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The Magazine of the American Horticultural Society

March/April 2005

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NOTES FROM RIVER FARM

OVER THE LAST few weeks, many of you have said how much you enjoyed the January/February issue of *The American Gardener*. You liked the great variety of articles—especially the one on ice flowers. You thanked us for the new department focusing on children's gardening. You enjoyed the news about AHS educational programs and activities. And many of you were pleased to see the rendering of the White House Gates in the entrance exhibit to the Philadelphia Flower Show.

But by far the greatest enthusiasm was generated by the annual Member Guide insert that featured the expanded roster of gardens and flower shows that offer special benefits to AHS members, as well as an incredible list of seeds to choose from in our annual Seed Exchange. This was certainly a special issue to savor and share with friends!

There is a special insert in this issue of the magazine as well. Located between pages 32 and 33, the AHS Annual Report summarizes our financial activities, programs, and donors in the last fiscal year, which ran from July 2003 to June 2004.

I am pleased to report that AHS is fiscally strong. In FY '04, operating revenues exceeded expenses for the first time in recent history. The AHS Endowment has been well invested and is yielding good returns. And gifts from AHS members and friends have been generous and numerous. I thank each of you who have contributed beyond the membership dues. Without such support, we would not be able to reach out nearly so effectively with our national programs, our message, and our vision.

Speaking of programs, we are trying something new and exciting this year with our annual Great American Gardeners Conference, which is being held April 13 to 15 in Orlando, Florida. The AHS Educational staff has put together a unique program that showcases all aspects of horticulture in America:

Green Industry: Visit the Hermann Engelmann Greenhouses, one of the most amazing wholesale nurseries in the house plant capital of the world.

Plant Research: Take a behind-the-scenes tour of a state-of-the-art research facility where some of the most beautiful new house plants are bred and propagated.

Community Beautification: Enjoy private garden tours in Celebration, a new urbanist community with the charm and beauty of a traditional village.

Great Gardens: Experience the incredible opening day at the Epcot International Flower and Garden Festival, including rose petals shot from huge confetti cannons, gardens full of color, horticultural stars featured throughout the day, and, as a grand finale, fireworks in the garden at night from our own private viewing area.

Also included in the conference is our annual awards banquet, at which we will honor the American horticulture heroes for 2005. (For a list of this year's AHS award winners, turn to page 12.) As a special highlight, during the banquet we will recognize our dear friend and colleague, AHS President Emeritus Dr. H. Marc Cathey, who has announced his retirement in June 2005.

If you have never before been to an AHS event, let the Great American Gardeners Conference be the first one. Please come to honor Dr. Cathey, to be inspired, and to have some fun.

Happy Gardening!



—Katy Moss Warner, AHS President

MEMBERS' FORUM

NATIVE FRUIT BONUS OF BUTTERFLIES

I enjoyed Lee Reich's interesting article about native fruits (January/February 2005). An added attraction to using these



Gulf fritillary

wonderful and nurturing plants is that they support native wildlife, including colorful butterflies. The caterpillars of many kinds of butterflies eat only a specific native plant (or group of closely related plants); these butterflies cannot survive without these plants.

For example, zebra swallowtails absolutely need pawpaws. Maypops support gulf fritillaries. Blueberries are the food plants of choice for brown elfins and other species. And clove currants are favored by

gray commas and tailed coppers.

The North American Butterfly Association Web site (www.naba.org) has free butterfly gardening brochures for many areas of the United States.

*Jeffrey Glassberg
President*

*North American Butterfly Association
Morristown, New Jersey*

ELUSIVE PEARS

I guess I am a slow reader, but I just finished your nice article on pears (September/October 2003). We bought a place with a small old orchard that has been neglected for about 50 or so years. Some of the pear trees have survived all those years and are still producing, especially a row of 'Bosc'.

Now we have planted some dwarf 'Bartlett' and 'Keiffer' pears. Do you know 'Moonglow' and/or 'Butter' pears? Both have been recommended for our heavy clay soil, but nobody seems to know sources for these varieties.

*Neil Hunter
Nashville, Tennessee*

Editor's response: In the nursery industry, 'Butter' pears are the same as 'Beurre' cultivars, from the French for "butter." Examples include 'Beurre Giffard', 'Beurre Bosc', and 'Beurre Hardy'. Two mail-order sources for both 'Moonglow' and 'Beurre' cultivars are Miller Nurseries in Canandaigua, New York, (800) 836-9630, www.millernurseries.com; and Henry Leuthardt Nurseries in East Moriches, New York, (631) 878-1387, www.henryleuthardtnurseries.com.

CORRECTION

In the "New Plants for 2005" article in the January/February issue, the hardiness and heat zones for the Encore Azalea cultivars, *Rhododendron* 'Robled' (Autumn Chiffon™) and *R.* 'Roblec' (Autumn Carnation™), were listed incorrectly. The correct zones for these cultivars are USDA Zones 7-9 and AHS Heat Zones 10-6.

PLEASE WRITE US! Letters should be addressed to Editor, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308, or you can e-mail us at editor@ahs.org. Letters we print may be edited for length and clarity.

Thanks to Our Seed Donors

The following individuals and seed companies generously donated seeds to the 2005 AHS Seed Exchange. Their names were inadvertently left off the listing of donors that was included in the *AHS Member Guide* that accompanied the January/February issue of *The American Gardener*. We apologize for the omission. A complete list of 2005 seed donors can be viewed on the AHS Web site (www.ahs.org) by clicking on "Members Only" and then "Annual Seed Exchange."

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National Garden Month 2005

THE AMERICAN HORTICULTURAL SOCIETY, along with several other nonprofit organizations and green industry sponsors, is once again partnering with the Burlington, Vermont-based **National Gardening Association** to promote April as



National Garden Month. This year's theme is "Give a Garden—Add Beauty to Life." Home gardeners, schools, businesses, and communities across America are encouraged to make a difference through gardening. Ways to participate range from giving a container of flowers to a neighbor to planting a garden at a local park or helping a local school create a garden.

"As gardeners, we understand just how much the act of tending the earth influences our emotional and physical well-being," says **David J. Ellis**, AHS director of communications. "National Garden Month offers us all a chance to share some of the joy and inspiration we get from gardening with others."

To learn more about National Garden Month and how you can participate, visit www.nationalgardenmonth.org.

Washington Blooms! Spring Celebration

All of April—National Gardening Month—is dedicated to *Washington Blooms!*, AHS's celebration of springtime at River Farm. The grounds will bloom with thousands of daffodils, tulips, and other bulbs generously donated by Brent and Becky's Bulbs of Gloucester, Virginia; K. Van Bourgondien & Sons of Babylon, New York; Schipper & Company of Greenwich, Connecticut; and the Royal Dutch Wholesalers Association for Flowerbulbs and Nurserystock of the Netherlands. Special events will include garden tours, the Friends of River Farm Plant Sale, and a family activity day. Please visit www.ahs.org for more information.

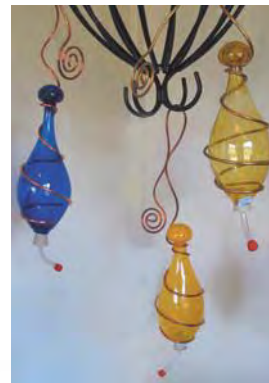
Virginia's Historic Garden Week Includes River Farm

FROM APRIL 16 to April 24, some of the finest homes and gardens across Virginia will be open for public viewing. On Saturday, April 16, **River Farm** will be one of the stops on a self-guided walking tour sponsored by the **Garden Club of Alexandria** and the **Hunting Creek Garden Club**. Other stops will include Carlyle House, Gunston Hall, Lee-Fendall House, Mount Vernon Estate and Garden, and Woodlawn.

Tickets will be available on the day of the tour at any of the houses or you may contact the Ramsay House Alexandria Visitor's Center at (703) 838-4200 for advance tickets. For more information, visit www.VAGardenweek.org.

Visit the AHS Garden Shop

WHEN VISITING River Farm, be sure to stop by the AHS Garden Shop. "We have a variety of unique, useful, and hard-to-find gardening items from books to tools and more," says **Tom Underwood**, AHS director of horticultural programs.



Handblown glass hummingbird feeders from Garden Artisans at the AHS gift shop

Recently, AHS partnered with **Garden Artisans**, a company specializing in handcrafted garden products and art such as birdhouses and birdbaths, window planters, sculptures, and tools. A selection of their creations is now available at the Garden Shop.

While your purchases from the Garden Shop will help to further the mission of AHS, you may also visit Garden Artisans online at www.gardenartisans.com. AHS receives a portion of the proceeds of any sale, and members will receive a discount on AHS books listed on the Garden Artisans Web site.

The AHS Garden Shop is open from 10 a.m. to 2 p.m. Monday through Friday, except on national holidays. Beginning in April, the Garden Shop will also be open for limited weekend hours during special events such as the Friends of River Farm Spring Plant Sale and other programs at River Farm.

Magic of Landscaping Symposium

THE MAGIC OF LANDSCAPING SYMPOSIUM, an AHS Horticultural Partner, is dedicated to promoting the "economic and social value of landscaping." This year's event will be held



One of the fanciful displays at Epcot

on May 6, during the **Epcot International Flower & Garden Festival**—held from April 15 to June 5—at Walt Disney World’s Epcot Center in Lake Buena Vista, Florida.

Dennis Higbie, Disney’s director of horticulture and pest management; **Kathleen Wolf**, an environmental psychology researcher at the University of Washington’s College of Forest Resources; and **Nancy Graham**, a national

leader in urban development and city building, will speak on a variety of topics throughout the day.

In addition, the symposium will include informative tours, a cocktail reception, and a viewing of *IllumiNations*, Epcot’s sound and lights show. For a complete schedule and more information, visit www.magicoflandscaping.com. To register, call (352) 429-2171 ext. 302 or e-mail mol@cherrylake.com.

AHS Member Day at the Cleveland Botanical Garden Flower Show

MODELED AFTER England’s renowned Chelsea Flower Show, the Cleveland Botanical Garden Flower Show is the largest outdoor flower show in North America. This year’s show will run from May 27 to 30 and its theme, “The Garden as Art,” will emphasize the interconnectedness of horticulture and art. As a special benefit to AHS members, on May 27 they will receive \$6 off the admission price of \$20 with their AHS membership card.

The show will include exhibits by notable landscape architects and gardeners, horticulture and flower-arranging competitions, and a wide selection of garden merchandise. To learn more, please call (888) 853-7091 or visit www.cbgbgarden.org.

Horticulture Gardening Institute Offers New Programs

THE HORTICULTURE GARDENING INSTITUTE (HGI), one of AHS’s Horticultural Partners, is a national organization dedicated to providing unique learning experiences for Master Gardeners and gardening enthusiasts in all growing zones, as well as developing training programs for the green industry.

It now offers two new online programs called “Herbaceous Perennials: Identification, Culture and Garden Attributes.” One course focuses on perennials for sun and the other on

Come Discover...

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Landscaping

Now in its third year, the Magic of Landscaping is a world-class symposium dedicated to the economic and social value of landscaping.

Epcot ~ Lake Buena Vista, FL
May 6, 2005
www.magicoflandscaping.com

Event Partners: American Horticultural Society~Cherry Lake Tree Farm~Epcot International Flower & Garden Festival~FNGLA



AHS NATIONAL EVENTS AND PROGRAMS 2005 CALENDAR

Mark your calendar for these upcoming national events and programs that are sponsored or cosponsored by the American Horticultural Society.

- MAR. 31–APR. 1. **AHS Garden School: The Art and Science of Color in the Garden.** George Washington's River Farm, Alexandria, Virginia.



- APR. 1–30. **Washington Blooms!** George Washington's River Farm, Alexandria, Virginia.

- APR. 3–5. **Colonial Williamsburg Garden Symposium.** Williamsburg, Virginia.

- APR. 13–15. **AHS Great American Gardeners Conference and Awards Presentation.** Orlando, Florida.

- APR. 22 & 23. **Friends of River Farm Spring Plant Sale and Flower Show.** George Washington's River Farm, Alexandria, Virginia. (Note: AHS members-only preview sale starts at 5 p.m. on the evening of April 21.)

- MAY 6. **Magic of Landscaping Conference.** Orlando, Florida.

- MAY 27. **AHS Member Day at Cleveland Botanical Garden Flower Show.** Cleveland Botanical Garden, Cleveland, Ohio.

- JUNE 2. **Taste of River Farm.** George Washington's River Farm, Alexandria, Virginia.



- JULY 28–30. **AHS National Children & Youth Garden Symposium.** Atlanta, Georgia. Hosted by the Atlanta Botanical Garden and Wonderland Gardens.

- SEPT. 19–23. **Eastern Performance Trials.** George Washington's River Farm, Alexandria, Virginia.

- SEPT. 24. **AHS Annual Gala.** George Washington's River Farm, Alexandria, Virginia.

For more information about these events, call (800) 777-7931 or visit the AHS Web site (www.ahs.org).

perennials for shade, but both will provide participants with in-depth information about outstanding plants that are available at local garden centers and nurseries for home gardeners.

HGI developed these programs with **Allan M. Armitage**, an AHS board member and one of the nation's foremost experts on



Allan Armitage

plants for all growing zones, especially perennials. "The Horticulture Gardening Institute has provided an amazing opportunity to reach and teach gardeners anytime and anywhere," says Allan.

In addition to these two new programs, HGI continues to offer its other popular online programs, "The Art and Science of Container Gardening" and "The Art and Science of the SMARTGARDEN™", both developed with AHS. To participate in any of

these programs, visit www.gardeninginstitute.com or link to the site through the AHS home page (www.ahs.org).

Dr. H. Marc Cathey Receives Alumnus Award

THE HORTICULTURAL SCIENCE Department of North Carolina State University in Raleigh named AHS President Emeritus **Dr. H. Marc Cathey** its Outstanding Alumnus for 2004. This award is given to "recognize and honor graduates who have made major impacts in horticulture and agriculture in general." The award was presented during the fall graduation ceremony held on December 15, 2004. "North Carolina State University gave me my start all those years ago," says Dr. Cathey, who earned his bachelor's degree in horticulture there in 1950 before going on to get his master's degree and doctorate at Cornell University.

Donated Trees Planted at River Farm



The George Harding Memorial Azalea Garden at River Farm is alot greener this spring thanks to the Dominion Valley Garden Club and a grant they received from Principal Financial Group based in Des Moines, Iowa. Last fall, club members and the AHS horticultural staff, shown above, planted five Foster hollies (*Ilex x attenuata*) and four white pines (*Pinus strobus*) donated by the club. These new trees replace trees lost during Hurricane Isabel in 2003.

Garden Club of America Scholarships

EVERY YEAR, The Garden Club of America (GCA) offers numerous scholarships, fellowships, and awards to students of horticulture, landscape architecture, or related programs. Among the areas of study available are botany, landscape design, garden history and design, and the conservation of endangered flora in the United States. In 2004 alone, 56 awards were presented.

Recently, **Stephanie Jutila**, AHS Education Programs Manager, served as a member of the selection committee for the GCA's 2005 Martin McLaren Scholarship, which provides a year of study, travel, and work in the United Kingdom. Stephanie was the recipient of the scholarship in 2000–2001, which provided her with a unique opportunity to study at the Royal Botanic Gardens, Kew, the University of Oxford Botanic Garden, the National Trust, and at the University of Reading. "Thanks to the generosity of GCA members, the number of scholarships has increased greatly over the years, providing so many wonderful opportunities for students to launch themselves into their careers," says Stephanie.

To find out more about the GCA's scholarship program, visit www.gcamerica.org or call (212) 753-8287.

News written by Assistant Editor Viveka Neveln and Editorial Intern Nicole Gibson.

2005 Plant Sale at River Farm

Please join the Friends of River Farm at their annual plant sale, held at River Farm on April 21 to 23. This much anticipated annual spring event will feature more than 20 vendors selling "a large selection of unique and hard-to-find native plants, trees, shrubs, perennials, and annuals," says AHS Horticulturist **Peggy Bowers**. In addition to plants, gardening tools, books, and accessories will be on sale.



The special **AHS member's-only preview sale** is scheduled for Thursday, April 21, from 4 p.m. to 8 p.m. *Please bring your current AHS membership card for admission that evening.* The plant sale will then open to the general public on Friday from 9 a.m. to 6 p.m. and on Saturday from 9 a.m. to 3 p.m. All proceeds from the sale benefit the gardens and grounds of River Farm.

For more information, call (703) 768-5700 ext. 149 or visit www.ahs.org and click on the River Farm link. Directions to River Farm are also available on the Web site.

American Horticultural Society 2005 National Children & Youth Garden Symposium "Making Connections" JULY 28–30, 2005

Discover the importance of connecting kids to plants as you see the gardens and programs of the **Atlanta Botanical Garden** and **Wonderland Gardens**, the hosts of the 2005 Symposium. The home base for the 13th Annual National Children & Youth Garden Symposium is **Emory University** and **Atlanta, Georgia**. Come gather the tools to be effective in connecting kids to plants and discover inspiring ways to share the bountiful opportunities to teach in the garden.

Be on hand for the "**Growing Good Kids Excellence in Children's Literature Awards**" presented by the Junior Master Gardener Program and the American Horticultural Society which honor engaging and inspiring works of garden- and ecology-themed children's literature.



Children's Garden at Atlanta Botanical Garden

Registration opens May 1, 2005. Visit www.ahs.org for more information.

AHS 2005 GREAT AMERICAN GARDENERS NATIONAL AWARD WINNERS

THE AMERICAN HORTICULTURAL SOCIETY proudly announces the recipients of the Society's 2005 Great American Gardeners Awards. These individuals, organizations, and businesses represent American gardening at its best. Each has made significant contributions to fields such as plant research, garden communications, landscape design, youth gardening, horticultural technology, and conservation. AHS applauds their passionate commitment to American gardening and their outstanding achievements within their fields.

The 2005 awards will be presented on April 14 during the Great American Gardeners Conference in Orlando, Florida. To register for the awards banquet or for more information about the Great American Gardeners Conference, visit www.ahs.org or call (703) 768-5700 ext. 121.

LIBERTY HYDE BAILEY AWARD

To qualify for this award, an individual must reside in North America and must have made significant contributions in at least three of the following areas of horticultural activity: teaching, research, writing, plant exploration, administration, art, business, and leadership.

A professor emeritus of horticulture at the University of Wisconsin–Madison,



Edward R. Hasselkus has conducted research on woody ornamental plants throughout his career. Since 1967, Hasselkus has served as curator of the Longenecker Horticultural Gardens of the University of Wisconsin Arboretum, where he developed a premier collection of woody plants with over 2,500 taxa.

Among his proudest achievements is having influenced the lives and careers of over 3,000 students. Hasselkus's many other awards include the American Association of Botanical Gardens & Arboreta Award of Merit Distinguished Career Award (2003), the National Council of State Garden Clubs Award of Excellence (2000), and the Arthur Hoyt Scott Medal (1996).

LUTHER BURBANK AWARD
Recognizes extraordinary achievement in the field of plant breeding.

LUTHER BURBANK AWARD

Recognizes extraordinary achievement in the field of plant breeding.

The late **Donald R. Egolf** spent the majority of his career at the United States Na-



tional Arboretum, where he developed numerous shrubs and trees with improved ornamental features, disease resistance, and cold and heat tolerance. His research resulted in the introduction of 57 cultivars, many of which—including the 'Shasta' doublefile viburnum and dozens of crape myrtle selections—are commonplace in the American landscape.

Egolf received many honors during his lifetime, including a Fulbright Scholarship to England and awards from the American Nursery Association, the Massachusetts Horticultural Society, and the International Lilac Society.

PAUL ECKE, JR. COMMERCIAL AWARD

Given to an individual or institution, who, because of a commitment to the highest standards of excellence in the field of commercial horticulture, contributes to the betterment of gardening practices everywhere.

Roy G. Klehm represents the fourth generation of the Klehm family to work as nurserymen in northern Illinois and southern Wisconsin. He is the co-founder and vice president of Beaver Creek Nursery, Inc. and Klehm's Song Sparrow Farm and Nursery. Klehm has also served as the president of the American Peony Society (APS) from 1972 to



1974 and on the APS's board of directors from 1968 to 2004.

1974 and on the APS's board of directors from 1968 to 2004.

Klehm's many other professional awards include the American Peony Society's A.P. Saunders Memorial Medal (1989), the Garden Writers of America Will Jung Distinguished Service Award (1995), and the American Peony Society's Gold Medal for the 'Pink Hawaiian Coral' hybrid peony (2000).

G. B. GUNLOGSON AWARD

Given for the creative use of new technology to make home gardening more productive and enjoyable.

Located on the campus of Michigan State University in East Lansing, the **Horticulture Gardening Institute (HGI)**



is a national organization founded by the MSU Department of Horticulture, MSU Global Ventures, and the MSU Extension Master Gardener Program. HGI offers online programs, face-to-face events, access to national gardening experts, certificates of completion, and Master Gardener educational credits in selected states.

Founder **Christine Geith** (left), is HGI's co-executive director along with **Mary McLellan** (right), who also serves as the curriculum director.

HORTICULTURAL COMMUNICATION AWARD
Recognizes effective communication using

HORTICULTURAL COMMUNICATION AWARD

Recognizes effective communication using

media and research techniques for the purpose of expanding horticultural awareness.

Steve Bender has been a senior writer for *Southern Living* magazine since 1983. He



is a popular speaker and gives talks on a wide variety of gardening topics all over the country.

Bender's articles in *Southern Living*, which often poke fun at gardeners' foibles, have won many writing awards. His first book, *Passalong Plants*—co-authored with Felder Rushing—was named the best-written garden book of 1994 by the Garden Writers Association of America. Recently, Bender revised and updated the *Southern Living Garden Book* that describes more than 7,000 plants. Bender has served as chairman of the Homewood, Alabama, Beautification Board and currently sits on the board of Aldridge Botanical Gardens in Hoover, Alabama.

HORTICULTURAL THERAPY AWARD

Recognizes significant contributions to the field of horticultural therapy.

Rebecca L. Haller has practiced and taught horticultural therapy for nearly 30



years. She established a vocational horticultural therapy program in Glenwood Springs, Colorado, for adults with developmental disabilities that is still thriving after more

than 20 years in operation.

Currently Haller directs the Horticultural Therapy Institute in Denver, Colorado, teaches horticultural therapy classes in affiliation with Colorado State University, and provides consultation to new or developing programs. At Denver Botanic Gardens, Haller designed and taught a series of professional courses in horticultural therapy, managed the sensory garden, and created programs and access for people with disabilities. Haller has served as

president, secretary, and board member of the American Horticultural Therapy Association, focusing on professional development and education.

LANDSCAPE DESIGN AWARD

Acknowledges an individual whose work has expanded the awareness of horticulture in landscape architecture.

Julie Moir Messervy is an acclaimed landscape designer, author, and lecturer



with an inspired vision for creating outdoor sanctuaries that feed the spirit. Her innovative approach to composing gardens of beauty and meaning is furthering

the evolution of landscape design and changing the way people think about their outdoor surroundings.

With more than two decades of experience, Messervy has emerged as a leader of a movement in which landscape design is

American Horticultural Society

2005 GREAT AMERICAN GARDENERS CONFERENCE

ORLANDO, FLORIDA

APRIL 13-15, 2005

“Sub-Tropical Garden Treasures, Old and New”



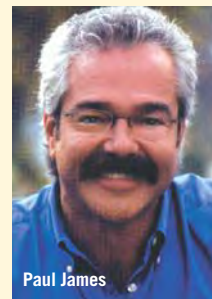
We invite you to join your fellow AHS members for three days of sub-tropical garden delights this spring. Orlando, Florida, will be the site of our 2005 Great American Gardeners Conference and our home base as we explore the rich garden traditions of the region and discover the diversity of contemporary gardens to be found in central Florida.

Enjoy an evening at Orlando's Harry P. Leu Gardens and experience the graciousness and beauty of "Old Florida."

Celebrate outstanding American horticulture and meet the winners of the 2005 Great American Gardeners Awards.

Visit private gardens and see amazing horticulture—talk to the people who make it all happen, and learn firsthand about the joys and challenges of gardening in the sub-tropics.

Attend the opening-day festivities at the 2005 Epcot International Flower & Garden Festival, including an appearance by Paul James, host of HGTV's "Gardening by the Yard."



Paul James

PLUS... all full-conference registrants will receive a complimentary copy of the 2004 edition of the AHS landmark publication the AHS A-Z Encyclopedia of Garden Plants—an essential reference source for every gardener's library!

