

The American GARDENER

The Magazine of the American Horticultural Society

September/October 2005

Spring Bulbs Live Up
Beds and Borders

Earth-Friendly Tips for
Fall Cleanup

Simplifying the Garden:
Work Less, Enjoy More

shade-loving
ground covers



**A green lawn does not have
to be hazardous to your health.**

Why risk exposing your family to the potential health risks associated with unnecessary lawn chemical use? NaturaLawn® of America's environmentally friendly approach creates a green lawn quickly, more naturally, and with fewer weeds. We know a one-size-fits all chemical program is simply not a safe approach. That's why we customize a formula that's right for your lawn. Working with nature, not against it, NaturaLawn of America strengthens your lawn's root system by building the soil to help give you a healthy green lawn that stays that way.

Call 800-989-5444 and we'll show you that our service is as superior as the lawns we create.



**NaturaLawn of America, the safer way to a healthy lawn.
Find out more at www.nl-amer.com.**

© 2005. NaturaLawn of America, Inc. All rights reserved. Each office independently owned and operated.
For permission to reproduce this piece, call 800-989-5444.

contents

Volume 84, Number 5 • September / October 2005

FEATURES



page 28

14 YOUTH GARDEN SYMPOSIUM 2005 BY CHARLOTTE ALBERS

Highlights from the annual AHS National Children & Youth Garden Symposium, which was held in Atlanta in July.

18 GROUND COVERS FOR SHADE BY GENE BUSH

These attractive plants will reduce maintenance in shady gardens without taking over.

24 FALL CLEANUP RECONSIDERED

BY KRIS WETHERBEE

A little restraint can go a long way toward keeping the natural ecosystem in balance.



page 24

28 SPRING BULBS FOR BORDERS

BY BECKY HEATH

Integrating bulbs with herbaceous perennials and shrubs can extend a garden's flowering season and create new color combinations.

34 SIMPLIFYING THE GARDEN BY CAROLE OTTESEN

Here's some expert advice for reducing maintenance in a garden.

38 OUTLANDISH OUTGROWTHS BY KATHRYN LUND JOHNSON

Exploring the curious world of plant galls.

ON THE COVER: *Epimedium ×versicolor* 'Sulfureum' makes an attractive spring-blooming ground cover for shady gardens.
Photograph by Mark Turner

DEPARTMENTS

5 NOTES FROM RIVER FARM

6 MEMBERS' FORUM

8 NEWS FROM AHS

River Farm being transformed for the Eastern Performance Trials, HGI offers new volunteer opportunities for Master Gardeners, new children's gardening book awards debut in Atlanta.

12 AHS PARTNERS IN PROFILE

Monrovia Nursery.

42 GARDENING BY DESIGN

The importance of plants.

44 ONE ON ONE WITH...

Paul Meyer, director of the Morris Arboretum.

46 HABITAT GARDENING

The Great Basin Desert.

48 GARDENER'S NOTEBOOK

Organic cut flowers gaining popularity, rare California wildflower is rediscovered, new Garden Literature Index™ now available, Denver Botanic Gardens partners with Lady Bird Johnson Wildflower Center, Connecticut to initiate ban of invasive plants at town level.



page 46

52 CONSERVATIONIST'S CORNER

Aiding endangered bees and other pollinators.

53 BOOK REVIEWS

Bulbs for Garden Habitats, *On Foreign Soil: American Gardeners Abroad*, and *Dogwoods*.
Special focus: Themed gardening books.

56 REGIONAL HAPPENINGS

61 HARDINESS AND HEAT ZONES AND PRONUNCIATIONS

62 RIVER FARM SNAPSHOT

Sunflowers and azure skies.



AMERICAN HORTICULTURAL SOCIETY

7931 East Boulevard Drive Alexandria, VA 22308-1300
(800) 777-7931 fax (703) 768-8700 www.ahs.org

Making America a Nation of Gardeners, a Land of Gardens

American Horticultural Society

PRESIDENT Katy Moss Warner

Board of Directors

CHAIRMAN Arabella S. Dane *Center Harbor, New Hampshire*
FIRST VICE CHAIRMAN Brian E. Holley *Cleveland, Ohio*
SECOND VICE CHAIRMAN Don E. Riddle, Jr. *Davidsonville, Maryland*
SECRETARY Albin MacDonough Plant *Baltimore, Maryland*
TREASURER Christine Perdue *Middleburg, Virginia*
IMMEDIATE PAST CHAIR Kurt Bluemel *Baldwin, Maryland*

GENERAL COUNSEL William A. Pusey *Arlington, Virginia*

Leslie Ariail *Alexandria, Virginia* ■ Allan M. Armitage *Athens, Georgia* ■ William E. Barrick, Ph.D. *Theodore, Alabama* ■ Katherine Belk-Cook *Charlotte, North Carolina* ■ Katherine Stark Bull *Washington, D.C.* ■ John Alex Floyd, Jr. *Trussville, Alabama* ■ Joel Goldsmith *Gilroy, California* ■ Beverly Hanselman *Nashville, Tennessee* ■ Carole Holey *Wilson, Wyoming* ■ Natasha Hopkinson *New York, New York* ■ Margaret Kulp *Louisville, Kentucky* ■ Melissa R. Marshall *Pittsburgh, Pennsylvania* ■ Carol C. Morrison *Palatine, Illinois* ■ J. Landon Reeve *Woodbine, Maryland* ■ Harry A. Risetto, Esq. *Falls Church, Virginia* ■ Felder Rushing *Jackson, Mississippi* ■ William Seale, Jr. *Alexandria, Virginia* ■ Jeanne Shields *Greenville, Delaware* ■ Arnold Steiner *Birmingham, Alabama* ■ Steven Still *Hilliard, Ohio* ■ Howard McK. Tucker *Alexandria, Virginia* ■ Susie Usrey *Dayton, Oregon* ■ Robert D. Volk *San Marino, California* ■ Daryl Williams *Lake Buena Vista, Florida*

2005 Advisory Council

Beverly Hanselman, Nashville, Tennessee – Chair

Katherine Belk-Cook, *Charlotte, North Carolina*
Clarissa Bonde, *Washington D.C.*
Walter Bull, *Columbia, South Carolina*
Elaine Burden, *Middleburg, Virginia*
Dr. H. Marc Cathey, *Silver Spring, Maryland*
Fred Clapp, *Alexandria, Virginia*
Russell Clark, *Boston, Massachusetts*
Bartie Cole, *Owings Mills, Maryland*
Jim Corfield, *Geneva, Illinois*
Virginia Hill Daisy, *Dedham, Massachusetts*
Edward N. Dane, *Center Harbor, New Hampshire*
David and Kitty Ferguson, *Westwood, Massachusetts*
Ben Griswold, *Glyndon, Maryland*
Sheryl Heckler, *Middleburg, Virginia*
Henry Jameson, *East Sound, Washington*
Dr. Richard W. Lighty, *Kennett Square, Pennsylvania*
Carolyn Marsh Lindsay, *Ponte Vedra, Florida*
Mickey Lynch, *Dunmore, Pennsylvania*
Stu McMichael and Lucinda Crabtree, *Falls Church, Virginia*

Robert and Joanna Martin, *Menlo Park, Colorado*
Mrs. Malcolm Matheson, *Mt. Vernon, Virginia*
Egon Molbak, *Bellevue, Washington*
Nancy Keen Palmer, *Nashville, Tennessee*
Bob Patterson, *Washington D.C.*
Dr. Julia W. Rappaport, *Santa Ana, California*
Harry A. Risetto, Esq. *Falls Church, Virginia*
Deen Day Sanders, *Norcross, Georgia*
Josephine Shanks, *Houston, Texas*
Barbara Shea, *Baltimore, Maryland*
Holly Shimizu, *Glen Echo, Maryland*
Charles Henry Smith, Jr., *Middleburg, Virginia*
Nancy Thomas, *Houston, Texas*
Bryan Thomlison, *Haddonfield, New Jersey*
Pauline Vollmer, *Baltimore, Maryland*
Joyce and Harvey White, *Nashville, Tennessee*
Joannah and Daryl Williams, *Sebring, Florida*

Corporate Partners

The Care of Trees ■ Cherry Lake Tree Farm ■ DK Publishing ■ EarthBox™
■ Green Industry Yellow Pages ■ Homestead Gardens ■ Kurt Bluemel, Inc. ■ Monrovia ■
NaturaLawn of America ■ Osmocote ■ Thompson & Morgan

Horticultural Partners

America in Bloom ■ Bellingrath Gardens & Home ■ Colonial Williamsburg Foundation Garden Symposium ■ Communities in Bloom ■ Cox Arboretum ■ Epcot International Flower & Garden Festival ■ The Gardeners of America/Men's Garden Clubs of America ■ Great Southern Tree Conference ■ Greater Gardens of the Washington Area ■ Homestead Resorts Horticultural Symposium ■ Horticulture Gardening Institute ■ Leonard Haertter Travel Company ■ Magic of Landscaping Symposium ■ Morris Arboretum ■ Oklahoma Horticultural Society

