planners often wait to see where people choose to walk, then put sidewalks there. When new approaches will get us where we're going faster, fine. But when older, intuitive paths are already doing the job, why not pave them where they lie?


So if it's crossed your mind that the ivory tower types seem bent on hair-splitting without regard to the practical implications on the rest of the world, you're not



Garden mums such as 'Olivia' are still considered to be in the genus *Chrysanthemum*.

It doesn't need to be that way. Consider the case of the genus *Chrysanthemum*. When the splitters had their way with that revered genus, starting in 1961, the plants that most people associated with the word suddenly wore other labels, including *Dendranthema*, *Ajania*, and *Tanacetum*. Confusion reigned. Many growers and authors flat-out refused to adopt the new names. Enter Piers Trehane. In 1995, Trehane, who is chairman of the ISHS Commission on Registration and Nomenclature, proposed conserving *Chrysanthemum* as the genus

alone. Many plant-savvy people have ruefully concluded that the modern taxonomist's guiding principle must be, “If it ain't broke, break it.”

And if that statement makes my surname eligible to be rendered synonymous with some pestiferous weed, like poor Johann Siegesbeck's, so be it. 

John Friel, a marketer for a perennial plant propagator, serves on the Board of the Perennial Plant Association and co-chairs its Nomenclature Committee.

THE GENUS *Citrus* belongs to the rue family (Rutaceae), which leaves me scratching my head. Nothing to my mind looks less like garden rue (*Ruta graveolens*) than a grapefruit tree. Then again, no one said understanding plant taxonomy is easy.

The genus *Citrus* contains around 16 species, many of which are familiar, like sweet orange (*Citrus sinensis*), lemon (*C. limon*), lime (*C. aurantiifolia*), tangerine (*C. reticulata*), and grapefruit (*C. ×paradisii*). Less well-known are the numerous interspecific hybrids and (progressively weirder) edible-fruited citrus family cousins, ranging from the kumquat (*Fortunella* sp.), to the calamondin orange (*×Citrofortunella microcarpa*), and the limequats (*×Citrofortunella floridana* and *×C. swinglei*). (For more on *Citrus* relatives, see a web special linked to this article on the AHS website, www.ahs.org.)

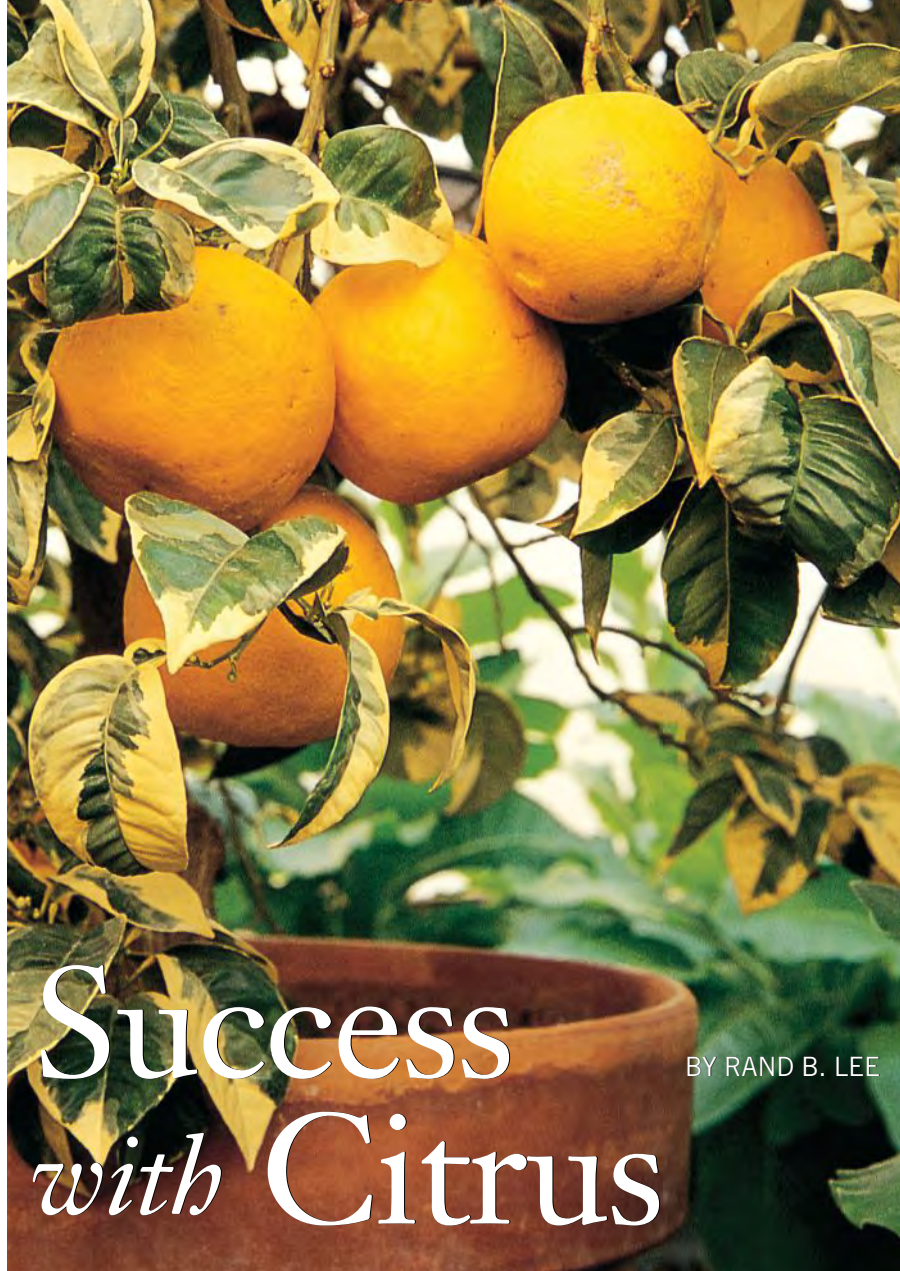
Citruses were among the first plants grown under glass more than 400 years ago, for not only has their influence down through the ages on medicine, perfumery, cookery, and commerce been incalculable, they can also be very pretty. They make woody-stemmed, variably thorny shrubs or trees with narrow to broad, oval, fragrant, oil-gland-dotted, shiny green leaves (variegated in some rare forms).

Their leaves are attached to their twigs by narrow stems, called petioles. In most citrus species, the petioles are “winged” down their lengths with flaps of green tissue, very narrow in some varieties, and in others so wide as to almost constitute second leaves trailing behind the true leaves nose to tail. The shape and constitution of a citrus’s petioles is a factor that helps distinguish species and, in some cases, offers clues to the parentage of citrus hybrids.

But few of us grow citrus just for their foliage. It is the flowers and fruit we want. Most species blossom between March and June and, occasionally, beyond. Their demure white flower-clusters, often pink or purple in bud, possess five thick, outward-curving petals and prominent stamens. They range from entrancingly to intoxicatingly fragrant.

GROWING CITRUS INDOORS

In North America, most citrus varieties are reliably hardy growing outdoors in USDA Zones 10 and 11, which includes



Growing citrus plants indoors offers the opportunity to enjoy their fragrant and delicious rewards year round.

southern Florida, parts of the Texas Gulf Coast, lowland southern Arizona, and southern California. A few species and cultivars are hardy in Zone 9. Thus these regions are where the bulk of the American citrus industry is located and where lucky home gardeners can grow citrus trees in their backyard. For the rest of us, indoor pot culture is the only option for growing these wonderful plants. Trees can be kept small by pruning, and grafted “dwarf” trees are generally available.

Certain citrus varieties can be chal-

lenging subjects for indoor culture. They tend to be fussy about light, warmth, moisture, and humidity, and—when grown in less than perfect conditions—they are prone to a number of insect pests.

Despite all this, they remain very popular, and for good reason. “If you are going to take on this kind of a roommate, especially if you have lots of South sun, compared to other houseplants the payoff [with citrus] is huge,” says Barbara Pleasant, author of *The Complete Houseplant Survival Manual* (Storey, 2005).

Variegation is a rare trait for citrus, such as this container-grown grapefruit.

Some citrus selections that are more amenable to indoor growing conditions are highlighted in the following overview of the different citrus types, and in the sidebar on page 28.

Lemons The true lemon (*C. limon*, Zones 10–11), appears to have evolved in what is now northwestern India, as an ancient hybrid of the lime and one of the earliest citrus species cultivated by humans, the citron (*C. medica*). Growing six to 21 feet tall in the wild, lemon trees are decorated with short, thick, stiff spines; serrated leaves with narrowly winged petioles; purple-tinged white blossoms; and egg-shaped, sour fruits protected by thick peel—yellow when ripe—prominently stippled with oil glands.

One of the attractions of lemons for indoor culture is that they, unlike oranges, often bloom off and on year-round, which means their perfume and

lemons do not need the long season of summer warmth oranges and grapefruit require to ripen their fruits, nor do lemons require high humidity. This, and the species' everbearing tendencies, makes lemons a great choice for indoor fruit growers.

One everbearer recommended for indoor pot culture is the nearly thornless heirloom 'Eureka', dating from 1877. Early-bearing and prolific, it is sensitive to cold and pests. Another good everbearer for pots is 'Genoa' or 'Genova', introduced to California from Genoa, Italy, in 1875. It is shrubby, nearly trunkless, and very thorny; its medium-sized fruits are a favorite with citrus connoisseurs.

The Meyer or Chinese dwarf lemon (*C. ×meyerii*, syn. *C. limon* 'Meyer') may be a hybrid of a lemon and an orange. It was discovered in 1908 by Frank N. Meyer, a USDA plant explorer, growing in a pot near Beijing (then Peking), China. It is one

but most heavily in winter. It is also slightly hardier than other lemons, to Zone 9.

Encountered frequently in garden centers is the giant Ponderosa, or American wonder lemon (*C. limon* 'Ponderosa', syn. *C. pyriformis* 'Ponderosa'), which at one time was considered a separate species. A smallish, moderately thorny everbearer, 'Ponderosa' produces its immense, dramatic orange-yellow fruits readily indoors, making it a popular container plant. The fruits easily run a pound or two. Its attractive habit and eye-catching fruit also make it a valued landscape plant, where hardy.

Limes The true lime (*C. aurantiifolia*, Zones 10–11), which has yielded its genetic material to so many citrus varieties, may itself be another ancient hybrid between the citron and some unknown species. Originally native to Southeast Asia, it develops into a small tree, nine to 15 feet tall, with short, stiff, wickedly sharp spines and narrowly winged petioles; its one- to two-inch-wide fruits ripen green with a flush of yellow, and their very thin rinds are stippled with oil glands.

Spanish sailors and settlers brought these limes to the West Indies and from there they spread to Mexico, California, and the Florida Keys. It was in the last location, in the 1980s, that I tasted my first fresh "Key" limes right off their thorny little bush. In other parts of the country these limes are known as West Indian or Mexican limes.

The larger limes typically sold in supermarkets are considered a separate species (*C. latifolia*). Cultivars of this species tolerate lower temperatures and are better choices for indoor culture. One is 'Bearss', a vigorous seedling with more-than-usual cold tolerance (to Zone 9). It is typically kept at about nine feet, but if unpruned, it can reach 24 feet, with an attractive rounded canopy and egg-shaped, nipped, lemonlike, green-turning-yellow, seedless fruits. Similar in appearance and taste is the fruit of 'Tahiti', which grows on a slightly smaller tree. While many West Indian limes are grown from seed, 'Bearss' and 'Tahiti' are often grafted onto a more durable rootstock.

Oranges Several distinctive types of orange have evolved over time, but the first cultivated orange was probably the



The Meyer lemon, with its dwarf habit and tasty fruit, is a good choice for indoor culture.

fruit can be enjoyed over a longer period. Because they are always actively growing, lemons are among the least hardy of citrus, much less able to bounce back from frost damage than oranges. Temperatures must stay above 29 degrees Fahrenheit (F) for their flowers and fruits to remain undamaged; below 20 degrees, the trees often die. On the flip side,

of the hardiest and most compact of the lemons, with smooth-skinned and rounded fruit. Because 'Meyer' was found to be frequently virus-infected, it has largely been replaced by 'Improved Meyer', a virus-free clone discovered in the early 1950s. It makes a wonderful pot plant, bearing exceptionally juicy, slightly sweet, gourmet-quality fruit nearly year-round



A good choice for indoor culture, ‘Bearss’ limes were selected by a California nurseryman named T.J. Bears.

bitter or sour orange (*C. aurantium*, Zones 8–9), prized for centuries for its abundant, perfumed flowers, aromatic peel, and refreshing juice. Originally from Southeast Asia, it may be a very ancient hybrid of the shaddock (*C. maxima*) and the mandarin tangerine (*C. reticulata*). Sour oranges are more cold tolerant than sweet oranges and, unlike most other citrus, are often grown on their own roots.

The quintessential sour orange is undoubtedly ‘Seville’, still available, and most often encountered in that staple of British breakfasts, orange marmalade. Another sour orange cultivar, ‘Bouquet de Fleurs’, is grown not for its dark orange fruit but for its intensely perfumed flowers, held in great clusters against a backdrop of rounded, shiny, dark green foliage. ‘Fasciata’ bears sour, variegated fruits with broad stripes that start out alternately dark green and pale green, then ripen to orange and yellow.

The sweet orange (*C. sinensis*, Zones 9–10) has been cultivated for so long that its origins are murky, though South China and Vietnam are suspected. Jon Parkinson, in his 1629 herbal, *A Garden of Pleasant Flowers*, devotes an entire chapter to “orenges.” Thomas Jefferson was mildly obsessed with orange culture, but his attempts to grow them in Virginia met with

Resources

California Rare Fruit Growers, San Francisco, CA. www.crfg.org.

Growing Citrus: The Essential Gardener’s Guide by Martin Page. Timber Press, Portland, Oregon, 2009.

Sources

Four Winds Growers, Winter, CA. (530) 795-4760. www.fourwindsgrowers.com.

Jene’s Tropicals, St. Petersburg, FL. (727) 344-1668. www.tropicalfruit.com.

Logee’s Greenhouses, Danielson, CT. (888) 330-8038. www.logees.com.

One Green World, Molalla, OR. (877) 353-4028. www.onegreenworld.com.

Raintree Nursery, Morton, WA. (360) 496-6400. www.raintreenursery.com.

numerous setbacks, including winter cold and grazing sheep.

Today ‘Valencia’, selected in the late 19th century, constitutes 90 percent of the sweet oranges grown worldwide. For indoor culture, ‘Trovita’ is a highly adaptable recommended variety. Its fruits, which are borne abundantly, ripen in spring, with thin skins, few seeds, and excellent flavor.

Navel oranges are popular because they are seedless and easy to peel. Gardeners desirous of contemplating their navels can pick among ‘Washington’, highly recommended for indoor growers; its heavy-bearing sport, ‘Robertson’; ‘Lane Late’, an

Australian selection notable for its ability to hold its fully ripe fruit on the tree for seven months; and ‘Cara Cara’, a Venezuelan cultivar with rich, sweet, pink flesh.