The 2005 Great American Gardeners Conference promises to be an event not to be missed!

Visit www.ahs.org or call (703) 768-5700 ext. 121 for more information.

as much a personal journey as it is about leaving a unique imprint upon the earth. She has inspired a new generation of landscape designers, homeowners, and others to create gardens that reflect an inward vision deeply rooted in outdoor archetypes, childhood imagination, and aesthetic impulses.

Author of acclaimed books such as *The Inward Garden* and *The Magic Land*, Messervy is currently working on a book titled *Outside the Not So Big House* that will be released in early 2006.

MERITORIOUS SERVICE AWARD

Awarded to a past board member or friend of the Society to recognize outstanding and exemplary service in support of the Society's goals, services, and activities.

Duane Kelly is chairman of Salmon Bay Events, which produces the Northwest and San Francisco Flower & Garden Shows, and the Seattle Interior Show. The Northwest and San Francisco shows are the third and fourth largest flower shows, respectively, in the United States.



Kelly served on the Board of the American Horticultural Society from 2002 to 2004. As a member of the AHS Visioning Committee during that period, he played a leading role in crafting new vision and mission statements that have guided the Society's expanded programs and initiatives in the new millennium.

Kelly has also been an active member of many other national and regional gardening groups. He has served as president of the Arboretum Foundation, a 3,000-member support group for Washington Park Arboretum in Seattle, and he is currently on the Board of the San Francisco Botanical Garden.

PROFESSIONAL AWARD

Given to an individual who makes a living as director of an arboretum or botanical garden and whose achievements during the course of his or her career represent a significant contribution to horticulture.

Mary Pat Matheson is the executive director of the Atlanta Botanical Garden.



She also directs Smithgall Arboretum, a new 168-acre arboretum in Gainesville, Georgia. Under her leadership, the Atlanta Botanical Garden has been actively

expanding its visitor base through developing its educational programs, exhibitions, and special events. Matheson has been involved in the American Association of Botanical Gardens and Arboreta (AABGA) for more than 18 years. She recently completed a two-year term as the organization's president and continues to serve on its board as past president. Her commitment to the field of public horticulture is evident from her service to AABGA as well as her participation as a peer and panel reviewer with the Institute of Museum and Library Services. She is also a member of an international steering committee focused on the development of a national strategy for plant conservation in America's botanic gardens.

JANE L. TAYLOR AWARD

Awarded to an individual, organization, or program that has inspired and nurtured future horticulturists through its efforts in children's and youth gardens.

Marcia Eames-Sheavly has worked in the New York State Cooperative Extension system for the past 20 years, most recently providing statewide leadership and coordination of a garden-based learning program through Cornell University's



Department of Horticulture. Her efforts have focused on engaging young people in learning about the significance of plants in their lives, often by way of art, culture, or other interdisciplinary avenues. She also strives to help adults understand the benefits of involving young people in the process of garden planning, design, and implementation instead of inviting them to the garden upon completion.

In recent years, Eames-Sheavly has made a commitment to applied research in the area of youth development and

garden-based learning, and is currently engaged in a study of children's levels of participation in a number of gardening projects.

TEACHING AWARD

Recognizes an individual whose ability to share his or her knowledge of horticulture with others has contributed to a better public understanding of the plant world and its impact on people.

Terry H. Mikel is an acclaimed teacher and commercial horticulture agent with the Maricopa County Cooperative Extension, University of Arizona. Mikel developed the Arizona Certified Landscape Professional Program, teaches with the Master Gardener program, and is the state's primary instructor for the Arizona Certified Nursery Professional Program.



Mikel has received many awards including the Arizona Nursery Association's Distinguished Service Award and the University of Arizona's Extension Faculty of the Year Award.

URBAN BEAUTIFICATION AWARD

Awarded to an individual or institution for significant contributions to urban horticulture.

Gateway Greening is a nonprofit organization dedicated to community development through community gardening. Since 1984, Gateway Greening has helped transform neglected and abandoned lots in St. Louis into productive gardens and beautiful landscaped areas. Gateway Greening supports more than



160 neighborhood greening and community garden projects. In addition, Gateway Greening offers school programs in classrooms in more than 150 schools in the St. Louis area. Its mission is to provide resources and training to neighborhood groups who believe in their communities and want to reclaim them from urban decay. **Gwenne Hayes-Stewart** currently serves as Gateway Greening's executive director.

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Classic *and* Contemporary Spireas

BY ILENE STERNBERG

From old-fashioned floral charm to new-fangled hot foliage, spireas offer something for every garden.



Poorly UNDERAPPRECIATED spireas. Like the late comedian Rodney Dangerfield, they just “don’t get no respect.” The most enthusiastic word horticulturists generally muster for this genus of over 80 species in the rose family is “serviceable.” Not exactly a glowing endorsement.

Spireas are not only serviceable but dependable. They are true garden workhorses for their ornamental utility, adaptability, and ease of maintenance. Most are quite cold hardy and reliable in the upper Midwest, northern New England, Canada, and other places where people garden in earmuffs and mittens. And they add lots of seasonal interest to a garden. Their flowers range from pure white through shades of pink to deep magenta, and depending on the species, bloom from spring through late summer. Many have exceptional foliage, ranging from yellows and reds to lime and blue-green. Furthermore, according to nursery owners Kay and Herb Johns of Phillip Point Perennials in Danielsville, Pennsylvania, they are highly deer-resistant and an important nectar source for a host of butterfly species.

Although spirea selections display a range of notable features, many are confusingly similar. This is partly because they interbreed promiscuously, producing lots of variants, and because vegetative mutations, or sports, occur frequently. Furthermore, the same cultivar may behave quite differently from one location to another, blooming at different times or growing to different sizes. Despite this somewhat malleable nature, it is well worth the effort to sort through both old-fashioned spirea standards and the newer introductions; they have much to offer.

TALL TYPES

Larger spireas make wonderful additions to a sunny mixed-shrub border or the background of a perennial display. Some work well on steep banks, where their gracefully arching stems can help to cover ground that is difficult to mow.

Spiraea prunifolia (syn. *S. prunifolia* ‘Plena’, USDA Hardiness Zone 5–8, AHS Heat Zone 8–5), one of several species

Spiraea catonensis ‘Flore Pleno’ produces an abundance of snow-white double flowers along its arching branches.

JERRY PAVIA



An heirloom plant, Vanhoutte's spirea is still considered one of the best.

commonly known as bridalwreath spirea, has been a fixture in American landscapes since the mid-1800s. It is a bit leggy compared to many of the newer hybrids, typically four to nine feet tall and six to eight feet wide, and more prone to disease. But its $\frac{1}{3}$ -inch flowers look like tiny white roses spaced along the stems, giving the broadly sweeping shrub a delicate, airy effect in late April.

Many think the Vanhoutte spirea (*S. xvanhouttei*, Zones 4–8, 8–1) outshines the rest with its graceful arching stems supporting an abundance of white flowers in early spring. It can reach six to eight feet tall with a 10- to 12-foot spread. The one in my garden has been making a spectacle of itself for at least 25 years, despite having been moved three times. One of nurseryman Tony Avent's favorite selections is 'Pink Ice', with white-and-green-mottled leaves, and the petioles and new stem and leaf growth are suffused pink with salmon. The Vanhoutte spirea is so dense with fine twigs that it offers considerable screening even in winter. A phalanx of Vanhoutte spireas in bloom makes a beautiful display cascading down a steep embankment.

Reeves spirea (*S. cantoniensis*, syn *S. reevesiana*, Zones 5–9, 9–1) is another species often referred to as bridalwreath. Growing six feet tall and up to 10 feet wide,

it is semi-evergreen in the South, the Gulf coast of Texas, and parts of California, where the bluish-green leaves may turn red in fall. 'Flore Pleno' (syn. 'Lanceata') is a widely planted double-flowered cultivar. It offers up a profusion of snowy blooms that are good for indoor arrangements. It blossoms best when grown in full sun, but puts on a respectable display even in partial shade. Try it in a mixed border with azaleas for some color and textural contrast.

MID-SIZE SELECTIONS

Mid-size spireas make stunning flowering hedges either by themselves or mixed with other shrubs. They also add textural interest to a bed when combined with large leafed perennials. Those with dense, mounding habits provide seasonal color to foundation plantings. And selections with yellow or pale green leaves adapt well to light shade, adding a bright splash of color to the edge of a woodland.

Mellow Yellow® spirea (*S. thunbergii* 'Ogon', Zones 4–8, 8–4), a Pennsylvania Horticultural Society Gold Medal Winner, is quite popular in the Mid-Atlantic states. The three- to four-foot plants

foam with tiny white flowers (some say fragrant, but I never noticed) exceptionally early in spring, even before its willowy, bright yellow leaves burst forth. The finely textured foliage takes on pink and orange hues in autumn.

Horticulturist Scott Aker of the U.S. National Arboretum favors the five-foot elf spirea (*S. xcinerea* 'Grefsheim', Zones 5–9, 9–1), with its wispy arching sprays of bamboolike leaves and little sparkling white blossoms. "Because of its nice habit, because it has more 'wow' value than most spireas, and because it's from Norway, and I'm part Norwegian," says Aker, "it must be good." It is also very adaptable, blooming in March in USDA Zone 8, and May in Zone 4. Fall color is yellow spattered pink.

The Japanese spirea (*S. japonica*, Zones 4–9, 9–1) has given rise to many superb cultivars. Their flowers are held in flat corymbs that vary in color. Native to Japan, Korea, and China, it has naturalized in North America from New England through the Appalachians into Tennessee and Georgia, and west to Indiana, growing so ubiquitously, it is on The Nature Conservancy's and others' invasive species lists.

Among the most popular selections is *S. japonica* 'Anthony Waterer', a three- to five-foot-tall and -wide shrub that has been commonplace since the late 1800s. It bears long-lasting deep pink blooms. New growth is reddish, turning green, then red-



***Spiraea thunbergii* 'Ogon' offers both attractive white flowers and chartreuse foliage.**

Resources

Manual of Woody Landscape Plants
by Michael Dirr. Stipes Publishing,
Champaign, Illinois, 1998.

Sources

Fairweather Gardens, Greenwich, NJ.
(856) 451-6261.
www.fairweathergardens.com.
Catalog \$5.

Heronwood Nursery, Kingston, WA.
(360) 297-4172.
www.heronwood.com. Catalog \$5.

Joy Creek Nursery, Scappoose, OR.
(503) 543-7474.
www.joycreek.com. Catalog \$3;
free online.

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

Wavecrest Nursery and Landscaping Company, Fennville, MI.
(888) 869-4159. www.wavecrestnursery.com. Catalog \$1.

dish-purple in fall. 'Neon Flash' is a dense mounded green shrub, slightly wider than its three- to four-foot height, with purple new growth and vivid rosy-red flowers from spring through fall, when the leaves turn dark burgundy. 'Shirobana' (syn. 'Shiburi') is great for indecisive gardeners. It has three colors of flowers, pink, white, and deep rose that bloom simultaneously on the rounded, two- to three-foot shrub.

Japanese spirea notable for their season-long foliage display include 'Gold-flame', which grows two to three feet tall with a slightly greater spread and bears light crimson flowers. Leaves emerge reddish bronze and turn bright gold before they fade to green. Fall color is coppery orange. 'Fire Light' is similar in size, but produces deeper orange spring growth that doesn't revert to green but turns fiery red in fall. While most spireas prefer full sun, these paler-leaved cultivars actually keep their color better in part shade. Try letting a *Clematis* 'Jackmanii' meander over one



Above: *Spiraea japonica* 'Shirobana', with flowers in varying shades of pink, is the perfect companion to rose-pink checker-bloom and lavender-blue Russian sage. **Left:** Prized mostly for its attractive fall foliage, *Spiraea fritschiana* also features large clusters of summer flowers.

of these shrubs for an added summer extravaganza, as garden consultant and writer David Culp does.

Jonathan Wright, a gardener at Chanticleer Gardens in Wayne, Pennsylvania, raves about Miyabe spirea (*S. miyabei*, Zones 6–9, 9–6), a stunning plant with silvery blue foliage that performs beautifully in bright shade. It grows three feet tall and wide and bears large inflorescences that resemble clusters of pearls before opening into lacy, flat, white flower heads.

Spiraea fritschiana (Zones 4–8, 8–4) was introduced from Korea by Richard Lighty, former director of the Mt. Cuba Center for the Study of Piedmont Flora. It is prized for its yellow-orange-red fall color. A popular cultivar, *S. fritschiana* 'Wilma'

(syn. 'Pink Parasols'™), selected by Tim Wood of Spring Meadow Nursery in Grand Haven, Michigan, has striking bluish-green foliage tinged with red all summer. In June, big, pink, umbrellalike blossom heads cover the mounding shrub. Because it grows only two to three feet tall, Wood says it is great for mass planting.

Nurseryman Herb Johns loves a cultivar of the birchleaf spirea called *S. betulifolia* 'Tor' (Zones 5–9, 9–1), a compact, two- to three-foot, white-flowering shrub closely related to *S. fritschiana*. An eye-catching foundation shrub, it receives rave reviews in fall, when its iridescent blue-green leaves turn yellow, bronze, red, and plum purple.

GET SHORTY

Neat, low-mounding spireas integrate well with perennials or can be planted as a low hedge, spreaders make terrific flow-

MORE SPIREAS FOR YOUR GARDEN

Here are some other spirea selections worthy of consideration in your garden. Be aware the height and spread listed in catalogs for spireas are contingent upon cultural conditions and upon the region in which they are grown. A two- to three-foot shrub in one part of the country may grow a good deal larger in another.

Name	Height/ Spread (ft.)	Form	Flower Color/Season	Foliage Traits	Hardiness Zones, Heat Zones
<i>Spiraea japonica</i> 'Alpina'	1/2-3	low spreading	light pink/late spring to early summer	blue-green	4-9, 9-1
<i>S. japonica</i> 'Bumalda' (syn. <i>S. xbumalda</i>)	3/3	dense, rounded	dark pink/summer	new leaves bronze maturing to green	4-9, 9-1
<i>S. japonica</i> 'Crispa'	2-3/4-5	fine textured, mounding	pink and red/early summer	crinkled, green	4-9, 9-1
<i>S. japonica</i> 'Dart's Red'	2-3/4-5	mounding	deep red/early summer	medium green	4-9, 9-1
<i>S. japonica</i> 'Goldmound'	1-3/3-4	compact mound	pink/late spring to early summer	bright yellow	4-9, 9-1
<i>S. japonica</i> 'Little Princess'	2/3	compact mound	pink/early summer	medium green	4-8, 8-1
<i>S. japonica</i> 'Magic Carpet'	1 1/2-2/3	low mound	deep pink-purple/summer	gold with red tips	4-9, 9-1
<i>S. japonica</i> 'Mertyann' (Dakota Goldcharm™)	1/2-3	low, spreading	pink/summer	gold with bronze tips	4-9, 9-1
<i>S. nipponica</i> 'Snowmound'	2-4/3-5	compact, rounded	white/mid- to late spring	medium green	4-8, 8-1
<i>S.</i> 'Snow White' (syn. <i>S. trichocarpa</i> 'Snow White')	4-5/4-5	compact, arching	white/late spring to early summer	bright green, gold-orange in fall	5-8, 8-5
<i>S. thunbergii</i> 'Fujino Pink'	4/4	arching	red buds open pink/early spring	green, yellow-orange in fall	4-8, 8-4
<i>S. xvanhouttei</i> 'Renaissance'	5-8/8	tall, arching	white/early spring	resistant to rust and mildew	4-8, 8-1

ering ground covers beneath taller shrubs, and some diminutive cultivars are just the thing for edging a border or tucking into a rock garden.

Introduced from southeastern Europe in 1830, *S. decumbens* (Zones 5-9, 9-1) is an outstanding ground cover and fits in well at the front of a sunny border. Just

eight inches high with prostrate branches, it is only now gaining recognition as a garden plant. Expect white frothy blooms in June and a compact, spreading habit.

Most of the other diminutive spireas are *S. japonica* cultivars. An effective pest-free ground cover, rock garden, or edging choice is *S. japonica* 'Golden Elf' (Zones 4-9, 9-1). It grows only four to nine inches high and two feet wide, producing rich golden foliage, cushiony compact growth, and dainty pink flowers.

'Limemound' (Zones 4-9, 9-1) grows 18 to 24 inches tall and wide. Its oval, sharply toothed leaves emerge yellow-orange, turning lime green, and aging to attractive autumnal shades of red and orange. 'Flaming Mound' (Zones 4-9, 9-1) is a low spreader, 12 to 20 inches tall,

The chartreuse leaves of *Spiraea japonica* 'Limemound' provide a stunning contrast to early-blooming blue flowers such as these forget-me-nots (*Myosotis sylvatica*).





Native to western North America, *Spiraea douglasii* forms dense thickets.

with dark pink blooms and gold foliage that is rich red upon opening and in autumn. Both are useful in borders, cottage gardens, rock gardens, foundation plantings, as a low hedge, or edging.

THE NATIVES

North American spireas are not particularly notable or widely grown in gardens today, and are often characterized as “scruffy.” Many are bog plants.

Spiraea tomentosa (Zones 3–8, 8–1) is commonly known as steeplebush or

hardhack—neither of which is a particularly alluring moniker for a shrub. Introduced in 1736, it was probably the first spirea in colonial gardens. It has upright rosy-purple spikes and is best suited for a wild garden.

Spiraea douglasii (Zones 5–8, 8–5) from the American West grows three to six feet tall and bears pink-purple flowers in mid-summer. Meadowsweet (*S. latifolia*, Zones 2–6, 6–1), indigenous to eastern North America, is similar in size and bears white to pink spires. Both species spread to form thickets and can be invasive.

Mountain spirea (*S. densiflora*, Zones 6–9, 9–1), another western native, grows one to three feet tall and wide, and bears flat-topped clusters of rose-pink flowers in summer.

CULTURE

Spireas grow best in well-drained soil augmented with lots of organic matter, but can tolerate some of the worst soils, including compacted clay. Most species thrive in full sun, except for yellow-leaved varieties, which retain better foliage color when grown in some shade. When spireas are grouped in mass plantings or used as hedges, they need some space in order to preserve their well-being.

Plant in spring or early fall, and keep them evenly moist until established. Afterwards, they are remarkably drought

PRUNING PRIMER

Spireas that bloom in early spring—such as the bridalwreaths, the selections of *S. thunbergii* and ‘Snowmound’—bloom on old wood and should be pruned right after flowering. They are usually trimmed for shape and to control their size. If they become woody and unproductive as they age, remove a quarter to one third of the oldest, weakest stems annually at ground level. This stimulates spring growth from the crown just under the cuts.

Spiraea japonica selections and other summer-blossoming spireas flower on the current season’s wood. Best flowering is achieved if plants are cut by half or even to the ground in late winter or before growth starts in the spring. Remove faded flowers to stimulate a second flush of bloom.

Most spireas make good cut flowers for indoor arrangements. “Don’t put them in water, however, because the flowers will quickly senesce,” warns Philadelphia-area garden writer Liz Ball. “Like pussywillows, if dry, they will hold up until you tire of them.” —I.S.

tolerant but, naturally, would appreciate a blanket of mulch and a drink during a dry spell. Not especially heavy feeders, they do well with just a yearly dose of a balanced, slow-release fertilizer. Most spireas are extremely winter hardy and don’t require any special winter protection. They transplant easily, too.

Spireas have so much going for them: They are relatively pest free, low maintenance, cold hardy, and adaptable. They put on a good show while in bloom and again in autumn. Deer don’t like them, butterflies do. And their ample varieties can be used in so many ways. If you haven’t grown any spireas lately, perhaps it’s time to revisit this underappreciated shrub. It deserves your consideration and surely will earn your respect.

A free-lance writer and garden columnist, Ilene Sternberg gardens on an acre-and-a-half in West Chester, Pennsylvania.



Pink-flowered *Spiraea densiflora* is native to the mountains of the American Northwest.

finding Wonderland

How one man's personal tragedy inspired the creation of an oasis of learning and hope for children.

BY DANNY C. FLANDERS



SHELDON FLEMING will never forget that night in 1987. He was too exhausted after a long day of work in the family nursery to go out and buy his sister some ice cream. She had been sick, and their mother thought the treat would make Kelly feel better.

To this day, he wishes he had been the one—not Kelly—who went to Baskin-Robbins. If he had, he says, maybe his younger sister would still be alive today. Instead, the 21-year-old woman was abducted and murdered, a nightmare experience that turned the Fleming family upside down.

Yet, like many who suffer tragedy, Fleming found solace in gardening. Soon after, he and a childhood friend came up with the idea for creating Wonderland Gardens, a hands-on community outreach program that would connect students throughout metropolitan Atlanta with nature, each other, and themselves. Now, a decade later, the nonprofit Wonderland is part community garden, part green space destination, and part outdoor classroom for children, seniors, and entire families. "Life is all about relationships, and that's what this garden is all about," says Fleming.



Top: Sheldon Fleming behind the sign that welcomes visitors to Wonderland Gardens. Above: Young gardeners from CHRIS Kids, Inc., an Atlanta-based organization for socially disadvantaged children and youth, mulch the vegetable beds at Wonderland.

The garden has become a national model for environmental education and a rallying point for community activism. “Wonderland is as much about making a difference in one’s own community as it is anything else,” says Tom Underwood, AHS director of horticultural programs.

In July, along with the Atlanta Botanical Garden, Wonderland will host the American Horticultural Society’s National Children & Youth Garden Symposium.

The youth gardening movement, which began in the late 1980s with a few groundbreaking children’s gardens, has gained steam in recent years. That’s thanks in part to programs like Wonderland that relate gardening to a variety of disciplines, such as math, art, and music.

A GARDEN OF JOY

Yet the project was the farthest thing from Fleming’s mind in the wake of his sister’s death. Kelly had only recently joined the family nursery when she was slain. Her killer has never been caught. Two years after the incident, Fleming’s mother died in her sleep of what Fleming calls pure grief.

The lack of closure propelled him to sink his teeth into something more meaningful than simply selling plants. He became determined to provide a safe sanctuary for people to experience the joys of nature.

After closing the family nursery, Fleming shared his idea with a friend, Michael Davis, who had grown up across the street from the Fleming family. Davis, who had worked with nonprofit organizations, decided he wanted in on the plans. After learning that land that once housed a dairy in South Dekalb County near Atlanta had been donated to the county as green space, the two friends leased 20 acres of it for establishing the nonprofit Wonderland Gardens.

Mathis Dairy had been a community institution visited by generations of school children and families eager to try their hands at milking Rosebud, the dairy’s famed mascot. With the creation of Wonderland, community members could continue to visit this fertile tract to learn about the natural world around them.

PROGRAMS FOR GROWTH

With Atlanta’s mild climate, the all-or-



The 20,000-square-foot Carver Outdoor Classroom, which includes a pavilion, top, and surrounding gardens, provides an ideal setting for creative hands-on learning. Above: Sheldon Fleming tends a bed in a nearby area called the Life Lab, where lesson activities are held.

ganic Wonderland quickly became a year-round green space destination for groups and individuals of all ages and cultures. The site, nestled in the shadows of surrounding housing developments, offers nature walks along a path made of shredded recycled tires, community garden plots for families to grow vegetables, cooperative programs with area schools,

an outdoor classroom for hands-on lessons, and a story-telling area appropriately dubbed “Storyland.” There, preschoolers through seven-year-olds plant and harvest vegetables. In the Outdoor Carver Classroom, elementary school students visit throughout the year to plant, weed, and compost their own garden of flowers and vegetables. And there’s

the Life Skills area, where 16- to 20-year-olds develop work ethics with volunteer instructors.

“We have two rules here: Have fun, and eat your veggies,” says Fleming. Any produce the children don’t eat or take home—which amounts to some 200 pounds a year—is donated to the Atlanta Community Food Bank.

Fred Conrad, the food bank’s community gardening coordinator, describes Wonderland as “a hands-on botanical garden—the only one I know of where kids can learn by doing as well as watching.” Fleming, he says, has a knack for working with children, about 1,000 of whom visit annually. “I’ve seen him come up with many captivating projects that the kids are perfectly capable of doing by themselves with just Sheldon’s voice leading them through the steps,” Conrad says. “He builds the kids’ sense of self confidence, and they obviously have fun gardening. They become proud, they take ownership and go home remembering how great their day in the garden was.”