President's Council

CHAIRMAN'S CIRCLE Mr. and Mrs. John H. Ariail, Jr. ■ Mr. Bill Barry ■ Mr. and Mrs. Kurt Bluemel ■ Mr. and Mrs. Edward N. Dane ■ Mr. Gerald T. Halpin ■ Mr. and Mrs. James S. Hutchinson ■ Mr. Robert E. Malesardi ■ Ms. Nancy Petersen ■ Ms. Barbara Robinson ■ Mr. Phil Snyder ■ Mr. Robert Stohler ■ Mrs. Pauline Vollmer ■ Ms. Claire Watson

LIBERTY HYDE BAILEY ASSOCIATES Ms. Sue Dick ■ Mr. A. Michael Gellman ■ Mr. and Mrs. Mickey Lynch ■ Mr. and Mrs. Ken Mountcastle ■ Mr. and Mrs. Don E. Riddle, Jr. ■ Mr. Timothée Sallin ■ Jeanne Shields ■ Mr. and Mrs. W. Bruce Usrey ■ Ms. Katy Moss Warner

HAUPT ASSOCIATES Dr. and Mrs. William E. Barrick ■ Mr. and Mrs. C. William Black ■ Mr. and Mrs. Robert L. Bogle ■ Mr. Richard C. and Mrs. Katherine Stark Bull ■ Dr. and Mrs. H. Marc Cathey ■ Mrs. Elisabeth C. Dudley ■ Mr. and Mrs. Richard W. Hanselman ■ Mrs. Carole S. Holey ■ Mr. and Mrs. Robert E. Kulp, Jr. ■ Mr. and Mrs. Malcolm Matheson, Jr. ■ Mr. and Mrs. Harold McClendon, Jr. ■ Ms. Christine Perdue ■ Mr. Paul H. Pusey ■ Ms. Michele Richardson ■ Harry A. Risetto, Esq. ■ Dr. and Mrs. George E. Staehle ■ Mr. and Mrs. Arnold Steiner ■ Mr. John Wm. Thomas and Mrs. Valerie Thomas ■ Mr. Howard McK. Tucker and Ms. Megan Evans ■ Mr. and Mrs. Robert D. Volk

PRESIDENT'S COUNCIL Mr. and Mrs. Richard C. Angino ■ Nancy J. Becker, M.D. ■ Mrs. Katherine Belk-Cook ■ Dr. and Mrs. Joseph Benedict ■ Mr. Phillip Bermingham ■ Dr. Joel Birnbaum ■ Mrs. George P. Bissell, Jr. ■ Dr. Sherran Blair ■ Count and Countess Peder Bonde ■ Mrs. Anne Bucher ■ Mr. and Mrs. Cason Callaway, Jr. ■ Mrs. Susan M. Cargill ■ Mr. and Mrs. Charles E. Carr ■ Mr. and Mrs. James L. Corfield ■ Mr. and Mrs. Edward Daisey ■ Mr. and Mrs. James F. Delano ■ Ms. Doris Diman ■ William P. G. Dodson, D.D.S. ■ Mrs. Robert Duemling ■ Mrs. Beverley W. Dunn ■ Dr. and Mrs. John A. Floyd, Jr. ■ Mr. and Mrs. Dennis Garcia ■ Mr. John Sward Gleiber ■ Mr. and Mrs. Joel Goldsmith ■ Mr. and Mrs. John H. Guy, IV ■ Mrs. Richard W. Hamming ■ Dr. and Mrs. William O. Hargrove ■ Mr. and Mrs. Max Hart ■ Mr. and Mrs. Brent Heath ■ Mr. and Mrs. Richard F. Hohlt ■ Mr. and Mrs. Brian E. Holley ■ Mr. and Mrs. Allan L. Holmstrom ■ Mrs. Elizabeth Hooff ■ Mr. and Mrs. Peter Hopkinson ■ Mr. Philip Huey ■ Mr. Henry Jameson ■ Mr. and Mrs. Robert B. Lindsay ■ Ms. Joann Luecke ■ Mr. and Mrs. Randolph Marshall ■ Mrs. Dorothy Marston ■ Mr. George Cole S. McCray ■ Mrs. Rachel L. Mellon ■ Mrs. Rosalyn Milbrandt ■ Mr. and Mrs. Egon Molbak ■ Mr. and Mrs. Malcolm Moore ■ Dr. and Mrs. David E. Morrison ■ Mr. and Mrs. William J. Moss ■ Mrs. Shirley Ann Nicolai ■ Mr. and Mrs. William G. Pannill ■ Mr. and Mrs. Albin MacDonough Plant ■ Mrs. Charles Price ■ Mr. and Mrs. William A. Pusey ■ Mrs. Deen Day Sanders ■ Mr. and Mrs. William Seale, Jr. ■ Mrs. Josephine M. Shanks ■ Mr. and Mrs. Charles Henry Smith, Jr. ■ Mr. and Mrs. William M. Spencer ■ Mrs. Juliet Sproul ■ Mr. Harold Stahly ■ Ms. Lida M. Stifel ■ Dr. and Mrs. Steven Still ■ Mr. and Mrs. John B. Strassenburgh ■ Mr. Joe Viar ■ Mr. and Mrs. Harvey C. White ■ Mr. and Mrs. John W. White, Sr. ■ Mr. and Mrs. D. Anderson Williams ■ Mrs. Marilyn B. Wilson

HONORARY PRESIDENT'S COUNCIL Mrs. Enid A. Haupt ■ Mrs. John A. Lutz ■ Mr. and Mrs. Bruce Miller

The 2005 member password for the AHS Web site (www.ahs.org) is **blooms**.

The American GARDENER

EDITOR

David J. Ellis

MANAGING EDITOR AND ART DIRECTOR

Mary Yee

ASSISTANT EDITOR

Viveka Neveln

EDITORIAL INTERN

William Clattenburg

CONTRIBUTING EDITORS

Rita Pelczar

Joanne Wolfe

CONTRIBUTING WRITER

Carole Ottesen

EDITORIAL ADVISORY BOARD

CHAIR John Alex Floyd Jr.
Birmingham, Alabama

Allan M. Armitage
Athens, Georgia

Nina L. Bassuk
Ithaca, New York

Richard E. Bir
Brevard, North Carolina

John E. Bryan
San Francisco, California

John L. Creech
Columbus, North Carolina

Keith Crotz
Chillicothe, Illinois

Panayoti Kelaidis
Denver, Colorado

Richard W. Lighty
Kennett Square, Pennsylvania

Elvin McDonald
West Des Moines, Iowa

Felder Rushing
Jackson, Mississippi

**ADVERTISING
AND CORPORATE
PARTNERSHIPS** *The American Gardener*
7931 East Boulevard Drive
Alexandria, VA 22308
(703) 768-5700
E-MAIL: emonheim@ahs.org

The American Gardener (ISSN 1087-9978) is published bimonthly (January/February, March/April, May/June, July/August, September/October, November/December) by the American Horticultural Society, 7931 East Boulevard Drive, Alexandria, VA 22308-1300, (703) 768-5700. Membership in the Society includes a subscription to *The American Gardener*. Annual dues are \$35; two years, \$60. International dues are \$50. \$10 of annual dues goes toward magazine subscription. Periodicals postage paid at Alexandria, Virginia, and at additional mailing offices. Postmaster: Please send Form 3579 to *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308-1300.

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

Copyright ©2005 by the American Horticultural Society.

♻️ Printed in the U.S.A. on recycled paper.

NOTES FROM RIVER FARM

PEOPLE OFTEN ask me, "Who are the members of the American Horticultural Society?" There are many different groups of plant and garden lovers in America—from professionals in the green industry to educators and research scientists, from garden writers to garden designers, from serious long term gardeners to those who have just discovered the joys of gardening. These are all members of the AHS. No matter how seriously some pursue their profession or avocation, we all meet on the same level as passionate gardeners and caretakers of the earth.

This past July, I had the privilege of spending a few days with a number of AHS members who are dedicated to sharing the hopeful, joyful, critically important message of plants and gardens with young people in America. The venue was the AHS's annual National Children & Youth Garden Symposium in Atlanta. What a spirited, exciting event! Here were educators—from those who offer summer camps in gardening to those connecting kids to plants in public gardens throughout America to those who have set up gardening programs for large networks of schools. Here were designers of children's gardens and writers who deliver the stories that introduce our youth to the importance of plants and the environment.

Each of the participants shared remarkable stories of success in different aspects of youth gardening. National figures on the youth garden scene like Jane L. Taylor and Marcia Eames-Sheavly offered their perspective. Garden book authors like Felder Rushing and Sharon Lovejoy delighted us with their stories. Designers of children's gardens, like Cindy Tyler and Ann English, shared their ideas and successes. Leaders in public gardens like Mary Pat Matheson and Sheldon Fleming gave us their personal insights. Educators like Tim O'Keefe, who have developed innovative and effective teaching systems, offered their experience and creativity.

At the AHS, we are committed to offering these kinds of national forums that bring together leaders who can truly make a difference in America—and in our world. Each of these youth garden leaders, whether they are doing big projects or small, are AHS members. If you are an AHS member keenly interested in youth gardening, be sure to put July 27 to 29 on your calendar for next year, when the symposium will be hosted by the Missouri Botanical Garden in St. Louis.