Another well regarded orange subgroup is blood oranges. These medium-sized wonders have burgundy-flushed peels and glistening burgundy flesh tasting of some sprightly, sweet-tart citrus wine. ‘Sanguinelli’ is a good blood orange for pots; its spicy, deep red fruits ripen in late winter and are held for many months before they must be picked. The fruits of ‘Moro’ have perhaps the darkest interior color, a glistening, blackish-burgundy; it produces well at a young age.



‘Valencia’, the most commonly grown orange, is the primary source of Florida’s orange juice.

Tangerines The common mandarin or tangerine (*Citrus reticulata*, Zones 9–11), a native of Southeast Asia, was known to the Victorians as the “Tangierine orange,” after Tangier in North Africa, where the inhabitants had grown the fruits for centuries. In the wild it is a small, spiny, slender-branched tree bearing narrow leaves, fragrant white blossoms, and seedy, sweet-fleshed, three- to four-inch, slightly flattened, globular fruits with loose, thin, aromatic orange-yellow peel. According to Martin Page, author of *Growing Citrus: The Essential Gardener’s Guide* (see “Resources,” above), mandarin, tangerine, and clementine have been used very loosely as names for different selections of this species, leading to “considerable confusion.”

Tangerines tend to bear fruit in alternate years. ‘Clementine’, the Algerian tangerine, bears smaller, redder, glossier fruit than the species, with tart, sweet, exceptionally tender pulp; the fruit ripens in late fall and can hang on the tree for months without spoiling. ‘Dancy’ bears its easy-to-peel fruit in early winter. ‘Murcott’ (aka “Florida Honey”) is a spring ripener, bearing fruits with mild, sweet, juicy, orange meat. It may be a hybrid of the tangerine and the sweet orange.

Since warm days followed by cooler nights tend to intensify mandarins’ fruit color and flavor, efforts have been made to develop varieties more tolerant of cold. And since many people find them irritatingly seedy, seedless cultivars are prized. A class of mandarins known as satsumas (some botanists put them in a separate species, *C. unshiu*) originated in Japan. The classic hardy seedless satsuma mandarin is ‘Owari’, a cultivar with sweet-tart, early-ripening, easy-to-peel fruit. ‘Kishu’, another Japanese variety, bears small, soft, seedless, exceptionally sweet and easy to peel fruits that do not ship well, which makes it a popular cultivar among home gardeners. ‘Gold Nugget’, another extra-hardy seedless mandarin, starts bearing in



One of the most cold-tolerant citrus varieties is the ‘Owari’ satsuma mandarin, which will tolerate temperatures down to 12 degrees F.

TOP CHOICES FOR INDOOR CULTURE

William Ross is a farmer and container fruit expert who lives in Vermont. A former editor with the now-defunct Indoor Citrus Society, Ross later served for 15 years as container gardening editor with the California Rare Fruit Growers, an organization whose members share an interest in growing and learning about unusual fruiting plants. Based on his experience growing citrus trees, by far the easiest selections to fruit indoors are the ‘Ponderosa’ and ‘Meyer’ lemons and the ‘Bearss’ seedless lime. “All outproduce everything in my greenhouse under all sorts of conditions,” says Ross.

Ross’s citrus trees are not pampered. “My greenhouse gets down to 27 degrees in the wintertime, and we get weeks of low sun,” explains Ross. “That pretty much rules out [growing] oranges.” But he insists that ‘Ponderosa’, ‘Meyer’, and ‘Bearss’ regularly take such conditions without any ill effects, often bursting into bloom at the return of the sun in January. After that, says Ross, “they pretty much do what they feel like,” with the fruits hanging on the trees for weeks and months alongside the blossoms. The blooms of ‘Ponderosa’, he notes, are particularly profuse and fragrant.



William Ross checks out a Meyer lemon fruiting in his Vermont greenhouse.

—R.B.L.

March, and unlike many mandarins, can hold its richly flavored fruit on the tree through the summer.

Grapefruits The name “grapefruit” is a somewhat imaginative reference to the way the fruits are carried on the trees in bunches, like grapes. The true grapefruit or pomelo (*C. xparadisi*, Zones 10–11), is another old citrus hybrid, maybe with the sweet orange and the shaddock (*C. maxima*).

As with many citrus varieties, the origins of grapefruit are unknown. In any case, *C. xparadisi* makes a large, densely leafy tree with a rounded crown; narrow twigs; blunt-tipped, round-based, oval leaves; and in the wild, four- to five-inch-wide, yellow to slightly orange fruits with very juicy, light yellow to reddish pulp.

Many varieties are grown commercially, but they are difficult to cultivate indoors because they need high summer temperatures and lots of light in order to ripen their fruits. However, ‘Oroblanco’ bears big, de-

liciously fragrant blossoms that can develop into small, sweet, seedless fruits even in areas of low summer heat.

GROWING AND CARING FOR CITRUS PLANTS

When potting up a new plant, choose a container only slightly larger than the existing root ball. Terra cotta pots are ideal for citrus, but as the plant increases in size, these may become too heavy to move the plant easily. Whatever pot you choose, make sure it has one or more drainage holes. Citrus plants should be repotted every three to five years to renew the soil and increase pot size to accommodate the growing root ball.

Pot your plants in a rich, well-drained, neutral to slightly acidic potting mix containing lots of coarse sand or perlite; do not use unsterilized garden soil. Some growers also swear by mixing in a handful of charcoal around the plant’s root-zone to keep the chemistry sweet. When repotting, be careful not to disturb the root ball; and when replanting it, make sure that the top

roots are barely beneath the soil surface.

Water the newly planted pot thoroughly, and maintain a regular watering schedule thereafter, allowing the soil at the root zone to dry out slightly between waterings. According to Ross, “you pretty much have to water all the time, but there is almost no danger of overwatering unless you leave water standing in the saucer.” If possible, use rainwater or purified water, because chlorinated water can damage citrus. In addition, most citrus appreciate high humidity, which can be provided by humidifiers or by placing gravel-filled trays of water underneath or nearby.

Authorities tend to differ on the best fertilizer for potted citrus. Martin Page recommends a balanced slow-release fertilizer (20-20-20) in winter and a higher nitrogen fertilizer, say 25-15-15, when plants are in active growth. Ross finds monthly applications of Miracle-Gro® blossom-booster formula sufficient for his lemons and ‘Bearss’ lime. Yellowing leaves may be a sign of iron deficiency; add sulfur or spray foliage with an iron chelate solution to counteract this.

To thrive indoors, citrus trees require the best sun you can give them, ideally eight to 12 hours of direct sunlight a day.

For optimum ripening of citrus fruit, a constant summer temperature of between 55 and 85 degrees is ideal. In temperate regions, move your plant outdoors to a sunny patio or front yard out of the wind as soon as night-time temperatures are consistently above 55 degrees. Water and fertilize it regularly until fall, then start moving it indoors again gradually, allowing time for the plant to acclimate to indoor conditions. In fall and winter, when many citrus varieties’ active growth slows down, citrus will do best if kept in a cool area, down to about 50 degrees at night. During the same period, let the top inch of your pots dry to the touch between waterings, and cut back to half-strength fertilization.

From seed it takes most citrus up to five years to attain fruiting size. Because seed from named varieties does not come true, most people start with plants. (For a list of recommended sources, see page

27.) Remember that it can take at least a year for fruit to tree-ripen and develop best flavor. And because citrus fruit does not ripen off the tree, resist the urge to harvest prematurely.

PEST AND DISEASE PREVENTION

Quarantine newly purchased citrus plants for several weeks in order to give any little hitchhiking pests time to hatch out and show themselves. The worst



Move your citrus plants outdoors for the summer as soon as night-time temperatures consistently stay above 55 degrees Fahrenheit.


pests of indoor citrus are scale insects, which resemble small, oblong, slightly raised pustules flattened against the twigs and leaf surfaces; fuzzy white mealy bugs that lay eggs among the roots at the bottom of the pots (the babies look like bits of cotton fluff), then grow up to crawl into every nook and cranny of leaf and branch; spider mites, infinitesimal white, red, or black crabs that stipple the leaves and fling little airy hammocks among them; and aphids, whose droppings can, in severe infestations, become host to a black fungus that can severely inhibit an afflicted plant’s photosynthesis. White fly and fungus gnats rejoice in citrus, too.

All the above pests may be dealt with by a regular spray schedule. Many citrus growers use products containing neem oil, a botanical insecticide, as general repellents on a regular basis—Ross sprays every two weeks; insecticidal soaps, such as Safers® Brand products, as contact killers; and to suffocate pests, a one-percent solution of light horticultural oil. For established adult scale infestations, Ross says there is no substitute for handiwork with a toothbrush. If you choose to use pesticides, even botanical types, be sure to follow manufacturers directions. And avoid use of systemic pesticides, which will be taken up into all parts of your plant, including the fruit you hope to savor.

Pruning your indoor citrus is important, says Ross, because plants allowed unrestricted growth indoors “will get spindly and out of control.” Since citrus flower and fruit best on new wood, Ross does not prune off all the new shoots. He prunes just enough to permit the above-ground parts of his trees to get bigger by one to two inches per year. Even at this modest growth rate, he warns, “in 10 to 20 years you’ll have a citrus tree your size.”

One of the nice things about citrus is that they are good communicators. If you underwater them, they’ll wilt. If you underfeed them, or if their roots are rotting from being kept too wet, their leaves will become cupped or turn yellow. If you have your plants in a cold draft or low humidity, their leaves will drop. The key to success is to follow a regular schedule of watering, fertilizing, and pest control.

REWARDS OF SUCCESS

What it comes down to, with citrus, is that despite the challenges, these plants are incredibly rewarding for anyone willing to meet their needs. If you haven’t grown a citrus plant before, or have tried one without success, I suggest you seek out one of those discussed in this article and prepare to be delighted. 

A frequent contributor to The American Gardener, Rand B. Lee is a garden writer based in Santa Fe, New Mexico.

Steps to a Successful

Seed sales, market research reports, and surveys of American Horticultural Society members and other gardeners point to a significant trend in gardening: More and more Americans are growing their own fresh fruit and vegetables. This isn't surprising given today's soaring food prices, a troubled economy, and the increased concern for eating high quality, locally grown food. And what could be more local than your own backyard? To support your interest in growing vegetables, fruit, and herbs, we are introducing a new department called "Homegrown Harvest" that we hope will inspire and assist you in your food growing efforts.

*While many readers have been growing fruit and vegetables for years, some of you may be new to edible gardening. With this in mind, we asked Barbara Ellis, author and editor of numerous gardening books including *The Veggie Gardener's Answer Book: Solutions to Every Problem You'll Ever Face*, *Answers to Every Question You'll Ever Ask* (Storey Publishing, 2008), to provide some basic tips for success in growing vegetables. In coming issues, other food gardening experts will share their insights about growing specific edible plants. Join us as we expand our focus both in the pages of this magazine and in our landscapes.*

—The Editors



Vegetable Garden

Growing your own vegetables and herbs can save you money, gives you a source of nutritious food, is great fun, and reduces your environmental footprint.

BY BARBARA W. ELLIS

PHOTOGRAPHS BY NEIL SODERSTROM

IT DOESN'T take much to inspire an experienced gardener to get planting. The promise of a basket full of succulent lettuce, vine-ripened tomatoes, or crisp snap peas is enough to get them started. Beginners are a bit more hesitant to start a family food garden. Fortunately, if you keep a few basic principles in mind, growing vegetables is fairly straight forward.

For starters, vegetables are an agreeable lot, and most are satisfied with the same basic conditions—full sun, adequate moisture, and rich, well-drained soil. Give them what they want, and they'll repay you with a bountiful harvest. It's really that simple.

I've asked a few gardening friends and other experts from different regions to chime in with their experiences and advice on what newer vegetable gardeners should keep in mind. I hope these basic steps will inspire you to expand your horizons, whether that means planting your first vegetables, adding a row or two to your existing garden, or experimenting with a crop or two you've never grown.

PICK A PERFECT SITE

"Almost unanimously, vegetables need sun," says Ron Vanderhoff from Roger's

Gardens in Corona Del Mar, California. Inadequate light only leads to "stretched out plants, poor fruit set, and wimpy produce," Ron points out. Ideally locate your garden on a spot that receives at least eight hours of sun a day. Some vegetables, such as lettuce, cope just fine with a half day of sun. Others, such as tomatoes, will grow but will produce far less than they would in full sun.

Other characteristics of the perfect site include easy access to a hose for watering, well-drained soil, and a level spot that's convenient, so tending crops and harvesting produce is easy and efficient.

START SMALL

You can grow a surprising amount of food in a carefully managed four-by-four-foot patch, and a garden that size will give you ample opportunity to learn about caring for a vegetable garden. At the most, keep first-time gardens to no more than 10 by 20 feet. Digging up a gigantic patch can leave you struggling to keep on top of weeds and other problems, so think quality rather than quantity. You can always make your garden larger next year. If you don't have the time or space to dig a vegetable garden, consider growing vegetables



Opposite page: Food doesn't get any fresher than what you can harvest from your own garden. **Top right:** For maximum production, water your vegetable garden regularly. **Right:** If you lack garden space, large containers can accommodate a variety of crops, including tomatoes.

in containers. In this case, large containers or tubs are best, and will accommodate most crops. Another option is to incorporate vegetables as part of your flower garden or in other plantings. Lettuce, spinach, dwarf basil, and parsley make pretty edgings, while larger vegetables such as peppers, and Swiss chard are handsome in mid-border.

FEED YOUR SOIL

Long before you plant that first seed, start thinking about what your soil needs to produce healthy plants. Rich garden soil contains plenty of organic matter and has a loose, friable structure that lets water drain away and allows roots to grow through it easily. The fastest way to destroy good soil is to work it when it is too wet or too dry. Since soil organic matter gets used up—and provides nutrients for your growing veggies in the process—begin a regular program of adding organic matter to soil to help it stay healthy and produce healthy plants.

Compost—gardener's gold—is one of the best sources of organic matter for your garden. Combine kitchen scraps, garden trimmings, leaves, grass, and other materials to start making some of your own. Many municipalities have composting programs and you'll find a wealth of information about making it on the Internet. Well-rotted manure is another good source of organic matter, but be sure to dig it into the soil a couple of weeks before you plant. Wherever you get it, add organic matter to the soil every time you dig a hole and also use it to topdress vegetable crops.

Keeping the soil covered with an organic mulch also helps add organic mat-



Making your own compost is a great way to recycle kitchen and garden wastes, and adding it to your garden soil boosts soil fertility and improves its structure.

ter. Another option for unplanted soil is a cover crop such as clover or hairy vetch. Sow the seeds in spring or fall, let the crop grow, then dig or till the plants into the soil a few weeks before you plan to plant your garden.

MAKE A SIMPLE PLAN

Experienced vegetable gardeners would agree with Ron Vanderhoff when he says “vegetable gardening is ultimately always a regional issue. With plants, what applies in cool, cloudy Seattle is often quite different than in sunny, warm southern California. Texas and New York are as unique

as Lima beans and fava beans.” Information found on seed packets is often dramatically generalized, and “often doesn't apply to your own garden,” says Vanderhoff. “For instance, in most parts of the country, peas, lettuce, and broccoli are planted in spring, but in California that would be deadly. Here, we plant them in September or October and harvest all the way through March or April.”