As Wonderland’s executive director, Fleming manages a small operating budget that relies on about \$100,000 in grants

and donations annually. From the beginning, the garden’s leading benefactor has been the Arthur M. Blank Family Foundation, which has contributed about \$200,000 since 1998.

“For us, Wonderland represents the opportunity to provide community green space, but the fact that they’re so interested in drawing in people, both young and old, and getting them involved in the environment is what’s even more exciting,” says Margaret Connelly, senior program officer for the foundation, formed by Home Depot co-founder Arthur Blank.

“We have two rules here: Have fun, and eat your veggies.”

—Sheldon Fleming

Wonderland also relies on the help of hundreds of community volunteers for maintaining the gardens, and on local nurseries for generous donations of plants, gardening materials, and tools.

LOOKING TO THE FUTURE

Buoyed by success, Fleming has set his sights even higher. Once Wonderland’s

AHS National Children & Youth Garden Symposium

Wonderland Gardens is a host for the 2005 symposium to be held in Atlanta July 28 to 30. For more information about the symposium, see page 11. For more information about Wonderland, visit www.wonderlandgardens.org.

only employee, he now has the help of a small staff. By year’s end, he hopes to launch a \$10 million capital campaign for improvements to the garden, including construction of an environmental education center named in honor of his idol, agricultural scientist and educator George Washington Carver.

That effort will require getting the Wonderland message before the community, something Fleming has pushed for years. Since 1997, he’s designed educational exhibits for Atlanta’s Southeastern Flower Show—he also serves on the show’s governing board—and this year he will host a new cable TV gardening show.

“Sheldon is truly passionate about his dream to build and develop Wonderland Gardens into a teaching laboratory for children throughout the metro area,” says Sharon Flores, president of the flower show’s board. “His commitment to that dream is contagious, and he has brought a cross-section of corporate and community leaders and the general public to his cause. The story of Wonderland Gardens and Sheldon Fleming is a classic.”

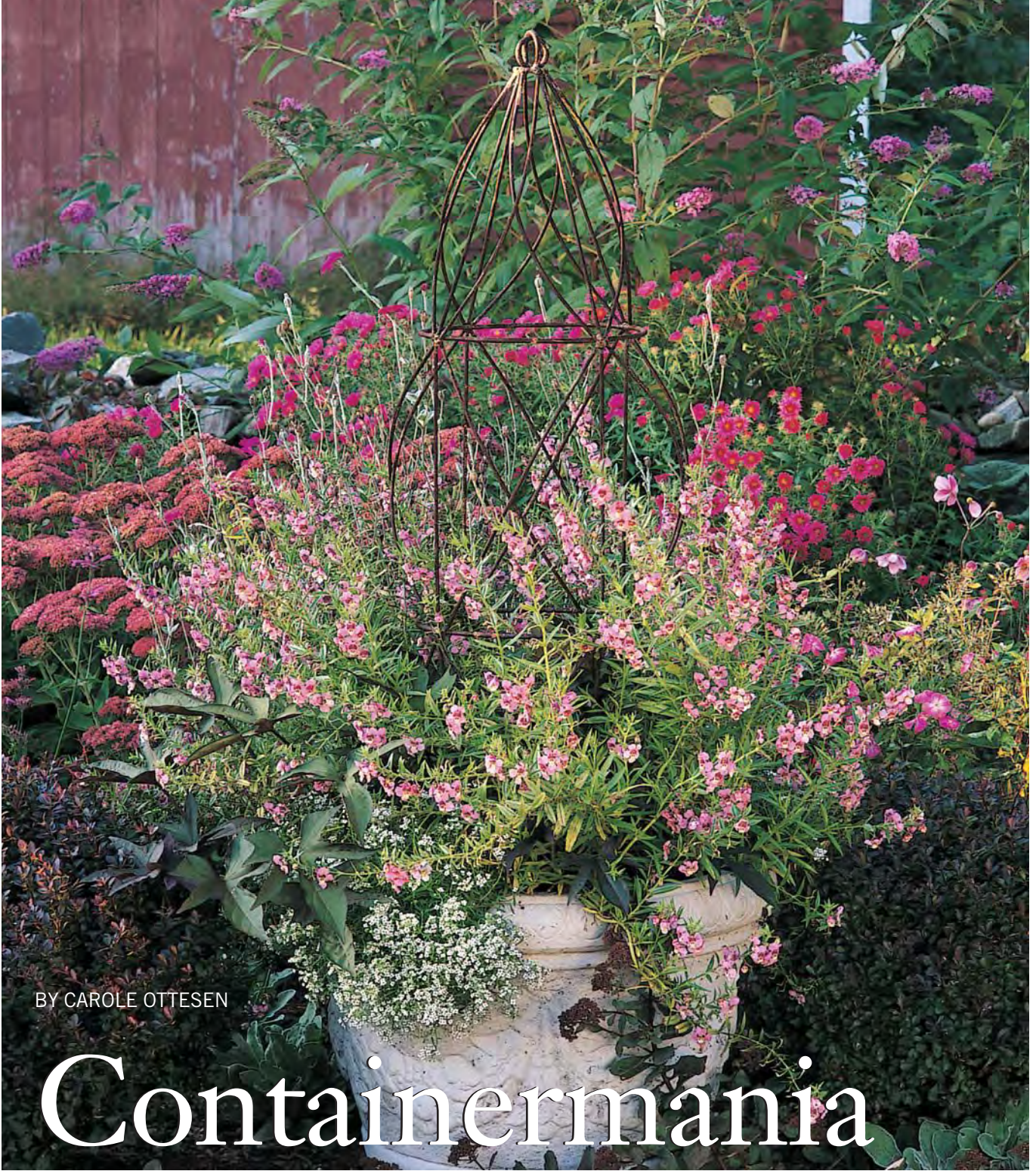
And it’s one that likely would never have been written had it not been for one man’s need to cope with great loss. “Wonderland has given me the opportunity to redirect the anger inside me into something positive,” says Fleming.

Nowadays, when Fleming looks to the skies for relief while toiling under a hot Atlanta sun, he’s never daunted by the lack of clouds. Instead, he envisions a proud Kelly. “She’s smiling,” Fleming says with a broad grin. “No doubt, she’s looking down and smiling.”

Danny Flanders is the garden writer for the Atlanta Journal-Constitution.



Students from nearby Columbia Middle School gather in the Carver Outdoor Classroom on a foggy autumn day to examine insects they have found in the garden. Children visit Wonderland throughout the year to work in the gardens and observe nature’s many facets.



BY CAROLE OTTESEN

Containermania

Growing plants in containers is a simple concept with unlimited creative potential.

GARDENING IN CONTAINERS seems tailor-made for today's world, where many of us don't have space or time for extensive gardens, but it's hardly a modern invention. Nebuchadnezzar's hanging gardens of Babylon were among the world's earliest and largest container gardens, built to rise above the flat, sun-baked plains of his Mesopotamian kingdom in order to recreate for his homesick wife, Amyitis, the green mountainous landscape of her youth in Persia. The Greek geographer Stra-

bo described the gardens as enormous, hollow, earth-filled pillars large enough to accommodate trees. Water from the Euphrates River was brought up by a chain pump fitted with buckets to keep the gardens green and growing. Since that time or, more likely, well before, growing plants in containers has enabled gardeners to have what Nature, unaided, would not support.

Today, just as in ancient times, containers enable gardeners to stretch the palette of what survives in a climate. Gardeners



Above: Simple, but stunning, the same style black containers in a range of sizes have been planted with yellow pansies. A backdrop of mixed tulips provides the perfect foil.



Left: Set against a woven fence, this assortment of container-grown herbs—including mint, thyme, lemongrass, sage, and rosemary—functions as a mini kitchen garden that is also ornamental.

Opposite page: A white container brimming with *Angelonia* 'Angel Mist', white alyssum, and *Ipomoea* 'Blackie' adds light to this border of predominantly reds and deep purples. The decorative metal plant support gives height and a sense of drama to the arrangement, making it stand out in the garden.



Above: Set amid a bed of variegated creeping buttercup, cuphea, caladium, and coleus, papyrus and other aquatic plants thrive in an old-fashioned metal bath tub.

Left: Thanks to a variety of potted plants, this corner of a deck looks like a thriving perennial bed. The pots have been placed at different heights to produce a layered effect that shows each plant to its advantage. Among the plants here are heuchera, yarrow, coleus, hosta, and oxalis.

in temperate zones can grow tropicals inside on sunny windowsills or outdoors during the warmer growing season, bringing them, container and all, indoors during the winter. Desert dwellers can enjoy water and bog gardens. People living in cold, wet regions can grow rock garden plants in carefully mixed, fast-draining soil and scree.

Potted plants can serve a variety of practical functions in the garden. Strategically placed, these portable gardens help direct foot traffic, define or divide space, add color to a border where it is most needed, and fill in unattractive gaps.

BASIC NEEDS OF CONTAINER PLANTS

The guidelines for container culture are fairly simple. All but bog and pond plants require drainage, usually via a hole in the bottom of the pot. In general, the light, rich soil sold in bags as “potting soil” works well and has been sterilized to discourage soil-borne pathogens. Plants can be set into the containers much more closely than in a garden bed. Hence, regular fertilizing and frequent, often daily, watering is needed. (See page 55 for a selection of recent books on container gardening.)


GETTING CREATIVE

While the guidelines for growing container plants are based upon science, selecting and arranging the plants and choosing

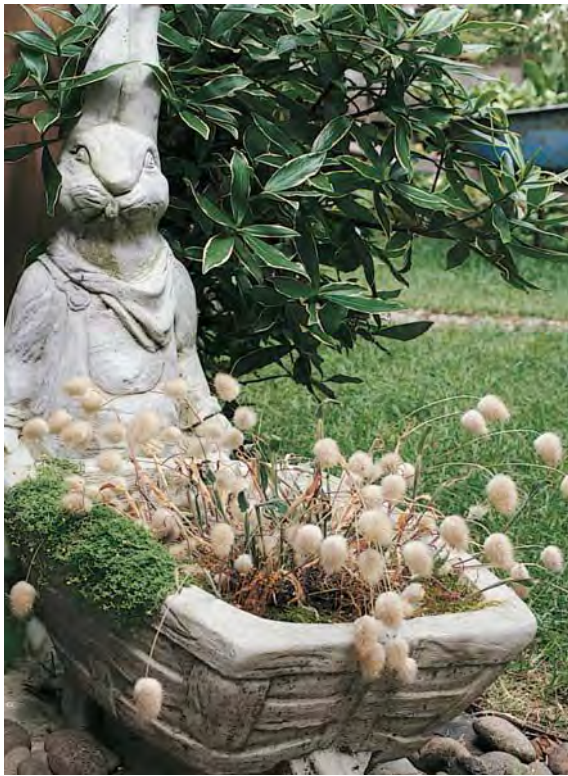
the vessel that will serve as their home is an art. It calls upon our senses of color and scale, form and size. When it is well done, the results are spectacular.

Recent years have witnessed a kind of containermania, fueled in part by the superb displays at botanic gardens across the country, inspiring visitors to try what they see at home. For example, at Denver Botanic Garden, former director of horticulture Rob Proctor “expanded the container display from a couple dozen to over 1,000 containers,” says Director of Outreach Panayoti Kelaidis, adding, as a result, “there are containers everywhere in Denver nowadays.”

Garden centers and catalogs offer thousands of container types, shapes, colors, sizes, and materials. But every garage, basement, and attic is likely to turn up something that will hold enough soil to support plant life. If you want to get really creative, containers can even be made from pieces of scrap wood, wire mesh, and other discarded items.

Whatever their shape, size, or composition, when containers are also exquisite arrangements set thoughtfully into borders, on patios, and adjacent to entryways, our gardens are doubly enriched. It is no wonder that, more and more, we are choosing to grow plants in containers for the container’s sake. 

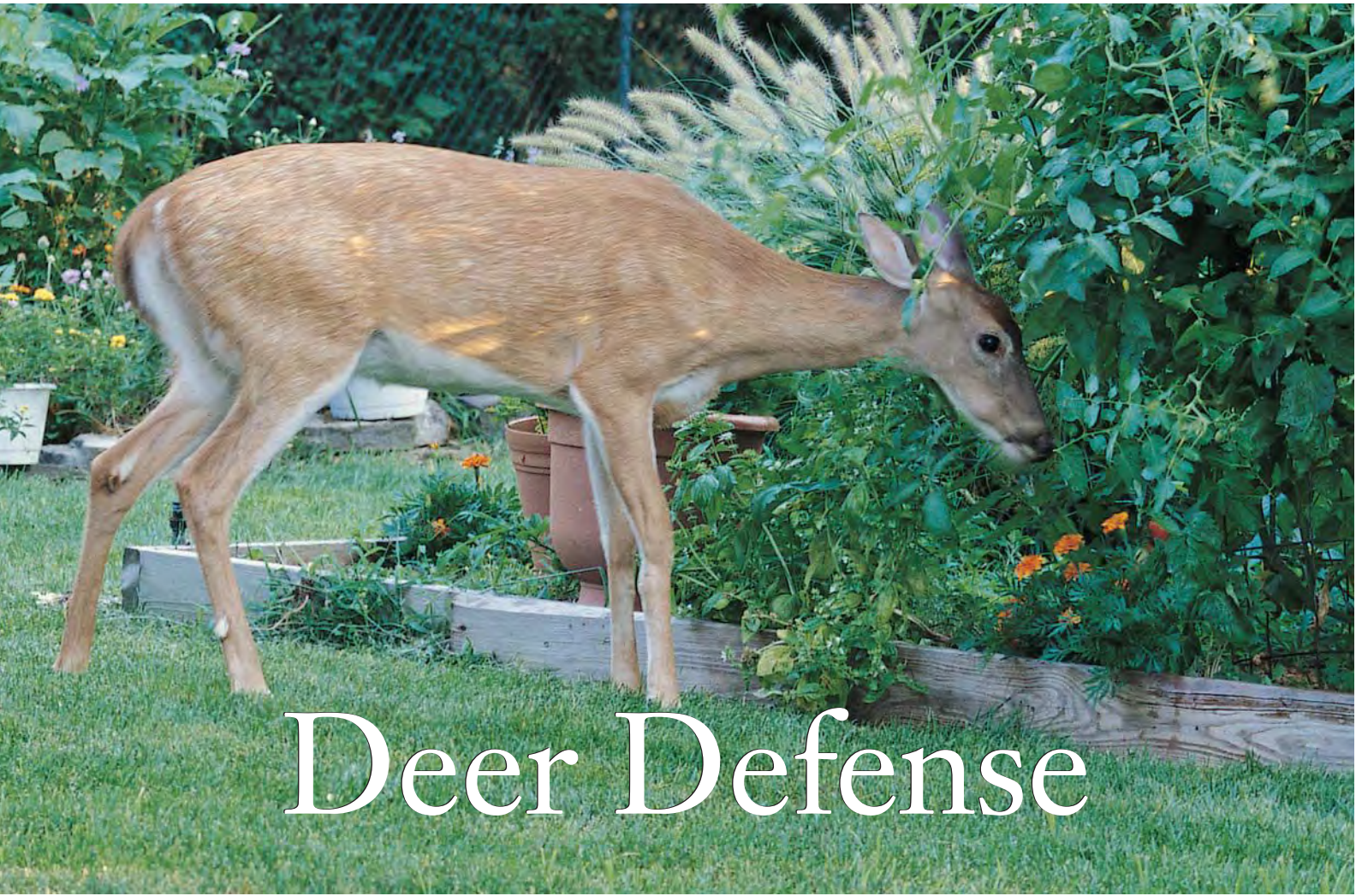
Carole Ottesen is associate editor of The American Gardener.



Above: A whimsical rabbit planter cleverly planted with hare's-tail grass (*Lagurus ovatus*) plays a visual pun.

Many objects that have outlived their original use make great containers. Top right: A rusty wheelbarrow gets a second life as a planter for a collection of succulents in a desert garden. Right: Low-growing sedums and other succulents are shown to advantage in the empty seat of a brightly painted metal chair.





Deer Defense

Dealing with these garden marauders requires a varied strategy and vigilance.

BY CAROLE OTTESEN

THE POPULATION OF white-tailed deer (*Odocoileus virginianus*) has grown from under half a million to an estimated 20 million nationwide over the last few decades. White-tailed deer are now ubiquitous in all but a few western states where mule deer inhabit their niche. The loss of wildlife habitat combined with their burgeoning numbers have caused these usually reclusive mammals to invade agricultural as well as suburban and urban areas. There, they ravage crops and gardens—including, very likely, your own.

If you have ever awakened to find 40 hostas chewed to bare stems in a single night, if your arborvitae sport hourglass figures, if your azaleas or roses don't bloom, and your strawberry bed has disappeared, read on. You'll find not only sympathy, but also strategies for protecting your garden.

Top: Caught in the act, a white-tailed deer grazes in a backyard garden—an offense that has made this species unwelcome across the United States.

ALAN AND LINDA DETRICK

For most gardeners, the kind of damage deer do to plants is not easily ignored. Because of the way deer eat—by shredding the tissues—deer damage doesn't usually kill outright, it maims. Maimed plants are more susceptible to disease, become stunted with continual deer browse, and are unattractive.

When faced with a deer problem, gardeners usually turn to repellents as a first line of defense, and for good reason: They're readily available and easy to use.

TYPES OF REPELLENTS

There are three general types of repellents. The first type, most often in spray form, makes plants taste bad. There are also extremely bitter systemic tablets. Best used when putting new plants into the ground, the tablets need over a month to be absorbed but last up to three years.

There are plenty of commercially available repellents of the bad-tasting type, but one of the most effective is a homemade mixture of 20 percent whole eggs and 80 percent water. If you apply it on a dry day when temperatures are above freezing, it should last about a month. Take the membrane off the yolk to help keep your sprayer from clogging—at least for a while.

The second kind of repellent smells bad. Repellents based on aroma work best in the warmer months. "In winter," says garden writer and photographer Karen Bussolini, who gardens on a "deer-infested mountainside" in Connecticut, "the aroma molecules don't disperse into the air as well."

Do-it-yourself malodorous methods include spreading bloodmeal, hanging mesh bags of human hair, or dangling strongly scented soaps such as Irish Spring or Zest from or very near—within 30 inches of—susceptible plants. The bloodmeal works for a short while, but may attract local dogs and other carnivores. There are mixed reviews of human hair, but many gardeners swear by the soaps—although there are a few who report that the deer actually eat it. Also, some gardeners have found that when fish emulsion is applied as a foliar feed, it can act as a deer repellent as well.

The third type of repellent combines bad odor with bad taste. Products such as Deer-Off, Deer Solution, and Not Tonight Deer! are examples of these. (See "Sources" on page 32 for a list of



A bar of strong-smelling soap in a mesh bag serves as a deer repellent in this tomato patch.

some mail-order companies that offer deer-detering products.)

EFFECTIVE USE OF REPELLENTS

After trying a multitude of products ranging from coyote urine to soap, I have found that repellents will help keep deer from devouring plants if—and *only* if—they are applied relentlessly and continually. This is one of the biggest problems with using repellents. If you let up on the application,



Deer have feasted on this hosta bed, leaving only the less-tender stems standing.

even just for a week because the deer seem to be keeping away, sure enough, there will come a night when the hostas (tulips, daylilies, roses, etc.) will be chewed up and ruined for the rest of the season. I have also found that repellents work better if you vary them regularly.

Another tip for success with repellents is to apply early—*before* deer have invaded your garden. Don't wait to take action until after the fact. "With each new planting," advises Brad Roehler, manager of the display garden and grounds at the Institute of Ecosystem Studies in Millbrook, New York, "regardless of the time of year that you are planting or the susceptibility of the plant to browsing, spray the plant with an odor-based repellent immediately after planting." If deer have an unpleasant first encounter with your new plant, explains Roehler, they're more likely to avoid it in the future.

DOG-GONE EFFECTIVE

Besides repellents, there are several other strategies you can try. Dogs are terrific at deterring deer, but not just any dog will do. You need one who lives for the chase and who does so with unbounded enthusiasm. Nando, my peerless Portuguese water dog, was such an animal. He kept watch from his perch on the deck, ready to spring at the first sign of movement. And for the better part of a decade, whenever fellow gardeners be-

moaned their deer problem and traded recipes for deer deterrents, I secretly thought their concerns were much ado about nothing. All the while, my unfenced, hosta-stocked garden suffered only occasional damage.

Two weeks after Nando died, I learned my lesson the hard way. Ninety-eight out of 100 'Apricot Beauty' tulips I had planted were eaten in the course of a week. My entire hosta collection was ravaged in a single night. The carnage continued without abatement. I thought I knew the answer: Get another dog.

But this time, that solution did not work. Lita, my current beloved Portuguese water dog, is simply not convincingly terrifying. When she runs at the deer in the field, they lope a few yards out of her way. They wait for her to go back to the house. And she does.

FENCING OPTIONS

A fence is more reliable than a dog, but you'll need a tall one. Deer are capable of leaping six feet—easily. A fence that will keep deer out has to be eight to 10 feet tall and it has to encircle your entire garden.

One type of fencing that is becoming increasingly popular for critter deterrence is meshlike deer netting. It is more economical than wood, can be installed by the homeowner, and it tends to blend into the background.

"I've taken deer netting seven feet tall and 50 feet long from one tree to the next. I just staple it to the trees," says Colleen Belk, senior manager at Barton Springs Nursery in Austin, Texas, where, she says, "we are surrounded by white-tailed deer."



Because a deer can easily leap six feet, fencing is an effective deterrent only if it's at least eight feet high and encloses the entire property you wish to protect.

Belk likes the way this kind of malleable fencing can be bent around obstacles in its way. "It really makes a difference," she says.

Some people have had luck with a shorter fence and wires or mesh strung at intervals above it. The wires and mesh tend to disappear into the background, but a deer will strike them while attempting to jump the low fence.

Others swear by a double fence line situated at a distance—about five feet apart—that thwarts a deer's running jump. "Deer are very hesitant to jump a double fence," says Roeller.

Finally, there are electric fences—often just one wire that gives an electric shock when touched. For best results,

these are baited with apples or peanut butter. These work well, but need frequent inspection and re-baiting—and, obviously, may not be a good choice if you have pets or young children.

UNPALATABLE PLANTS

Deer have definite preferences when it comes to browsing. Because of this, John Hadidian, director of the Urban Wildlife Program of the Humane Society of the United States, says, "The most successful strategy in the long run is using deer-resistant plants."

There are plants they adore such as daylilies (*Hemerocallis* spp.), hostas, and yews (*Taxus* spp.). You might consider these to be the human equivalent of steak or chocolate cake. Then there are the plants they will eat if nothing better is around. Candytuft (*Iberis* spp.) and torch lilies (*Kniphofia* spp.) might be considered the oatmeal and plain pasta of the plant world. Finally, there are plants they don't like very much and won't eat unless they are really hungry. Often these are strong-smelling plants such as herbs, those with latexy sap such as euphorbias or those with hairy leaves (*Verbascum* spp.) or spiny leaves (*Mahonia* spp.). Poisonous plants, such as century plants (*Agave americana*), lupines (*Lupinus* spp.), foxgloves (*Digitalis* spp.), and castor bean (*Ricinus* spp.) are not deer favorites, either.



Daylilies, left, and tulips, right, are invitations to dinner in your garden for hungry deer.

DEER-RESISTANT PLANTS FOR THE GARDEN

Gardening amid a deer population—as the following list shows—doesn't mean your plant palette has to be limited. While deer have been known to nibble on just about any plant, these are not their meals of choice. They also seldom bother with ornamental grasses and ferns.

Trees and Shrubs

Arborvitae (*Thuja plicata* and *T. orientalis*)

Barberry (*Berberis* spp.)

Bayberry (*Myrica* spp.)

Bearberry

(*Arctostaphylos uva-ursi*)

Beautybush

(*Kolkwitzia amabilis*)

Birch (*Betula* spp.)

Bluebeard

(*Caryopteris xclandonensis*)

Bottlebrush (*Callistemon* spp.)

Boxwood (*Buxus* spp.)

Buckeye (*Aesculus* spp.)

Bush cinquefoil (*Potentilla fruticosa* and cultivars)

Butterfly bush (*Buddleja* spp.)

California incense cedar

(*Calocedrus decurrens*)

California lilac (*Ceanothus*

'Blue Jeans' and 'Emily Brown')

Clumping bamboo

(*Fargesia* spp.)

Colorado blue spruce

(*Picea pungens* forma *glauca*)

Creosote bush

(*Laurea tridentata*)

Daphne (*Daphne* spp.)