I am looking forward to another exciting opportunity to meet AHS members in late September. The Garden Centers of America is coordinating the first annual Eastern Performance Trials and our AHS headquarters at George Washington's River Farm is one of the six featured sites. National green industry leaders Campania International, Centerton Nursery, Cherry Lake Tree Farm, Goldsmith Seeds, Proven Winners, and Saunders Brothers Nursery will be showcasing their newest varieties of annuals, perennials, shrubs, trees, and containers right here in our beautiful gardens. Again, the AHS is providing a national forum for sharing information and inspiration. (For more on the trials, see page 8.)

Please encourage your friends and colleagues to join the AHS so that we can continue to offer and expand these important and unique forums for leadership.

Happy gardening!



—Katy Moss Warner, AHS President





MEMBERS' FORUM

SOLD ON SOIL ORGANISMS

I just wanted to say that the July/August 2005 issue blew me away. Never have I seen so much helpful information and all in one issue. The article "Mighty Mycorrhizae" by Doreen G. Howard and the interview with soil biologist Elaine Ingham were fantastic. Every Extension office should pass these two articles out at the door.

Agnes D. Kling
Ridgefield, Connecticut

MONARDA FAN

I very much enjoyed the article on "Must-Have Monardas" by Jessie Keith in the July/August issue. They have always been among my favorite garden flowers.

How interesting that the article's author should teach in a town called Media, because, in the 1968 edition of *A Field Guide to Wildflowers: Northeastern/Northcentral North America* by Roger Tory Peterson and Margaret McKenny, there is listed a *Monarda media*, aka purple beebalm. The description reads "similar to wild beebalm but red-purple. Bracts purplish." I have never seen this species listed in any other wildflower book and am curious why.

Vicki Hill Foster
Fayette, Maine

Jessie Keith's response: *Monarda media* is definitely a plant veiled in mystery. In 1809, German plantsman and taxonomist Carl Ludwig von Willdenow described this "species" based on a garden specimen that he found, but he did not actually observe any wild populations of them. Years later, populations were found, but upon closer inspection, specialists believed *Monarda media* to be a naturally occurring hybrid between *Monarda didyma* and *M. fistulosa*. This is still understood to be the case.

Despite its uncertain taxonomic status, a couple of nurseries carry *M. media*, including Sylvania Natives (www.sylvanatives.com) and Scott Brothers Nursery (www.scottbrothersnursery.com).

CONCERN OVER NANDINA

As a veteran author of gardening articles, I know how hard it is to be comprehensively informed about any particular plant. Even so, given the considerable notoriety of *Nandina domestica*, how did it make the "recommended" list in "Compact Shrubs" (July/August 2005)? For some time the Nature Conservancy, the Lady Bird Johnson Wildflower Center, and the U.S. Forest Service, among many other national organizations and state agencies, have designated this pretty Chinese native as a Class I invasive "actively disrupting plant communities," especially in the southern United States.

AHS has usually been sensitive to the problem of such invasives, a topic treated extensively in *The American Gardener* (March/April 2003).

William J. Scheick
University of Texas at Austin

Editor's response: In identifying plants with the potential to be invasive, we walk a very fine line. Our philosophy is to take a regional approach to invasiveness and flag only the plants that are known to be serious problems in the wild. Although nandina appears on several invasive plant lists, some southern horticulturists have challenged whether it should be considered on a par with plants like kudzu, privet, and Japanese honeysuckle. Nonetheless, breeders are addressing this concern, and some of the newer compact cultivars—such as Gulf Stream™ mentioned in our article—are chosen for attractive foliage and produce little or no fruit.

HARBOR GETS SHORT SHRIFT

In the July/August issue of *The American Gardener*, I noted the misspelling of the cultivar epithet for *Nandina* 'Harbour Dwarf' on page 31. The misspelling ("Harbor") is widespread and possibly arose

from the assumption that the "Harbour" refers to a harbor. Actually, the name commemorates C.L. Harbour, a North Carolina nurseryman, who was located between Winston-Salem and Greensboro—far from the Atlantic shore and any harbor.

Donald H. Voss
Vienna, Virginia

DR. CATHEY TRIBUTE


Your story about AHS President Emeritus Dr. H. Marc Cathey (July/August 2005) brought back memories of years past when he would ask me to join him in group panels, group lectures and, to my terror, direct phone calls during radio programs.

He has a broad knowledge of the world of horticulture, which he shares with immense modesty and a great sense of humor. He gently taught a lot to so many of us. I am so happy that he is still working at it.

Alfredo F. Siani
Consultant/Horticulturist
Oatlands, Loudoun County, Virginia

CORRECTIONS

In "Must-Have Monardas" (July/August 2005), the term "rhizomes" was incorrectly defined as the result of an editorial error. Rhizomes are horizontal, often underground, stems that send out nodal roots and shoots. In the same article, the location of the Morden Research Centre should have been Winnipeg, Manitoba.

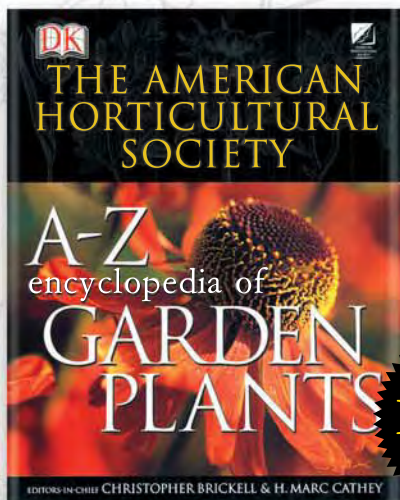
Also in the July/August 2005 issue, in an article announcing the election of Harry Risetto to the AHS Board of Directors, Risetto's affiliations with two horticultural groups were misstated. Risetto is currently a trustee of the American Dahlia Society, of which he is a past president. He is a member of the Royal Horticultural Society. 

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.



THE BEST TOOLS OF THE TRADE FOR YOUR GARDEN

Your perfect garden is only 3 steps away:



Step 1:

Identify the best plants for your garden

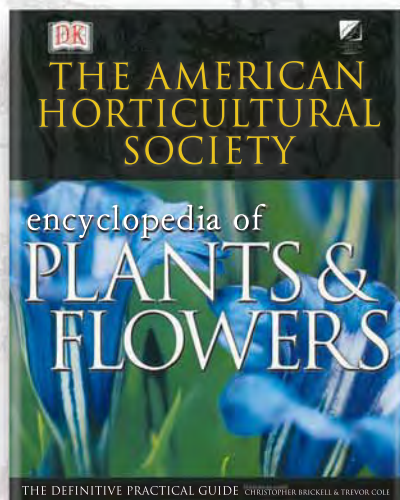
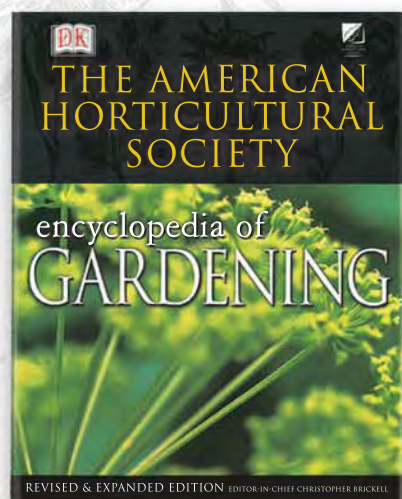
A revised and updated edition with complete profiles of 15,000 plants and shrubs, their growth habits, height and spread, and geographical origin.

NEW!

Step 2:

Improve your gardening techniques to obtain the best results

More than 400 step-by-step sequences to troubleshoot any problem, from preparation and landscaping to frost control and water conservation.



Step 3:

Expand and add color and variety

More than 8,000 plants and flowers, along with expert advice on cultivation, pests, and diseases.

SETTING THE STANDARD IN GARDENING REFERENCE

Available wherever books are sold • For more great ideas visit www.dk.com and sign up for our FREE newsletter

River Farm Spruces Up for Eastern Performance Trials

OVER THE SUMMER, River Farm was abuzz with activity as the AHS and many partner organizations worked together to prepare AHS headquarters for the first ever **Eastern Performance Trials (EPT)**, which will run from September 19 through 24. Co-ordinated by the **Garden Centers of America** and designed for green industry professionals, this event will showcase new plant introductions from major national and international plant development companies at six locations in the mid-Atlantic region.

"The AHS is proud to be one of the host sites for the debut of this phenomenal national event," says AHS President **Katy Moss Warner**. "We envision that the trials will become an important tradition the green industry will look forward to every

year from now on. The annual AHS gala, scheduled for the final day of the trials, will provide an opportunity for us to share this landmark occasion with our members and friends from around the country."

Landscape architect **Ann English**, AHS's EPT project coordinator, worked closely with AHS Horticulturist **Peggy Bowers** and the other members of the horticultural team to make the changes needed to integrate

the individual plant exhibits seamlessly into the River Farm landscape. These included the construction of a new promenade in front of the estate house, the creation of several pathways around the grounds, and expansion of various garden areas and beds.

"Peggy and I have had to meet many challenges in order to coordinate the on-site projects and create the display areas for our partners," says Ann. "The complexity and scope of this event has required the teamwork of the whole AHS staff, cooperation of the EPT partners, and the generous support of those who have contributed design work, construction assistance, and donations of plants and other materials."

Green industry professionals who wish to attend EPT must pre-register by going to www.easternperformancetrials.org. The AHS is offering a special day for its members to view the trials at River Farm on September 22. Call (703) 768-5700 ext. 121 or e-mail education@ahs.org for more information about the AHS Member Day.