What to do? Consult with your local Cooperative Extension office or with neighborhood gardening experts to find out what planting schedule works best in your region, along with which crops are easiest to grow. Also find out the dates of your last spring and first fall frosts (see “Resources,” page 35) and jot them on your calendar so you can use them to help determine what crops to plant when. If it's your first vegetable garden, select five or six crops to start with. Use your last spring frost date to schedule when to start seeds, keep the planting process organized, and to figure out when other crops should go into the garden. Keep in mind that plants don't read the calendar and there's lots of flexibility in those planting times. If you can't get anything in the ground one week, just do it the next and don't worry about it.



An easy way to determine if your soil is ready to be worked is to squeeze a clump of soil in your hand; if it holds together initially but crumbles when pressed, it is ready.

GET OFF TO A GOOD START WITH EASY-TO-GROW CROPS

If you're new to growing vegetables, one of the best ways to gain confidence is to start with easy-to-grow crops. Radishes and green beans are high on most gardeners no-fail lists, but there are many other easy vegetables, including cucumbers, zucchini and summer squash, garlic, leaf lettuce, arugula, snap peas, Swiss chard, and kale. Tomatoes are only a little bit harder to grow, mostly because full-size plants require caging or trellising for best production. Because of this, compact patio-type hybrid tomatoes are easiest to start with because they don't need training.

Easy or not, if you don't like Swiss chard or zucchini, a garden full of these crops won't be a success, since enjoying the fruits of your labor at table is, after all, the main goal of growing vegetables. For this reason, concentrate on crops you love—especially if you can't find them locally. Grow heirloom tomatoes, purple green beans, or a mix of lettuces not available at your local grocery store, for example.



Cucumbers, top, and Swiss chard, right, are easy to grow. Also worth growing are vegetables that are not available in the grocery store, such as these heirloom carrots, above left.

to Vermont, it's easy to forget that it's colder underground than above. I can sow some of the more cold-tolerant vegetable seeds, including peas, radishes, and spinach, but they will germinate so slowly that I'd be better off waiting until the soil warms to at least 50 or 60 degrees Fahrenheit. Be a tortoise, I must remind myself, not a horticultural hare."

Transplants may fail altogether if it's too cold. That's why it's important to harden seedlings off by exposing them to outdoor conditions gradually before transplant time. Set transplants out in a protected location for an hour or two the first day, then gradually increase the time



One way to protect tomato transplants from a sudden cold spell is to surround them with jugs of water and cover their cages with plastic.

Another way to keep things relatively simple is to start with transplants rather than seeds for the most part. According to Jo Ellen Meyers Sharp, a columnist for the *Indianapolis Star* and editor of *Indiana Living Green: A Hoosier's Guide to Sustainable Living* magazine, "for beginners, I think there's greater success when they start with transplants, especially tomatoes and peppers. Leafy vegetables, such as lettuces, spinach, and Swiss chard, are very easy to grow from seeds. So are squash, corn, beans, and peas." Once you have a few

years under your belt, try growing other crops from seed, and concentrate on cultivars you can't find in garden centers, including many heirlooms.

GIVE YOUR VEGGIES A GOOD START

It's easy to plant too soon and every spring is a bit different, so it's a good idea to use soil temperature to figure out when to plant. Karan Davis Cutler, a long-time vegetable gardener and author of *Burpee: The Complete Vegetable & Herb Gardener*, notes, "When spring brings the first red-wing blackbirds back

they are outdoors before transplanting to the garden. Another way to get a head start is to pre-warm soil by covering it with black plastic a week or more before transplanting.

When transplanting, be sure to water each plant as it goes into the garden. Water the entire area as well. Give new transplants extra protection by covering them with homemade cloches—plastic milk jugs with the bottoms cut out work well, especially if you are growing crops such as tomatoes or peppers, which need warm temperatures.

MAKE THE MOST OF YOUR SPACE

Even a tiny garden can produce an amazing amount of food if you use some simple intensive gardening techniques. Traditional single rows devote as much space to paths as they do crops. Instead, plan on using wide rows or beds, which range from two to four feet wide, with a path on either side. The ideal width of the beds varies according to how far you can comfortably reach. Sow a broad band of lettuce or radishes or plant two or three rows of cabbage or broccoli in each bed. The goal is to fill the entire bed with plants by the time they are ready for harvest. Experiment to determine what spacing works best. Start by spacing plants on all sides at the distance recommended within the row. Grow head lettuce, for example, 12 inches apart on all sides; only four inches if you are planning to harvest baby leaves, not heads.

Also experiment with techniques such as interplanting—surround tomato transplants with snap peas or lettuce, for example. The peas or lettuce will be harvested before the tomatoes fill in the space. Succession planting is another great way to get the most from your space: the minute the spring lettuce or snap pea crop



Mulching bare soil helps reduce weeds and prevents moisture loss through evaporation. It also helps moderate summer soil temperatures by acting as a layer of insulation.



With careful planning and experimentation, many different crops can be grown together even in a small space for an abundant harvest.

is finished, replace it with a summer crop of beans or Swiss chard. Also save space by helping crops grow up: Use trellises to train crops such as peas, beans, and cucumbers, and cages for tomatoes.

While it's tempting to sow an entire package of seed at one time, inevitably that approach leads to a glut of produce that goes to waste. Instead, spread out your harvest by sowing a little bit at a time—a foot or so of lettuce or a dozen pea plants per person in your household every 10 days, for example. Sowing small batches means you'll have a manageable crop to tend and the right amount of produce to harvest. If you're buying transplants, don't plant an entire market pack (four to six plants) of any one cultivar. Six to 10 tomatoes will supply a two-person household. To ensure a bit of variety, share extra plants with friends and family so you have space for slicing, cherry, and heirloom tomato types.

KEEP WEEDS AT BAY

Mother Nature abhors a vacuum, and she'll quickly fill any space that's un-

planted. That means weeds. The first secret to keeping weeds at bay is to keep the soil covered with mulch. The second is to think of mulching as something you do all season long. "Keep a stockpile of mulch such as shredded leaves right in your garden," advises Fern Bradley, a horticulturist, long-time vegetable gardener, and author of *Rodale's Vegetable Garden Problem Solver*. "If you don't have leaves, buy a few bales of straw, stack them alongside your garden, and cover them with a tarp (working with wet straw is no fun). When mulch is right at hand, you'll use it more often."

PATROL FOR PROBLEMS

It's important to keep an eye out for problems so you can take steps to fix them before they get out of hand. Take time daily—or at least every other day—to walk through your garden to look for plants that need a drink, soil that should be covered up with mulch, and stems that need to be directed onto and up trellises and other supports.

Also look for signs of pests and diseases. Be sure to look under leaves. If you find an insect you don't recognize, try to identify it or at least determine if it is doing any harm. The vast majority of insects in a garden are either beneficial or benign. Beneficials like lady beetles are often ready to take care of a pest population for you, but populations of beneficials generally build in response to pests so you need to give them time. If you do need to use control measures, start by handpicking or blasting pests off the



Use the least toxic measures possible to control pests, such as this squash bug.

plants with a hose; the latter technique works for both spider mites and aphids. For organic gardeners, the next line of defense is biological controls such as Bt (*Bacillus thuringiensis*) or spinosad, both effective for leaf-chewing caterpillars. Use low-toxicity sprays such as insecticidal soaps only as a last resort.

If your pests are of the four-legged furry kind, scare tactics or pepper sprays may work temporarily; fencing them out is your best option.

HARVEST WITH CARE

According to Jo Ellen Meyers Sharp, many beginners “sometimes are slow to harvest.” When you see peas or beans that need picking, or lettuce that seems large enough for the salad bowl, don't wait,” she advises, “the more you harvest the more the plant will produce.”

While harvesting promptly is important, it's also essential that you harvest gently. Yanking beans or peppers from the plant can damage plant roots, which reduces future yields. The same can be

Resources

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

Four Season Harvest: Organic Vegetables from Your Garden All Year Long by Elliot Coleman and Barbara Damrosch. Chelsea Green Publishing Company, White River Junction, Vermont, 1999.

Frost Chart for the United States. The Old Farmer's Almanac, www.almanac.com/garden/frostus.php.

The Moosewood Restaurant Kitchen Garden by David Hirsch. Ten Speed Press, Berkeley, California, 2005.

Rodale's Vegetable Garden Problem Solver by Fern Marshall Bradley. Rodale Press, Emmaus, Pennsylvania, 2007.

The Veggie Gardener's Answer Book: Solutions to Every Problem You'll Ever Face, Answers to Every Question You'll Ever Ask by Barbara Ellis. Storey Publishing, North Adams, Massachusetts, 2008.




By using scissors to harvest lettuce leaves, you avoid damaging the plant's roots.

said for pulling off lettuce leaves—use scissors and cut them off, or pull with one hand while steadying the plant in the ground to protect the roots.

EXPERIMENT AND ENJOY

One of the great things about gardening—and vegetable gardening is no exception—is that there are always new things to learn, new techniques to try, new crops to grow, new schedules to fid-

dle with, and new questions to answer. So, experiment with a variety of crops that appeal to you, keep notes in a journal for next year, and enjoy the process along with your bumper harvest. 

Barbara W. Ellis is a garden editor and author. Her most recent book is Covering Ground: Unexpected Ideas for Landscaping with Colorful, Low-Maintenance Ground Covers (Storey, 2008).



Pruning Deciduous Shrubs

Winter is the perfect time to consider the pruning needs of your plants. You can take the guesswork out of pruning deciduous shrubs by following these simple guidelines. BY LEE REICH

DECIDUOUS SHRUBS need more pruning than most other plants; fortunately, they also are among the easiest plants to prune. Both the need for and ease of pruning stem (pardon the pun) from the same reason: Shrubs are shrubby because most never develop a permanent trunk or trunks; instead, new sprouts are always developing at or near ground level. So although unpruned plants can become congested with this continuous growth, any mistakes you make in pruning are easily erased by each year's fresh crop of stems. The main goals in pruning these plants, then, are to rid them of decrepit or undesirable wood and to thin out young stems so those that remain have sufficient room to develop.

When pruned correctly, a deciduous shrub should have a few young, a few

middle-aged, and a few older stems. The process used to achieve this, known as renewal pruning, is rather straightforward: As the oldest stems become unattractive or produce few flowers, they are removed, leaving more space for younger stems to develop. New shoots appear each year and the previous year's stems move up in age until they are old enough to be cut away.

Still, some art and science is involved in pruning deciduous shrubs. How old is "too old" for the oldest stems, and how crowded is "too crowded" for the youngest ones? I've simplified such decisions by grouping deciduous shrubs into categories according to how long the oldest wood keeps performing well—i.e., producing flowers or displaying decorative bark—and how many suckers or new sprouts at or near ground level a par-

ticular species sends up each spring. Shrubs whose stems perform well for a long time tend to sprout fewer suckers each year, and vice versa.

One nice thing about grouping shrubs for pruning needs according to their growth habits is that you can figure out how to prune a shrub merely by observing its growth. You don't even have to know the name of the shrub you're pruning!

GENERAL ADVICE

Except for formal hedges (and most shrubs do not look their best in formal attire), the one tool you will not need for this pruning is hedge shears. Most of your cuts will be down at the base of the plant, and the most useful tools for these cuts are loppers and hand pruners. If pruning has been neglected for some

Renewal pruning of shrubs such as this currant (*Ribes* sp.) involves cutting the oldest, unproductive stems almost back to the ground.

years, you might also need a pruning saw to cut away the oldest branches. Removing old stems at the base of a shrub encourages a fountainlike growth habit of branches that looks far more natural and pleasing than when shrubs are reduced in stature with hedge shears. (For more information about specific pruning tools, see “Green Garage,” page 48.)

Flower buds that open in spring develop during the previous growing season, so prune early-blossoming shrubs right after they finish blooming. This timing is not for the health of the shrub, but for maximum flower display; if you prune before bloom, while the shrub is dormant, you’re going to cut away potential blossoms. (You may want to cut a few dormant branches to bring indoors for forcing in late winter, though.) It’s important to prune these



No matter what type of shrub, crossing branches should always be eliminated.

shrubs soon enough after the blossoms fade to ensure the following year’s flower buds have time to develop.

Shrubs that blossom later in the growing season form their flower buds on the current year’s shoots. The time to prune these shrubs is while they are dormant and leafless, generally just before growth begins for the season or at least after the coldest part of winter has passed.

Timing and tools aside, always remove any dead, diseased, or crossing branches whenever you notice them. And, because we grow these shrubs for their beauty, also remove or shorten any awkwardly growing stems.

Now, on to specifics for each category



To develop a natural, fountainlike habit and maximize the flower display for forsythias, prune them immediately after flowering in the spring, removing the oldest stems at the base.

ry of shrub. For lists of specific shrubs that belong to each category, visit the AHS website at www.ahs.org and click on the web special, “Pruning Lists for Deciduous Shrubs,” linked to the online version of this issue.

SHRUBS THAT PERFORM WELL ON OLD WOOD AND MAKE FEW SUCKERS

In this first category are a number of shrubs that grow few—if any—new suckers each year. Additionally, their older branches continue to flower well for many years, often creating a picturesque framework over time. These



***Fothergilla gardenii*, with its bottlebrush spring flowers, is an example of a shrub that rarely needs pruning to look its best.**

shrubs are shrubby by virtue of their size, but, depending on definition, some could be termed trees. Consider, for instance, a dwarf Japanese maple (*Acer palmatum*) that is a graceful mound only five feet high atop a single bifurcating trunk. Or, only slightly larger at perhaps six to 10 feet, a star magnolia (*Magnolia stellata*). More clear-cut examples of what most gardeners might consider to be strictly a shrub within this pruning category would be dwarf fothergilla (*Fothergilla gardenii*), cotoneasters (*Cotoneaster* spp.), and witch hazels (*Hamamelis* spp.).

These shrubs are among the easiest to prune. Basically, don’t. In reality, a stem here or there may eventually become decrepit or grow grossly out of place, marring the appearance of the shrub. Or a sucker may appear that can be removed, or be left to replace a dying stem that’s being cut away. Generally, though, little pruning is needed and even that only every few years.