Florida anise (*Illicium* spp.)

Heavenly bamboo

(*Nandina* spp.)

Juniper (*Juniperus* spp.)

Mahonia (*Mahonia* spp.)

Magnolia (*Magnolia* spp.)

Norway spruce (*Picea abies*)

Oleander (*Nerium oleander*)

Pieris (*Pieris* spp.)

Plum yew (*Cephalotaxus* spp.)

Serviceberry

(*Amelanchier* spp.)

Skimmia (*Skimmia japonica*)

Spirea (*Spiraea* spp.)

Sugar bush (*Rhus ovata*)

Summersweet

(*Clethra alnifolia*)

Sweet shrub (*Calycanthus* spp.)

Viburnum (*Viburnum* spp.)

Yaupon (*Ilex vomitoria*)

Herbaceous Perennials

Astilbe (*Astilbe* spp.)

Barrenwort (*Epimedium* spp.)

Basket-of-gold

(*Aurinia saxatilis*)

Beebalm (*Monarda didyma*)

Bleeding heart (*Dicentra* spp.)

Bluestar (*Amsonia* spp.)

Boltonia (*Boltonia asteroides*)

Catmint (*Nepeta* spp.)

Columbine (*Aquilegia* spp.)

Copper Canyon daisy

(*Tagetes lemmonii*)

Creeping phlox

(*Phlox stolonifera*)

Damianita

(*Chrysactinia mexicana*)

Delphinium (*Delphinium* spp.)

False indigo (*Baptisia* spp.)

Giant hyssop (*Agastache* spp.)

Goldenrod (*Solidago* spp.)

Green and gold

(*Chrysogonum virginianum*)

Hellebore (*Helleborus* spp.)

Lady's mantle (*Alchemilla* spp.)

Lamb's ears

(*Stachys byzantina*)

Lavender (*Lavandula* spp.)

Lily-of-the-Nile

(*Agapanthus* spp.)

Lily-of-the-valley

(*Convallaria majalis*)

Lords and ladies

(*Arum italicum*)

Lungwort (*Pulmonaria* spp.)

Lupine (*Lupinus* spp.)

Matilija poppy

(*Romneya coulteri*)

Mazus reptans

Mexican marigold

(*Tagetes lucida*)

Milkweed (*Asclepias* spp.)

Monkshood (*Aconitum* spp.)

Mullein (*Verbascum* spp.)

New Zealand flax

(*Phormium tenax*)

Nolina parryi

Pachysandra spp.

Peony (*Paeonia* spp.)

Prickly pear (*Opuntia* spp.)

Pride of Madeira

(*Echium candicans*)

Red elderberry

(*Sambucus racemosa*)

Redwood sorrel

(*Oxalis oregana*)

Russian sage

(*Perovskia atriplicifolia*)

Sacred lily (*Rohdea japonica*)

Sage (*Salvia* spp.)

Saxifrage (*Saxifraga* spp.)

Sedge (*Carex* spp.)

Spurge (*Euphorbia* spp.)

Statice (*Limonium latifolium*)

Stoke's aster (*Stokesia laevis*)

Sweet flag (*Acorus* spp.)

Thrift (*Armeria maritima*)

Tickseed (*Coreopsis* spp.)

Yarrow (*Achillea* spp.)

Bulbs

Allium (*Allium* spp.)

Autumn crocus (*Colchicum* spp.)

Daffodil (*Narcissus* spp.)

Fritillary (*Fritillaria* spp.)

Glory of the snow

(*Chionodoxa* spp.)

Grape hyacinth (*Muscari* spp.)

Hyacinth (*Hyacinthus* spp.)

Snowdrop (*Galanthus* spp.)

Snowflake (*Leucojum* spp.)

Squill (*Scilla* spp.)

Winter aconite

(*Eranthis hyemalis*)



California incense cedar



Summersweet



Lily of the Nile



Bleeding heart



Daffodil

Most years, you can get by with little to no deer damage by planting things they don't like, especially in places where they enter your garden. (See page 31 for a list of some of the many deer-resistant plants.) And these not-so-tasty plants, if used in larger groups, can go a long way to protecting the yummy plants tucked into their midst.

However, "deer may not react consistently to the same plant in different parts of the country," cautions Hadidian. "Whether this is because of seasonal differences or soil conditions changing the taste of a plant or just due to variations in the deer population, no one is sure." He recommends experimenting with different plants and talking to your neighbors to find out which plants your local deer avoid. Also, bear in mind that a starving deer will eat almost anything.

ZONE OUT

Another deer-detering technique you can try is borrowed from the school of xeriscape: creating zones. The idea is to divide the garden into distinct zones, based upon the number of susceptible plants in each area and the amount of care needed to keep those plants safe from deer.

Zone one becomes the high-maintenance space where deerly-loved plants are grouped together. Ideally, any susceptible plants in outlying areas get moved into this zone, creating a space



Plants with spiny leaves, like leatherleaf mahonia, are usually not attractive to deer.

Resources

Deer Proofing Your Yard & Garden by Rhonda Massingham Hart. Storey Publishing, North Adams, Massachusetts, 1997.

Gardening in Deer Country by Vincent Drzewucki Jr. Brick Tower Press, New York, New York, 1998.

Solving Deer Problems: How to Keep Them Out of Your Garden, Guaranteed by Peter Loewer. The Lyons Press, Guilford, Connecticut, 2002.

www.mydeergarden.com. Information and advice for gardening with deer.

www.ecostudies.org/gardening_tips.html. Grounds manager Brad Roeller at the Institute of Ecosystem Studies shares 30 years of deer-detering strategies.

Sources for Deer-Detering Products

Benner's Garden, Inc., Conshohocken, PA. (800) BIG-DEER
www.bennersgardens.com.

DeerBusters, Frederick, MD. (888) 422-DEER. www.deer-busters.com.

Deer-Resistant Landscape Nursery, Clare, MI. (800) 595-3650.
www.deerxlandscape.com.

Havahart, Lititz, PA. (800) 800-1819. www.havahart.com.


that is gourmet central for deer. Grouping plants will make any efforts at protection easier. Because zone one is likely to be a small portion of your property, it might even be possible to fence it. Even without a fence, the routine applications of deer deterrents will become a far easier chore if you don't have to wander the garden looking for (and often missing some) susceptible plants. Because it is quicker and easier to do, you are more likely to apply the deterrents with the regularity needed for success.

You can designate the entire periphery of your property as zone three. This is the part that is way too big and/or inaccessible to keep sprayed. The answer here is using plants that deer would rather not eat. There is no joy quite like the one you get when you assemble a border planting that has deer spitting out the bits they test taste. When you plant a clumping bamboo (*Fargesia* spp.), a leatherleaf mahonia (*Mahonia japonica* 'Bealei'), or bluestar (*Amsonia hubrichtii*), deer taste the gastronomic equivalents of rancid cheese and cardboard, liberally laced with castor oil.

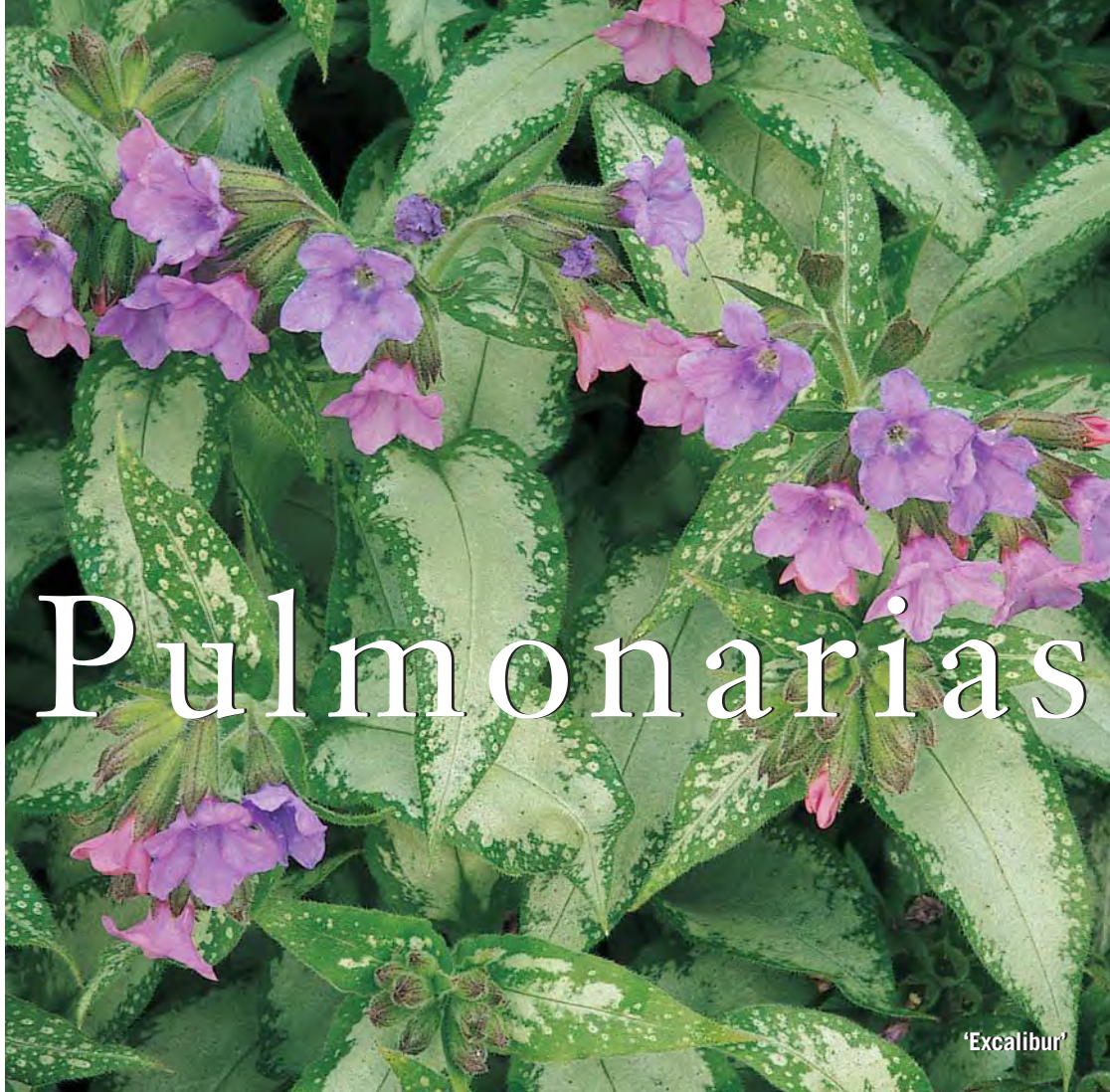
This leaves zone two, the in-between, problematic area where the plants deer love are too big to move to another location. Here is where you'll have to get creative. Scarecrows that move in the wind, gizmos that shoot water, protective netting, and systemic tablets are some things you might try.

NOTHING IS FOOLPROOF

Like it or not, deer are here to stay, and gardeners must find ways to coexist with them. Short of a dog with just the right deer-detering personality on guard around the clock or an eight-foot fence that encircles your property, nothing is foolproof. As Hadidian says, "We have to be willing to accept a certain amount of damage and work with it as best we can."

However, with some patience, persistence, and well-planned defenses, you can enjoy your garden in spite of the deer. Have courage, and good luck! 

Carole Ottesen is associate editor of The American Gardener. Her deer-ravaged garden is in Potomac, Maryland.



Move over hostas and heucheras, the new shining stars of the shade garden are the no-longer-humble lungworts. ARTICLE AND PHOTOGRAPHS BY KAREN BUSSOLINI

AS HERBACEOUS perennials go, pulmonarias are shift characters. Their flowers change color from day to day. Immature leaves on bloom stalks are of one sort, while mature basal leaves are altogether different. There are the awkward transitional stages. Identities and heritage are so mixed up that even the experts can't agree.

Pulmonarias can be tough to grow or altogether too easy, self-sowing with abandon. They are usually disdained by deer but loved by slugs. Gardeners I spoke with were emphatically divided in their opinions. Many said they couldn't get enough pulmonarias; others, who once had a similar yen, had ripped them all out in frustration. For such a demure plant, it certainly stirs up passion in gardeners.

The first pulmonaria in my Connecticut garden came to me as *Pul-*

monaria saccharata 'Mrs. Moon'. It proliferated in deep pockets of humusy soil between glacial boulders on our steep mountainside, but I found it insufferably insipid. Yet what hard-hearted gardener could dismiss a plant that so suddenly bursts from the cold earth and miraculously pops into bloom when snow is still on the ground? I took to cherishing its assurance that spring was around the corner and casting a blind eye to the slug holes in the spotted foliage and the powdery mildew that followed.

A few years ago, however, I discovered *Pulmonaria* 'Excalibur'. Its shimmering platinum blades disabused me forever of the notion that pulmonarias were wimpy. Its bold character juiced up a jumble of delicate spring ephemeral wildflowers in my woodland garden. As the season progressed, leaves became

thicker and more heavily silvered, forming a large clump that carried through in great style well into winter, never marred by the slugs and mildew that so disfigured 'Mrs. Moon'. Ever in search of silver plants, particularly silvers to light up the shade, I tracked 'Excalibur' to its source, plant breeder Dan Heims of Terra Nova Nurseries in Oregon. Soon my woods were full of tiny silver pulmonarias, both Terra Nova releases and English imports.

Heims, as it turns out, had also been frustrated with 'Mrs. Moon'. He noticed that the 'Mrs. Moon's grown in other parts of the country were all different from each other, that people had evidently selected seedlings that did better in their region.

He also noticed that a vigorous long-leaved pulmonaria with thick, sticky,



'Mrs Moon' is an old favorite but highly variable depending on where it is grown and susceptible to disfigurement by slugs and powdery mildew.

mostly silver leaves and deep blue, long-blooming flowers, which he had brought back from England, didn't get powdery mildew in his garden. He made this plant—later identified as *P. 'Margery Fish'*—the heart of a selective breeding program he started in 1989.

Determined to make a better garden plant, Heims concentrated on the sturdy mildew-resistant silvers. He wanted long-blooming showy flowers in a wider range of colors, improved form and vigor, attractive foliage, compact flower clusters that “stand up and look at you” rather than sprawling, and a more attractive transition from flowering to mature foliage. Over the last decade, he and a number of other American and European breeders have achieved almost all of those goals.

PULMONARIA BASICS

Pulmonarias are hardy herbaceous perennials belonging to the borage family (Boraginaceae). They are native to Europe and western Asia, ranging from England east to Siberia, from Italy and Greece north to Sweden. In the wild, pulmonarias mostly inhabit woodlands

and scrub, sometimes grassy or rocky places and stream banks. This wide distribution in various habitats suggests the potential for equally wide usefulness in North American gardens.

Pulmonarias have a long history of medicinal and herbal use. The genus name is derived from *pulmo*, the Latin for “lung.” Based on the Doctrine of Signatures, early healers reasoned that their spotted leaves, resembling diseased lungs, would cure pulmonary ailments. Although the efficacy of pulmonarias has not been confirmed by modern scientific study, some herbalists recommend them for bronchial complaints. Considering that they can be allergenic, irritating to the skin, and may contain toxic alkaloids, common sense dictates against uninformed experimentation.

Their funnel-shaped flowers, like those of other borages such as bluebells (*Mertensia* spp.) and comfrets (*Symphytum* spp.), generally start out pink in the bud, changing to shades of blue or purple, sometimes white or red. The color change is thought to be a signal to pollinators, enticing them to blooms with plentiful nectar and fresh pollen.

Flower buds overwinter at or just below soil level. Plants form upright or sprawling clumps that spread slowly by rhizomes. Basal leaves are simple, ovate to elliptic, heart-shaped or oblong, hairy and often spotted in white or silver. Stem leaves are sparse and small.

CULTURAL REQUIREMENTS

Pulmonarias grow best in dappled deciduous shade with a light mulch of decomposing leaves like that found on a forest floor. The exception is *P. longifolia* and its cultivars, which are good candidates for sunny sites provided the soil is moist and well drained. Given humus-rich soil and yearly replenishment of chopped leaves or leaf mold, additional feeding shouldn't be necessary. Most are quite winter hardy throughout the United States.

The biggest problems reported by gardeners all over the country were powdery mildew, slugs (and snails), and rampant self-sowing. Powdery mildew afflicts plants stressed by drought and is exacerbated by humidity. Providing deep, moist soil rich in organic matter and supplemental water in dry weather helps. Cutting back affect-



Mildew on *P. saccharata* 'Highdown'

ed foliage (some recommend cutting plants to the ground right after bloom, which also takes care of the self-seeding problem), lightly fertilizing, and watering will stimulate the growth of healthy new foliage. A better solution would be to plant some of the many mildew-resistant varieties, whose substantial leaves are also less apt to be tattered by slugs.

REGIONAL REPORTS

Many gardeners still grow and love the

PULMONARIA SPECIES

Some 10 to 14 individual pulmonaria species are recognized, but only half that many are commonly cultivated.

Common pulmonaria or Jerusalem cowslip (*P. officinalis*, Zones 6–8, 8–6) has been cultivated in gardens at least since the 16th century, mainly for its herbal uses. A variable species, it has strongly spotted oval to heart-shaped semi-evergreen leaves. Pink-red buds turn violet or sky blue, occasionally white. It is more tolerant of alkaline soils than other pulmonarias.

Long-leaf lungwort (*P. longifolia*, Zones 3–8, 8–4) has small, tightly clustered violet to cobalt blue flowers opening from pink buds and attractive, long, brightly spotted leaves. It is more tolerant of heat, sun, drought and clay soils than other pulmonarias. Unfortunately, its semi-evergreen foliage is very mildew prone. A subspecies, *P. longifolia* subsp. *cevennensis*, has very silvery foliage and is extremely mildew-resistant.

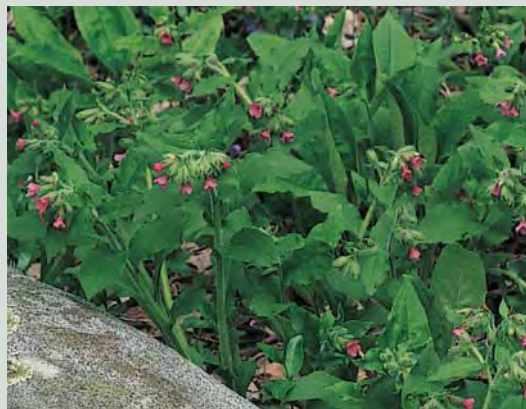
Red lungwort (*P. rubra*, Zones 4–8, 8–3), also semi-evergreen, is not mildew-prone, blooms very early and is extremely hardy. Its flowers encompass the coral-salmon-raspberry red range. Foliage, except for that of 'David Ward', is mostly unspotted.

Pulmonaria mollis (Zones 6–8, 8–6) is very early and very hardy, sometimes blooming by Christmas in Oregon. Heims likes its "blackberry" clusters of flowers, blue with smoky tones of purple. It is the largest pulmonaria, growing up to 30 inches tall, with velvety deciduous leaves, but self-sows with abandon.

Semi-evergreen Bethlehem sage (*P. saccharata*, Zones 4–8, 8–1) is nicely spotted in silvery-white and moderately vigorous. Its stem leaves are nearly as large as its basal leaves, which makes for a particularly cohesive form while its pink buds, which open to light blue, are in bloom. It is very susceptible to mildew.

Blue lungwort (*P. angustifolia*, Zones 2–7, 8–1) is "the worst mildew magnet" in Heims' garden, but he likes its small stature and rich cobalt blue flowers. One of his early crosses from this species, the dwarf 'Little Star' is popular in England, where mildew isn't such a problem.

—K.B.



Very early-blooming red lungwort has unspotted foliage.

straight species (see box, above), but cultivars and hybrids are often better plants. Among the oldest known is my 'Mrs. Moon', which has been around since at least the 1930s. This, along with 'Sissinghurst White' and 'Mawson's Blue' from later in the 20th century, although still beloved by many gardeners, are probably not true to the originals described in literature. The exceedingly promiscuous nature of pulmonarias, compounded by their long passalong status, has left many

uncertainties in the heritage of these and other popular cultivars.

Faced with a bewildering array of new pulmonarias on the market, how is one to parse the catalog hype and advice often based on growth in temperate English climes? Given all the differing soils, moisture levels, temperature ranges, and other climatic factors, clearly they can't all be superlative everywhere.

I tested about 15 cultivars in my garden over the last two years and relied on advice

from experts on the best performers from other regions of the United States.

The best ones had good flowers (large and/or strongly colored enough to matter) that coincided with enough foliage to make a graceful whole. They also had leaves that were nicely formed with uniform patterns and matured into long-lasting clumps of distinctive character.

NORTHEAST Pulmonarias are popular in the Northeast, though I've yet to see one blooming as prolifically as those illustrated in the catalogs. But they have other virtues. Mary Ann McGourty of Hillside Gardens in Norfolk, Connecticut, says, "Aside from fabulous foliage, I love them because they are the first plant in the garden that the hummingbirds go to." After five or six months of winter, we are all grateful for early flowers, however skimpy, and for the hummingbirds and bees they attract. All the new varieties I tried were slug and deer resistant, important in a woodland garden. Grown in rich, damp soil, few suffered from mildew.

'Blue Ensign', with plain green ovate leaves and deep azure flowers is fresh and straightforwardly gorgeous, with foliage that remains good, although the experts say it gets mildew. All the other ones that performed well for me are silver. 'Excalibur', still a favorite, blooms in the snow some years, with finely shaped spotted leaves turning to green-edged silver before blooms have finished. 'Cotton Cool's large





'Cool Cotton'



'Milky Way'



'Baby Blue'

mulberry to gentian-blue flowers and orangish buds are thrown out awkwardly above low sprawling basal foliage, but they glow against the cool silvery-green color. I love the shimmery underwater quality of its mature leaves, especially in the evening.

I grow 'Moonshine' for its strong foliage; flowers are small and insipid. Early spotted leaves turn quickly to heavy silver with mid-green splotched margins, striking when the sun hits. 'Milky Way' forms a nicely-shaped upright mound. Its lancelike basal leaves on long stems intermingle with good quantities of medium blue flowers. Early flowers are purplish pink touched with blue. Leaves are a handsome dark green with contrasting fine silver spots.

Compact 'Baby Blue' has the best form of all when in bloom and the most flowers, of pale salmon pink to pale Wedgewood blue. Its leaves are splatter-painted in silver spots at the tips. The small leaves of 'Crawshay Chance' emerge a clear lime green, then become precisely spotted, as with a fine brush. Mature leaves are heart-shaped, with small round spots of metallic whitewash on leaf margins, and larger spots that merge at the midrib. In my opinion, 'Raspberry Splash' is unappealing until its dark pink flowers have finished blooming. Then it forms tall lusty clusters of very long, thin, spotted dark leaves, providing good contrast to brighter and more rounded varieties.

SOUTHEAST Geri Laufer of the Atlanta Botanic Garden, reports that only *P. longifolia* types survive in the humid Southeast. Tony Avent of Plant Delights Nursery in Raleigh, North Carolina, concurs, adding that soils in his area are either tight clay that doesn't drain well enough or sandy ones that don't hold enough moisture. He finds that pulmonarias do better at higher elevations with cooler nights.

Avent's recommendations include 'Majeste', silver with a green edge; 'Dark Vader'; 'Trevi Fountain'; 'Silver Streamers', with wavy-edged silver lanceolate leaves and violet-blue flowers; and 'Raspberry Splash'. Noting wistfully that none of them are as vigorous in the South as they would be in the Pacific Northwest, he says "Zone 7b is the southernmost stop on the highway of life for pulmonarias."

MIDWEST In 2001, the Chicago Botanic Garden evaluated 51 kinds for use in Midwest gardens. 'Mrs. Moon', which frustrated gardeners elsewhere, received a high rating, while 'Margery Fish' and 'Blue Ensign', touted in Oregon and the Northeast, fared poorly. 'Glacier', 'Little Star', 'Roy Davidson', 'Sissinghurst White', *P. officinalis* 'White Wings', *P. saccharata*, and *P. rubra* 'Bowles Red' received the highest ratings.

Mary Walters of Walters Gardens in Michigan, is sold on 'Diana Clare', with long silver leaves and large violet-blue flowers striped in purple. It has "tremendous vigor" in her sandy loam and still looks good in August, the true test for any garden perennial.