AHS Partners for Eastern Performance Trials

Campania International
Centerton Nursery
Cherry Lake Tree Farm
Goldsmith Seeds
Proven Winners
Saunders Brothers Nursery



EPT Project Coordinator Ann English, right, works with the crew of Chapel Valley Landscape Company during construction of a new promenade in front of the estate house at River Farm.

HGI Offers Master Gardener Volunteer Opportunities

THE HORTICULTURE GARDENING INSTITUTE (HGI), an AHS horticultural partner and recipient of the AHS's 2005 G. B. Gunlogson Award, is offering unique volunteer opportunities for Master Gardeners. Based in East Lansing, Michigan, HGI brings gardeners from around the country together to learn and share new skills through its online programs.

"I am in the garden all day, so I really look forward to getting online at night to work on the programs and enhance my skills," says **Sheri Ann Richerson**, a Bronze Level Advanced Master Gardener in Marion, Indiana, who is completing her fourth HGI online program and is an active volunteer.

Master Gardeners must complete an HGI online program before volunteering. The program topics include: The Art and Science of the SMARTGARDEN®; Herbaceous Perennials for Shade; Herbaceous Perennials for Sun; and The Art and Science of Container Gardening.

"Volunteering has been extremely rewarding because the Internet allows me to help gardeners around the country and learn from them while earning credits, too," says Sheri.

One volunteer option is to join the Art and Science of Container Gardening program's "Master Gardener Review Team." Volunteers review container garden plans submitted online

Great American Gardener Awards in Florida



During the 2005 Great American Gardeners Conference held in Orlando, Florida, this past April, AHS Board of Directors Chair Arabella Dane, left, and AHS President Katy Moss Warner, right, presented the Meritorious Service Award to Duane Kelly of Seattle, Washington. A former AHS Board member, Kelly was instrumental in developing AHS's vision for its future. He currently chairs Salmon Bay Events, which produces the Northwest and the San Francisco Flower and Garden Shows.

from program participants, provide feedback, and approve completed plans. Another option is to become a "Conversation Coordinator" for one of the four online programs. This involves monitoring the discussion board, answering daily inquiries, and posting thought-provoking messages every two weeks. HGI volunteers receive training and are monitored to ensure a positive experience.

For more information about the online programs and volunteer opportunities, visit www.gardeninginstitute.com or call (517) 432-1950.

Ornaments for Holiday Trees

ONCE AGAIN, the AHS is extending an invitation to individuals, groups, families, clubs, or classrooms to create ornaments that will decorate River Farm's holiday trees. The themes for this year's holiday trees are Americana (red, white, and blue), Lewis and Clark (silver and gold), George Washington (blue and white), Plants and Flowers (multicolored), Solar System (multicolored), and Bountiful Harvest (red and gold). Contact AHS Children's Programs Coordinator **Nancy Busick** at (703) 768-7500 ext. 132 or e-mail youthprograms@ahs.org for further details.



CHARLESTON GARDEN FESTIVAL

AT MIDDLETON PLACE

PRESENTED BY

home magazine

PLATINUM SPONSORS
Garden Design Magazine
The Post & Courier

GOLD SPONSORS
Dorchester County
The Muhler Company
Wertimer & Associates
Hyams Landscaping and Garden Center
Monrovia
Total Wine
Summer's Bend

SILVER SPONSORS
Brittain's of Charleston
Cypress, Magnolias & Blossom
Sottile Foundation
Carolina First Bank
Designworks
Lowcountry Garden Club
Bank of South Carolina
Courtney Gunter Graphic Design
Hamby Catering
Erth Food

GARDENING AROUND THE WORLD

OCTOBER 21-23, 2005

843.723.9293

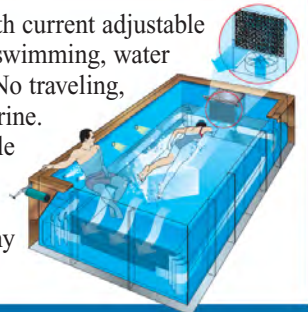
www.charlestongardenfestival.org

Swim At Home



The Treadmill for Swimmers!

Swim or exercise against a smooth current adjustable to any speed or ability. Ideal for swimming, water aerobics, rehabilitation and fun. No traveling, no crowded pools, no heavy chlorine. The 8' x 15' Endless Pool is simple to maintain, economical to run, and easy to install inside or out. Modular construction means many sizes and options are available.



For Free DVD or Video Call
(800) 233-0741, Ext. 4426
Visit www.endlesspools.com/4426



Celebrate Dr. Cathey Day with Bulbs

When **Dr. H. Marc Cathey** retired as AHS's president emeritus in June, one of the tributes approved by the AHS Board of Directors was to proclaim his birthday, October 23, as Dr. H. Marc Cathey Day and celebrate it every year.

This year's celebratory project is still in the planning stages, but the concept is for people to plant small purple bulbs such as crocuses or reticulated irises in the shape of X's and O's as a spring surprise for a friend. At River Farm, bulbs will be distributed to staff and volunteers on Friday, October 21 for planting on the 23rd.

"We encourage everyone to join us in celebrating the birthday of one of our nation's great horticulturists," says AHS President **Katy Moss Warner**. "It's an ideal project for children to learn how to plant bulbs as well as create a happy moment for someone special in their lives."

Updates on the bulb-planting project will be posted on the AHS Web site (www.ahs.org) in early October.

FORF Family Picnic Day



During the inaugural Friends of River Farm (FORF) Family Day on May 15, 2005, AHS Corporate Partner The Care of Trees used some of River Farm's lofty trees to show delighted young visitors what it's like to be up high among the leaves like an arborist. Other activities of the day included a picnic, face-painting for children, storytelling, and arts and crafts activities. The next FORF Family Day is scheduled for May 21, 2006.

AHS Members Shine in Photography Contest

THE GARDENERS OF AMERICA (TGOA)/Men's Garden Clubs of America (MGCA), a garden club group that joined AHS as horticultural partners in 2005, generously opened its annual photography competition to AHS members this year.

When the awards were announced earlier this year, several first-time AHS entrants had earned top honors, including AHS Board Chair **Arabella Dane** of Center Harbor, New Hampshire, who won Best of Show for her photograph of *Geranium maderense*.



Award winners included Arabella Dane's "*Geranium maderense*," left, and Donald Bolak's "*Waterlily*," above.

AHS member **Donald Bolak** of Wheeling, Illinois, earned the title of 2005 Sweepstakes Winner by achieving the highest total score for his combined entries (winning photographs of *Dodecatheon meadia* 'Shooting Star,' *Echeveria*, and *Cyclamen*). Arabella and Donald also received Judges Awards for their entries.

Other top winners included AHS member **Anne C. Allen**, who received first runner-up for her photograph of *Magnolia* 'Ann', and **Melissa Hanlin**—a TGOA member from Olathe, Kansas—who took second runner-up for "Spider on *Tagetes patula*, Marigold."

"I would like to thank all the photographers who participated in the 2005 Photography Competition," says **Judy Schuck**, photography and calendar chairman for TGOA/MGCA. "Thirty one photographers submitted entries, including eight AHS members who were entering for the first time."

More than 350 images, both slides and digital, were entered. Some of the photographs from this year's contest will be considered for publication in the 2007 calendar sold annually as a fundraiser for TGOA/MGCA. "We try to pick photos that reflect the different months of the year," says Judy. "With the high quality photos we have to choose from this year, it's going to be very hard to narrow them down."

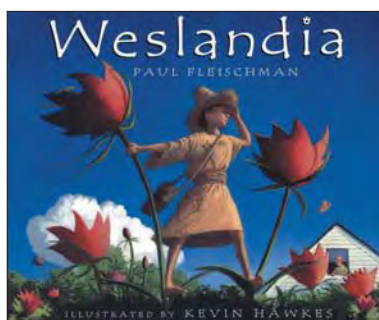
For more information about the TGOA/MGCA photography competition—including images of the winning photos—visit www.tgoa-mgca.org/photocompet.htm or call (515) 278-0295. The deadline for submitting photographs for the 2006 competition is December 21. Copies of the 2006 calendar may be ordered through the TGOA/MGCA Web site at www.gardenersofamerica.org.

Kids Help Unveil New Book Award in Atlanta

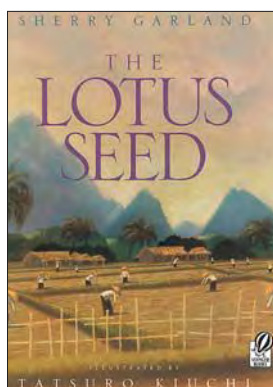
KIDS TOOK center stage at the 2005 National Children & Youth Garden Symposium to help unveil the first ever “Growing Good Kids —Excellence in Children’s Literature Awards.”

The goal of this new award program, co-sponsored by the American Horticultural Society and the **Junior Master Gardener Program**, is to honor children’s books that teach meaningful lessons about gardening and the environment in a well-written, well-illustrated context. During the presentation, children from Atlanta area Junior Master Gardener programs read excerpts from some of this year’s award winning books.