SHRUBS THAT FLOWER BEST ON ONE-YEAR-OLD WOOD

Many familiar shrubs, such as lilacs (*Syringa* spp.), forsythias, and mock oranges (*Philadelphus* spp.) flower best on one-year-old wood. These shrubs flourish with

annual pruning because it stimulates growth of new shoots that become the following year's flower bearers. One slight wrinkle with this group of shrubs: The one-year-old, flower-bearing shoots could originate from ground level or could originate higher up in the plant, growing from older stems. The location of these flowering shoots determines pruning technique, so I have further subdivided this category into two groups, as follows:

■ ***Shrubs that flower best on one-year-old wood originating from older wood up in the plant.***

Stems of shrubs in this category continue to grow new shoots that flower well for a few years before they lose vigor, at which point they need to be removed to make way for younger stems. Begin pruning these shrubs by peering in at the base of the plant, lopper or pruning saw in hand. Cut some of the oldest stems to the ground or down to low, vigorous suckers. Some shrubs, such as lilacs, spread wider and wider ever so slowly over the years, so keep an eye out for, and remove, older stems diverging from the main clump. Others, such as forsythias, spread mostly by hopscotching along as their arching stems touch the ground and root. Cut off



Japanese kerria benefits from being pruned right after it blooms. Remove the older, brown stems and retain the green ones, which will produce next year's flowers.

and dig up these rooted stem tips to create new plantings or to share.

Cutting back the oldest stems on these shrubs is a very efficient way to prune. A single cut removes a lot of wood at once. Those oldest stems are also the tallest ones, so each cut dramatically lowers the plant—putting lilac blossoms back near nose level, for instance. And removing that old wood opens up space for younger, more vigorous, replacements.

These shrubs tend to grow many new suckers each year—usually too many. As a result, they crowd each other so none get the light they need for best flower bud development. Again, work at the base of the shrub, this time with your hand pruners, thinning out the excess of young suckers.

It's impossible to give a prescription for how long to leave an older stem, or for how many young suckers to leave each year. Such details depend on growing conditions and the nature of the plant as well as how high and how wide you want your shrub to grow. A certain amount of art is involved here; and, because you are pruning shrubs, you have an opportunity to exercise creativity from year to year.

■ ***Shrubs that flower best on one-year-old wood originating at ground level.***

This subcategory of shrubs requires more drastic pruning than the previous one. Every year, cut away all wood that is more than one year old, either right down to ground level or to a vigorous shoot originating low in the plant. Japanese kerria (*Kerria japonica*) is an example of a shrub in this subcategory; prune it each year right after it blooms, removing the stems that produced the flowers. Kerria stems are “color coded” to make pruning easier: Young shoots, which should be left intact to bear the next year's blooms, are bright green. Older stems on which the current year's blooms were borne are the ones to cut away, and these



Lilac flowers are formed most abundantly on one-year-old wood; removing old, unproductive stems each year stimulates the production of new stems that will flower the following year.

PRUNING A LILAC

Although an overgrown lilac may still produce flowers, these blooms are usually high up on the branches, away from where they will be most appreciated—at nose level. Because the upper branches shade those below, few flowers are formed on lower stems. Renewal pruning will both increase flowering and reduce the overall size of the shrub.

—L.R.

PRUNING OUT OLD STEMS



Pruning a shrub that has been neglected for several years may require more than simple loppers or hand pruners. Select the oldest branches and cut them back to the ground, or to a strong stem near the ground using a pruning saw. Removing the oldest branches opens up the shrub to make space for vigorous new stems and reduces its height.

REMOVING SUCKERS



Using hand pruners or loppers, remove some of the suckers to make room for the others; leaving too many will cause crowding so that none receives sufficient light to produce flowers. Remember, ideally you want to have a blend of a few older stems, a few middle size stems, and a few young stems when you are finished.

are brown. The young stems decoratively retain their bright green color through their first winter. Even without this color-coding, the oldest stems on shrubs should be obvious from their thickness and the flakiness of their bark.

SHRUBS THAT BEAR FLOWERS OR DEVELOP THEIR BEST LOOK ON NEW GROWTH

At the opposite end of the spectrum from that first category of shrubs we addressed is the group that performs best on shoots less than a year old. That performance



Bluebeard (*Caryopteris* sp.), above and top, blooms on new stems, so plants can be pruned almost to ground level in late winter.

could come from flowers, as is the case for butterfly bush (*Buddleia davidii*), bluebeard (*Caryopteris* spp.), and St. Johnswort (*Hypericum* spp.). Or, that show could come from a plant's attractive stems, as is the case for red-osier dogwood (*Cornus stolonifera*).

Like shrubs in the first category, whose oldest stems perform so well that hardly any pruning is needed, shrubs in this last category are also among the easiest to

PRUNING HYDRANGEAS

Gardeners are often confused about how to prune their hydrangeas, and with good reason: Several different hydrangea species are commonly cultivated, and their pruning needs vary, sometimes within species. Here's a quick guide to identifying and pruning hydrangeas.

If your hydrangea makes large clusters of pink or blue flowers, it's bigleaf hydrangea (*Hydrangea macrophylla*). The plant flowers late, but from buds that form the previous growing season. Some newer cultivars—the Endless Summer® series, for instance—also bloom on new shoots of the current season. Blossoms on new shoots open later than those from old wood, extending the blossoming season. Prune bigleaf hydrangeas in spring, cutting back stems to fat flower buds. Cold winters at the northern edge



of this species' growing range can kill flower buds, in which case the plant puts out leaves but does not flower—except in the case of the Endless Summer® cultivars, which will go on to flower on new shoots.

If your hydrangea is a billowing shrub a few feet high with heart-shaped leaves and bears mopheads of white blossoms in early summer, it's smooth hydrangea (*H. arborescens*). Prune this hydrangea to the ground early each spring or, if a larger shrub is desired and no winterkill occurs, cut some branches to the ground and others back at varying heights—from one to three feet.

If your hydrangea is a spreading shrub bearing tapering clusters of white flowers in early summer and leaves resembling those of an oak, it's oakleaf hydrangea (*H. quercifolia*). Prune in the same way as bigleaf hydrangea. The foliage of this species has good fall color, so all is not lost if a cold winter at the northern end of this plant's growing range kills the flower buds.



If your hydrangea flowers in mid- to late summer, eventually growing 15 or more feet high and developing multiple woody trunks, it's peegee hydrangea (*H. paniculata*). A light pruning in early spring will stimulate growth of new flower-bearing shoots.

And finally, if your hydrangea is a climbing or—if not given support—a clamoring vine bearing white flowers in early summer, it's climbing hydrangea (*H. anomala* ssp. *petiolaris*). Just shorten any stems that grow out of bounds. (For more detailed information on pruning hydrangeas, click on the web special linked to this article on the AHS website, www.ahs.org).

—L.R.

prune. Because these shrubs perform best on new shoots, pruning entails nothing more than an annual lopping of all stems almost down to the ground. Cutting these shrubs nearly to ground level late each winter stimulates lanky new shoots that bear their flowers later that same summer. The following winter, cut them all down again to perpetuate the cycle.

Shrubs such as butterfly bush and crape myrtle (*Lagerstroemia* spp.) die back from cold in many northern gardens, so this pruning accomplishes what winter cold does in these climates anyway. But this is not the case for many



For an annual display of brilliant red stems, cut red-osier dogwood (*Cornus stolonifera*) to the ground early each spring.

other shrubs in this category. (Where crape myrtle does not die back, it needs little pruning, which also allows its attractive, mottled bark to develop.)

Red-osier dogwood does not have to be cut back every year, although this annual, severe pruning results in a flush of new stems, which are the only ones that have decorative red bark. Enjoy the colorful stems through winter, then cut them all back in early spring to stimulate the following winter's flaming red stems. Alternatively, prune this shrub, as well as purple osier willow (*Salix purpurea*), to present a different look—a mop of colorful stems atop a short, noncolorful trunk. In succeeding years, all those col-

PRUNING ROSES

By right, there should be no reason for rose pruning to garner any special mention. Roses, after all, are just another shrub, albeit one that has inspired poets and painters, and led to the formation of societies. That said, many types of roses flower both early and late during the growing season, which means that you leave many stems alone for earlier flowers but also shorten some stems drastically to stimulate vigorous new growth for later flowers. And even beyond this, roses differ in their bearing habits. The way to prune any rose is to observe or otherwise learn its flowering habit, then prune it in the same way as any other shrub with that flowering habit.

To whit: Roses that flower well on old wood and make few suckers include climbing roses, landscape (groundcover) roses, and shrub roses such as apothecary, Father



For roses that bloom on new growth and one-year-old wood, like the polyantha rose shown above, cut back older stems to about a foot, but leave younger stems taller.

Hugo's, musk, and Scotch roses. These need little pruning beyond the removal, after a number of years, of an old cane to make way for a replacement from a sucker. Roses that flower on one-year-old wood originating from older wood up in the plant as well as on the season's new growth include floribunda, grandiflora, hybrid perpetual, polyantha, and hybrid tea roses, as well as shrub roses such as moss, cabbage, Damask, Japanese, burgundy, modern shrub roses, and *Rosa moyesii*. Prune these roses by shortening older canes to about a foot and younger ones only slightly. To a point, the more drastically you prune, the fewer, the larger, and the later the blossoms, and the smaller the plant. For rambling roses that flower best on one-year-old wood originating at ground level, cut away flowering canes right after bloom. —L.R.

orful stems can then be cut back to the trunk rather than to ground level.

The vigorous new growth resulting from annual, severe pruning also may lead to some decorative leaf effects. When shrubs are cut to ground level, newer leaves may retain a juvenile appearance that can be quite different from the appearance of the species' mature leaves. Cider gum (*Eucalyptus gunnii*) leaves, for example, are bluish green and round on vigorous stems arising near

ground level, while the mature foliage, present when the plant is grown as a tree, is elongated and a rich green color. At the very least, leaves sprouting near ground level following severe pruning are larger than their counterparts on more sedately pruned shrubs.

TAKING CLUES, MAKING CUTS

The bottom line to pruning deciduous shrubs is to observe their growth habits carefully—they offer important clues as

Resources

The American Horticultural Society Pruning & Training by Christopher Brickell and David Joyce. DK Publishing, New York, New York, 1996.

Cass Turnbull's Guide to Pruning by Cass Turnbull. Sasquatch Books, Seattle, Washington, 2004.

Plant Amnesty,
www.plantamnesty.org.

The Pruning Book by Lee Reich. Taunton Press, Newton, Connecticut, 1997. (A revised edition of this book is scheduled for release in 2010.)


Pruning Trees, Shrubs & Vines by Karan Davis Cutler. Brooklyn Botanic Gardens, Brooklyn, New York, 2003.

Pruning Ornamental Shrubs by Christopher Starbuck. University of Missouri, 2007. <http://extension.missouri.edu/explore/agguides/hort/g06870.htm>.

Pruning Shrubs by Erv Evans. North Carolina State University, 2003. www.ces.ncsu.edu/depts/hort/consumer/factsheets/shrubs/text/pruning.html.

Sources for Tools

A list of sources for pruning tools can be found on page 50, in the "Green Garage" article.

to what and when to prune—then make your cuts accordingly. And don't worry too much about making a mistake—you'll get to try again the following year. 

Garden consultant and author Lee Reich is the author of The Pruning Book (Taunton Press, 1997), Uncommon Fruits for Every Garden (Timber Press, 2004), and, most recently, Landscaping with Fruit (Storey Publishing, 2009).

Bonnie Harper-Lore: America's Roadside Ecologist

by Mary Yee

RESTORATION ECOLOGIST Bonnie Harper-Lore is taking the war against invasive weeds on the road. As head of the Vegetation Management Program for the Federal Highway Administration (FHWA) and the only plant expert in the U.S. Department of Transportation (USDOT), Harper-Lore oversees “all things green and growing” on 12 million acres of right-of-way along thousands of miles of interstate, state, and county roads. Roads often pass through land that serves as natural habitat for plants and animals—and sometimes as preserves for endangered flora. Harper-Lore’s job is helping state DOTs manage these local ecosystems, but, she says, “We cannot restore or protect native plant communities without learning how to prevent, predict, and control invasive plants first.” She was instrumental in organizing the first Weeds Across Borders conference in 2002 to foster international cooperation in the battle. The most recent biennial conference took place last summer in Banff, Canada.



Harper-Lore has been a passionate naturalist all her life. Growing up in rural Wisconsin, she says, “I had a set of Golden Nature Guides as friends.” Since 1993, she has been with the FHWA, helping shape policy on native plants and the control of invasive species. She has written two manuals, *Roadside Use of Native Plants* (USDOT, 1999) and *Roadside Weed Management* (USDOT, 2007), and contributed to a book for home gardeners, *Native Alternatives to Invasive Plants* (Brooklyn Botanic Garden, 2006).

Managing Editor and Art Director Mary Yee talked with Harper-Lore about how legislation on highway vegetation has affected the environment, the on-going battle against invasive species, and what still needs to be done to improve the management of public land around the nation’s ever-growing network of roads.

Mary Yee: You helped the Clinton Administration write an Executive Memorandum (EM) issued in 1994 and an Executive Order (EO) in 1999. How did they affect vegetation management?

Bonnie Harper-Lore: The 1994 EM on beneficial landscaping provided the first “universal” definition of a native plant. It recommended that all agencies of the DOT set an example in the restoration and preservation of native species by implementing strategies to protect existing native populations and reducing or eliminating the use of herbicides, fertilizers, and supplemental irrigation. But because an EM cannot be enforced, few states chose to follow the guidelines.

The EO in 1999 on invasive species had more clout. It defined what an invasive plant is and required that projects



Under the management of the Missouri DOT, a stand of native pale purple coneflowers (*Echinacea pallida*) thrives along one of the state’s well-traveled roads.

using Federal funds prevent the spread of invasive plants and use native plants as much as practicable. Unfortunately, there are not enough native seed growers to meet the needs of many land-management agencies at all levels of government.

What defines an invasive plant?

An invasive plant is a non-native plant introduced from another country or a region of our own country that, in the absence of its natural enemies, out-competes existing vegetation. This includes naturalized plants such as oxeye daisy (*Leucanthemum vulgare*), which were introduced to North America by European settlers long ago.

A non-native plant that causes harm to the economy, human health, and/or the environment is considered a noxious weed;

For more information about invasive weeds, contact your local university Extension Service, native plant societies, and your State Department of Natural Resources or Agriculture.

native. Once established there, it has adapted so well that it displaces local vegetation in the region's oak forests and is considered an invasive species.

In what situations might non-natives be appropriate plant choices?

Inside the limits of a highly urban landscape, I would consider whatever plants are needed to achieve good and durable design. But in a rural environment, we have a responsibility to protect what we can of diminishing natural areas. When native

sionmakers, scientists, and policymakers from agriculture, natural resources, and transportation agencies from the U.S., Canada, and Mexico attended the first conference in Tucson, Arizona.

Were there any major developments in the conference last May in Canada?

I am proud to say we took a big step towards further continental cooperation. I have been working with the U.S. State Department on a draft Memorandum of Understanding (MOU) that I was finally able to introduce at the last conference.

The MOU would be a working agreement among the three countries to share technical information and resources and visit sites that demonstrate successful vegetation management. Without a formal agreement, momentum only lasts as long as its current champions have time. Volunteers from each country will review the MOU and bring their recommendations to the 2010 conference in West Virginia.

How do the choices that gardeners make contribute to the spread of invasives?

In spite of all we in the horticultural field have learned, known invasives such as Russian olive (*Elaeagnus angustifolia*) and Japanese barberry (*Berberis thunbergii*) are still sold and planted. Many gardeners may not be fully aware of the problems they may cause by growing these plants, but I am convinced most will change their behavior if they are properly educated.