MOUNTAIN WEST I expected to hear that pulmonarias were impossible in the dry mountain West, so my biggest sur-



'Roy Davidson'

prise came from Panayoti Kelaidis, director of outreach at the Denver Botanic Garden. Kelaidis doesn't consider any plant a "keeper" unless it has proved itself in the landscape for at least 10 years. His keepers include species and older cultivars *P. 'Roy Davidson'*, 'Bertram Anderson', 'Sissinghurst White', *P. rubra*, and *P. angustifolia*, his favorite, with piercing blue flowers. "It runs a bit, so I can make a big mass of it." His *P. longifolia* and *P. saccharata* have persisted for more than 30 years.

The key, says Kelaidis, is drip irrigation and a shaded site with humusy soil. Denver gets most of its moisture in sum-



Pulmonarias combine well with many early bulbs and wildflowers. Here, 'Sissinghurst White' grows with purple hyacinths and Dutchman's breeches (*Dicentra cucullaria*).

mer, which suits them; winters are not overly wet and air is cool and dry at night at high elevations.

Garden writer Tom Peace, who gardens in Denver and Texas, finds that coarse granitic soil, uncrowded conditions and a northern exposure help. With a slope for drainage and good humusy soil, *P. longifolia* subsp. *cevennensis*, from limestone mountains in southern France, will survive—but not thrive—in the alkaline soil of Texas.

PACIFIC NORTHWEST The Pacific Northwest's long spring creates pulmonaria heaven, until summer drought sets in. Heims favors 'Trevi Fountain', a hybrid of *P. longifolia*, for its vigor, large deep blue flowers, and excellent form, forgiving its tendency to get some mildew; 'Northern Lights', which is entirely silver with one of the showiest, long-lasting displays of flowers, in wine tones to blue (also ranking as one of the toughest and best in winter); 'Dark Vader', for vigor and form, dark green leaves with silver spotting, and pink to dark blue flowers; and 'Baby Blue' which forms a neat mound that stands out among the sprawlers and has sky-blue flowers.

Heims describes brilliantly silver-spotted 'Polar Splash' as his most drought- and sun-resistant pulmonaria, thriving in full blazing sun in his area. For clay soils, he recommends those with *P. rubra* and *P.*

mollis heritage, such as *P. mollis* 'Sambor', a green-leafed form with pink flowers turning to violet, *P. rubra* 'Barfield Pink' with white-edged pink flowers, or *P. rubra* 'Redstart', a vigorous coral-red with compact form and green leaves. None of them will survive in constantly saturated soil or if mulched too heavily.

CALIFORNIA In the San Francisco Bay area, garden designer Rosalind Creasy finds that most pulmonarias do well on drip irrigation once a week until high summer, when they go dormant until the sun is lower in the sky. She uses them in large containers in the shade. The Yamagami Nursery in Cupertino, California, recommends *P. angustifolia* 'Azurea', *P. longifolia* 'Bertram Anderson', *P. Margery Fish*, 'Excalibur', and 'Roy Davidson', but notes that with warm days and cool nights, mildew can be a problem.

ONGOING EVALUATION

In a study published in the February 2004 issue of the journal *HortScience* (Vol. 39, No. 1), Temple University researcher Kimberly H. Krahl reported the results of screening for powdery mildew resistance on some 25 selections. The top five performers, respectively, were *P. longifolia* subsp. *cevennensis*, *P. rubra* 'David Ward' and 'Redstart', *P. Excalibur*, and *P. Spilled Milk*. Given the popularity of pulmonarias, it's likely that

Resources

"An Appraisal of *Pulmonaria* for the Garden" by Richard G. Hawke. Plant Evaluation Notes, Issue 17, 2001. Chicago Botanic Garden. (Order at www.chicagobotanic.org).

Herbaceous Perennial Plants by Allan M. Armitage. Stipes Publishing, Champaign, Illinois, 1997.

Pulmonarias and the Borage Family, by Masha Bennett. Timber Press, Portland, Oregon, 2003.

Sources

Bluestone Perennials, Madison, OH. (800) 852-5243. www.bluestoneperennials.com. Catalog free.


Busse Gardens Perennials, Big Lake, MN. (763) 263-3403. www.bussegardens.com. Catalog \$3; free online.

Forestfarm, Williams, OR. (541) 846-7269. www.forestfarm.com. Catalog \$5; free online.

Terra Nova Nurseries, for retail sources for its pulmonarias, visit www.terranovanurseries.com.

The Variegated Foliage Nursery, Eastford, CT. (860) 974-3951. www.variegatedfoliage.com. Catalog \$3.50; free online.

ongoing evaluation will be required to identify the best cultivars.

'Mrs. Moon' is still with me, and I've come to appreciate her old-fashioned charm even as the dazzling new introductions turn my head. Some of the new ones may revert a bit, or self-sow too enthusiastically. But many will doubtless become classics, for they are superior garden plants offering three seasons of interest. 

Karen Bussolini is co-author, with Jo Ann Gardner, of Elegant Silvers: Striking Plants for Every Garden, published by Timber Press this year.

Green Roofs

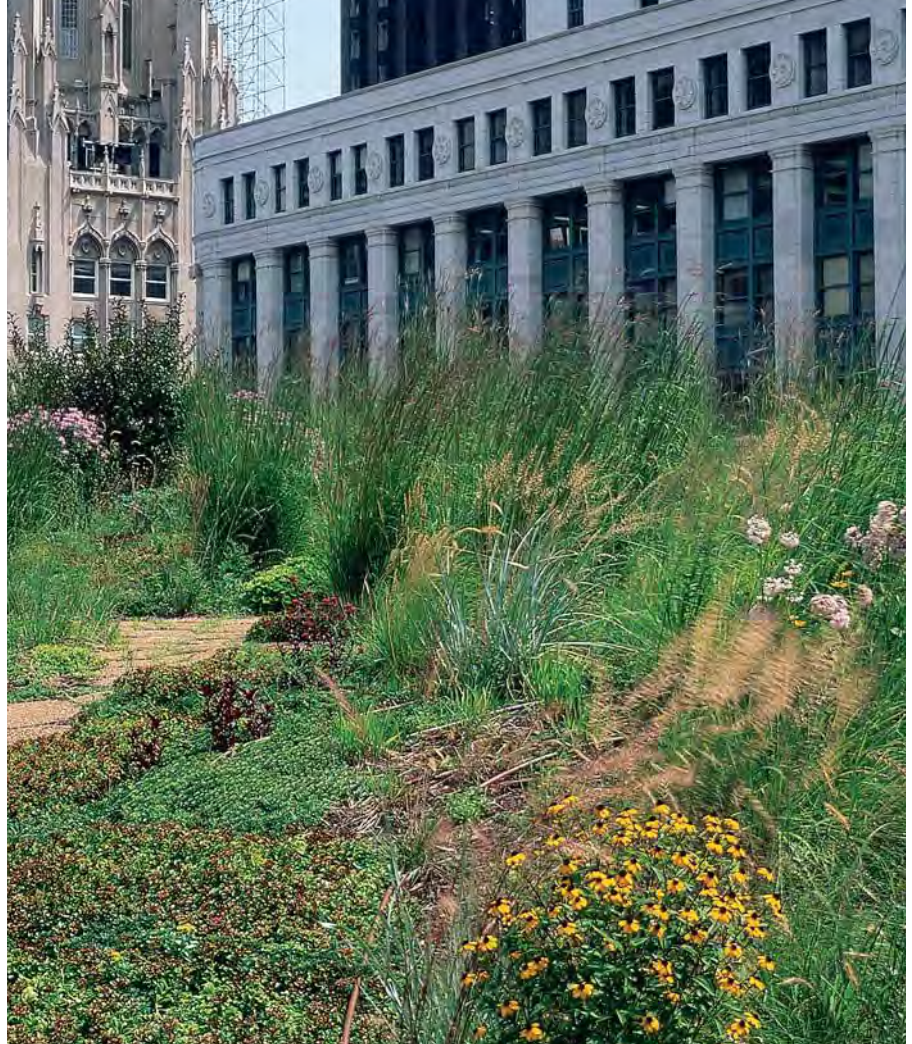
Designers, architects, and urban planners in North America are embracing rooftop plantings.

BY JESSIE KEITH

IMAGINE LOOKING OUT an aircraft window to a city below and seeing green. Every rooftop you see is covered by windswept gardens where passing birds and pollinating insects can find food and refuge. Science fiction? Not anymore. Architects, developers, researchers, and municipalities across North America are embracing green roofs, a trend that has already found widespread acceptance in Europe.

Green roofs are roof surfaces lined with water-impermeable membranes topped with drainage layers and a growing medium that supports plant life. This concept isn't new. "In the Roman Empire, the ruling classes had green roofs as a sign of wealth, the Vikings had sod houses, and don't forget the hanging gardens of ancient Babylon," says Stephen Peck, director of Toronto-based Green Roofs for Healthy Cities, a nonprofit organization that promotes the North American green roof industry. More recently, northern Europeans have been implementing and developing green roof technology since the 1960s, but the North American movement has only begun to take root in the last decade.

Green roofs offer numerous benefits in urban areas, ranging from temperature mitigation to reduction of storm water runoff and air pollution, noise abatement, the creation of wildlife habitat, and beautification.



Above: The green roof on Chicago's City Hall is not only beautiful but saves energy. Below: The world's largest green roof at the Ford plant in Dearborn has become a wildlife habitat.



A GROWING INDUSTRY

David Beattie, founding director of the Center for Green Roof Research at the Pennsylvania State University in State College, says his inspiration to start the

program "came from time spent in Germany, where developers are expected to replace lost green space." Since he founded the Center in the early 1990s, the industry has grown rapidly in the United



Above left: Designed by Oehme, Van Sweden Associates, this semi-intensive green roof at the Pepco Building in Washington, D.C., features ornamental grasses, forbs, and sedums. **Above, right:** Biodegradable mesh helps sedums take root in an extensive green roof garden.

States, says Beattie, “with research and educational programs at universities across the country and large-scale focal projects appearing in many major cities.”

One of the first major American projects to draw attention to the possibilities of green roofs was at Chicago’s City Hall, which was topped with 33,000 square feet of plantings in 2001. Other cities and designers have since taken up the challenge: the Solaire Building in New York City’s Battery Park has a 5,000-square-foot green terrace; the Gap Headquarters in San Bruno, California, has 195,000 square feet of undulating green roof; and the green roof on the Ford Assembly Plant in Dearborn, Michigan, is—at 454,000 square feet—the world’s largest.

There are two types of green roofs, designated in green roof vernacular as “extensive” and “intensive.” The former are low-maintenance green spaces with shallower growing medium (two to six inches in depth), planted with hardy, drought-tolerant succulents such as sedums, delospermas, and ice plants, and, sometimes, re-seeding drought-tolerant annuals.

By contrast, “intensive” roofs have deeper growing medium (one to four feet in depth) and may be planted with a wide array of herbaceous plants, shrubs, vines, and even small-sized trees. Intensive roofs can include everything from parklike plantings to flower borders, vegetable gardens and wildflower meadows. In between are the “semi-intensive” roofs, which incorporate elements of both.

No matter the type, “green roofs are smart,” says Peck. “This single technology can give so much to people in cities.”

Wherever green space is scarce, green roofs are gaining popularity. “Green roofing is best suited to high-density, ultra-urban areas where people are culturally accustomed to using rooftops and place a premium on green space,” says Dawn Gifford, director of DC Greenworks, a Washington, D.C.-based nonprofit organization dedicated to safeguarding the city’s urban ecosystem.

ENERGY BENEFITS

In cities, green roofs mitigate the urban heat island (UHI) effect, which is caused by radiant heat from buildings and pavement being trapped in the environment.

Bare asphalt- and fiberglass-covered rooftops can reach temperatures of 180 degrees Fahrenheit, whereas heat-deflecting green roofs remain around 78 degrees. UHI results in the kind of air-conditioning usage that can trigger massive power outages. “Cities nationwide overheat due to loss of green space,” says Beattie. “Green roofs abate this problem.”

Green roofs have also been shown to have insulating properties in winter and can reduce a building’s heating requirements. According to an estimate by Weston Design Consultants of Chicago, Chicago’s overall energy needs would be reduced by 720 megawatts a year—a sav-



Ground covers, a slate patio, and a pergola of black locust trunks adorn this intensive green roof designed and installed by DC Greenworks at a private residence in Takoma Park, Maryland.

PLANTS FOR GREEN ROOFS

Ed Snodgrass, owner of Emory Knoll Farms and founder of Green Roof Plants in Street, Maryland, (410) 452-5880; www.green-roofplants.com, has for more than a decade been working to expand the repertoire of drought-tolerant succulents for green roofs. “We test each plant for functionality before promoting them for green roof use,” says Snodgrass, noting that drought, wind, and cold tolerance are the most important attributes, as well as beauty and vigorous growth.



Green roof plant trial beds at Emory Knoll Farms

According to Snodgrass, “Sedums are most commonly used for extensive green roofs because they are robust, diverse, and have a tendency to spread quickly, but there are several other succulents that have shown to be useful too.” Currently, Green Roof Plants, which is the only nursery in the country solely dedicated to the production of plants for green roofs, carries more than 100 selections of sedums, ice plants (*Delosperma* spp.), and talinum, among others.

The chart below lists 10 hardy, evergreen succulents that Snodgrass recommends for green roofs. Most would also be suitable ground covers for hot, sunny garden sites.

—J.K.

Name	Height/Width (inches)	Flower/Foliage Color	Other Interest	USDA Hardiness, AHS Heat Zones
<i>Allium senescens</i>	3–15/2–4	pink/gray-green	spiraled straplike leaves	4–10, 10–1
<i>Delosperma congestum</i> ‘Gold Nugget’	1–2/8	yellow/green	tight-mounding habit	4–8, 8–4
<i>Sedum album</i> ‘Coral Carpet’	4/24	white/green with coral overtones	dark coral winter foliage	6–9, 9–6
<i>Sedum</i> ‘Green Spruce’	4/24	yellow/bright green	green sprucelike foliage	6–9, 9–6
<i>Sedum lydium</i>	2/8	white/red-tipped bright green	shade and moisture loving	5–8, 8–5
<i>Sedum rupestre</i> (syn. <i>S. reflexum</i>)	4/24	yellow/gray-green	blue sprucelike foliage	6–9, 9–6
<i>Sedum sexangulare</i>	3/36	yellow/red-tipped bright green	fast spreading	5–8, 8–4
<i>Sedum spurium</i> ‘John Creech’	2/24	pink/green	small dense foliage	4–9, 9–1
<i>Sedum telephium</i> ‘Matrona’	24/12	pink/purple-gray	3-inch flower clusters in fall	4–9, 9–1
<i>Talinum calycinum</i>	6–10/12	magenta/ bright green	midwest U.S. native	5–9, 9–5

ings of about \$100 million—if all of its roofs were green.

In addition to providing energy savings, green roofs also reduce stormwater runoff, a major source of pollution and flooding in cities. On standard rooftops, rainwater runs off onto streets and into storm sewers, picking up oil and other pollutants that are then carried into rivers, lakes, and groundwater.

The plants and growing medium on green roofs, on the other hand, absorb up to 75 percent of the rainfall, thus reducing runoff dramatically.

CHALLENGES TO CONSIDER

Despite all the benefits green roofs offer, they aren’t more widespread because, according to advocates, most American cities aren’t prepared for green roof technology. Developers and architects lack incentives

for their installation and are left to wade through a sea of red tape and building-code restrictions. “Policy change is key to making widespread urban green roofing possible,” emphasizes Peck.

According to Gifford, “In North America, Chicago and Toronto lead the way right now with policy change. Oregon is next, then Washington, D.C., and New York City are neck to neck.” Gifford applauds Chicago Mayor Richard M. Daley for his support of green roof legislation and technology, which has led to the installation of green roofs on more than 100 buildings in that city.

Because green roofs are relatively heavy compared with conventional roofing, structural integrity is a critical design consideration. “Before installing any green roof, it is vital to have the loading capacity

of your roof assessed by a certified architect,” says Peck. Extensive green roofs weigh an average of 18 to 25 pounds per square foot when wet; intensive types weigh between 80 and 150 pounds per square foot. “Most city or commercial buildings automatically have ample loading capacity to support a green roof,” says Beattie, “while residential homes do not.” He also notes that green roofs built in colder regions must also be able to support the added weight of snow loads.

Affordability has been another factor slowing the pace of evolution of the green roof movement. A standard asphalt or shingled roof costs about \$2 a square foot, while in the commercial market extensive green roofs range from \$8 to \$30 a square foot for large-scale projects. This is balanced somewhat by the greater durability



Above: A wildflower meadow designed by Marie-Anne Boivin of Soprema blooms on the roof of this residential building on Howe Island in Ontario, Canada. This award-winning green roof was installed using the Sopranature roofing system created by Soprema of Canada. **Right:** Boivin also designed the green roof for this parking garage in Québec.

of green roofs, which will last from 35 to 100 years, compared with 15 to 30 years for conventional roofs.

Prefabricated systems are already helping to make green roofs more affordable. A number of companies have developed proprietary green roofing materials for both commercial and residential use. Soprema of Canada supplies a complete green roof system called Sopranature, and modular grid systems like Weston Solutions, Inc. and ABC Supply Company's (Chicago, Illinois) Green Grid™ system and Green-Tech's (Roswell, Georgia) modular green roof units are also readily available. But, according to Beattie, these commercial systems have not yet been independently evaluated for performance.

AFFORDABLE GREEN HOMES

The emergence of proven prefabricated green roofing materials will help drive down costs and, eventually, put green roofs within the average homeowner's reach. "Most roofs are residential," says Patrick Carey, a pioneer of residential green roofs and founder of Hadj, an architectural design-build firm based in Seattle, Washington, "so it is vital to make roof greening a possibility for the individual homeowner."

In 1999, Carey and several colleagues from the Northwest Eco-Building Guild



began experimenting with residential green roofs and focusing on "driving the cost down and quality up." Through their efforts the average price for a residential extensive green roof has dropped from \$25 per square foot to \$10.

There is still disagreement about the viability of green roofs for general residential applications. Beattie believes most old homes are incapable of supporting green roofs without structural modifications, but he suggests they can be easily installed on the roofs of outbuildings such as sheds, barns, and garages. Carey, however, is confident that green roofs are an option for everyone and is willing to tackle "any roof, anywhere! We go where the timid commercial people won't."

Some of the most beautiful extensive green roofs have been installed at private residences. Marie-Anne Boivin, an agronomist and designer with Soprema, has created many residential green roofs with an emphasis on color and aesthetic appeal. She and Shim-Sutcliffe Architects of Toronto teamed up to install a 1,700-square-foot roof planted with sedums and a colorful wildflower meadow on a residence in the Thousand Islands, Ontario. This project won the

Resources

The Center for Green Roof Research, hortweb.cas.psu.edu/research/greenroofcenter/index.html.

Green Roofs for Healthy Cities, Toronto, Canada. www.greenroofs.org.

■ The organization's third annual Greening Rooftops for Sustainable Communities Conference will be held in Washington, D.C., on May 5 and 6, 2005. Visit its Web site for details.

Greenroofs, www.greenroofs.com.

■ Publishes *The Greenroof Directory of Manufacturers, Suppliers, Professional Services, Organizations, & Green Resources*.

The Northwest Eco-Building Guild, www.ecobuilding.org.

Planting Green Roofs and Living Walls by Nigel Dunnett and Noel Kingsbury. Timber Press, Portland, Oregon, 2004.

2004 residential award of excellence at last year's Green Roofs for Healthy Cities conference.

FUTURE PROSPECTS

"We are just beginning to understand the dynamics of green roofing in North America," says Beattie. "I'd like to see more acceptance of the technology by both federal and local agencies." With "more widespread and better certification training for architects and builders, and lower costs for clients," adds Peck, green roofs will be well designed and properly installed.

"Success breeds success," says Barbara Deutsch, senior director of programs and research for the Casey Trees Endowment, a nonprofit group in Washington, D.C. "We need to show the country our green roof success stories. The more successful installations we implement, the more accepted this technology will become." ☺

Jessie Keith is a horticulturist, plant biologist, and free-lance writer. She resides in Wilmington, Delaware.

Form Should Not Follow Fashion

This is the eighth article of an ongoing series on garden design.

TEMPTATION LURKS at every turn when you are beginning the design of a garden. In the last issue, we discussed how to avoid the seductive siren call of plants. Plants, we found, lead gardeners to focus on minutiae instead of on a holistic approach to the overall garden. This impedes the creative process.

A second temptation waiting to ensnare would-be garden designers is the urge to begin by selecting specific garden components (gazebos, patios, decks, etc.) or a distinct garden style (Italian, modern, English, etc.). This is understandable since most people think of gardens in primarily visual terms. Gardens are, after all, the epitome of eye candy (no matter what *GQ*, *Vanity Fair*, or *Cosmo* want you to believe).

People also tend to feel most comfortable with what they already have seen and know. Our familiarity with gardens is mainly derived from what we see in books, magazines, television shows, catalogs, and stores. All these forces generate certain expectations of what gardens should be and what they should look like. Once form begins to follow fashion, creative design suffers. It becomes all too easy for gardeners to start focusing on trends instead of developing and adhering to their own program statements.

Indeed, if you peruse the shelves of your local bookstore you'll find countless books and magazines on how to make an "English Cottage Garden," a "Native Woodland Garden," an "Herb Garden," a "Tropical Garden," and dozens of other garden genres. Books and catalogs also showcase an endless parade of stone walls, urns, trellises, chairs, and ornaments. Many of these are, unfortunately, the equivalent of design by numbers, listing the components, plants, and accessories essential to each garden type. Such guidance often emphasizes how gardens look—their form or style—rather than the process of actually designing them.

This limits creative exploration and makes it very easy to slip into collecting objects and accessories—designing *a la carte*—without having an overall plan of how they will relate to each other and the garden. The secret is to break free of the comfortably familiar and the trendy, to explore what you really want, and to find a way to achieve it. The foundation for



creating a vibrant garden should be rooted in the program statement—the guiding vision for the garden we discussed in the November/December 2004 issue.

AN HERBAL REMEDY

Let me offer a garden example. Perhaps you crave that "herb garden" you have repeatedly seen in glossy magazines and at a local botanical garden. You envision it as your private retreat, replete with boxwood edging, knotted patterns of herbs, brick or gravel paths, standard form fruit trees, and an abundance of fresh ingredients for your kitchen. The end product, a "proper" herb garden, appears fairly easy to achieve with a little work, planting, and the proper urn as a focal point.

But what if you happen to live on a hilly wooded lot with minimal sunny spots and no level areas except where the house stands? You could cut down the trees to let in light, but the woodland is probably the reason you bought the property in the first place. Besides, the trees' foliage looks splendid in the autumn. The topography is nothing a bulldozer and retaining walls worthy of a medieval hill fortress could not correct. But leveling the knolls would be a little expensive and perhaps overly dramatic. Finally, you may admit that you really have no desire to prune

UNDERSTANDING STYLE: IT'S MORE THAN A LOOK

As a designer, I am often asked what my “style” is. My answer is: I do not have one. I approach each garden design project with an open mind and try to minimize preconceived notions of what the final form will resemble. I never set out to design a specific type of garden. I seek to discern what is unique in the collective needs, desires, functions, and vision for each project. In doing so, I remain flexible and receptive to ideas. The results are often a bit unexpected, but almost always very pleasing.

To pass this philosophy on to my design students, I urge them to visit gardens and to ignore the obvious elements—the specific plants, ornaments, paving materials, decorative schemes, and stylistic flourishes—at least initially. I ask them to analyze what effects the garden has on them and by what means the garden achieves those effects. By abstracting from the garden its underlying design structures, they pick up ideas that can be applied in many different design situations and clothed in many different visual trappings in their own gardens.

In short, I admonish them *not* to replicate a garden’s visible surface components and groupings of objects. Rather, I exhort them to recreate the experience of being in a wonderful garden by analyzing and documenting the unfolding of spaces, the play of light and shade, the effects of scent, the interplay of enclosure and openness, the choreography of landforms, and endless other vital lessons. Indeed, using such an approach, a gardener is able to glean ideas anywhere—from Versailles to an urban postage-stamp garden. —T.F.

and pinch endlessly. Well, that picture-perfect herb garden is looking a bit like an impossibility. But you *can* have a garden that fits you and your site!