AHS Education Programs Manager **Stephanie Jutila** says the excerpts “helped to remind people how prevalent these works of literature are in our lives.” The introductory readings

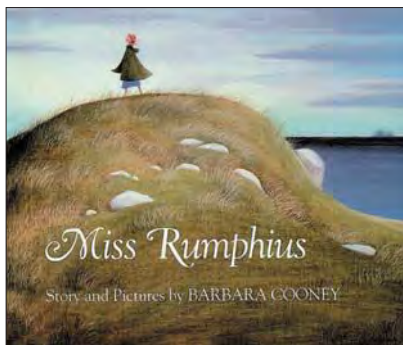


These books were among 40 to receive awards for “Classic” literature.



also allowed young people to take an active role in the new program. **Randy Seagraves**, Junior Master Gardener Program national curriculum coordinator and the master of ceremonies at the award presentation, adds, “If you have ever read a book to a child, you have seen how freely a child can become immersed in a story. Books can shape how young people view the world around them.”

In the first year of the award program, “garden and ecology-themed” books published before 2005 were considered in a one-time “Classics” category for originality and significance to the genre. The award review committee included members of the AHS National Children & Youth Garden Symposium Advisory Panel, Junior Master Gardener specialists and coordinators, teachers, youth leaders, and children. 40 books were selected to receive the “Classic” award and are eligible to bear the official Growing Good Kids award seal. Next year, children’s gardening and nature books published in 2005 will be eligible for the award.



AHS NATIONAL EVENTS AND PROGRAMS

2005–2006 CALENDAR

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

- SEPT. 19–24. **Eastern Performance Trials.** George Washington’s River Farm, Alexandria, Virginia. (Thursday, September 22, has been designated a special open day for AHS members to view the trials.)
- SEPT. 24. **AHS Annual Gala.** George Washington’s River Farm, Alexandria, Virginia.
- DEC. 8. **Friends of River Farm Holiday Reception,** George Washington’s River Farm, Alexandria, Virginia.

2006

- MAR. 5–12. **Philadelphia Flower Show.** Pennsylvania Convention Center, Philadelphia, Pennsylvania.
- APRIL 1–30. **Washington Blooms!** George Washington’s River Farm, Alexandria, Virginia.
- APRIL 20–22. **Friends of River Farm Annual Plant Sale.** George Washington’s River Farm, Alexandria, Virginia.
- MAY 21. **Friends of River Farm Family Day.** George Washington’s River Farm, Alexandria, Virginia.
- JUNE 2. **Great American Gardeners Award Ceremony and Banquet.** George Washington’s River Farm, Alexandria, Virginia.
- JULY 27–29. **National Children & Youth Garden Symposium.** St. Louis, Missouri.

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

“For many children, books are a critically important introduction to the fascinating world of plants and gardens,” says AHS President **Katy Moss Warner**. “The awards identify the best literature, and help the JMG Program develop a curriculum that will be available to teachers. They also benefit anyone who has a child in their life by providing a list of inspiring books.”

To see a complete list of the 2005 Growing Good Kids award winners, visit www.ahs.org and click on the “Awards” link.

News written by Assistant Editor Viveka Neveln and Editorial Intern Will Clattenburg.

Monrovia Nursery: A Passion for Plants

by William Clattenburg

SINCE THE 1920s, when **Harry Rosedale** founded Monrovia Nursery, the wholesale company headquartered in Azusa, California, has distinguished itself by its commitment to nurturing healthy plants and developing innovative techniques for producing and marketing them. A plant industry leader, Monrovia virtually invented the containerized plant, pioneered the shipment of plants, created state-of-the-art soil mixes, practiced water recycling, and led the way in coding its plants with both USDA hardiness zones and AHS heat zones.

IT'S ALL ABOUT THE PLANTS

Monrovia is best known internationally for its woody ornamentals, but the company also grows herbaceous perennials, grasses, bamboos, and vines. Its six nurseries nationwide produce 22 million plants a year that are sold exclusively through some 5,000 independent garden centers in the United States and Canada.

The decision to sell plants only to independent garden centers is one example of the company's values. Another is not rushing plants through the development process. "We don't want to introduce new plants just to say that they're new," says **Gilbert Resendez**, president of sales and marketing. "Our focus is on plants that are superior to what's in the market currently."

Monrovia anticipates demand by paying attention to what its customers want. "One trend we're seeing is a higher demand for regional native plants," says Resendez. In southern California, he notes, the pre-existing demand for drought-tol-



Founded in the 1920s, Monrovia Nursery is headquartered in Azusa, California.

erant plants is converging with the newer demand for natives. "We're augmenting the native plants we grow by adding complementary plants—in particular, those that are water-conserving," he says.

COMMITMENT TO QUALITY

Over the years, Monrovia has introduced nearly 300 "exclusive plants." According to **Nicholas Staddon**, Monrovia's director of new plants, finding such plants requires the combined efforts of "breeders, hybridizers, plant hunters, great gardeners, and our own craftsmen."

As in other facets of the industry, Monrovia has taken the initiative in perfecting tests for new plants. "Once a new plant has been identified, we take it to one of our six locations and put it in what we call our 'bullpens,'" Staddon explains. "There, we look for the right soil, fertilizer, pruning method, dependability as a container plant, attractiveness, and—most importantly—if the plant will hold up in the home garden."

One new plant Staddon is particularly excited about is a just released magnolia cultivar called Black Tulip™ (*Magnolia ×soulangiana* 'JURmag1'). "Black Tulip blooms at an early age, and has an extraordinary shape to the flowers, which are almost like tulips and wine-red in color," says Staddon.

SHARED VALUES

As Monrovia approaches its 80th anniversary, the company continues to expand its role as a major source of high quality plants that enhance the environment.

Becoming an AHS Corporate Partner, says Resendez, illustrates Monrovia's commitment to the AHS mission. "We value our partnership with AHS, because both of our organizations want to get the message out about the benefits of using plants in their proper locations in the American garden," says Resendez.

William Clattenburg is an editorial intern for The American Gardener.

For more information about Monrovia, visit www.monrovia.com. For information on the AHS's Corporate Partnership program, contact Eva Monheim at emonheim@ahs.org.



high-bred,
well-fed,
loving-care...

Nuccio's Bella Rossa Camellia
Camellia japonica 'Nuccio's Bella Rossa' P.P. #13023

 **MONROVIA®**

Only from Monrovia...

- Genetically superior specimens exceed industry norm
 - 42 exclusive soil blends ensure stronger root systems and disease resistance
- Each plant is nurtured and cared for by specially trained Horticultural Craftsmen

Distinctively Better® Plants...from the Ground Up

*Available at fine garden centers.
For the location nearest you, call 1-888-Plant It!*



HORTICULTURAL CRAFTSMEN® SINCE 1926

www.monrovia.com



© Monrovia 2004 04-0752L

BY CHARLOTTE ALBERS

Youth Garden

Educators and gardening enthusiasts found plenty of ideas



ENTHUSIASTIC, PASSIONATE, creative, energized—these are the kind of adjectives that captured the spirit of the presenters and attendees at the AHS 2005 National Children & Youth Garden Symposium in Atlanta, Georgia, this past July. Nearly 200 participants from around the United States and overseas shared ideas and inspirational stories during the three-day symposium, which was jointly hosted by Atlanta Botanical Garden and Wonderland Gardens. Educational sessions were held on the campus of Emory University.

From the opening general session headlined by keynote speaker **Sharon Lovejoy**, to 20 educational presentations, and be-

hind-the-scenes tours of regional gardens, there were ample opportunities to learn how to use gardens and nature for interdisciplinary teaching across all age levels.

Several national organizations that have strong youth gardening programs were represented at the symposium, including the **Junior Master Gardeners**, **the National Gardening Association**, **the National Wildlife Federation**, and **the Life Lab Science Program**. Local groups that participated included **EEin-Georgia**, a statewide environmental education consortium.

“It was exciting to witness leaders in youth gardening in America sharing enthusiasm for their successes so selflessly

This page, top left: Symposium attendees check out a whimsical oversized watering can with rabbit ears at the Children’s Garden at the Atlanta Botanical Garden (ABG); bottom left: the fountain in the Parterre Garden at ABG features a Dale Chihuly glass sculpture. Above: AHS staffers Charlotte Albers, left, and Nancy Busick, right, with, left to right, symposium attendee Jane Dicus and featured speaker Sharon Lovejoy. Opposite page, top: Wonderland Gardens founder Sheldon Fleming recounts the garden’s history to the symposium group.

TOP AND BOTTOM LEFT: CHARLOTTE ALBERS; TOP RIGHT: JESSICA ROZNIUS

Symposium 2005

and inspiration in Atlanta this July. Here are the highlights.



and so powerfully,” says AHS President **Katy Moss Warner**. “There are so many great programs throughout America, and so many inspired leaders. It was a proud moment for the AHS.”

MAKING CONNECTIONS

Keynote speakers Sharon Lovejoy, **Tim O’Keefe**, and **Marcia Eames-Sheavly** are involved in very different aspects of youth gardening, but their experience and insight offer universal lessons.