Gardeners who plant known invasives for their aesthetic value, hoping to restrict the plants to their property, are taking a big risk. Between wind and wildlife, the seeds of these species *will* escape.

What is the ultimate goal of highway vegetation management?

Safety will always be the first requirement of roadside vegetation, but it also offers environmental benefits, including erosion control, creating wildlife habitat, and providing wildfire buffering.

More than ever, we need to take a sustainable view of the roadsides that crisscross the country. They represent millions of acres of conservation opportunity we cannot afford to waste.

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



Bonnie Harper-Lore, second from left, and the ecological staff of the California Department of Transportation view a rare protected vernal pool habitat on a right-of-way.

most are introduced invasive plants. Most states have State Noxious Weed Laws; few of the laws include American native plants—poison ivy being an exception.

Are there instances where American native plants are considered invasive?

We need to keep in mind that a plant that is native to one part of North America can become a problem in another part, so it's not always about plants from other countries.

A good example is the black locust (*Robinia pseudoacacia*), a tree native to the Appalachian Mountains. When it was transplanted to the Midwest for use as windbreaks on farms, it was no longer

species are matched to site conditions, they usually offer the best solution.

How did the first Weeds Across Borders conference in 2002 come about?

Since the early 1990s, various federal agencies, including the FHWA, have come together to share in the management of noxious weeds. The Weeds Across Borders campaign was an extension of this effort.

Because all lands in North America are connected by our highways and weeds don't recognize political boundaries, I felt the FHWA needed to work with landowners adjacent to the rights-of-way as well as state and county agencies and even our neighboring countries. About 100 deci-

Horticultural News and Research Important to American Gardeners



'Lambkin' melon

2009 ALL-AMERICA SELECTIONS WINNERS

Four new varieties—three vegetables and one flower—have been given the All-America Selections (AAS) distinction for their outstanding performance in comparative trials across the country.

Viola 'Rain Blue and Purple' is the 2009 AAS Cool Season Bedding Plant award winner. Its flowers exhibit an unusual trait of naturally changing color, opening purple and white, then turning purple and blue. This plant is both cold and heat tolerant, so it blooms during fall and winter in the south, and in spring and summer in northern regions.

For vegetables, flavor is an important factor in the evaluation process so all are taste-tested. In addition to its sweet flavor, 'Honey Bear' acorn squash received top ratings for its compact habit and high yield due to its tolerance to powdery mildew. 'Gretel' eggplant's three- to four-



'Gretel' eggplant

inch slender white fruits with tender skins and sweet flesh impressed judges, along with its ability to reach maturity in only 55 days. A Christmas type melon, 'Lambkin' stood out for its sweet, aromatic, juicy fruits that mature early.

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

NEW PLANT HORMONE DISCOVERED

A handful of known plant hormones, such as auxins and gibberellins, have been utilized for decades by plant scientists for their ability to regulate shoot and root growth. Scientists have now identified a new group of plant hormones, called strigolactones, that play a role in controlling branching in plants. Research published in the journal *Nature* last year showed that plants with a mutation causing them to lack the ability to create strigolactone branched without restraint. If treated with strigolactone, these plants returned to a normal branching pattern.

Prior to this discovery, scientists had known that strigolactone exuded through roots induces beneficial fungi such as mycorrhizae to form symbioses with the plant. As root exudates, these molecules

also stimulate the seeds of nearby parasitic plants to germinate and attach to their victims. Now that strigolactone has been identified as a plant hormone, scientists will have many more avenues to explore as they learn more about its potential effects and applications.

"We still don't know the details about how it is made," says Harry Klee from the Horticultural Sciences Department at the University of Florida (UF) in Gainesville. "We know virtually nothing about how it actually works and how the plant uses it to control the degree of branching." Klee and other UF scientists were among the first to identify the genes that synthesize strigolactones, which facilitated the discovery that these chemicals act as plant hormones.

FINANCIAL WOES BESET MASSACHUSETTS HORTICULTURAL SOCIETY

Beleagued by financial difficulties, the Massachusetts Horticultural Society (MHS) has canceled the 2009 New England Flower Show that was scheduled for March, though the organization is planning two smaller events for the spring and summer instead.

In a recent *Boston Globe* article, Betsy Ridge Madsen, president of the society's board of trustees, stated that MHS canceled the show because of the sluggish economy and the fact that last year's show lost money. With a 137-year history, this event was one of the nation's longest continuously running flower shows.

Another significant strain on the organization's resources has been the creation of its newly completed "Greenway Gardens," part of downtown Boston's Rose Fitzgerald Kennedy Greenway built above the Big Dig's highway tunnel system. Though not as grand as the botanical showpiece MHS originally had planned, the installation and maintenance of these gardens on nearly five acres of land have cost the organization hundreds of thousands of dollars.



'Honey Bear' acorn squash

Last year the 180-year-old organization also laid off more than half its staff as a result of its financial predicament, and changed the leadership of its board of trustees. It has launched a "Save Our Society" campaign, "reaching out to foundations, businesses, and individuals with the goal of putting the Massachusetts Horticultural Society back in the black and continuing our most fundamental programs." For more information, visit www.masshort.org.

OUTSTANDING REDBUD COLLECTION RECEIVES NATIONAL RECOGNITION

The North American Plant Collections Consortium (NAPCC) recently recognized the redbud collection at the JC Raulston Arboretum at North Carolina State University in Raleigh as one of the nation's best. The collection features 41 taxa of *Cercis*, including several hard-to-find species such as giant redbud (*C. gigantea*) and smooth redbud (*C. glabra*).

In addition to the collection's comprehensiveness, its research value also earned it the NAPCC distinction. Dennis



JC Raulston Arboretum Director Dennis Warner, right, and Research Assistant Layne Snelling hand-pollinate redbud flowers in an attempt to create new varieties.

Werner, director of the arboretum and a horticulture professor at NC State, has developed a redbud breeding pro-

gram, focusing on native eastern redbud (*C. canadensis*). According to Mark Weathington, assistant director and curator of collections, they are "breeding for novel weeping forms such as purple, gold, and variegated foliage forms." Additionally, research with the collection includes "evaluating the landscape suitability of the various species, and evaluating the numerous named and unnamed selections," Weathington says.

The NAPCC is coordinated by the American Public Gardens Association in cooperation with the U.S. Department of Agriculture's Agricultural Research Service and the U.S. National Arboretum. The consortium designates outstanding collections of landscape plants in an effort to encourage the preservation of plant germplasm and high standards of plant collections management.

ROBOT'S AWARD-WINNING RECYCLING PROGRAM CELEBRATES NEW SUCCESS

Look in just about any gardener's shed and you're bound to find a pile of empty plastic pots, cell packs, and trays from previ-

The American Horticultural Society's

SPRING GARDEN MARKET

at River Farm

A Plant Sale and Marketplace of Garden-Inspired Items



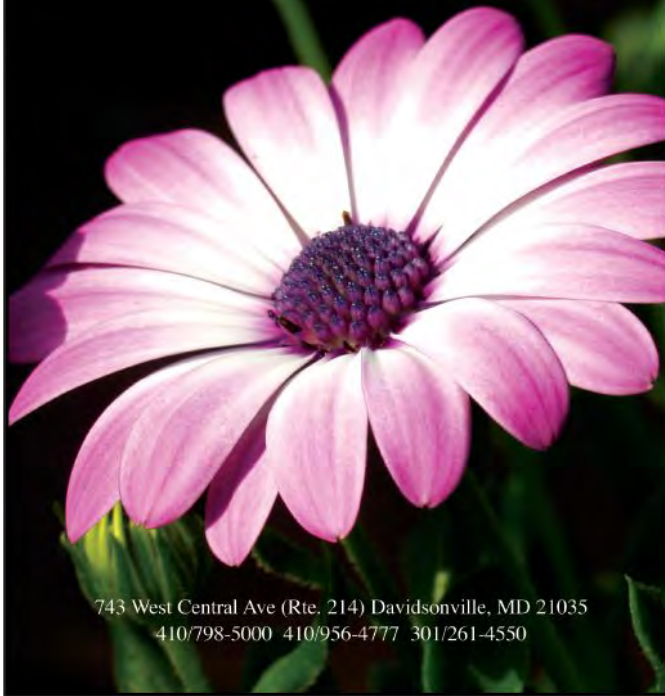
Vendors Wanted for Spring Garden Market!

The American Horticultural Society is looking for vendors for its Spring Garden Market taking place from April 16-18, 2009 at its River Farm headquarters in Alexandria, Virginia. A variety of spaces are available for vendors of plants and garden-related items. Contact Sharon Grant at (703) 786-5700 ext. 114 or sgrant@ahs.org for more information.



Homestead Gardens

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ous planting seasons. But this is less likely to be true in St. Louis. In 2008, the Missouri Botanical Garden's (MOBOT) pot recycling program set a new record for itself by collecting and recycling 75 tons of plastic. Since it launched in 1998, the program has recycled approximately 330 tons of horticultural plastic waste.

For several months each year, MOBOT serves as a central collection site for residents and businesses. A number of retail garden centers throughout St. Louis also serve as satellite collection sites. The plastics are then ground down and recycled into other products by various manufac-



MOBOT's Steven Cline sorts through a pile of plastic containers ready for recycling.

turers. One of the only recycling programs of its kind in the nation, it was recently recognized by the American Public Gardens Association with its Award for Program Excellence, given to innovative and pioneering horticultural programs.

"This is a model system designed to show how important recycling is to getting waste back into useful production," says program founder and organizer Steven Cline, manager of the MOBOT's William T. Kemper Center for Home Gardening. While the program has recycled pots into planks, landscape timbers, and other products "the plastics industry changes all the time, depending on the price of oil," says Cline. "That price dictates the kinds of products that can be made and the overall sustainability of the program."

For more information on MOBOT's plastic pot recycling program, visit www.mobot.org/hort and click on "Activities and Events" or call (314) 577-9561.

PEOPLE and PLACES in the NEWS



The Haupt Conservatory at the New York Botanical Garden

Enid A. Haupt Honored by New York Botanical Garden

The late horticultural philanthropist Enid A. Haupt was recently honored with a Gold Medal of the New York Botanical Garden (NYBG). Awarded infrequently, the medal is given in recognition of individuals who have made significant contributions to the garden and to horticulture, botany, plant science, and education.

"Enid Haupt was the greatest patron American horticulture has ever known and a historic figure in the life of the New York Botanical Garden, active in the garden for more than 30 years," says NYBG President Gregory Long. One of Haupt's most notable contributions to NYBG was funding for the renovation of its historic conservatory, now named in her honor. "Since the conservatory reopened in 1997, six million people have enjoyed its collections and special exhibitions—largely a result of Mrs. Haupt's commitment to public horticulture," Long adds.

Haupt, who died in 2005, donated millions to the NYBG and many other horticultural and cultural organizations, including donating River Farm to the American Horticultural Society for its headquarters in 1973.

Syngenta Acquires Goldsmith Seeds and Yoder Brother's Brand

Last fall, the Switzerland-based agribusiness giant Syngenta purchased the Yoder Brothers, Inc. brand as well as the chrysanthemum and aster product lines from this American breeder and propagator of a variety of ornamental crops. The remaining Yoder entities will continue to be owned and operated by Yoder Brothers, Inc. until July 2009, when the business will be renamed. Syngenta also recently acquired Goldsmith Seeds, a family-owned, multinational ornamental plant breeder and seed producer. Syngenta plans to maintain both the Yoder and Goldsmith brands under its Syngenta Flowers umbrella.

"Syngenta may not be a well known name in garden and landscape circles, but it has certainly become impossible to ignore in the flower industry," says Allan Armitage, a horticulture professor at the University of Georgia. "In the last two years it has initiated aggressive breeding programs in annuals and perennials. In recent years, it has also spent enormous amounts of money on infrastructure and breeding companies in Europe and North America, putting it on the same level as large companies such as Ball Horticulture and Proven Winners, Inc."

Syngenta, which produces and markets pesticides and seeds, bills itself as a "world-leading agribusiness committed to sustainable agriculture through innovative research and technology." Syngenta Flowers focuses on the pot and bedding plant industry, breeding and marketing flower seeds and plants globally.

CRAZY FOR CATMINTS

With their profusion of blue, purple, or white flowers, aromatic foliage, and low maintenance needs, catmints (*Nepeta* spp.) play well in a variety of garden and landscape settings. In a recent seven-year trial of 36 different *Nepeta* taxa at the Chicago Botanic Garden (CBG) in Illinois, four catmints performed exceptionally well in terms of their ornamental traits, resistance to pests and diseases, adaptability, and hardiness.

Nepeta 'Joanna Reed', *N.* 'Six Hills Giant', *N.* *×faassenii* 'Select Blue', and *N.* *racemosa* 'Walker's Low' all bloomed heav-



Nepeta 'Six Hills Giant'

ily and kept neat habits throughout the season without the need for shearing back, unlike several other taxa in the trial. Each of these cultivars produces lavender-blue flowers on stems that can reach up to three feet, with the exception of 'Select Blue', which has more compact stems up to 14 inches. They all grow well in USDA Zones 4–8 and AHS Heat Zones 8–1, though soggy conditions for prolonged periods should be avoided because catmints do not tolerate wet feet.

For a copy of the full report on the trial, call the CBG at (847) 835-5440 or visit www.chicagobotanic.org.

ACORN SCARCITY CAUSES CONCERN

In parts of the Mid-Atlantic and Midwest, acorns were almost completely absent this

past fall, sparking concern among homeowners, naturalists, arborists, and other scientists. Oaks (*Quercus* spp.) are known to go through cycles of abundant and poor production, depending on the species, but a complete lack of acorns is unusual. "Most people," explains Guy Sternberg, an oak expert and founder of Starhill Arboretum in Petersburg, Illinois, "believe it has to do with the weather—say a late freeze or heavy rain during pollination—coupled with the trees' inability to produce good crops in successive years."

Other theories have linked the shortfall to factors such as acid rain and the emergence of the 17-year-cicadas last spring. However, other areas of the country reported bumper crops of acorns, so the consensus is that the localized acorn shortage, though out of the ordinary, is probably not a calamitous occurrence—unless, of course, one is a squirrel.

SLOWER-GROWING GRASS FOR SOUTHERN REGIONS

St. Augustine grass (*Stenotaphrum secundatum*) is one of the most widely used grasses in much of the Southeast, Gulf of Mexico region, and parts of California because of its tolerance for high temperatures. A newly released slower-growing selection called Captiva™, resulting from 15 years of breeding and research at the University of Florida (UF), could mean significant savings in mowing fuel and time. Since it grows between one-and-a-half and two-and-a-half inches per week—about half as fast as other types of St. Augustine grass—it needs less frequent mowing. Russell Nagata, a horticulturist at UF who helped develop Captiva, estimates that if everyone in Florida alone could mow half as often, it would save up to 30 million gallons of fuel a year and reduce harmful emissions.