LET'S GET REAL

Instead of getting caught up in visual and stylistic clichés, begin thinking about what you really want. What *truly* turns you on in a “traditional” herb garden design? Could it be the strong sense of inward-looking enclosure, an intimate spot to spend time in reflection? If you are a manic socialite whose idea of being alone is sitting in Grand Central Station, this is probably not the best basis for your garden. Or, is it something as simple as a desire to grow your own food? If so, you might be better served with a small, informal kitchen garden, or even herbs planted in pots on a patio. If, on the other hand, your culinary aspirations lean towards food contained within microwavable packaging, your herb garden loses a significant *raison d'être*. A stereotypical herb garden, in short, may not be very reflective of your lifestyle.

Here's where going back to the ideas and goals in your program statement will once again keep you on track. Continue thinking about what you really want. Maybe the beauty of a well-ordered space full of graphic patterns—think French curves in heated embraces or leafy Gordian entanglements—is what draws you to an herb garden. Instead of sun-loving herbs, consider creating your garden with a selection of evergreen perennials, ground covers, and shrubs amenable to shade—and which will remain compact with little or no pruning.

Among these are small shrubs such as Himalayan box (*Sarcococca hookeriana* var. *humilis*), which offers the bonus of fra-

grant winter flowers; skimmias (*Skimmia* spp.), which have winter berries; and Japanese holly (*Ilex crenata* ‘Helleri’), which has fine-textured foliage and responds well to shaping. Evergreen perennials such as hellebores and lily of China (*Rohdea japonica*) could be in the mix, as well as grasslike ground covers such as *Acorus gramineus* ‘Variegatus’ and various sedges (*Carex* spp.).

The view from your sitting room looks out onto gentle,

upward sloping land. The slope is now an asset since its tilted angle will allow you a better view of anything planted on it than a flat area would. Slopes, in particular, showcase the nodding flowers of hellebores to great advantage. The slope is also spacious so plantings may be large-scaled, bold, and compelling.

Alternately, maybe an ornately patterned brick patio is all you need to reproduce the eye-catching patterns you crave, letting you dispense with horticultural maintenance altogether. The existing tree canopy will cast ever-changing shadow lines on the screen of the pavement, adding to the garden’s overall compositional value. The woodland now becomes an intrinsic part of the design.

These two possible “herbless” herb gardens throw away the rules to create new types of spaces. You have focused on the *essence* of what you want your garden to be. These gardens fit your personal goals and can be achieved on your property. Most importantly, they are *your* visions and not someone else’s dream of what your garden could or should be. The garden follows your program.

In the next issue, we will take a fresh look at that stock item in garden design, the perennial border.



This highly formal garden is clearly unattainable for most gardeners, but, if this is the kind of garden you like, you can translate elements of its design to a real-life setting.

Tres Fromme is a landscape designer at Longwood Gardens in Kennett Square, Pennsylvania.



Peter Orum

OWNER OF Midwest Groundcovers, the largest ground cover producer in Illinois, Peter Orum is currently President of the American Nursery and Landscape Association (ANLA). This trade association, located in Washington, D.C., represents America's leading horticultural businesses and promotes gardening as well as legislation to protect the environment and our country's green spaces.

If you haven't heard of the organization, perhaps you're familiar with some of their projects—among these, the Victory Garden program started during World War II, Highway Beautification, and America In Bloom.

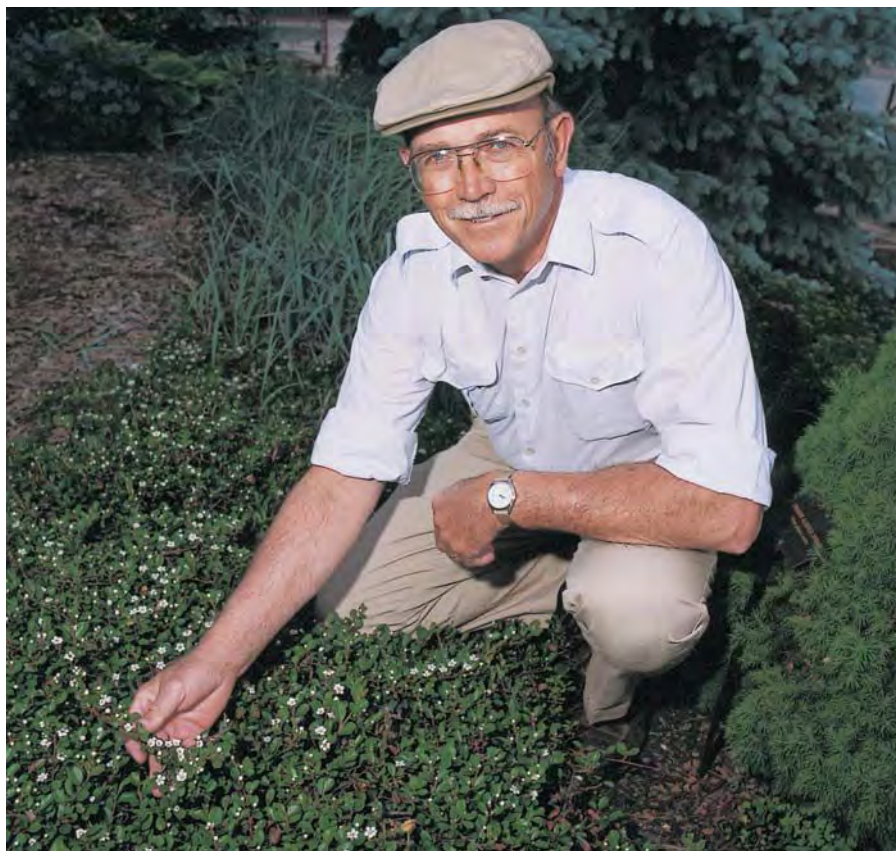
Garden writer Lynda DeWitt recently spoke with Orum about ANLA's initiatives relating to invasive plants and other issues the organization views as priorities this year.

Lynda DeWitt: Please bring us up to date on ANLA's work on the invasive plant issue.

Peter Orum: ANLA takes the invasive species issue very seriously, from both ecological and plant growing/marketing perspectives. It is important that decisions about invasive species be made on the basis of reputable scientific research and information. Both through our involvement with the USDA-ARS Floricultural and Nursery Research Initiative and funding by our own Horticultural Research Institute endowment, we have and will continue to fund research to answer some of the questions regarding invasive species. We are currently funding research on breeding non-invasive selections of important plants that may be regional invasives, and on plant invasiveness assessment models.

While we need to prevent the introduction of another kudzu, decisions must take into account the varied climates and uses of plants. A plant that is appropriate for the home garden may not survive a day in a parking lot island. Yet, those parking lot plantings are crucial to maintaining green spaces in our rapidly spreading urban environments.

Our fundamental position is that the right plant for the right place is the best solution. As far as plant choices and alternatives to invasives, the local/regional nature of the issue suggests that universities, cooperative Extension services, and state associations are the best



Peter Orum shows off *Cotoneaster* 'Nordic Carpet'®, a new introduction from Denmark.

sources for developing locally-based plant recommendations.

Likewise, please describe your Habitattitude™ program for water gardeners.

The Habitattitude™ program is a consumer outreach partnership involving the

pet and nursery industries. The goal is to avoid unwanted releases of potentially invasive pets and aquatic plants into the natural environment. The program is a chance for water gardening retailers to use education, rather than more regulation, to solve environmental problems.

For more specifics on the program, you can visit www.habitattitude.net.

The USDA has been working on a revised edition of the Plant Hardiness Map, which is expected to be released later this year. From what we've heard, this map will have four additional zones (15, up from 11). It will continue to be based on the average annual daily minimum temperature, but it will incorporate additional factors that affect temperature, such as elevation, proximity to large bodies of water, urban heat islands, and mountain slope effects. What is ANLA's position on the proposed new map?

ANLA is supportive of USDA in its effort to develop a new hardiness map that is more accurate and reflects microclimates that affect plant growth. We have a staff member who represents the grower community on the Technical Advisory Committee with USDA. It is important to us that the map is based on the best, climatologically correct data set. Consumers select plants and growers

For More Information

American Nursery & Landscape Association, 1000 Vermont Ave., NW, Suite 300, Washington, DC 20005-4914. (202) 789-2900. www.anla.org.

produce and market their plant material based upon the map, so it is critical that it be accurate.

What other issues do you plan to tackle during your year as president of ANLA?

A top priority for us is for Congress to pass—and for President Bush to sign—meaningful immigration reform legislation. ANLA and like-minded allies are fighting together for the future of American agriculture. We believe the labor and immigration bill, S.1645 and H.R.3142 or AgJOBS as we call it, is absolutely essential to that future. If we do not have a dependable workforce now and in the future, American specialty agriculture as we know it will disappear to other coun-

tries. We want to keep these farms and these jobs in America!

As owner of Midwest Groundcovers, you're involved in evaluating many new plant varieties each year. Can you describe a few of the new cultivars that gardeners can look forward to this spring?

At Midwest Groundcovers, we have been very excited about the performance of Flower Carpet Roses in the past few years. These ground cover roses are now available in six colors and display excellent disease resistance and an exceptional bloom period.

Cotoneaster 'Nordic Carpet'® is a new introduction from Denmark by Midwest Groundcovers and Twixwood Nursery. 'Nordic Carpet'® is a low-growing, evergreen cotoneaster. It features white flowers in the spring over deep green leaves on red stems. It holds winter interest with leaves that turn bronze-green and bright red berries.

Free-lance writer Lynda DeWitt lives in Bethesda, Maryland.



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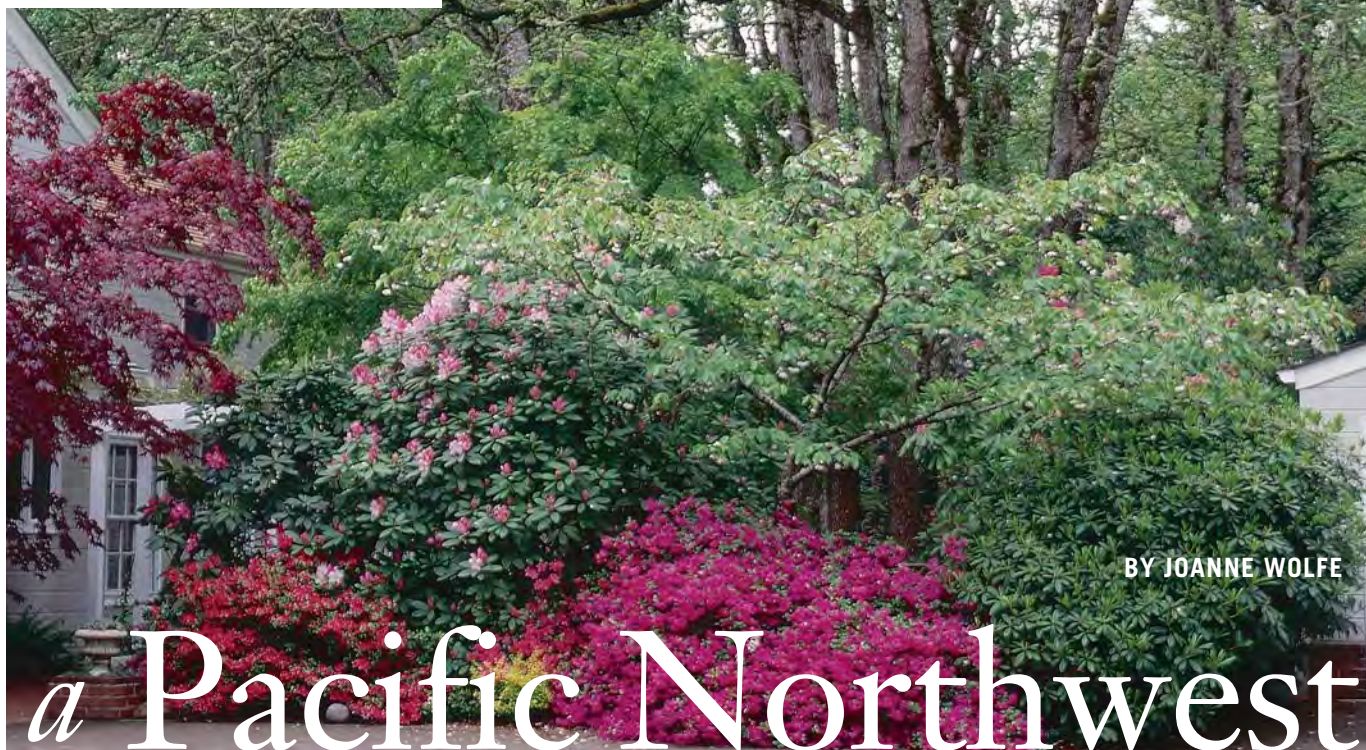
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Cherry Lake Tree Farm is pleased to announce its corporate partnership with the American Horticultural Society and is committed to helping fulfill the AHS mission by promoting the importance of large trees in the landscape.





BY JOANNE WOLFE

a Pacific Northwest *Paradise for Wildlife*

THE MARITIME Pacific Northwest boasts a nearly ideal climate that supports a rich diversity of native flora and fauna. The region stretches from northern California to Alaska. Its eastern boundaries are the northern Rockies, the Cascades, and the Klamath Mountains, and it is characterized by mild, wet winters and warm, dry summers. Opportunities for creating a habitat garden in this region are almost unmatched, so you may feel a little overwhelmed about where to begin. First, it's a good idea to review some general gardening principles, and then we'll focus on the best plants to attract and support the region's wildlife.

PLAN FOR SUCCESS

The key to gardening success is ensuring that plants are compatible with place. It helps to map your property to identify weather patterns, areas of sun and shade, and the relationships of existing buildings, large trees, and other prominent landscape features. If you already have large native trees such as Douglas firs (*Pseudotsuga menziesii*), false cedars (*Chamaecyparis* or

Calocedrus spp.), or bigleaf maples (*Acer macrophyllum*) on your land, they can become focal points for a wildlife-friendly shade garden. A hedgerow of native rhododendrons, serviceberries (*Amelanchier alnifolia*), or osier dogwoods (*Cornus stolonifera*) would make a great backdrop for perennials and ground covers.

More likely, however, you occupy a city lot that has a hodge-podge of native and non-native vegetation, and you may be tempted to rip everything out and start from scratch. Unless your plot of land is hopelessly overrun with invasive non-natives, such as English ivy (*Hedera helix*) and Scotch broom (*Cytisus scoparius*), or you have substantial reasons for removing large trees and shrubs—for example, they are unhealthy or could negatively affect structures—I recommend that you work with what you already have. There are important reasons for developing your habitat garden over a period of years rather than trying to create it in a single season.

NATIVE CAN BE ATTRACTIVE

Detractors of native landscapes often

complain that they look messy or out of control, and that is sometimes true of wild landscapes where plants are competing vigorously for limited light, water, and soil nutrients. It's also true in areas where vegetation has been extensively affected by human activities and plants are struggling to regain territory, or where invasive species have run rampant.

In a more controlled garden setting, however, native plants benefit from nutrient-rich soils and less-crowded conditions. In this environment, they will tend to grow larger and healthier and have greater visual appeal. If you clear your land and start from scratch, every plant will be young and equally competitive. None will be large enough to shelter others from weather, wildlife depredations, or other adverse conditions—nor will they protect each other and the soil from excess moisture loss.

Also, wild creatures and gardeners alike benefit from a garden that contains vege-

Native oaks (*Quercus garryana*) form a canopy over rhododendrons, maples, and cherries in this Oregon garden.



A bigleaf maple (*Acer macrophyllum*) offers a perch for wildlife above assorted shrubs and ground covers. A shallow basin of water on a tree stump provides easy access for sipping and bathing.

tation in various life stages. In the wild, animals are drawn to mature trees and shrubs because they are sources of food and shelter. They're also drawn to edges, where meadow becomes hedgerow or forest, because such edges offer protected observation points—important for both predators and prey. Humans are attracted to those transition zones as well, because the natural layering of plants is visually appealing.

WILDLIFE-ATTRACTING NATIVE PLANTS

If your property lacks large vegetative focal points, begin by adding them. Place plants in groups according to their preferences for wet, mesic (midrange), or dry conditions. Some native plants estivate (go dormant) in droughty Pacific Northwest summers, and these will not welcome frequent watering or placement where they will receive runoff from the roof.

Choose a mix of evergreen and deciduous natives that will give your garden year-round appeal. Here also, gardener and wildlife interests come together: evergreens are visual focal points; they also offer food and shelter for birds and other animals. Deciduous trees provide nesting or larval habitat and edible fruits or nuts. Their leaf litter is a natural deterrent of annual winter weeds, insulates soil to protect perennials from freezing, and attracts insect-foraging birds.

Native oaks, junipers, and pines are the greatest wildlife attractors, but many species grow quite large and may not be

suitable for city lots. For small wildlife gardens, good plants to include are evergreen trees such as shore pine (*Pinus contorta*) and the five-foot-tall *Chamaecyparis lawsonia* 'Minima', and deciduous trees such as paper birch (*Betula papyrifera*), Oregon



Flowering currant's fruit attracts wildlife.

crabapple (*Malus fusca*), and bittercherry (*Prunus emarginata* var. *mollis*). Oregon ash (*Fraxinus latifolia*) is a notorious bird-attractant, but its messy fruit-drop is best confined to the back of a deep border. The compact filbert or hazelnut (*Corylus cornuta*) is an excellent choice because it offers food for both humans and wildlife.

For wildlife-attracting shrubs, consider planting *Juniperus communis*, tall and creeping Oregon grape (*Mahonia aquifolium* and *M. repens*), huckleberry (*Vaccinium ovatum*), and flowering currant (*Ribes sanguineum*).

Finally, try layering perennials, vines,

Resources

Gardening with Native Plants of the Pacific Northwest by Arthur R. Kruckeberg. University of Washington Press, Seattle, Washington, 1993.

The Handbook of Northwest Gardening by Ann Lovejoy. Sasquatch Books, Seattle, Washington, 2004.

Landscaping for Wildlife in the Pacific Northwest by Russell Link. University of Washington Press, Seattle, Washington, 1999.

Pacific Northwest Garden Survival Guide by Debra Prinzing. Fulcrum Publishing, Golden, Colorado, 2004.

www.rainyside.com. The "go-to" place for Pacific Northwest habitat gardening.

www.tardigrade.org/natives. Another great site for basic habitat information and links to other useful sites.

Sources

Forestfarm, Williams, OR. (541) 846-7269. www.forestfarm.com. Catalog \$5 (free online).

Siskiyou Rare Plant Nursery, Medford, OR. (541) 772-6846. www.siskiyouareplantnursery.com. Catalog \$3; free online.

and ground covers such as pearly everlasting (*Anaphalis margaritacea*), *Delphinium nudicaule*, and trumpet honeysuckle (*Lonicera ciliosa*) to attract a host of songbirds, hummingbirds, and butterflies to your garden. (A chart of regionally appropriate plants for habitat gardening in the Pacific Northwest can be found linked to this article on the AHS Web site, www.ahs.org.)

Joanne Wolfe is a contributing editor for The American Gardener and a key voice in the habitat gardening movement. Her native habitat is the Pacific Coast of Oregon.

Horticultural News and Research Important to American Gardeners

GARDEN CRUSADER TURNS L.A. VACANT LOT INTO COMMUNITY FARM

In 2001, the Gardener's Supply Company, a mail-order supplier of environmentally responsible garden products based in Burlington, Vermont, began recognizing and awarding Garden Crusaders, individuals "who are improving the world through gardening."



Maurice Jones in his award-winning garden

Littered with the detritus of urban life, the lot was the site of drug sales, gang fights, prostitution, and muggings. In two short years, Jones transformed the lot and named it the South Central City Farm. Now the lot is a place where families can grow their own food, where citrus trees provide fresh fruit for residents, and where children can safely play and learn to garden. After the "farm's" first year, the neighborhood crime rate dropped by more than 25 percent. And in less than two years, it began receiving awards from the Los Angeles Police Department, the City Council, and the mayor. Eventually, Jones hopes to have volunteers take over the management of South Central City Farm. If that happens, he will be free to work his magic at similar gardens in other parts of the inner city.

For a complete list of the 2004 Garden Crusader Award winners, visit www.gardeners.com. To nominate a gardener for the 2005 award, call (888) 239-1553 or e-mail crusader@gardeners.com.

partment, the City Council, and the mayor. Eventually, Jones hopes to have volunteers take over the management of South Central City Farm. If that happens, he will be free to work his magic at similar gardens in other parts of the inner city.

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NEW CARROT PIGMENTS SIGNAL NUTRIENT CONTENT

Researchers at the University of Wisconsin are breeding carrots in a rainbow of colors—yellow, dark orange, bright red, and even purple. What is even more surprising than these colors is that their various pigments are associated with different nutrient contents.

"We knew there had to be differences in compounds, pigments in particular, to account for the differences in colors. What we did not know at that time was that these compounds had nutritional value, other than vitamin A precursor carotenoids," says Philipp Simon, director of the

USDA's vegetable breeding program at the University of Wisconsin–Madison's College of Agricultural and Life Sciences.

Working with University of Wisconsin nutritionist Sherry Tanumihardjo, Simon found that each carrot pigment was linked to a different mix of compounds. Yellow carrots contained xanthophylls that promote good eye health. Red carrots contain lycopene, also found in tomatoes and thought to prevent heart disease and cancer. Purple carrots contain anthocyanins, powerful antioxidants that protect cells against free radicals. What's more, these compounds are in forms the body can use.

It may be some time before multi-colored carrots are available at your local grocery store, but in the meantime, you can grow your own—your kids may even get a kick out of eating them. Baker Creek Heirloom Seeds in Mansfield, Missouri, carries red, purple, yellow, and white carrots; call (417) 924-8917 or visit www.rareseeds.com. Amishland Heirloom Seeds (www.amishlandseeds.com) in Reamstown, Pennsylvania, also sells a mix of colors.

FLUFF FROM RECYCLED GARBAGE

There's nothing anywhere else in the country like the big machine at Waste-Away Services in McMinnville, Tennessee. Each week, it shreds 160 tons of garbage collected from Warren County at the rate of roughly seven tons per hour. What happens next, however, is the real miracle. Ninety-five percent of the unsorted garbage that enters the machine is recycled into Fluff, a material that may find its way into plant growing mixes.

In a paper written for the Center for Applied Nursery Research, Amy N. Wright, Jeff L. Sibley, and Wenliang Lu of Auburn University's Department of Horticulture state, "Our studies at this point suggest that replacing about one-third of pine bark with MSWC (Fluff) can be effectively used to grow a wide variety of container plants or flowers. Grower opin-



Carrots aren't just orange anymore!

ions of Fluff were generally positive.”

In addition to its horticultural applications, Fluff can be compressed into a host of other products. So far, Composite Products of America, another division of the Bouldin Corporation that owns WastAway (www.wastaway.com), has turned Fluff into fencing materials, park benches, decking, and landscape timbers.

NORTHWESTERN AND CHICAGO BOTANIC GARDEN COLLABORATE TO TRAIN BOTANISTS

In response to a critical shortage of botanists and plant conservationists at a time when plant species around the world are increasingly endangered, Northwestern University and the Chicago Botanic Garden are collaborating to offer the nation's first Master of Science degree in plant biology and conservation. This unique interdisciplinary program is designed to equip the next generation of plant scientists to face the national and international threats to biodiversity and the possibility of global mass extinctions.

“We are experiencing major environmental changes...and these shifts are

having a major impact on human life and the science of our globe,” says Jon E. Levine, director of Northwestern's biological sciences program. “By teaching new scientists to apply reason and science to these large and complex problems, we are looking to the future.”

Applications are being accepted for the fall 2005 class. For more information, call (847) 491-4031 or visit www.wcas.northwestern.edu/biosci/graduate/.

ABUNDANT LIFE SEED CATALOG RISES FROM THE ASHES

After a devastating fire in 2004 that destroyed its offices, the Abundant Life Seed Foundation decided to give up the seed catalog business and concentrate on its Organic Seed Alliance and World Seed Fund. Fortunately, Tom and Julie Johns, owners of Territorial Seed Company in Cottage Grove, Oregon, have taken over the unique catalog business.

Abundant Life Seeds has been “protecting the genetic diversity of rare or endangered food crops since 1975,” and now will continue to do so. The first catalog,

available online at www.abundantlife.seeds.com, offers only certified organic grown seeds.

GREEN INCENTIVES

In parts of the country where summer temperatures sizzle and rainfall is seasonal, water and power are increasingly precious commodities. That's why some cities are developing incentive programs to encourage and reward citizens for eco-sensitive landscaping.