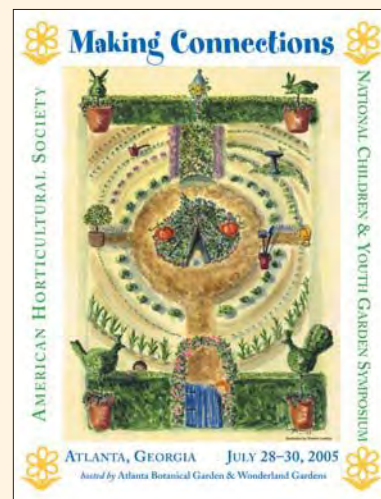
Lovejoy, an award-winning author and illustrator of garden books, focused on the benefits young people receive from experiences with nature. She spoke about the calming, restorative aspects of natural experiences for children suffering from ADHD and other maladies. She advocated for un-designed areas that allow children to explore, noting that American children in 1981 had, on average, 100 minutes per week of unstructured play and discovery compared to 50 minutes in

2005. “Children need dream time,” said Lovejoy. “They need wild places and un-designed areas: a spot for the wild things.”

In his address, O’Keefe shared stories, videos, and classroom strategies that he has successfully used to get children to make connections with the natural world. A second-grade teacher at the Center for Inquiry in Columbia, South Carolina, O’Keefe and his classroom projects have been featured in professional development videos. He also discussed how to encourage budding biologists and botanists to develop authentic scientific methods as they explore their subject matter.

Marcia Eames-Sheavly, recipient of the 2005 AHS Jane L. Taylor Award for her work as an Extension educator at Cornell University, addressed how garden-based educational programs can be designed to integrate critical life lessons and developmental skills that children and young people really need. Among the most important components of any curriculum,

YGS Posters Available



A limited number of the full-color symposium posters featuring a charming illustration by Sharon Lovejoy are still available. The 11-by-14-inch poster—signed by the artist and suitable for framing—can be purchased for \$10 plus \$2 for shipping and handling. To order, call (703) 768-5700 ext. 121.

she said, are lessons that give children a sense of belonging, make them feel they are successful, demonstrate they can influence people and events, show them the value of helping others, and are fun and at the same time physically and intellectually stimulating.

EDUCATIONAL SESSIONS

Diverse educational presentations and hands-on workshops during the symposium ranged from the study of medicinal plants to instructions on how to make a class herbarium for plant research, and lessons about the ruby-throated hummingbird.

This year’s symposium was particularly rich in presentations relating to the

Students at Cedar Shoals High School in Atlanta pull up weeds and apply mulch in their rain garden, which is planted with moisture-loving trees, shrubs, and perennials in a spiral design inspired by a mathematical concept known as the Fibonacci number sequence.

creation of outdoor classrooms or school gardens that allow children to explore the idea of habitats, or interconnected natural systems. Among the creative projects profiled was one on creating a rain garden and another that addressed turning an inner courtyard into an outdoor classroom.

At Cedar Shoals High School in Athens, Georgia, construction left a major eyesore in the form of a large detention pond. "It was an ugly mudpit," notes landscape architect **Ann English**, who used the site as a field study assignment for undergraduate students in a landscape design class she taught at the University of Georgia.

English engaged her class in assessing what kind of garden would appeal to the high school students. Based on that feed-



back, the final design created by English and colleague Lauren Zeichner was centered on a spiral planting of trees that tolerate "wet feet," including bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*), and river birch (*Betula nigra*). The design was inspired by the Fibonacci number sequence, a mathematical relationship that has been observed in many natural phenomena, including the spiral-

ing shape of shells and the arrangement of scales on pine cones.

When work began last year, students wore hip boots to dig plants into the heavy clay soil and shovel mulch.

In addition to the trees, students planted moisture tolerant shrubs and perennials such as red chokeberry (*Aronia arbutifolia*), Virginia sweetspire (*Itea virginica*), and swamp milkweed (*Asclepias incarnata*). 'Ice

ANN ENGLISH

LAWN & GARDEN

yellow pages

HOME GARDENER

Powered By: **GREEN INDUSTRY YELLOW PAGES**
An Interactive Media Publisher

Find Plants, Products and Services for Your Garden!

www.LGYP.com

Homestead Gardens

Because Life Should Be Beautiful

743 West Central Ave (Rte. 214) Davidsonville, MD 21035
410/798-5000 410/956-4777 301/261-4550

GARDEN EXPLORATIONS

Splashing fountains were a welcome sight at the entrance to the Children's Garden at the Atlanta Botanical Garden (ABG). Symposium attendees toured the lushly planted two-acre garden and engaged in a question and answer session with **Cindy Tyler**, a principal with Marshall•Tyler•Rausch Landscape Architects, and **Tracy McLendon**, ABG's education director. A special garden railway exhibit—Locomotion in the Garden—set up outside the Fuqua Conservatory, delighted guests before a banquet dinner that featured opening remarks from ABG Executive Director **Mary Pat Masterson**, AHS President

Katy Moss Warner, and AHS Board Chair **Arabella Dane**. The highlight of the evening was the debut of the "Growing Good Kids—Excellence in Children's Literature" awards (see page 11 for more on the book awards).

At nearby Wonderland Gardens, Columbia High School students and **Sheldon Fleming**, the garden's founder and executive director, gave tours of the community garden complex, which includes a butterfly meadow and pond used for nature study. The student guides, who volunteer at the garden during the year, addressed ecological issues like composting organic waste and recycling post-consumer plastic and rubber.

An optional field trip to Callaway Gardens in nearby Pine Mountain offered an opportunity to learn about *Lepidoptera* in the Cecil B. Day Butterfly Center conservatory, where hundreds of exotic tropical insects fluttered amid languid blooms and cut-fruit feeding stations. Program staff also guided guests



Left: A student from Columbia High School uses a magnifying glass to show a symposium attendee the diversity of life in a sample of pond water at Wonderland Gardens. **Above:** A group takes an optional tour of Callaway Gardens.

through the John A. Sibley Horticultural Center, Mr. Cason's Vegetable Garden, and Virginia Hand Callaway Discovery Center, where a final dinner brought the symposium to a close. —C.A.

Ballet')—all tough plants that can take periodic flooding.

Now one year old, the Cedar Shoals Rain Garden has begun to attract wildlife. **Stella Guerrero**, a teacher at Cedar Shoals, uses the garden and surrounding landscape to help students understand basic botany in conjunction with an interactive Web site (www.discoverlife.org).

Janet MacNeil, a parent at Glover Elementary School in Milton, Massachusetts, shared the process of transforming an empty inner courtyard into an outdoor classroom. The design for this project was developed by **Ruth Parnall** and **Virginia Sullivan**, consultants with Learning by the Yard, a landscape design company specializing in school projects. After the design was presented to students and staff in 2003, a Giving Tree in the school lobby was hung with cards listing items the project team

needed to get growing. Families made donations to the courtyard garden and helped build raised planters, install birdfeeders, and water newly planted shrubs and trees.

Parnall and Sullivan studied the microclimates within the courtyard and designed the large space to include a wildflower meadow, hilltop grove with log benches, an arbor, a farm garden for grow-

ing pumpkins, a woodland edge habitat, and a clearing for large group gatherings. "The courtyard will function as a field laboratory for the school community," says Sullivan. "The structure illustrates the ecology of native plant communities and provides valuable wildlife habitat."

The success of the Glover Elementary School project has led to an initiative to create outdoor learning environments at all the public schools in Milton.

"Encouraging young people to have frequent and positive interactions with gardens and the natural world is so important that good ideas and successful lesson plans like these should be shared as widely as possible," says **Stephanie Jutila**, AHS Education Programs Manager.

ST. LOUIS will provide the backdrop for the 14th annual symposium, hosted by the Missouri Botanical Garden (MOBOT) July 27 to 29, 2006. Highlights include a guided tour of the new children's garden that the MOBOT is unveiling next spring. Look for more details soon at www.ahs.org.

Charlotte Albers is coordinator of AHS's The Growing Connection program.

great Ground Covers *for shade*

These attractive plants reduce maintenance in shady gardens without taking over.

BY GENE BUSH

ONE OF THE most common questions I get at my nursery is, “What do you recommend for ground covers in my shade garden?” Many of these people have had bad experiences with overly aggressive spreaders like English ivy and bishop’s weed. Fortunately, woodland gardens lend themselves to a range of low-growing and spreading flora that reduce weeds and look good.

The concept of ground-covering plants implies using plants that have a bit of wanderlust, but not *too* much. There’s a difference between assertive plants and aggressively spreading plants. Sometimes a plant will fall into the former category in one region or soil type and into the latter category in another situation.

Before I place a ground cover in my garden, I research its growth habits and match its predicted expansion to the size of the area I want covered.

It’s also good to know how quickly a plant will grow to its mature dimensions. Some plants spread above ground by sending out branches that form roots when they touch the soil; others spread beneath the soil’s surface by roots or rhizomes.

Also consider a plant’s size in relation to its companions. Beware of planting aggressive ground covers near small, delicate, or slow-growing plants.

Ideally, garden ground covers should appear to flow smoothly, so that they resemble a gentle stream that winds around other plants. To me, many mound-forming ground covers look like gas bubbles rising to the surface of a still pond; they disrupt the garden’s visual flow and com-

***Anemone nemorosa*, a woodland ephemeral, produces a veritable carpet of flowers.**





Wild ginger's odd-looking ground-level flowers are designed for pollination by beetles.

pete with, rather than complement, the plants they surround. Plants that have uniform low growth are generally easier to incorporate into a design.

Here are a few of my favorite ground covers for a shady spot. Before you plant them in your garden, however, check with gardening friends or your local botanical garden to make sure they are not a problem in your region.