Additionally, Captiva has a softer texture and greener color than other St. Augustine grass selections. When trialed at sod farms across the south, it also appears to have good resistance to chinch bug, a common pest of turf grass in southern regions. Currently it is available in limited quantities, but will have greater distribution within the next year.

News written by Associate Editor Viveka Neveln.

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⑧ FRUITING	For EARLIER, HEAVIER, BEARING?

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Selecting the Right Pruning Tools for Each Task

by Rita Pelczar

AS LEE REICH mentions in “Pruning Deciduous Shrubs” (page 36), pruning involves a certain amount of artistry. Quality tools that match the job are imperative to maximize that artistry and minimize both plant trauma and gardener fatigue. Select your tools for each job based on the size of the branches or stems that need cutting. Too small a tool makes your work harder, can leave jagged cuts that provide openings for diseases and pests, and may damage your tool. Never twist your pruners to complete a cut, and keep the blades of your pruning tools sharp (see “Maintaining a Sharp Edge,” page 50).

HAND PRUNERS AND SNIPS

Hand pruners, also called hand shears or secateurs, are generally used for cutting branches up to three-quarter-inch in diameter. They get a lot of use, so it’s worth investing in a good pair. There are two types based on their blades: anvil and bypass. **Anvil pruners** have a single blade that cuts against a flat opposing surface. Use this type for cutting up dead branches or culling unwanted vines or saplings because it can crush stems in the process—something you want to avoid when pruning garden plants. The action of **bypass pruners** is more like scissors—one blade passes the other, creating a much cleaner, sharper cut. This is a better choice for tending the plants in your landscape.

Some pruners offer ratchet action, whereby the cut is made in increments with small, repeated squeezes that require less strength. **Country Home Products** offers sturdy, well balanced ratchet hand pruners capable of cutting through branches that are up to one inch thick. Its high carbon steel bypass blades with their non-stick coating retain their edge over a long period of use.

PowerGear® bypass pruners from Fiskars have won several design awards, including the Ease of Use Commendation from the Arthritis Foundation®, and for good reason: They are comfortable,

lightweight, and the handle rotates as you squeeze it, engaging gears that minimize the hand strength required. An adjustment screw allows you to modify the grip to fit your hand. **Corona’s Ergo-Action** bypass pruners are also designed to



Country Home’s ratchet hand pruners

reduce hand stress. Their angled blade and contoured handles are comfortable, even with extended use. **Felco pruners**, both anvil and bypass styles, come in a variety of sizes and are available for either right- or left-handed gardeners.

To extend your reach, long arm pruners look like hand pruners on a pole. These may have fixed poles with a reach of two to four feet, or telescoping poles that extend their reach up to 10 feet or so. I find that this type of pruners has somewhat limited applications and it is hard to use for long without causing fatigue.

However, it can be indispensable for pruning those hard-to-reach stems or otherwise inaccessible flowers for indoor arrangements.

A bit pricier than many hand pruners, the **Leatherman Genus**® is actually a very compact and practical garden tool kit. If you rotate the ergonomically designed handle of the bypass pruners, you can access a knife, Phillips screwdriver, sprinkler head adjustment tool/flat screwdriver, bottle opener, and a saw. All the tools are stainless steel and the body is anodized aluminum. The tool also comes with a diamond-coated file that doubles as a handy open-end wrench for adjusting the pruner nut.



Leatherman Genus pruners and tool kit

Snips and garden scissors are great for more delicate chores such as deadheading flowers, pruning herbaceous vines and stems, or harvesting fresh flowers and herbs. **OXO Good Grips**® garden scissors have serrated, stainless steel blades and a comfortable padded grip. **Softouch**® **Micro-Tip**® pruning snips from Fiskars with their padded handles are another good option for finely detailed pruning work. And Felco’s **fruit**

vegetable harvesting shear (F310) is the perfect tool for harvesting grapes.

LOPPERS AND POLE PRUNERS

Pruning loppers are similar to hand pruners, just bigger. Like hand pruners, they are available in anvil or bypass styles, and some offer ratchet action. Since loppers are gripped with two hands instead of one, the muscles in both arms are engaged, providing significantly more leverage. Loppers are useful for cutting branches from three-quarters to two inches in diameter. For maximum strength and control, cut the branch as far back in the blade opening (close to the pivot) as possible.

Short handled loppers—16 to 18 inches long—are great for close in work such as renewal pruning shrubs or pruning grapes. Longer handles—usually between 20 and 36 inches—extend your reach for overhead cuts or hard-to-reach spots. Some loppers have telescoping handles, which provide a range of handle lengths in a single tool. For example, the handles of Corona's **Compound Action Bypass Loppers** extend from 21 to 33 inches.



Loppers, like this one from Fiskars, are designed to cut branches up to two inches thick.

The ratcheting mechanism of Garrett-Wade's **Premium Grade Pruning Loppers** extends the typical limit of lopper cuts with a cutting jaw capacity of two-and-a-half inches. This tool is equipped with Teflon® blades and telescoping handles, which extend from 26 to 40 inches. The rubber grips provide stability.

Pole pruners are used to reach branches that are beyond the reach of loppers. They consist of a long pole with a hooked upper blade and a cutting blade below that is operated with a rope. Some are equipped with a telescoping pole. Exercise caution when using a pole pruner or any other pruning tool to cut overhead branches;

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MAINTAINING A SHARP EDGE

For clean cuts, sharpen your pruning tools regularly following these simple steps:

- Disassemble the tool (usually just a matter of removing a single screw).
- Using a soft rag and 3-in-1 oil or a lubricant specifically made for cleaning gardening tools such as Felco's Universal Lubricant Spray, wipe down all parts of the tool, removing dirt and plant debris; use steel wool to remove rust.
- Use a sharpening stone to remove nicks and restore a sharp edge to the blade. Hold the sharpening stone against the cutting blade at a slight angle and push the stone across the blade (away from you) along the entire length of the bevel. Sharpen in one direction only, beginning with the coarse side of the stone and finishing with the fine side.
- Although pruner blades are beveled only on one side, run the sharpening stone over the non-beveled side a few times to remove rough edges.
- Oil or grease all moving parts and reassemble tool.
- To refresh your blade's edge quickly, without disassembling the tool, Lee Valley offers a sharpener, pictured above, that adjusts to any size pruning blade.



Lee Valley's sharpener for pruners

—R.P.

branches can fall on and injure the operator below. And, of course, always check for overhead powerlines, too.

PRUNING SAWS

Pruning saws are required for branches that are too large for loppers or pole pruners. They may be fixed or folding and are designed to cut on the back stroke. Their blade is typically curved, with widely spaced teeth that help prevent binding in fresh wood.

The blades of **Bahco hand saws** range from seven-and-one-half to 11 inches; some are folding and are equipped with a



Felco curved hand saw

For hard-to-reach branches, **Orchard's Edge** offers several pole saws with telescoping handles that, depending on the saw, can be extended from 12 to 21 feet.



Bahco's hand saw folds for easy storage.

SPECIALTY PRUNERS

Certain pruning chores are easier with tools designed for the plant. Vineyard loppers, for example, have hooked bypass blades that hold the vine while it's being cut.

Rose growers may appreciate **Lee Valley's Snip & Strip Rose Pruners**. The hand-held snips have a three-inch blade for pruning canes and cutting stems, and a notch toward the tip of the blade for removing thorns. The American Rose Society has endorsed Fiskars's **Super Light PowerGear® Loppers**, which are compact, lightweight, and powerful enough

Sources

- Cactus Pruner**, www.cactuspruner.com.
- Corona**, www.coronaclipper.com.
- Country Home Products, Inc.**, www.countryhomeproducts.com.
- Fiskars**, www.fiskars.com.
- Gardener's Supply**, www.gardeners.com.
- Gardenscape Tools**, www.gardenscapetools.com.
- Garrett Wade Outdoor Tools**, www.garrettwade.com/Outdoor-Tools/c/12375.
- Lee Valley Garden Tools**, www.leevalley.com.
- Orchard's Edge**, www.orchardsedge.com.
- Rittenhouse Garden Tools**, www.rittenhouse.ca.

to cut through rose branches up to one-and-a-quarter-inch thick.

Cacti and succulents require pruning equipment that accommodates their thick, non-woody, and often spiny stems. A **Cactus Saw**, for example, has an angled, serrated blade and a long handle that keeps your hand away from the cactus itself. A **Cactus Whacker** is designed for smaller cacti and succulents and for more detailed pruning. If you really need to grasp the stem of your cactus, you will want to invest in a **Cactus Gripper** or **Cactus Grabber**. All of the above mentioned tools for cactus are available from Cactus Pruner (see "Sources," above).



Cactus Whacker

Rita Pelczar is a contributing editor for The American Gardener.

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Recommendations for Your Gardening Library

Flowers and Herbs of Early America

Lawrence D. Griffith. Colonial Williamsburg Foundation in association with Yale University Press, New Haven, Connecticut, 2008. 304 pages. Publisher's price, hardcover: \$50.

THIS SUMPTUOUS book gives rare insight into the garden activities of our colonial past and how modern gardeners might use those time-honored plants and practices. Griffith approached the project as both a research historian and as a professional gardener for Colonial Williamsburg in Virginia. Photographs by Barbara Temple Lombardi make the book an elegant, artistic contribution to modern florilegia.

The book describes 58 flowers and herbs with thorough, engaging, and well-illustrated essays. Griffith chose his subjects from among the more than 180 plants he grew at Colonial Williamsburg, deemed to be an accurate selection of plants for the American colonial period. In addition to relating the history of each plant from the perspective of old-time writers and gardeners, Griffith shares cultivation information gleaned from his own experiences.

Griffith praises the plants he discusses for their ability to form painterly combinations serendipitously. He captured my imagination with his "complicated and content bundle of interwoven flowering stems" of bishop's weed (*Ammi majus*), small-flowered zinnia (*Zinnia pauciflora*), mixed four o'clocks (*Mirabilis jalapa*), and striped French marigold (*Tagetes patula* 'Striped'), among many other delightful-sounding groupings.

The plant history purist might quibble with the inclusion of a number of modern cultivars. However, in most cases, Griffith explains each selection, noting new names for old plant types and the interesting effects of genetic drift in several species. Still, the 20th-century *Rudbeckia fulgida* var. *sullivantii* 'Goldsturm' seems out of place in this context.

After reading this book, I could not decide whether to place it on the coffee table for more leisurely perusal of the gorgeous flower photographs, woodcuts, and engravings, or to keep it among my gardening references for its practical cultivation descriptions and recommendations. In any event, it will be close at hand as I plan my next garden to include ragged robin, strawberry blite, and the large-flowered all-heal.

—Denise Wiles Adams

Denise Wiles Adams is a plant historian in Stony Point, New York. She is the author of Restoring American Gardens: An Encyclopedia of Ornamental Plants, 1640-1940 (Timber Press, 2004).

Lilacs: A Gardener's Encyclopedia

John L. Fiala. Timber Press, Portland, Oregon, 2008. 410 pages. Publisher's price, hardcover: \$49.95.

IF CONSIDERED CAREFULLY, the title of a book will often reveal exactly what to expect from its contents. Such is the case with *Lilacs: A Gardener's Encyclopedia*—it is absolutely encyclopedic in scope. Reverently revised by Freek Vrugtman, the International Lilac Registrar, the book is an updated version of *Lilacs: The Genus Syringa*, written two decades ago by the late John Fiala, a priest and college professor who founded the International Lilac Society.

For those who have not read Fiala's original work, do not let the encyclopedic nature of the book intimidate you—this is no dry read. Like the original, this updated version is replete with accounts of 19th- and 20th-century plant exploration adventures, the fascinating history of lilac breeding, and the hybridizers themselves. The book contains vivid descriptions of the 30-odd lilac species and natural hybrids as well as hundreds of cultivars.

Those who are familiar with Fiala's original version will notice that this revision is no simple-minded rehash. While organized in the original chapter format and including original text, every chapter has been revised and many are considerably expanded. For example, the first chapter contains important revisions to the taxonomy of the genus, including recent changes based on DNA evidence. Chapter 10, dealing with lilac hybridizers, features new information on lilac breeding efforts in Russia, the former Soviet Republics, and China, including descriptions of cultivars yet to be seen in North American gardens. In addition, the list of notable world lilac collections and gardens (Appendix C) has been considerably expanded.

This book is also a visual feast, containing 580 beautiful color photographs, including many of the original version's photos of flowers, whole plants, and lilacs in the landscape. In this edition, the photos are spread throughout the book as opposed to being clustered as they were in the original text.

For the cultivar descriptions, the accompanying photos, the updated taxonomic treatment, and the history and tales, this is a book that belongs on every lilac lover's bookshelf.

—Stan C. Hokanson

Stan C. Hokanson is an associate professor of horticulture and director of the woody landscape plant breeding and genetics program at the University of Minnesota in St. Paul.



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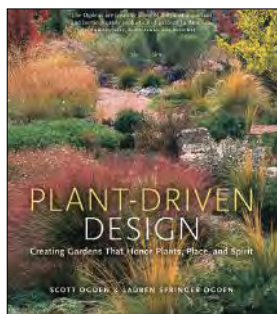
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Plant-Driven Design

Lauren Springer Ogden and Scott Ogden. Timber Press, Portland, Oregon, 2008. 284 pages. Publisher's price, hardcover: \$34.95.

LANDSCAPE ARCHITECTS and landscape designers have long argued about whether plants or hardscape elements are the



most important part of a garden. The case for hardscape elements' primacy could be summed up by landscape architect Steve Martino's statement that when he starts a new design, rather than plants, "I think about developing space using hardscape elements. I think plants are incidental to the garden and that it needs to be successful without plants."

In their new book, *Plant-Driven Design*, Lauren Springer Ogden and Scott Ogden take a radically different view—that the "architecture first" school of garden design often fails "to include plants in a way that celebrates their inherent character and natural power." They advocate giving plants equal billing and then some. In my opinion, *Plant-Driven Design* champions the "plant-it-instead-of-pave-it" point of view better than any book to date. It should be required reading for landscape architecture and design students, if for no other reason than it offers a thoughtful counterpoint to the prevailing wisdom.

This book is packed with photographic evidence that the Ogdens practice what they preach. The photos are framed with the eye of a designer who sees plants as the true heart of a garden. For example, the images feature wrought-iron gates draped with vines, stepping stones encroached on by thyme and veronica, gravel pathways punctuated with alliums, and yards in which dormant buffalo grass is enlivened by tulips. In these gardens, there is no way to avoid the plants—their designs blend "plant space" and "people space" in a way that promotes and celebrates close encounters with plants.

Seeing routine maintenance—or just plain gardening—as part of the design process is a recurring thread throughout the book. In one image, Lauren is pictured out in the garden filling two large black trashcans with weeds and grass seed heads. The caption for the photograph reads, "Not simply chores, weeding and editing sustain and renew a garden's design and at the same time nurture a fascination and connection for the gardener." As the Ogdens suggest, perhaps our desire to connect with the nature in our backyards isn't fulfilled by a spa or outdoor kitchen, but rather in the form of a weed, or some other garden plant that desperately needs the attention of a designer.