The Green LA Program, for customers of the Los Angeles Department of Water and Power, provides workshops at locations throughout the city and online (www.ladwp.com/trees). After learning proper tree planting and maintenance, participants take a quiz. If they pass, they receive up to seven free trees to provide cooling shade and control air pollution around their homes.

Residents of Albuquerque, New Mexico, receive an \$800 rebate for xeriscaping their home landscapes, a \$25 rebate on their water bill for buying a rain barrel for garden use, and substantial rebates for in-

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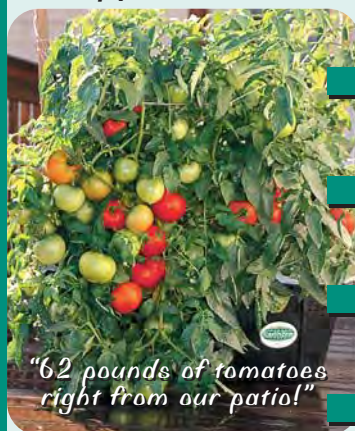
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stalling water-saving toilets and washing machines. Between the program's inception in 1994 and the end of 2003, the per person water usage dropped from 250 gallons per capita per day to 193.

Because traditional turfgrass lawns are perhaps the biggest landscape water hogs, many cities reward their inhabitants for decreasing turf areas or switching to native alternatives. In Louisville, Colorado, residents receive rebates for installing a buffalo grass lawn. In San Antonio, Texas, where the city requires a minimum of one shade tree per lot, no more than 50 percent of the landscape may be planted in turf—and that portion must be Bermuda, buffalo, or zoysia grass. Since October 1991, when the City of Tempe in Arizona started its rebate program, an estimated 1,900,000 square feet of turf have been removed and replaced with drought-tolerant landscaping.

In addition to saving water and energy, these programs have fostered a return to native vegetation that is aesthetically pleasing, suited to the region, and supports wildlife.

In Memoriam

New England nurseryman and garden designer **Allen C. Haskell**, 69, died on December 7, 2004. Haskell was a frequent guest on Martha Stewart's television show and always a popular exhibitor at New England flower shows.

Among the numerous professional honors and awards Haskell received was the AHS Paul Ecke, Jr. Commercial Award in 1987.

Past AHS president **Russell Seibert**, 90, died on November 28, 2004 in Sarasota, Florida. Seibert began his horticultural career as the director of the Los Angeles County Arboretum and Botanical Garden and went on to become the first director of Longwood Gardens in Kennett Square, Pennsylvania.

A long-time member of the AHS Board of Directors, Seibert served as AHS president from 1963 to 1965 and received the AHS Liberty Hyde Bailey Award in 1975.

Founding member of the International Water Gardening Society, **Perry D. Slocum**, 91, died on November 29, 2004 in Winter Haven, Florida. A prolific plant breeder, Slocum is perhaps best known for crossing the American lotus (*Nelumbo lutea*) with *N.* 'Rosea Plena' to produce the most popular and widely grown lotus in North America, *N.* 'Mrs. Perry D. Slocum', introduced in 1964.

He wrote numerous books on water gardening, including *Water Lilies and Lotus*, published posthumously in March 2005 by Timber Press.

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The American Gardener Our beautiful full-color bi-monthly magazine offers in-depth articles written by plant and gardening experts and enthusiasts.

Free Admission or special discounts to 170 public gardens and flower and garden shows across the United States and Canada.

Free Seed Exchange Program AHS's annual seed exchange program enables members to obtain hundreds of uncommon varieties of seeds.

Travel Study Program AHS and the Leonard Haertter Travel Company offer superb national and international garden-based, educational tours to beautiful private and public gardens in the United States and abroad.

Special invitations to educational programs such as the AHS Garden Schools and AHS partner events that include the Epcot International Flower & Garden Festival and the Colonial Williamsburg Foundation Garden Symposium.

AHS Online Our Web site (www.ahs.org) contains a wealth of information, including articles from *The American Gardener*, members-only pages with special information and updates, and links to other prominent gardening sites.

Your membership also supports our many national programs

George Washington's River Farm The AHS's National Headquarters is located on a scenic 25-acre site overlooking the Potomac River. Formerly one of our First President's farms, the property now features an artful blend of naturalistic and formal gardens that offer year-round delight to visitors of all ages.

National Children and Youth Garden Symposium Since 1993, this annual program has led the way in promoting the value of children's gardens and garden-based education.

The Growing Connection This innovative educational program teaches children about the science of growing food plants and their role in a healthy diet.

Online Gardening Courses Enroll in state-of-the-art online garden classes through AHS's partnership with the Horticultural Gardening Institute of Michigan State University.

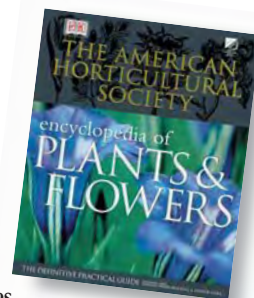
Heat Tolerance Map In 1997, AHS introduced the AHS Plant Heat Zone Map, which has revolutionized the way American gardeners select region-appropriate plants.

Book Program AHS and DK Publishing, Inc., have teamed up to create a definitive horticultural reference library for the 21st century.

SMARTGARDEN™ Launched in 2000, this AHS program uses existing tools, such as the USDA Plant Hardiness and AHS Plant Heat Zone codes, and considers new criteria to develop guidelines that best reinforce our stewardship of the earth.

Horticultural Intern Program Horticulture students from around the country get hands-on experience in garden maintenance and design and an opportunity to work with leading gardening experts.

National Awards Program The Great American Gardeners Awards recognizes individuals and organizations who have made significant contributions to horticulture. The Flower Show Awards spotlight earth-friendly garden displays at flower shows. Noteworthy garden books are the focus for our Book Awards program.



Annual Membership Levels

Annual membership in the American Horticultural Society, including six issues of *The American Gardener* magazine and all the benefits described on this page, is available at the following levels:

- \$35 Individual
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- \$1,000 President's Council
- Corporate Membership (contact our office)
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Recommendations for Your Gardening Library

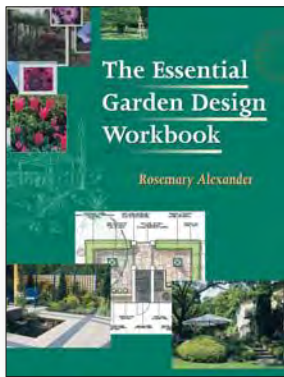
The Essential Garden Design Workbook.

Rosemary Alexander. Timber Press, Portland, Oregon, 2004. 292 pages. Publisher's price, softcover: \$34.95.

The Intimate Garden: Twenty Years and Four Seasons in Our Garden.

Gordon Hayward and Mary Hayward. W. W. Norton & Company, New York, New York, 2005. 224 pages. Publisher's price, softcover: \$39.95.

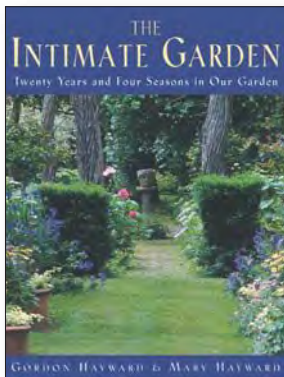
MOST GARDENERS I know are simply incapable of thinking in abstractions. For example, when I walk through my garden, I'm focused on the hydrangea that needs pruning or the bedraggled rose that has burst into bloom unexpectedly. Just like forests and trees, sometimes it's hard to see the garden for the plants.



In her new book, *The Essential Garden Design Workbook*, noted British garden designer Rosemary Alexander promotes the notion that a garden must be more than a collection of plants that one feels passionate about. It must

also be balanced and composed, like a great painting. To achieve this, Alexander introduces readers to pivots and focal points, the role of the overhead plane, the importance of depth, and the various qualities of water.

If this all sounds pretty esoteric, it is. This is a comprehensive, almost scholarly guide to the secrets of good garden design. It would be particularly helpful to a serious gardener who is getting ready to develop a large garden or improve an established garden. And anyone who is hiring a garden designer or landscape architect could use this book to follow along in the design process.



Gordon and Mary Hayward's new book, *The Intimate Garden*, takes a different approach to garden design. Here the reader gets a personal story of the couple's Vermont garden (Gordon is a well-known garden designer and

Mary honed her gardening skills in the English Cotswolds), and a more direct connection to plants as—well, plants. Detailed plant descriptions, almost 200 full color photographs, and en-

gaging stories help to describe the emergence of the garden as both an organic and a carefully planned process.

On one hand, strong design is always a key consideration. The Haywards describe a visit from a respected gardener who looked from the front door of the house to an old apple tree in the distance and said, "That's an important line." That single statement helped the couple find the starting point for their plan. But quite apart from design considerations, they also share a familiar joy in acquiring and planting new plants. They describe a trip to a nursery, after which they "planted our new treasures in a white heat, paying some attention to a rough plan we had devised and a lot of attention to how the plants looked as we placed them."

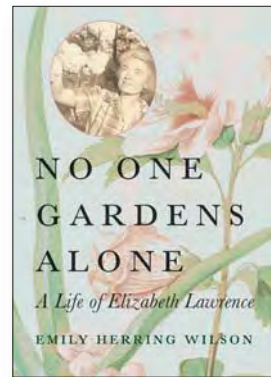
Both books make excellent companions for anyone undertaking a major design project. They also will make good reading for anyone who would like to understand how to apply design concepts to create a cohesive garden. —Amy Stewart

Amy Stewart is the author of The Earth Moved: On the Remarkable Achievements of Earthworms.

No One Gardens Alone: A Life of Elizabeth Lawrence.

Emily Herring Wilson. Beacon Press, Boston, Massachusetts, 2004. 334 pages. Publisher's price, hardcover: \$26.

IN THIS well-written and carefully researched biography of a giant in gardening literature, Emily Herring Wilson writes, "Elizabeth Lawrence had an implicit understanding of how essential her life was to her work, and she wrote from her experiences at home and in the garden." Lawrence's gardening interests were wide ranging, but her life was—outwardly, at least—circumscribed and quiet.



Though she attended Barnard College as a young woman and studied landscape architecture at what is now North Carolina State University, Lawrence never married, never held a job, and lived

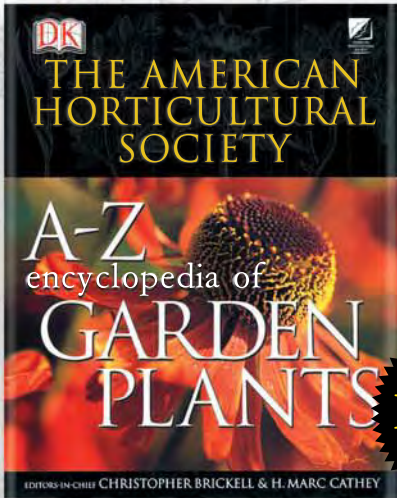
with her mother in Raleigh and then Charlotte, North Carolina. However, she corresponded voluminously with fellow gardeners across the country—people who responded to her garden articles in the *Charlotte Observer* and her books, such as *A Southern Garden*, *The Little Bulbs*, and *Gardens in Winter*.

Rather than concentrate on the details of Lawrence's relatively uneventful life, the author recreates the milieu that sustained Lawrence and enriched her writing. The book helps us



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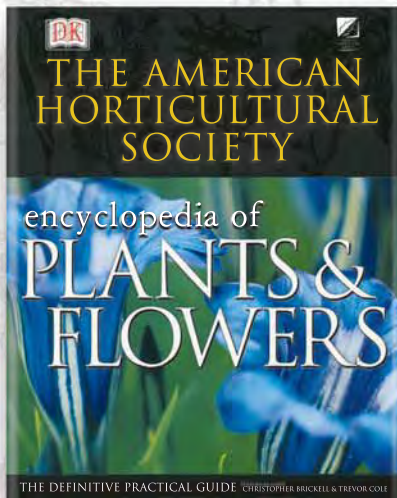
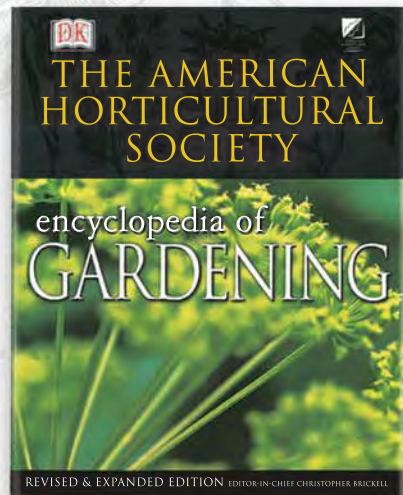
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One after one; the sound of rain, and bees
Murmuring; the fall of rivers, winds and seas. . .*

—William Wordsworth



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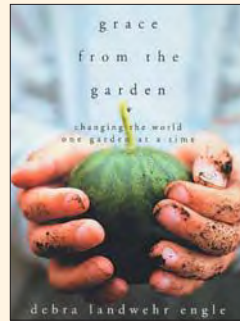
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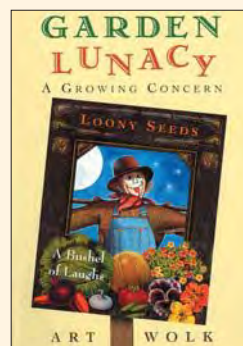
www.GardenersOfAmerica.org

GARDENING HAS the power to profoundly affect people's lives, as Debra Landwehr Engle demonstrates in *Grace From the Garden: Changing the World One Garden at a Time* (Roddale Press, 2003, 240 pages, hardcover, \$19.95). The book explores gardens that teach, nourish, unite, inspire, and heal people from all walks of life. As Engle explains, many of them started with "a simple idea, something anyone could do, and it grew into a project that altered people's lives." Heartwarming and inspiring, this collection of stories will introduce you to ordinary gardeners who literally plant seeds of hope in America and around the globe.



ordinary gardeners who literally plant seeds of hope in America and around the globe.

LEST GARDENERS ever take themselves too seriously, *Garden Lunacy: A Growing Concern* (AAB Book Publishing, LLC, 2004, hardcover, \$26.95) by Art Wolk will set them straight!



Through personal anecdotes and offbeat observations, Wolk—a multi-talented garden writer and lecturer—takes a light-hearted look at the sometimes-wacky world of gardening. He delves into the differences between gardeners and non-gardeners, the competitiveness of flower shows, dealing with garden pests, and more. "I probably have more horticultural foibles and addictions than any gardener you've ever met," writes Wolk. "If you identify with any of my eccentricities, I hope you'll be able to laugh along with me."

—Viveka Neveln, Assistant Editor

understand not only Elizabeth Lawrence, but a way of life. We learn of the Raleigh society in which she grew up; we meet gardeners and friends, famous and obscure, who formed the fabric of her life. The book explores her friendship with fellow writers Eudora Welty and Katherine White as well as with other avid gardeners across the nation.

If you are looking for an in-depth exploration of Lawrence's gardens, this is not the book for you, though the author is clearly a knowledgeable gardener. However, if you would like to know more about the society that produced Elizabeth Lawrence, I heartily recommend this book. It brings to life a world that seems to have disappeared, one where women's lives were bound by family and social convention, but one in which it was still possible to live a rich life, nourished by a passion for gardening and the love of friends.

—Norma Prendergast

Norma Prendergast is an art historian who gardens in rural Brooktondale, New York.

Container Gardening

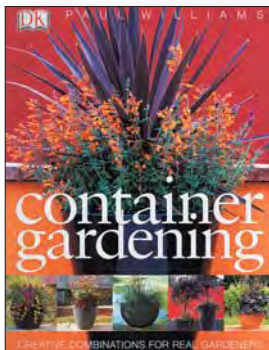
FOR SEVERAL YEARS, containers offered my only means of gardening when I lived in a city apartment, which, thankfully, had a large balcony. However, because of the versatility of container gardening, I never felt limited. I grew everything from giant sunflowers to winding wisteria and even several good-sized century plants (*Agave americana*). Whether you've got a balcony or a large property, container gardening offers nearly limitless possibilities, as evidenced by the following selection of books available on the subject.



In *Gardens to Go: Creating and Designing a Container Garden* (Bulfinch Press, 2005, hardcover, \$35), Sydney Eddison writes, "Container gardens can be of any size or shape; they can cover an entire rooftop or be squeezed onto a tiny patio. Assembling them is fun and relatively quick, and anybody can do it." Partnering with photographer Steve Silk, Eddison shares their experiences and knowledge of container gardening from the plants to

the pots, as well as that of six other prominent and passionate container gardeners. The book boasts 200 color photographs and includes helpful resources such as a list of basic plants for containers, recommended books for further reading, and sources for unusual annuals and tender perennials.

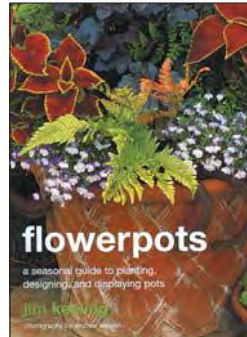
Design elements such as color, texture, proportion, and shape of both the plants and containers are important to consider, as



Paul Williams emphasizes in *Container Gardening: Creative Combinations for Real Gardeners* (DK Publishing, 2004, hardcover, \$25). In these pages you will find plenty of ideas and inspiration for your own creations. The book includes stunning portraits of containers Williams himself has created and demonstrates the skillful use of the design principles he covers. There is also a section that explains the merits

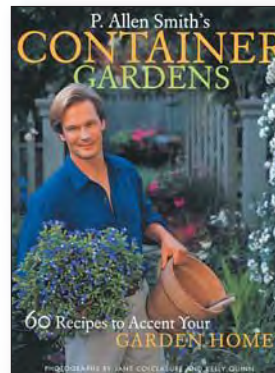
of various container materials, followed by some basic how-to instructions and maintenance tips. Finally, Williams provides a plant directory filled with his personal favorites and easy-to-grow plants, each one accompanied by a color photograph.

Flowerpots: A Seasonal Guide to Planting, Designing, and Displaying Pots (Trafalgar Square Publishing, 2004, hardcover, \$29.95) by Jim Keeling looks at container gardening



throughout the year. The book begins with a chapter called "Autumn," and progresses through the other seasons, because, as Keeling writes, "my year starts, as every schoolchild knows, after the summer vacation." Each season brings new possibilities and challenges, and the author guides his readers through each one. A craftsman who makes flowerpots from clay as well as a gardener who designs and plants his own creations, Keeling writes lyrically yet informatively about both pottery and gardening. Dazzling photographs further add to this lovely book.

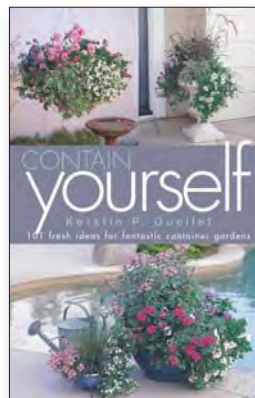
P. Allen Smith's *Container Gardens: 60 Container Recipes to Accent Your Garden* (Clarkson Potter, 2005, hardcover, \$29.95) takes a cookbooklike approach.



"Just as in cooking, the recipes are there as a formula for success and also as a framework to encourage you to add your own special twist," explains Smith. The "courses" in this cookbook are spring, summer, autumn, and winter, and each recipe lists "ingredients," such as the type of container to use and of course, the plants. Diagrams show

how to arrange everything and color photographs show the finished containers. The book also includes sections on container gardening how-to and maintenance, and a plant directory.

For something along the lines of a more straightforward manual, there's *Contain Yourself: 101 Fresh Ideas for Fantastic Container Gardens* (Ball Publishing, 2003, hardcover, \$24.95) by Kerstin P. Ouellet. The book is divided into three parts: The first briefly covers designing, planting, and caring for container gardens; the second part is devoted to plant profiles; and the last part contains ideas for using the plants previously mentioned. The arrangements Ouellet presents range from the simple and sophisticated to the whimsical and wild. Color photographs, helpful diagrams, and a conversational tone make this book both a pleasant read and an informative resource.



—Viveka Neveln, Assistant Editor



REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

MAR. 18–20. **Capital District Garden and Flower Show.** Hudson Valley Community College. Troy, New York. (518) 786-1529. www.gardenandflowershow.com.

RAP APR. 2. **The Berry Patch Gardener.** Lecture. Berkshire Botanical Garden. Stockbridge, Massachusetts. (413) 298-3926. www.berkshirebotanical.org.

APR. 12–17. **New York International Orchid Show.** The Greater New York Orchid Society. New York, New York. (212) 332-6577. www.gnyos.org.

APR. 15–17. **Hofstra University Arboretum Flower and Garden Show.** Hempstead, New York. (516) 463-6633. www.hofstra.edu/COM/Arbor/Arbor_flower_show.cfm.

APR. 28–MAY 1. **Spring Herb Sale.** Lyman Estate Greenhouses. Waltham, Massachusetts. (781) 891-4882. www.HistoricNewEngland.org.

RAP APR. 30 & MAY 1. **Cherry Blossom Festival.** Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7220. www.bbg.org.

Looking ahead

MAY 7. **Herb Plant Sale.** The New England Unit of the Herb Society of America. Wellesley, Massachusetts. (401) 274-8873. www.neuhsa.org.

MID-ATLANTIC

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

MAR. 17–20. **Washington Home and Garden Show.** Washington Convention Center. Washington, DC. (703) 823-7960. www.washingtonhomeandgarden.com.

APR. 2–MAY 27. **Acres of Spring.** Spring display. Longwood Gardens. Kennett Square, Pennsylvania. (610) 388-1000. www.longwoodgardens.org.

APR. 3. **Wilkes Birthday Festival.** Celebration of plants that started the U.S. Botanic Garden. U.S. Botanic Garden, Washington, D.C. (202) 225-8333. www.usbg.gov.

AHS APR. 3–5. **Inspiring Ideas for the Home Gardener.** Symposium. Colonial Williams-

burg. Williamsburg, Virginia. (800) 603-0948. www.colonialwilliamsburg.org.

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.

burg. Williamsburg, Virginia. (800) 603-0948. www.colonialwilliamsburg.org.

RAP APR. 9 & 10. **Virginia Daffodil Society Show.** Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. www.lewisginter.org.

APR. 11. **No Stone Unturned: Artists and Gardens.** Symposium. Carnegie Mellon University's School of Art. Pittsburgh, Pennsylvania. (412) 268-5765 www.cmu.edu/cfa/garden.html.

APR. 16–MAY 8. **Annual Gardening Days at Mount Vernon.** Plant sale. Mount Vernon. Alexandria, Virginia. (703) 780-2000. www.mountvernon.org.

AHS APR. 16–24. **Historic Garden Week.** Garden tours in numerous Virginia locations. The Garden Club of Virginia. Richmond, Virginia. (804) 644-7776. www.VAGardenweek.org. (See related article in "News from AHS" section.)

RAP APR. 30. **Annual Rare Plant Auction.** The Delaware Center for Horticulture. (302) 658-6262. www.dehort.org.

APR. 30. **Friends of the National Arboretum Garden Fair and Plant Sale.** U.S. National Arboretum. Washington, D.C. (202) 544-8733. www.fona.org.

Looking ahead

RAP MAY 7. **Rhododendron Show and Sale.** U.S. National Arboretum. Washington, DC. (202) 245-2726. www.usna.usda.gov.

MAY 7. **Bartram's Garden Native Plant Sale.**

Bartram's Garden. Philadelphia, Pennsylvania. (215) 729-5281. www.bartramsgarden.org.

RAP MAY 14. **Spring Garden Day.** Rare and unusual plant sale. Green Spring Gardens Park. Alexandria, Virginia. (703) 642-5173. www.greenspring.org.

SOUTHEAST

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

RAP MAR. 19 & 20. **Daffodil Show.** Atlanta Botanical Garden. Atlanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

RAP MAR. 31–APR. 2. **Early Bird Violet Club Annual Show.** Birmingham Botanical Gardens. Birmingham, Alabama. (205) 414-3900. www.bbgardens.org.

RAP MAR. 31–APR. 6. **Annual Plant Sale.** New Hanover County Master Gardener Association. Wilmington, North Carolina. (970) 452-6393.

APR. 8–10. **Bloom 'n' Garden Expo.** Williamson County Master Gardeners Expo. Franklin, Tennessee. (615) 790-5721. www.wcmga.net.

APR. 14–17. **An EPIC Celebration of Spring.** Flower and garden expo. EPIC Community Services. St. Augustine, Florida. (904) 829-2273. www.epiccommunityservices.org.

APR. 16. **Growin' Crazy.** Plant sale, nursery exhibits. North Carolina Cooperative Extension. Pittsboro, North Carolina. (919) 542-8202. www.ces.ncsu.edu/chatham/.