EPHEMERAL BEAUTY

European wood anemone (*Anemone nemorosa*, Zones 4–8, 8–1) is a spring-blooming ephemeral that goes dormant by midsummer. From mid-March through July, however, it tops my ground cover list. European wood anemone is a collector's dream, and so variable in nature that many forms have been selected, named, and passed along to fellow enthusiasts.

Wood anemone spreads by slender, woody rhizomes that resemble little twigs with eyes. The three-inch-long rhizomes branch outward just below the ground's surface, gradually forming a mat. Anemone foliage has deeply segmented leaves on six- to eight-inch-tall stems. Flowers of the species are white and sometimes have a reddish back. None that I have grown are shy about blooming; they put on quite a show in open shade, closing at night and on cloudy days. You can find cultivars with single or double flow-

ers in white, blue, lavender, pink, or combinations thereof.

Buttercup anemone (*Anemone ranunculoides*, Zone 4–8, 8–1) resembles *A. nemorosa* but sports yellow blooms. Semi- and fully double forms are available, as well as a hybrid between the two species. In alpine climates, try meadow anemone (*A. canadensis*, Zones 3–7, 7–1), but be aware that it can be invasive in warmer regions. All are easily grown in reasonably good garden soil; mulch with a thin layer of chopped leaves in fall.



The adaptable bulblet fern is suitable to both wetlands and drier, rocky sites.

SPICY AND SHY FLOWERS

Native from New Brunswick to North Carolina, Canadian wild ginger (*Asarum canadense*, Zones 2–8, 8–1) gets its common name from the aroma of culinary ginger that arises when its leaves or roots are bruised. In the early years of American settlement, pioneers candied the native *Asarum* roots and used them as a ginger substitute. Its striking leaves are large and heart-shaped with silvery hairs that become less silken as the plants mature. Individual leaves can reach eight to 10 inches across and stand a bit taller than one foot in height; the fleshy, branched rhizomes extend six inches or more.

Canadian wild ginger's shy blooms hide beneath its foliage and face the ground for easy pollination by beetles. The blooms are quite unique, however, and are worth turning the leaves over to enjoy. The flowers form seedpods containing masses of fleshy-tailed seeds. These are often dispersed by ants, which carry them off for the sugars in the seed tail. As a result, I have wild ginger growing in locations where I could never have transplanted or sown it successfully.

A good option for gardeners in the Northwest is *Asarum caudatum* (Zones 5–8, 8–4), which has shiny semi-evergreen foliage and burgundy flowers.

Wild ginger can be quite assertive in good, well-drained garden soil, so give it plenty of room to grow. It also performs well in nutrient-poor, rocky soil.

EASY-SPREADING FERNS

The bulblet or bladder fern (*Cystopteris bulbifera*, Zones 4–8, 8–1) has gemmae (bulblets) on the underside of the fronds toward the tip. When the tiny green balls mature, they drop to the ground and form new ferns. This method of propagation lends itself to hillsides where the little balls can bounce and roll down a slope. When the parent fern is planted at the top of a hill or embankment, its offspring form a cascade of green fronds that, waterlike, flow downward around rocks and other plants.

The bulblet fern's slender, bent-tipped fronds are light green and reach 12 to 18 inches in length. When they first emerge, stems are almost the color of Merlot wine, especially with the spring sun behind them. As spring progresses, the midribs turn a mahogany color. Bulblet fern is native to the eastern United States, where it is found in wet woodlands or on limestone that is moist from seepage. But this deciduous fern does not demand those conditions to thrive in the garden. Good garden soil or rocky ground suits its needs. If the fern gets too dry, its fronds turn crisp and brown, but it will green up again when it receives moisture.

From California to Alaska and east to Montana, try native Western sword fern (*Polystichum munitum*, Zones 3–8, 8–1), and in tropical regions consider another spreading sword fern, *Nephrolepis cordifolia* (Zones 9–11, 12–1). In the South, southern lady fern (*Athyrium filix-femina* subsp. *asplenoides*, Zones 6–9, 9–1) will quickly cover ground, so keep it confined to a specific area.

NATIVE IRIS

Dwarf crested iris (*Iris cristata*, Zones 4–10, 10–1) is native to the eastern and southern United States. Quite often it is found growing in sparse patches in deep shade, where I've completely ignored its presence. One day, however, I came upon a large drift that had not been overshadowed by shrubs and trees. That sighting inspired me, and I have since used *I. cristata* in favored areas of my garden.

Dwarf crested iris creeps slightly beneath, or right at, the soil's surface. When the wind blows leaf litter mulch aside, it's not unusual to see a mat of rhizomes



In light shade, dwarf crested iris creates vivid drifts of color with its late-spring blooms.

crisscrossing each other several layers deep. The long, slender rhizomes have nodules and light green growth tips that resemble tree roots.

Its swordlike foliage reaches only six to eight inches in height; when well suited to its location, it will cover a forest floor. The plant also stands up well to root competition and less-than-perfect growing conditions. In late spring, this iris blossoms on short stems just above the foliage in shades of bluish lavender to

purple with white crests. When grown in well-drained garden soil with plenty of light, but not full sun, crested iris blooms freely. Many cultivars are available, including a white form.

A TRACTABLE MINT

Meehania cordata (Zones 4–8, 8–4) unfortunately carries the common names of Meehan's mint or creeping mint. Just the mention of the word "mint" causes most gardeners to pass over this great native plant. Even in rich, moist soil it will not be the plant that eats your garden. It will form a wonderful woodland carpet, so give it room to spread.

Meehania roots from nodes on its trailing stems; each node sends out a new plant. Its heart-shaped leaves are hairy on their upper surface and deeply veined—almost scalloped—along their edges. In May and June, Meehan's mint blooms at the end of lax stems that arch above the foliage. The floppy, hooded blooms occur on one side of the stem and vary in color from lavender-blue to light lilac. In some regions, slugs can be a problem.

My garden sports a drift of Meehan's mint at the base of a walnut tree, where it competes with royal fern (*Osmunda regalis*), yellow lady's slipper orchid (*Cypripedium calceolus*), and turtlehead (*Chelone* spp.).



Growing only four to eight inches tall, Meehan's mint carpets a woodland garden with its elegantly scalloped foliage.

MULTISEASON INTEREST

For year-round interest, try partridge berry (*Mitchella repens*, Zones 4–9, 9–1), a North American native plant that shines throughout every season. This evergreen trailer seems unaffected by pests or diseases and remains as fresh in June as in February. Partridge berry forms lustrous green mats so flat they appear to be painted onto the soil. Like Meehan's mint, this slow-growing perennial spreads from nodes along its creeping stems.

Its dark green, rounded leaves are opposite on the stem and are generally less than an inch long. Even if it never bloomed, I would use partridge berry near a path where I could enjoy the lovely foliage. It does bloom, however, and always in pairs. Two tiny, fragrant

TRY NATIVE SPURGE

Allegheny spurge (*Pachysandra procumbens*, Zones 5–9, 9–3) is my favorite among the spurge species and cultivars available from garden centers and by mail order. There are five species in the genus, but only two seem to show up in nurseries. Of those two, the Asian species *P. terminalis* and its cultivars are the most readily available, but they can be invasive if not well contained. Hold out for our native Allegheny spurge and you won't be disappointed.

Pachysandra procumbens has evergreen foliage to approximately USDA Zone 6, or to Zone 5 with protection. In colder zones, it is deciduous. Foliage is at the end of lax stems that reach about one foot in height. Its deep green leaves



Easy to grow and always tidy, partridge berry lends year-round color to woodland floors.

trumpets of whitish-pink soon become scarlet berries, each having two white eyes. *M. repens* forma *leucocarpa* bears white berries. Sometimes the berries last through winter and are still present when fresh blooms arrive in late April. At least eight species of birds relish its fruit.

In nature, partridge berry prefers moist, acidic humus, but it will do well under less optimum conditions. I've observed that it prefers raised locations so that fallen leaves do not smother it in autumn. My soil is neutral to slightly acidic, and I have enjoyed attractive mats of this fine ground cover for years.

are slightly mottled with brown and have silvery veins and toothed margins; they take on a bronze cast with the onset of cold weather. In early April, fragrant, shell-pink-and-tan flowers crowd together to fill open spaces between the leaves. It's not unusual to see snow on the flowers and newly emerging foliage.

In the wild, you'll find Allegheny spurge growing in diverse environments. However, it performs best in good garden soil in open deciduous shade. After three years my drift of *Pachysandra* is approximately four feet wide; it skirts the base of a viburnum

Sources

Avant Gardens, Dartmouth, MA. (508) 998-8819. www.avantgardensne.com. Catalog \$3.

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

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

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

Heronswood Nursery, Kingston, WA. (360) 297-4172. www.heronswood.com. Catalog \$5; free online.

Munchkin Nursery & Gardens, Depauw, IN. (812) 633-4858. www.munchkinnursery.com. Catalog \$3; free online.