—Scott Calhoun

Scott Calhoun writes books and designs gardens in Tucson, Arizona. His latest title, *The Hot Garden*, will be released this March (visit www.zonagardens.com for details).



PHOTO BY ANNE C. ALLEN FROM 2008 GARDENER'S CALENDAR

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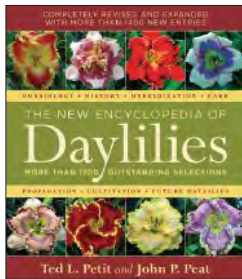


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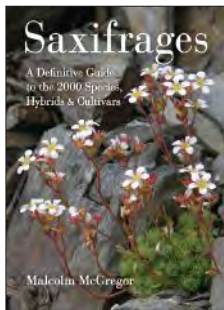
ASK A GARDENER which are his or her favorite plants, and chances are the answer will be “Whatever is in bloom!” However, almost every gardener I know has a few true favorites above all others. Often these are the ones that are reliably rewarding—daylilies, ferns, roses, or viburnums, for example. Others treasure rare and unusual specimens. And then there are the challenge-seekers, those who most enjoy the plants that require a little coddling to thrive, such as dahlias. Whatever plants you’re passionate about, books about a single genus or family are a perfect way to increase your knowledge and gain insight about them. Here are some recently published examples.

The New Encyclopedia of Daylilies (Timber Press, 2008, \$49.95) combines and expands upon two previous books by daylily experts Ted L. Petit and John P. Peat. In addition to the cultivars in their *Color Encyclopedia of Daylilies* published in 2000, this new book includes hundreds more plants and color photographs. It also incorporates portions of *The Daylily: A Guide for Gardeners*, released in 2004, because, as the authors point out, information on topics such as daylily species and



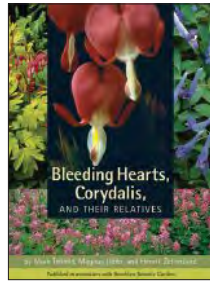
history hasn’t changed much in the intervening years. The result is a 408-page tome filled with 1,700 daylilies that Petit and Peat deem “the most worthy and worthwhile cultivars available” based on their personal experiences, American Hemerocallis Society popularity polls and awards, and how widely they are grown and sold. Along with chapters on daylily cultivation, hybridization techniques, and physiology, a section on the latest, yet-to-be-named cultivars rounds out the book.

Saxifrages by Malcolm McGregor (Timber Press, 2008, \$49.95) provides a thorough overview of the diverse genus *Saxifraga* and closely related *Micranthes*. This volume describes each of the 17 main botanical sections under which these genera are currently classified. McGregor includes details about their history, cultivation, and propagation, as well as personal observations from his extensive plant explorations and many years of growing them. The final part of the book contains general cultural information and a list of 100 of the author’s favorite saxifrages that are relatively easy to obtain and grow. More than 300 color photographs amply depict the myriad forms of this plant group, prized by rock gardeners.



Members of the bleeding heart family have become increasingly popular in gardens over the last decade, yet no reference

book on them existed to guide enthusiasts. To remedy this, Mark Tebbitt, Magnus Liden, and Henrik Zetterlund pooled their botanical and horticultural knowledge to write *Bleeding Hearts, Corydalis, and Their Relatives* (Timber Press, 2008, \$34.95). Published in association with Brooklyn Botanic Garden in New York, this book attempts to corral most of the cultivated taxa of this plant group, though their classification has been undergoing a good deal of re-organization and new species continue to be introduced.



In addition to descriptions of these plants, the book includes a section of color plates illustrating many of them, and there are chapters on their cultivation and natural history.

Plants recognized as “true” heathers and heaths star in *Gardening with Hardy Heathers* (Timber Press, 2008, \$19.95) by David Small and Ella May T. Wulff. These are the closely related European species of *Calluna*, *Erica*, and *Daboecia*, which have similar characteristics and cultural requirements. While heathers may be “grown in many temperate climate regions if their few specific cultural needs are met,” the authors caution that a number of other factors in addition to cold tolerance can affect survival. The book discusses these factors in



detail and offers advice on site selection and preparation to achieve best results. Of the 1,100 or so available heather cultivars, Small and Wulff describe a “representative selection that includes old favorites and recent introductions.” The book includes garden design ideas and information on propagation and breeding.

In *Calochortus* (Timber Press, 2007, \$29.95), Ron Parsons’s color photographs alone make a compelling case for how captivating *Calochortus* members can be. But the passion he and co-author Mary E. Gerritsen have for these bulbous wildflowers shines through in their writing as well. The book gives a brief explanation of *Calochortus* classification and a well researched account of the genus’s history, then describes in detail each of the three recognized botanical sections with the caveat that “this organization is quite likely to change in the not-too-distant future.” Many species are rare or endangered in their native range across the American West, but gardeners who are interested in growing them will find all they need to know in the final chapter.



—Viveka Neveln, Associate Editor



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

RAP JAN. 24. **Nature Journaling Workshop for Children.** Rhode Island Wild Plant Society. Blithewold Mansion, Gardens and Arboretum. Bristol, Rhode Island. (401) 253-2707. www.blithewold.org.

RAP JAN. 25. **Lunar New Year Celebration and Flower Market.** Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7200. www.bbg.org.

RAP FEB. 18. **Let Worms Eat Your Garbage.** Class. Tower Hill Botanic Garden. Boylston, Massachusetts. (508) 869-6111. www.towerhillbg.org.

FEB. 27 & 28. **Ecological Landscaping Association Annual Conference and Eco Marketplace.** New England Wildflower Society. Springfield, Massachusetts. (617) 436-5838. www.ecolandscaping.org.

RAP FEB. 28. **Planting Design in Multiple Dimensions.** Lecture. Arnold Arboretum of Harvard University. Boston, Massachusetts. (617) 524-1718. www.arboretum.harvard.edu.

Looking ahead

AHS MAR. 12-15. **GardenScape.** Flower and garden show. Rochester, New York. (585) 265-9018. www.rochesterflowershow.com.

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

JAN. 25-30. **Mid-Atlantic Horticulture Short Course.** Conference. The Virginia Horticultural Foundation. (757) 523-4734. www.mashc.org.

RAP FEB. 4-6. **Gardening in an Era of Climate Change: Is the Sky Really Falling?** Symposium. Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. www.lewisginter.org.

FEB. 6. **Today's Horticulture Symposium.** Longwood Gardens and the Chanticleer Foundation. Longwood Gardens. Kennett Square, Pennsylvania. (610) 388-1000. www.longwoodgardens.org.

RAP FEB. 7-9. **Full Moon Hike.** U.S. National Arboretum. Washington, D.C. (202) 245-4521. www.usna.usda.gov.

Events sponsored by or including official participation by AHS or AHS staff members are identified with the **AHS** symbol.

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 7-28. **Creative Flower Photography.** Workshop. U.S. Botanic Garden. Washington, D.C. (202) 225-1116. www.usbg.gov.

AHS FEB. 13-15. **Mid-Atlantic Home & Flower Show.** Virginia Beach Convention Center. Virginia Beach, Virginia. (757) 420-2434. www.tbaonline.org.

FEB. 19. **Land Ethics Symposium: Creative Approaches for Ecological Landscaping.** Bowman's Hill Wildflower Preserve. Bucks County, Pennsylvania. (215) 862-2924. www.bhwp.org.

AHS FEB. 19-22. **Maymont Flower & Garden Show.** Greater Richmond Convention Center. Richmond, Virginia. (800) 322-3976. www.maymontflowershow.com.

FEB. 27. **Green Matters Symposium: Water-Wise Landscapes.** Brookside Gardens. Wheaton, Maryland. (301) 962-1453. www.brooksidegardens.org.

RAP FEB. 28. **EcoSavvy Gardening Symposium: Techniques for Keeping Our Planet Healthy.** Green Spring Gardens. Alexandria, Virginia. (703) 642-5173. www.greenspring.org.

Looking ahead

AHS MAR. 1-8. **Philadelphia Flower Show.** Philadelphia, Pennsylvania. (215) 988-8899. www.theflowershow.com.

RAP MAR. 6. **Branching Out: Cultivating Community Engagement.** Symposium. Longwood Graduate Program. Longwood Gardens. Kennett Square, Pennsylvania.

(302) 831-2517. <http://ag.udel.edu/longwoodgrad>.

SOUTHEAST

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

RAP JAN. 31. **Success with Seeds.** Workshop. Daniel Stowe Botanical Garden. Elmont, North Carolina. (704) 825-4490. www.dsbg.org.

FEB. 18. **Planting for Seasonal Interest.** Lecture. South Carolina Botanical Garden. Clemson, South Carolina. (864) 656-3405. www.clemson.edu/public/scbg.

RAP FEB. 19 & 20. **Southern Garden Heritage Conference.** State Botanical Garden of Georgia. Athens, Georgia. (706) 542-1244. www.uga.edu/botgarden.

FEB. 27-MAR. 1. **Miami International Orchid Show.** South Florida Orchid Society. Miami, Florida. (305) 255-3656. www.sforchid.com.

RAP FEB. 28. **Back to Our Roots: The Southern Garden Revisited.** Perennial plant symposium and silent auction. Atlanta Botanical Garden. Atlanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

Looking ahead

AHS MAR. 5-8. **Nashville Lawn and Garden Show.** Tennessee State Fairgrounds. Horticultural Association of Tennessee. Nashville, Tennessee. (615) 876-7680. www.nashvillelawngardenshow.com.

AHS MAR. 18-MAY 31. **Epcot International Flower and Garden Festival.** Lake Buena Vista, Florida. (407) 934-7639. www.disneyworld.com/flower.

NORTH CENTRAL

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

JAN. 24. **Annual Gardening Show.** Purdue Extension and the Porter County Master Gardeners Association. Porter County EXPO Center. Valparaiso, Indiana. (219) 465-3555 ext. 21. www.pcgarden.info.

JAN. 24. **Toward Harmony With Nature.** Seminar. Fox Valley Area Chapter of Wild Ones. Oshkosh, Wisconsin. (920) 987-5587. E-mail: harmony@for-wild.org.

RAP FEB. 5. **The New Planting Design: Putting Plants First.** Symposium. *Horticulture* magazine. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. www.chicagobotanic.org.

RAP FEB. 7. **2009 Sustainability Symposium: In Your Own Backyard.** Cleveland Botanical Garden. Cleveland, Ohio. (216) 707-2816. www.cb garden.org.

AHS FEB. 7-15. **Fifth Third Bank Home & Garden Show.** Cleveland, Ohio. (216) 529-1300. www.homeandflower.com.

FEB. 27-MAR. 1. **Dayton Home & Garden Show.** Dayton Convention Center. Dayton, Ohio. (317) 576-9933. www.daytonhomeandgardenshow.com.

SOUTH CENTRAL

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

JAN. 24. **Designing Gardens for a Changing Climate.** Symposium. Hilltop Arboretum. Louisiana State University. Baton Rouge, Louisiana. (225) 767-6916. www.lsu.edu/hilltop.

RAP JAN. 24. **Rose Bed to Rose Bud.** Seminar and workshop. South Texas Botanical Gardens & Nature Center. Corpus Christi, Texas. (361) 852-2100. www.stxbot.org.

RAP JAN. 24. **Tree Talk Winter Walk.** Lady Bird Johnson Wildflower Center. Austin, Texas. (512) 292-4200. www.wildflower.org.

RAP JAN. 31-MAR. 15. **Henry's Garden.** Orchid show. Missouri Botanical Garden. St. Louis, Missouri. (314) 577-9400. www.mobot.org.

FEB. 7 & 8. **Gallery of Orchids.** Show and sale. Heart O'Texas Orchid Society. Zilker Botanical Garden. Austin, Texas. (512) 477-8672. www.hotos.org.

RAP FEB. 14. **Arbor Day Plant Sale.** Crosby Arboretum. Picayune, Mississippi. (601) 799-2311. www.crosbyarboretum.msstate.edu.

AHS FEB. 27-MAR. 1. **Arkansas Flower & Garden Show.** Little Rock, Arkansas. (501) 821-4000. www.arflowerandgardenshow.org.

Looking ahead

AHS MAR. 4-8. **Wichita Garden Show.** Wichita, Kansas. (316) 946-0883. www.wichitagardenshow.com.

MAR. 6-8. **Azalea Trail.** Home and garden tours. River Oaks Garden Club. Houston, Texas. (713) 523-2483. www.riveroaksgardenclub.org.

SOUTHWEST

AZ, NM, CO, UT

RAP JAN. 29-FEB. 12. **Botany for Gardeners.** Course. Red Butte Garden. Salt Lake City, Utah. (801) 587-5433. www.redbuttegarden.org.

JAN. 29 & 30. **Achieving a Sustainable Urban Forest.** 23rd annual urban tree care confer-

ence. Think Trees New Mexico. Albuquerque, New Mexico. (505) 243-1386. www.thinktreesnm.org.

RAP FEB. 12. **Muddy Waters: Who Owns the Rain?** Symposium. Front Range Sustainable Landscaping Coalition and Denver Botanic Gardens. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

International Master Gardener Conference

LAS VEGAS, NEVADA, will host the 2009 International Master Gardener Conference (IMGC) from March 22 to 26 at the Alexis Park Resort Hotel. With the theme, "New Frontiers," the goal is to address issues that gardeners everywhere face—water conservation, proper plant selection, soil enrichment, and pest control—while also providing hands-on access to sites that exemplify methods of environmental stewardship and technologies that offer sustainable solutions to those issues.

"The conference is open to anyone interested in horticulture and gardening. You need not be a Master Gardener to attend," says Ann Edmunds, 2009 IMGC coordinator. During the conference, more than 40 tours will be offered to sites such as the Grand Canyon, Hoover Dam, Spring Mountain Ranch State Park, and other public and private gardens.

Participants are encouraged to visit the American Horticultural Society booth in the conference's trade show. Call (702) 257-5587 or visit www.unce.unr.edu/imgc for more details or to register for the conference.



Several private gardens like this one will be on tour during the 2009 International Master Gardener Conference in Las Vegas, Nevada.

Southwest Rare Plant Conference

FOR THE 5TH ANNUAL Southwest Rare Plant conference, taking place in Salt Lake City, Utah, from March 16 to 20, the focus will be on "Changing Landscapes in the Southwest." The event includes the annual Utah Rare Plant Task Force conference and celebrates the 30th anniversary of the Utah Native Plant Society (UNPS).

Sponsored by the Nature Conservancy, Red Butte Garden, and the Utah Botanical Center, the conference will include posters, presentations, and breakout sessions covering ecosystem restoration, climate change, and rare native plants in the Southwest. Noel Holmgren, curator emeritus at the New York Botanical Garden, will give a keynote presentation about his insights from studying and writing about Intermountain flora for more than 30 years.

The UNPS is "dedicated to the appreciation, preservation, conservation, and responsible use" of native plants in Utah and the Intermountain West. For more information about the conference or to register, call (801) 377-5918 or visit www.unps.org.

—Caroline Bentley, Editorial Assistant

RAP FEB. 24 & 26. **Vegetable Gardening through the Seasons.** Workshop. Desert Botanical Garden. Phoenix, Arizona. (480) 481-8188. www.dbg.org.