APR. 22–24. **Arbor Day Celebration.** Family activities, exhibits. The North Carolina Arboretum. Asheville, North Carolina. (828) 665-2492. www.ncarboretum.org.

RAP APR. 23. **Glorious Hydrangeas.** Symposium. Sarah P. Duke Gardens. Durham, North Carolina. (919) 684-3698. www.hr.duke.edu/dukegardens.

Looking ahead

AHS MAY 6. **Magic of Landscaping Symposium.** Lake Buena Vista, Florida. (352) 429-2171. www.magicoflandscaping.com. (See related article in "News from AHS" section.)

RAP MAY 7 & 8. **Gardens For Connoisseurs.**

Minnesota Landscape Arboretum Opens New Visitor Center

VISITORS TO THE Minnesota Landscape Arboretum can now enjoy the new, state-of-the-art Visitor Center, which officially opened in January. The center is equipped with touch-screen kiosks to help visitors plan routes, an auditorium, two classrooms, a teaching garden, restaurant, and gift shop.

“Winter in Minnesota has always been our low season,” says Peter Olin, director of the 1,040-acre arboretum in Chaska. “With the new visitor center, we’ll have the opportunity year-round to present plant-related exhibits, while hosting conferences, lectures, and symposia that would otherwise have to move off-site.”

The new center reflects design elements from the original 30-year-old visitor center—which still stands nearby—designed by renowned Minnesota architect, Edwin Lundie. An emphasis on natural light and the use of geothermal energy for heating and cooling are just a few of the new building’s environmentally friendly features. In addition, six new terraces and garden areas around the visitor’s center will offer a glimpse into the experience that lies ahead.



Large windows provide the new center with plenty of light.

Already the arboretum has many events planned that will make use of the new facility. The Sugarbush Pancake Brunch and Maple Syrup Tours on March 26 and 27 provide a great family outing. Participants will learn how maple syrup is made and enjoy an all-you-can-eat pancake brunch complete with arboretum-made syrup.

On April 9, the arboretum’s annual Plant Information Fair will take place in the MacMillan Auditorium of the Visitor Center. The event will feature demonstrations, lectures, a plant sale, and the opportunity to speak with garden specialists.

The Minnesota Landscape Arboretum is a Reciprocal Admissions Program (RAP) participant, and therefore AHS members receive free admission. For more information about the arboretum, visit www.arboretum.umn.edu or call (952) 443-1422.

—Nicole Gibson, Editorial Intern

Tours of private gardens. Atlanta Botanical Garden. Atlanta, Georgia. (404) 876-5859. www.atlantabotanicalgarden.org.

NORTH CENTRAL

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

RAP MAR. 5–20. **Spring Flower Show—Paintings Spring to Life.** Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP MAR. 12–20. **Annual Indiana Flower & Patio Show.** Indianapolis, Indiana. (800) 215-1700. www.hsishows.com.

RAP APR. 14. **Go Native! Incorporating Native Plants in Your Landscape.** Class. Klehm Arboretum and Botanic Garden. Rockford, Illinois. (815) 965-8146. www.klehm.org.

APR. 16. **Perennial Premier.** Plant sale. Indianapolis Museum of Art. Indianapolis, Indiana. (317) 923-1331. www.ima-art.org.

APR. 16 & 17. **Daffodil Show.** Fellows Riverside Gardens. Youngstown, Ohio. (330) 740-7116. www.millcreekmetroparks.com.

RAP APR. 20–24. **Cincinnati Flower Show.** Cincinnati Horticultural Society. Cincinnati,

Ohio. (800) 670-6808. www.cincyflowershow.com.

RAP APR. 24. **Ask the Experts: Growing and Caring for Lilies.** Lecture. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-8326. www.chicagobotanic.org.

RAP APR. 30–MAY 1. **Plant Sale.** The Holden Arboretum. Kirtland, Ohio. (440) 946-4400. www.holdenarb.org.

Looking ahead

RAP MAY 13. **Arts and Crafts: Gardens and Landscapes of the Era.** Symposium. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-8326. www.chicagobotanic.org.

RAP MAY 27. **AHS Member Day at the Cleveland Botanical Garden Flower Show.** Cleveland Botanical Garden. Cleveland, Ohio. (216) 721-1600. www.cb garden.org. (See related article in “News from AHS” section.)

SOUTH CENTRAL

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

RAP MAR. 5–APR. 10. **Dallas Blooms.** Spring display. Dallas Arboretum and Botanical Garden. Dallas, Texas. (214) 515-6512.

www.dallasarboretum.org.

RAP MAR. 18–20. **Oklahoma Flower and Landscaping Show.** Oklahoma Botanical Garden and Arboretum. Tulsa, Oklahoma. (405) 744-6460. www.hortla.okstate.edu.

RAP APR. 5–7. **Beauty and the Brush.** Spring festival. Garvan Woodland Gardens. Hot Springs, Arkansas. (501) 262-9300. www.garvangardens.org.

APR. 7–9. **Gateway to Spring.** Convention. American Daffodil Society. Saint Louis, Missouri. adsconv2005.stldaffodilclub.org.

RAP APR. 16. **Breaux Bridge Garden Club Plant Show.** American Rose Society. Breaux Bridge, Louisiana. (800) 637-6534. www.ars.org.

RAP APR. 16 & 17. **Daffodil Show.** Botanica, the Wichita Gardens. Wichita, Kansas. (316) 264-0448. www.botanica.org.

APR. 19 & 20. **Countdown to Bloom.** Flower, horticulture, and conservation show. The Garden Club of Houston, River Oaks Garden Club, and the Museum of Fine Arts. Houston, Texas. (713) 639-7571. www.gchouston.org.

SOUTHWEST

AZ, NM, CO, UT

RAP THROUGH APR. 25. **Invasive Species Botanical Illustration Exhibit.** Denver Botanic Garden. Denver, Colorado. (720) 865-3500. www.botanicgardens.org.

MAR. 26. **Spring In Bloom Private Home Garden Tour.** The Valley of the Sun Gardeners. Phoenix, Arizona. (480) 636-6515. www.phoenixgardeners.org.

APR. 2 & 3. **Home Garden Tour.** Tucson Botanical Garden. Tucson, Arizona. (520) 326-9686. www.tucsonbotanical.org.

RAP APR. 22–24. **Annual Cactus and Succulent Show and Sale.** Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. www.dbg.org.

WEST COAST

CA, NV, HI

RAP MAR. 26. **Plant Sale.** Harold L. Lyon Arboretum. Honolulu, Hawaii. (808) 988-0456. www.lyonarboretum.com.

APR. 9 & 10. **Spring Plant Sale.** Occidental Arts and Ecology Center. Occidental, California. (707) 874-1557. www.oaec.org.

APR. 16. **Open Garden.** Unique rose collection on display. Sacramento Historic Rose Garden. Sacramento, California. (916) 443-2146. www.cemeteryrose.org.

APR. 21. **Desert Living: Energy-Efficient Design and Landscaping.** Lecture. Springs Preserve. Las Vegas, Nevada. (702) 258-3205. www.springspreserve.org.

APR. 23. **Elfin Forest Garden Festival.** Elfin Forest, California. www.elfinforestgardens.info.

APR. 25. **Ten Steps to a SMARTGARDEN™.** Talk by Pat Welsh. Palomar District Garden Clubs. Vista, California. (310) 450-6901. www.patwelsh.com.

RAP APR. 29 & 30. **Annual Spring Sale.** San Francisco Botanical Garden. San Francisco, California. (415) 661-1316. www.strybing.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP APR. 13. **Conifers for the Year-Round Landscape.** Lecture. Cheyenne Botanic Gardens. Cheyenne, Wyoming. (307) 637-6458. www.botanic.org.

RAP APR. 22. **Spring Plant Sale.** Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

New Australian Garden in San Francisco

AN EXCITING experiential adventure awaits visitors to the new Eastern Australia Garden at the San Francisco Botanical Garden, where Australian-born designer Bernard Trainor's plan takes its character from "materials both hard and soft."

The design's fusion of horticulture and hardscape features an exceptional collection of Australian plant material, together with a compelling central feature, the "rock circle." Created by visionary artists Jennifer Madden and Jeffrey Reed of Reed Madden Designs, the circle is a sculptural setting defined by concrete wall forms conveying a warm-hued palette and the fluid striations of rock formations. While their gentle curvature frames a meditative space, the walls can function also as seating, or be used as an outdoor classroom to study the surrounding flora.

At every junction, top-notch plant specimens complement the hardscaping. For example, *Brachysema praemorsum* 'Bronze Butterfly' is stunning, with burnished plum-colored foliage set off by odd red blooms with a beak-like profile. Kangaroo paw (*Anigozanthos* spp.) displays velvety vermilion inflorescences on slender flowering branchlets held high above the foliage.

Scot Medbury, SFBG's director, says, "It really is a morning garden, with shafts of light coming through all the fine foliage."

While the new Eastern Australia Garden may be viewed any day of the year, savvy gardeners may time their visit with another popular event—the San Francisco Botanical Garden's 38th Annual Spring Sale held on April 29 and 30. The preview sale on April 29 is for members only; the public sale is on April 30.

Admission to the San Francisco Botanical Garden at Strybing Arboretum is free though donations are welcome. For more information, please call (415) 661-1316 or visit www.sfbotanicalgarden.org.

—Alice Joyce, *GardenWalks* columnist, San Francisco Chronicle



The rock circle with its lush accompaniment of plants.

APR. 23 & 24. **Glide Wildflower Show.** Glide, Oregon. (541) 677-3797. www.glidewildflowershow.org.

RAP APR. 23 & 24. **FlorAbundance.** Plant sale. Washington Park Arboretum. Seattle, Washington. (206) 543-8800. www.arboretumfoundation.org.

RAP APR. 30. **Plant Sale.** Bellevue Botanical Garden Society. Bellevue, Washington. (425) 452-2750. www.bellevuebotanical.org.

APR. 30. **Whidbey Island Garden Tour.** Freeland,

Washington. (360) 321-6430. www.wigt.org.

CANADA

RAP MAR. 31. **Pond Gardening.** Workshop. The Arboretum, University of Guelph. Guelph, Ontario. (519) 824-4120. www.uoguelph.ca/arboretum.

APR. 9 & 26. **Creative Container Gardening for Patios and Balconies.** Workshop. VanDusen Botanical Garden. Vancouver, British Columbia. (604) 878-9274. www.vandusengarden.org. ☪

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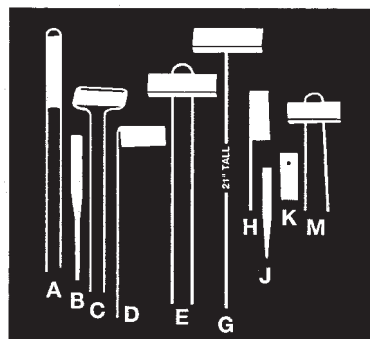
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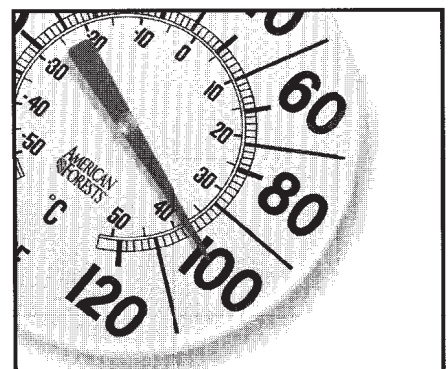
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Color the Garden Beautiful

by Dr. H. Marc Cathey

THOSE OF YOU who know me or have read my columns over the years know that color has always been a prominent influence in my life—probably stimulated by my early interest in painting. Many people know me by my nickname, “Dr. Purple,” and have heard me refer to my granddaughters as Miss Pink, Miss Emerald, Miss Peach, and Miss Ruby.

ESTABLISHING A COLOR VOCABULARY

As children, color is one of the first tools that our mind uses to identify and name things and objects. Thus our mind makes trees green, poinsettias red, and African violets purple. Yet we all establish a slightly different perception of, or language for, colors.

To add to the complexity, the colors we each perceive are influenced by countless variables, such as what type of lighting is being used (artificial or natural), the texture of the object (glossy, dull, hairy), and the presence of other nearby colors that may alter our perception.

To illustrate this last point, I have a striped tie that I use as a visual aid when doing presentations about color. When I ask the audience what color the stripes are, the answers are always incorrect. When you look at the tie up close, you realize that the combination of black and yellow stripes deceives the eye from a distance, making the black *appear* green.

Because our eyes are not reliable enough to consistently identify or compare discrete color shades, we need technology that will help us do this, as well as a common language to describe plant colors.

PLANT COLOR SYSTEMS

Over the years, various systems for standardizing flower colors have been developed. The American Horticultural Society’s involvement with color systems dates back to 1957, when the American Horticultural Council—which later merged with the National Horticultural Society to form AHS—introduced the Nickerson Color Fan. This color system



Our lack of an adequate color vocabulary prevents us from accurately describing the many shades of green shown here in the Japanese Garden at Hillwood in Washington, D.C.

was created by Dorothy Nickerson, a color technologist with the U.S. Department of Agriculture, in cooperation with the Munsell Color Company. The “fan” came in the form of a small booklet that fanned out to display 262 color samples coded to numbers in the Munsell color system. The Nickerson fan served as the standard measure of flower color in America for some years, but eventually fell out of use. More recently, a color chart developed by the Royal Horticultural Society has been used, but this system has its own limitations.

Fortunately, new technology is ready to come to our aid. The Minolta Company has developed a compact machine that can accurately “read” thousands of shades and tints of color. Using this machine, land-

scape designers and plant breeders in different parts of the country will be able to identify colors by a numeric system that will be linked to user-friendly color names.

I will be talking about the tools used to differentiate colors and the history of color-measuring systems during the AHS Garden School that is being held at River Farm on March 31 and April 1. The program, titled “The Art and Science of Color in the Garden,” will also include presentations by Allan Armitage, Pamela Harper, Tres Fromme, Katy Moss Warner, Sara Poly, and Heather Will-Browne. To learn more about this program, visit our Web site (www.ahs.org).

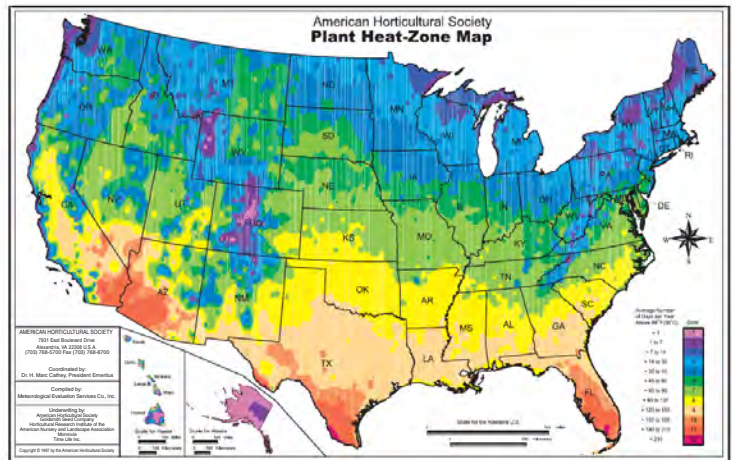
Dr. H. Marc Cathey is president emeritus of the American Horticultural Society.

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. Hardiness and Heat zone codes are generated by AHS and documented in the Showtime® database, owned by Arabella Dane.



A-I

- Acer macrophyllum** AY-ser mak-ro-FIL-lum (USDA 5–9, AHS 9–4)
Acorus gramineus AK-or-us grah-MIN-ee-us (10–11, 12–2)
Agave americana uh-GAH-vee uh-mair-ih-KAN-uh (9–11, 12–5)
Allium senescens AL-ee-um sen-ESS-ens (4–10, 10–1)
Amelanchier alnifolia am-eh-LANG-kee-ur al-nih-FO-lee-uh (4–9, 8–3)
Amsonia hubrichtii am-SO-nee-uh hew-BRIK-tee-eye (5–9, 9–5)
Anaphalis margaritacea ah-NAF-uh-liss mar-guh-rih-TAY-see-uh (4–8, 8–1)
Betula papyrifera BET-yew-luh pap-ih-RIF-ur-uh (2–7, 7–1)
Chamaecyparis lawsonia kam-ee-SIP-uh-riss law-son-ee-AN-uh (5–9, 9–5)
Cornus stolonifera KOR-nus sto-lon-IF-ur-uh (3–8, 8–1)
Corylus cornuta COR-ih-lus kor-NEW-tuh (5–7, 7–5)
Delosperma congestum del-o-SPER-muh kon-JES-tum (4–8, 8–4)
Delphinium nudicaule del-FIN-ee-um noo-dih-KAW-lee (5–7, 7–5)
Fraxinus latifolia frak-SIH-nus lat-ih-FO-lee-uh (6–8, 8–6)
Ilex crenata EYE-leks kreh-NAY-tuh (5–7, 7–5)

J-R

- Juniperus communis** joo-NIP-er-iss com-YEW-niss (2–6, 6–1)
Lonicera ciliosa lah-NISS-er-uh sil-ee-O-suh (6–9, 9–1)
Mahonia aquifolium mah-HO-nee-uh ah-kwi-FO-lee-um (5–9, 9–3)
M. japonica M. jah-PON-ih-kuh (7–9, 9–7)
M. repens M. REP-enz (5–8, 8–3)
Malus fusca MAL-us FEW-ska (6–9, 9–1)
Pinus contorta PY-nus kon-TOR-tuh (6–8, 8–6)
Prunus emarginata var. mollis PREW-nus ee-mar-jih-NAY-tuh var. MOL-lis (2–8, 8–1)
Pseudotsuga menziesii soo-doh-SOO-guh men-ZEES-ee-eye (5–7, 7–5)
Pulmonaria angustifolia pul-muh-NAIR-ee-uh ang-gust-ih-FO-lee-uh (2–7, 8–1)
P. longifolia P. lon-jih-FO-lee-uh (3–8, 8–4)

- P. mollis** P. MOL-lis (6–8, 8–6)
P. officinalis P. o-fiss-ih-NAL-iss (6–8, 8–6)
P. rubra P. ROO-bruh (4–8, 8–3)
P. saccharata 'Mrs. Moon' P. sak-uh-RAY-tuh (4–8, 8–1)
Ribes sanguineum RYE-beez san-GWIN-ee-um (6–8, 8–6)
Rohdea japonica RO-dee-uh jah-PON-ih-kuh (7–9, 9–7)

S-Z

- Sarcococca hookeriana var. humilis** sar-kuh-KOKE-uh hook-ur-ee-AN-uh var. HEW-mih-lis (6–9, 9–6)
Sedum album SEE-dum AL-bum (6–9, 9–6)
S. lydium S. LIH-dee-um (5–8, 8–5)
S. rupestre S. roo-PES-tree (6–9, 9–6)
S. sexangulare S. sek-SAN-gew-lar-ee (5–8, 8–4)
S. spurium S. SPUR-ee-um (4–9, 9–1)
S. telephium S. tuh-LEF-ee-um (4–9, 9–1)
Spiraea betulifolia 'Tor' spy-REE-uh bet-YEW-lih-fo-lee-uh (5–9, 9–1)
S. cantoniensis S. kan-ton-ee-EN-sis (5–9, 9–1)
S. × cinerea S. sih-NEE-ree-uh (5–9, 9–1)
S. decumbens S. dee-KUM-benz (5–9, 9–1)
S. densiflora S. dens-ih-FLOR-uh (6–9, 9–1)
S. douglasii S. dug-LASS-ee-eye (5–8, 8–5)
S. fritschiana S. fritch-EE-an-uh (4–8, 8–4)
S. japonica S. jah-PON-ih-kuh (4–9, 9–1)
S. latifolia S. lat-ih-FO-lee-uh (2–6, 6–1)
S. miyabei S. mih-YAH-bee-eye (6–9, 9–6)
S. nipponica S. nih-PON-ih-kuh (4–8, 8–1)
S. prunifolia S. prew-nih-FO-lee-uh (5–8, 8–5)
S. thunbergii S. thun-BER-jee-eye (4–8, 8–4)
S. tomentosa S. toh-men-TOH-suh (3–8, 8–1)
S. × vanhouttei S. van-HOO-tee-eye (4–8, 8–1)
Talinum calycinum tuh-LY-num kal-ih-SY-num (5–9, 9–5)
Vaccinium ovatum vak-SIN-ee-um o-VAY-tum (6–8, 8–6)

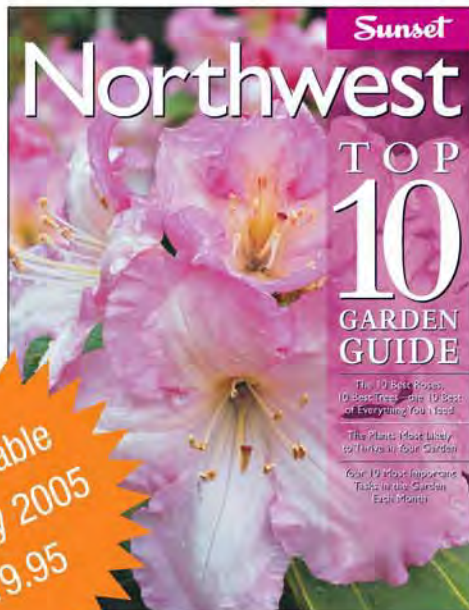
April's Flowers



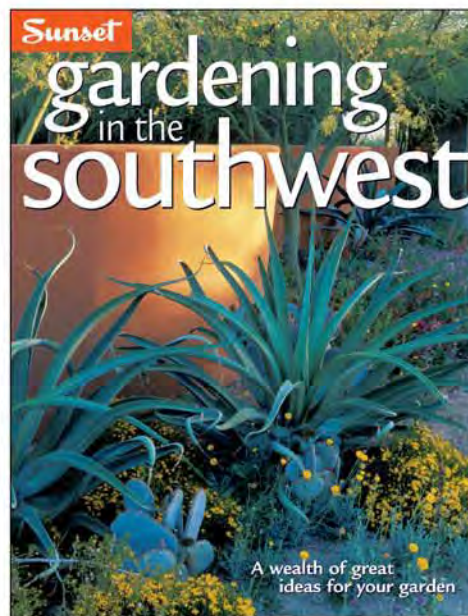
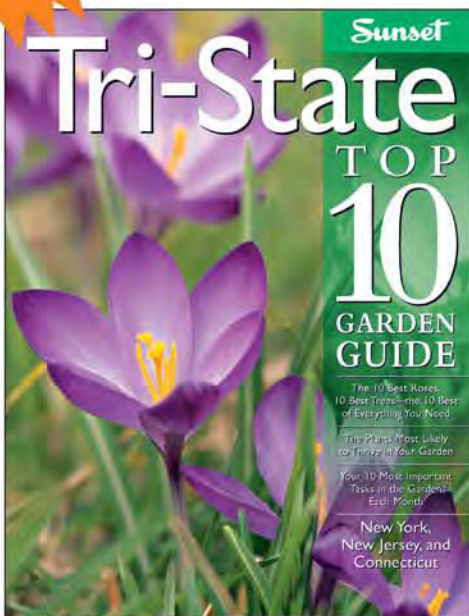
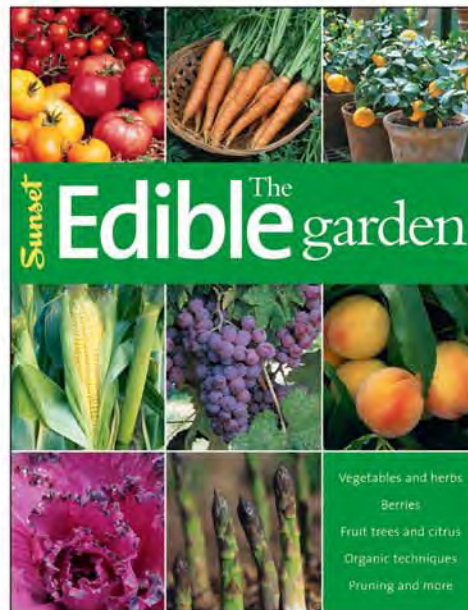
THE FIRST WARM DAYS of spring bring bright color to River Farm. Here, a river of orange-and-yellow 'Banja Luka' tulips, 'Spellbinder' daffodils, and blue Siberian bugloss (*Brunnera macrophylla*) joins yellow-twig dogwood (*Cornus sericea* 'Silver and Gold') in an exuberant display.

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