FEB. 26 & 27. **International Water Conservation and Xeriscape Conference.** Xeriscape Council of New Mexico. Expo New Mexico Fairgrounds. Albuquerque, New Mexico. (505) 468-1021. www.xeriscapenm.com.

Looking ahead

AHS MAR. 6-8. **Southwest Flower & Garden Show.** University of Phoenix Stadium. Phoenix, Arizona. (602) 485-1691. www.maricopacountyhomeshows.com.

WEST COAST

CA, NV, HI

JAN. 23. **Pruning and Care of Landscape Fruit and Nut Trees.** Class. University of California, Davis Extension. Davis, California. (800) 752-0881. www.extension.ucdavis.edu/agriculture.

RAP JAN. 31. **The Edible Garden.** Class. The Gardens at Heather Farm. Walnut Creek, California. (925) 947-1678. www.gardenshf.org.

RAP FEB. 7. **Remember Conifers.** Class. Descanso Gardens. La Cañada

Flintridge, California. (818) 949-4200. www.descansogardens.org.

FEB. 17. **Green Before Green Was Cool.** Trade show and conference. Nevada Landscape Association. Grand Sierra Resort. Reno, Nevada. (775) 673-0404. www.nevadanla.com.

FEB. 21. **California Natives.** Lecture and plant sale. Rancho Los Cerritos Historic Site. Long Beach, California. (562) 570-1755. www.rancholoscerritos.org.

Looking ahead

MAR. 5-8. **Pacific Orchid Exposition.** San Francisco Orchid Society. Fort Mason Center's Festival Pavilion. (415) 665-2468. www.orchidsanfrancisco.org.

MAR. 7 & 8. **Northern California Daffodil Society Show & Lecture.** Alden Lane Nursery. Livermore, California. (925) 625-5526. www.daffodil.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

AHS JAN. 31-FEB. 1. **Tacoma Home and Garden Show.** Tacoma, Washington. (253) 756-2121. www.otshows.com.

RAP FEB. 6-15. **Glass Art Celebration.** Dis-

servatory in Lions Park. Cheyenne, Wyoming. (307) 637-6458. www.botanic.org.

AHS FEB. 18-22. **Northwest Flower & Garden Show.** Seattle, Washington. (800) 569-2832. www.gardenshow.com.

Looking ahead

MAR. 11. **Mediterranean Garden Style in the Pacific Northwest; Theory, Aesthetics, and Plant Palette.** Lecture. Northwest Horticultural Society. Center for Urban Horticulture. Seattle, Washington. (206) 527-1794. www.northwesthort.org.

CANADA / INTERNATIONAL

RAP FEB. 12. **The Invaders: Invasive Species in Our Area.** Class. Royal Botanical Gardens. Hamilton, Ontario. (905) 527-1158. www.rbg.ca.

FEB. 26-MAR. 1. **Calgary Home & Garden Show.** Calgary, Alberta. (866) 941-0673. www.calgaryhomeshow.com.

Looking ahead

RAP MAR. 7 & 8. **Annual Orchid Show & Sale.** Queen Elizabeth II Botanic Park and Cayman Islands Orchid Society. Grand Cayman, Cayman Islands. (345) 947-9462 ext. 21. www.botanic-park.ky.



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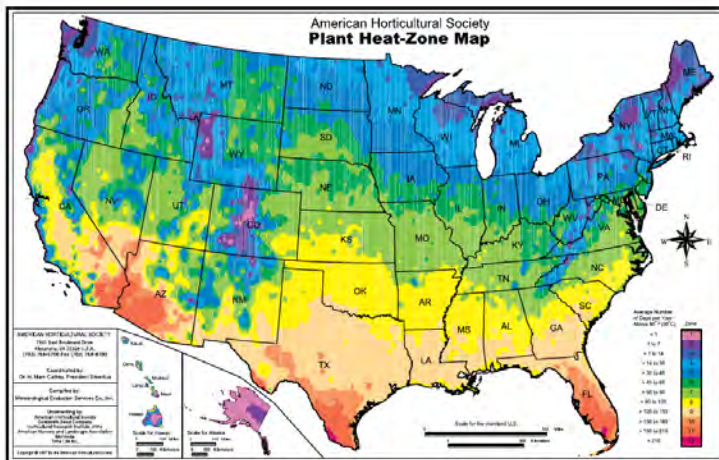
Making America a Nation of Gardeners, a Land of Gardens

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–C

- Acer palmatum*** AY-ser pal-MAY-tum (USDA Zones 5–8, AHS Zones 8–2)
- Agapanthus orientalis*** ag-uh-PAN-thus aw-ree-en-TAL-iss (7–11, 12–5)
- Agarista populifolia*** ah-guh-REES-tuh pop-yew-lih-FO-lee-uh (7–9, 9–7)
- Athyrium niponicum* var. *pictum*** uh-THIH-ree-um nih-PON-ih-kum var. PIK-tum (5–8, 8–1)
- Berberis thunbergii*** BUR-bur-iss thun-BUR-jee-eye (4–8, 8–4)
- Bletilla ochracea*** bleh-TIL-luh o-KRAY-see-uh (6–9, 9–5)
- Buddleia davidii*** BUD-lee-uh duh-VID-ee-eye (6–9, 9–1)
- Celastrus scandens*** seh-LAS-trus SKAN-denz (3–8, 8–1)
- Chamaecyparis pisifera*** kam-ee-SIP-uh-riss pih-SIF-ur-uh (4–8, 8–1)
- Chrysanthemum* × *morifolium*** krih-SAN-theh-mum mor-ih-FO-lee-um (5–9, 9–5)
- × ***Citrofortunella microcarpa*** sih-tro-for-tew-NEL-uh my-kro-KAR-puh (9–11, 12–9)
- Citrus aurantiifolia*** SIH-truss aw-ran-tee-ih-FO-lee-uh (10–11, 12–1)
- C. aurantium*** C. aw-ran-TEE-um (8–9, 10–7)
- C. latifolia*** C. lat-ih-FO-lee-uh (9–11, 12–8)
- C. limon*** C. LEE-mohn (10–11, 12–9)
- C. maxima*** C. MAKs-ih-muh (10–11, 12–9)
- C. medica*** C. MED-ih-kuh (9–10, 10–8)
- C. × paradisi*** C. par-uh-DEE-see (10–11, 12–9)
- C. reticulata*** C. reh-tik-yew-LAY-tuh (9–11, 11–8)
- C. sinensis*** C. sih-NEN-siss (9–10, 10–8)
- Clethra alnifolia*** KLETH-ruh al-nih-FO-lee-uh (3–9, 9–3)
- Colocasia esculenta*** kol-o-KAY-see-uh es-kyew-LEN-tuh (9–11, 12–3)
- Cornus stolonifera*** KOR-nus sto-lon-IF-ur-uh (3–8, 8–1)
- Cymophyllus fraserianus*** sy-MOF-ih-lus frayz-yer-ee-AN-nus (5–8, 8–5)

D–L

- Dianthus caryophyllus*** dy-AN-thus kair-ee-o-FIL-lus (7–10, 10–7)
- Diervilla sessilifolia*** dy-ur-VILL-uh ses-sih-lih-FO-lee-uh (4–8, 8–4)
- Echinacea purpurea*** ek-ih-NAY-see-uh pur-PUR-ee-uh (3–9, 9–1)
- Eriogonum allenii*** air-ee-OG-o-num ah-LEN-ee-eye (5–10, 9–5)
- Eucalyptus gunnii*** yew-kuh-LIP-tus GUN-ee-eye (8–10, 10–8)
- Eurobotrys racemosa*** yew-ro-BOT-ris ras-eh-MO-suh (6–9, 9–6)
- Fothergilla gardenii*** fah-thur-GIL-uh gar-DEN-ee-eye (4–9, 9–3)
- Fraxinus cuspidata*** fraK-SIH-nus kus-pih-DAY-tuh (5–9, 9–5)
- Geum coccineum*** JEE-um kok-SIN-ee-um (5–8, 8–5)
- Hexastylis shuttleworthii*** hex-uh-STY-lis shut-ul-WORTH-ee-eye (5–9, 9–4)
- Hibiscus syriacus*** high-BISS-kus sih-ree-AH-kus (5–9, 9–4)
- Hydrangea anomala* ssp. *petiolaris*** hy-DRAN-juh ah-NOM-ah-luh ssp. pet-ee-o-LAIR-iss (4–9, 9–1)
- H. arborescens*** H. ar-bo-RES-enz (4–9, 9–1)
- H. macrophylla*** H. mak-ro-FIL-luh (6–9, 9–6)
- H. paniculata*** H. pan-ik-yew-LAY-tuh (3–8, 8–1)
- H. quercifolia*** H. kwer-sih-FO-lee-uh (5–9, 9–4)
- Kerria japonica*** KAIR-ee-uh jah-PON-ih-kuh (4–9, 9–1)
- Lobularia maritima*** lob-yew-LAIR-ee-uh muh-WRIT-ih-muh (0–0, 9–1)
- Lonicera* × *brownii*** lah-NISS-er-uh BROWN-ee-eye (3–8, 8–3)
- Luzula sylvatica*** LOOZ-yew-luh sil-VAT-ih-kuh (5–8, 8–4)

M–Z

- Magnolia stellata*** mag-NOLE-yuh stel-LAY-tuh (4–9, 9–1)
- Muhlenbergia reverchonii*** mew-len-BUR-jee-uh reh-vair-CHO-nee-eye (5–9, 9–4)
- Pennisetum* × *advana*** pen-ih-SEE-tum ad-VEEN-uh (9–11, 12–1)
- Perosvkia atriplicifolia*** peh-ROV-skee-uh at-rih-plih-sih-FO-lee-uh (5–9, 9–2)
- Persicaria bistorta*** pur-sih-KAIR-ee-uh bis-TOR-tuh (4–8, 8–1)
- Prunus serrulata*** PREW-nus sair-yew-LAY-tuh (5–8, 8–5)
- Ptilotus exaltatus*** TY-lo-tus eks-al-TAY-tus (9–10, 10–3)
- Rudbeckia hirta*** rood-BEK-ee-uh HUR-tuh (3–9, 10–1)
- Ruta graveolens*** ROO-tuh gruh-VEE-o-lenz (5–9, 9–4)
- Salix purpurea*** SAY-lik pur-PUR-ee-uh (4–7, 7–1)
- Schizachyrium scoparium*** skits-ah-KEER-ee-um sko-PAR-ee-um (3–9, 9–1)
- Sempervivum arachnoideum*** sem-pur-VEE-vum uh-rak-NOY-dee-um (5–8, 8–3)
- Setcreasea pallida*** set-KREE-see-uh PAL-ih-duh (7–11, 12–1)
- Solenostemon scutellarioides*** so-len-O-stee-mon skoo-tuh-lair-ee-OY-deez (11, 12–1)
- Styphnolobium japonicum*** stif-no-LO-bee-um jah-PON-ih-kum (5–9, 9–5)
- Symphytotrichum novi-belgii*** sim-fy-o-TRY-kum NO-vih-BEL-gee-eye (4–8, 8–1)
- Xanthocyparis nootkatensis*** zan-tho-SIP-uh-riss noot-kuh-TEN-sis (4–7, 7–1)

GARDEN MARKET

CLASSIFIED AD RATES: All classified advertising must be prepaid. \$2.75 per word; minimum \$66 per insertion. Copy and prepayment must be received by the 20th of the month three months prior to publication date. To place an ad, call (703) 768-5700 ext. 120 or e-mail advertising@ahs.org.

EMPLOYMENT

HORTICULTURIST/VOLUNTEER COORDINATOR—The Arboretum at Penn State seeks to hire a person to oversee the plant collections and organize volunteer efforts in the H. O. Smith Botanic Gardens, a developing facility adjacent to the University Park campus. Applications will be accepted through January 29, 2009. For details, see Job #A-29344 at <http://www.psu.jobs/Search/Opportunities.html>.

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Photo © Robyn Churchill

Fraser's Sedge: A Native Perennial with Potential

by Keith P. Tomlinson

GARDENERS IN the Mid-Atlantic states can cultivate an extraordinary palette of plants. Over the past few decades, many of the region's native species have grown in popularity. While many Mid-Atlantic natives have a wide distribution, others are more localized or even rare. Nearly 20 years ago I stumbled upon just such a plant in the West Virginia highlands. At first its broad shiny rosette of leaves seemed yuccalike, or even akin to a bromeliad. But after a little research, I knew it could only be Fraser's sedge (*Cymophyllus fraserianus*, syn. *Carex fraserianus*, USDA Hardiness Zones 5–8, AHS Heat Zones 8–5).

For plant enthusiasts of the Appalachian Mountains, Fraser's sedge is a mythic plant, not often seen, but frequently sought after, perhaps because it is arguably the world's most unique sedge. Growing in rich mountain forests from Pennsylvania to Georgia, Fraser's sedge embodies the antiquity of the Appalachians. Named for plant explorer John Fraser, who discovered it while roaming the Appalachians in the 18th century, it is considered by botanists to be a particularly primitive sedge. Although it is fairly easy to grow, Fraser's sedge is rarely found even in the most sophisticated home landscapes and botanical garden collections.

In the wild, Fraser's sedge grows most often in diverse hardwood forests with rich soils and dappled to medium shade. A clump former, in cultivation its radial leaf arrangement can grow to more than a foot in diameter. The thick, glossy dark green leaves grow 10 to 15 inches long and nearly an inch wide, tending to flop as they mature. The foliage is evergreen, so it provides considerable winter interest. But the real show comes in late spring, when cone-shaped flowerheads emerge on upright stems. The pure white inflorescences are



Fraser sedge's bold, straplike foliage offers a sharp contrast to its dainty white flowers.

composed of a cluster of male flowers with showy, threadlike anthers above a ring of less conspicuous female flowers.

Garden uses for Fraser's sedge are wide ranging. It is a superb specimen plant in a woodland garden. In addition, it can be planted en masse to produce a stunning array of rosette leaves year round. Initial observations of Fraser's sedge at Meadowlark Botanical Gardens in Vienna, Virginia, where I work, suggest it will tolerate more sun than one might expect, given its native habitat.

Using native plants is more than a horticultural trend, it is a way to support the biodiversity of your region by creating ecologically balanced landscapes. There are few natives more horticulturally interesting than Fraser's sedge. Unfortunately, it is threatened or

endangered in several states. As with many native plants, its introduction to broader horticultural use through sustainable propagation techniques can help conserve the plant in the wild.

Fraser's sedge is available from a few specialists in the southeastern United States. A few years ago, while attending the Cullowhee Native Plant Conference, held annually at Western North Carolina University, I encountered it in the vendor's exhibit area, nestled discreetly among the offerings from Enchanter's Garden in Hinton, West Virginia. Seeing it there recalled the excitement of my first sighting of it in the wild two decades earlier.

Park Manager at Meadowlark Botanical Gardens, Keith P. Tomlinson also leads natural history tours for Smithsonian Associates.

Source

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