Resources

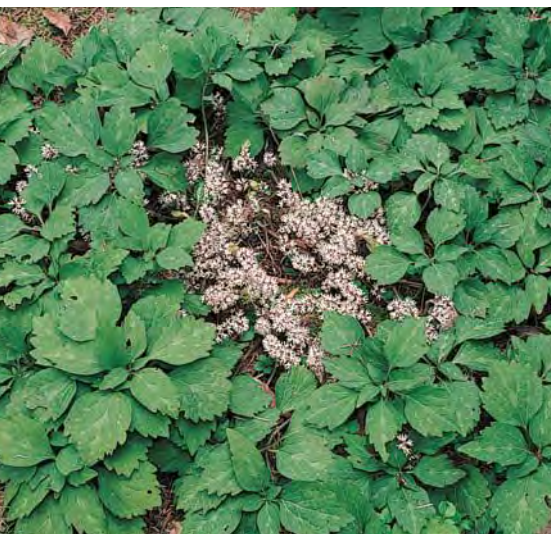
The Complete Shade Gardener by George Schenk. Timber Press, Inc., Portland, Oregon, 2003.

The New England Wildflower Society Guide to Growing and Propagating Wildflowers of the United States and Canada by William Cullina. Houghton Mifflin, Boston, Massachusetts, 2000.

with maidenhair fern (*Adiantum* spp.) for company.

SMALL BUT MIGHTY

More than 30 species of Solomon's seal grow throughout the world and three species are native to the eastern United States. Of all the available species and cultivars, dwarf Japanese Solomon's seal (*Polygonatum humile*, Zones 5–8, 8–4) is my favorite. *P. humile* grows only six to eight inches in height in a genus that has species reaching three to 12 feet or more. Most species are quite graceful in form, arching gently in the top one-third of their



Above: Native to North America, Allegheny spurge is evergreen in USDA Zones 5 or 6 and warmer. Right: Flowers of foamflower (*Tiarella cordifolia*) and creeping phlox (*Phlox stolonifera*) create a colorful tapestry in this woodland at Longwood Gardens in Kennett Square, Pennsylvania.

height. *P. humile*, however, stays stiffly upright. Its heavy leaves look like little green eggs (hold the ham). Blooms are white bells located on one side of each short stem, appearing in late spring.

Solomon's seal spreads primarily by rhizomes that lie just beneath the surface. White, fleshy, and covered with scars from the previous year's stems, the rhizomes frequently fork to send up additional stems that form a colony of slender, upright soldiers that appear to march in formation between taller perennials.



Flowers of *Polygatum humile* line one side of each six- to eight-inch stem.



In the western United States and in alpine environments, plant native false Solomon's seal (*Smilacina racemosa*, Zones 4–9, 9–1). This woodland beauty grows well in sun or moist shade.

TALLER GROUND COVERS

A large drift of foamflower (*Tiarella cordifolia*, Zones 3–9, 7–1) in bloom is to the eyes what a Mozart symphony is to the ears. The slightest breeze stirs the blooms into undulating waves of white foam that blow across a sea of bright green foliage. Its flowers bloom in racemes carried well above the foliage—stems can reach 14 inches in height. The numerous flowers in each raceme are white, occasionally aging to a pinkish flush.

Despite their lovely flowers, most foamflowers are now bred primarily for their foliage, and a seemingly unlimited number of cultivars are available. The species has been generous with forms that differ from the norm, and hybridizers often play up the dark markings in the center of the leaf or the highly variable leaf shapes. Bronze-leaved varieties also have been developed.

T. cordifolia is native to the southeastern United States but will do well in any woodland environment, and *Tiarella* varieties are available to USDA Zone 9. Foamflower foliage most often is bright

green and has a glossy, almost wet appearance. The leaves also are coarsely and sparsely hairy. The rate of spread by rooting trailers varies from hybrid to hybrid. Some are relatively slow, whereas others can be downright assertive. Foamflower grows best in humus-rich soil that has leaf mulch for it to root beneath.

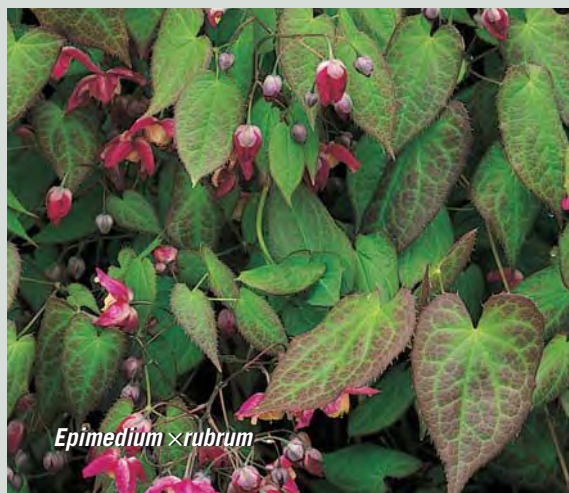
Another taller ground cover, *Uvularia perfoliata* (Zones 4–10, 10–4) is one of the five species of bellworts or merrybells, all native to the southeastern United States. *U. perfoliata* reaches 14 to 18 inches in height, and its stems remind me of pale asparagus tips when they emerge in early spring. Merrybells' foliage looks as though its stems pierce each leaf at its base. The blooms are clusters of long, pale yellow, tubular bells. It spreads by creeping rhizomes.

Although this little merrybells blooms in late April in my garden, its foliage remains until the first hard frost. Its early blooms make it a good companion to other spring-bloomers. This plant's upright, somewhat open form fills in between larger perennials such as hellebores, making it an attractive, multiuse ground cover.

Gene Bush is the owner of Munchkin Nursery & Gardens in Depauw, Indiana.

MORE SHADE-LOVING GROUND COVERS

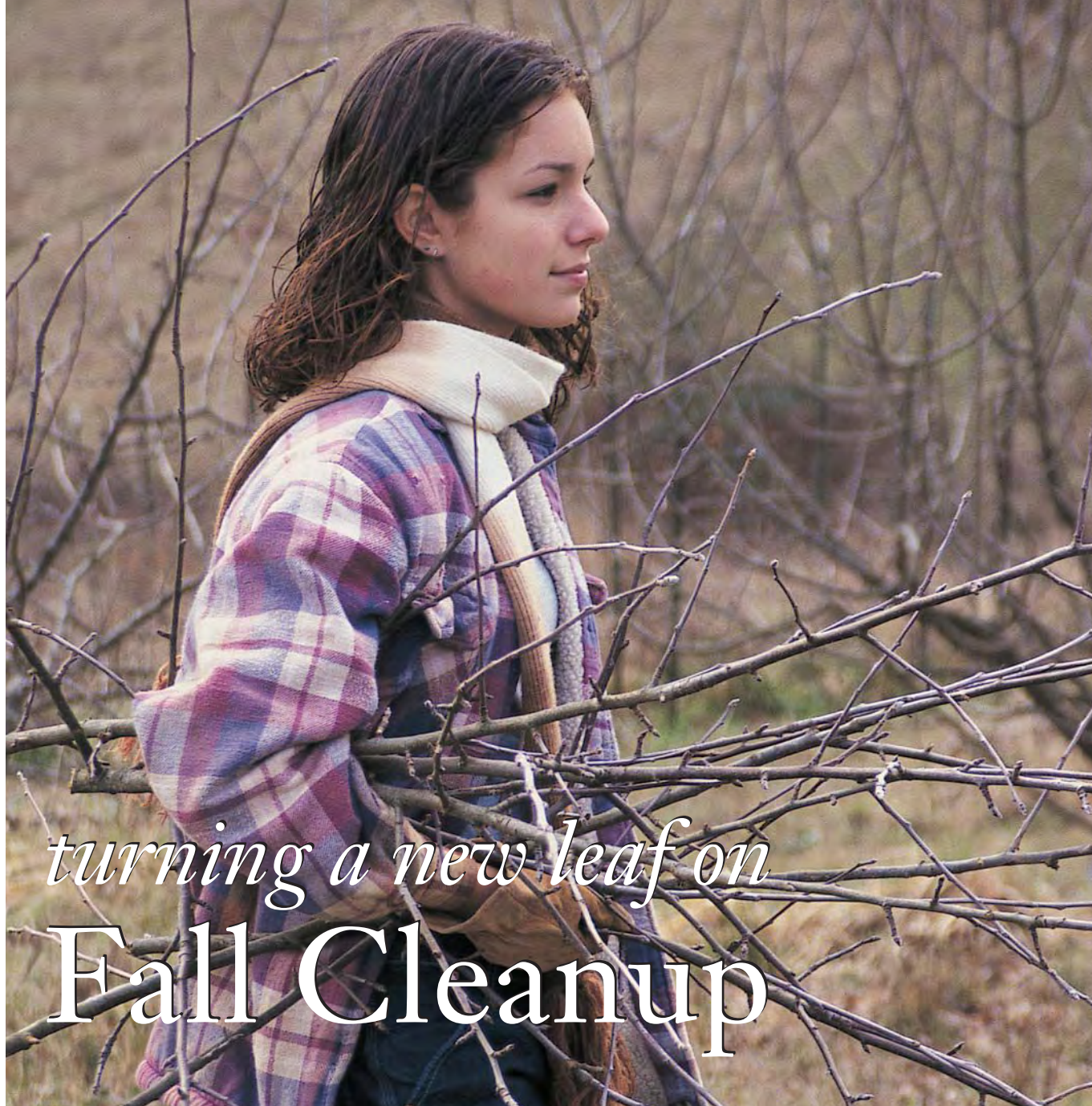
Name	Hgt./Width (in.)	Other Features/Culture	Origin	USDA, AHS Zones
Barrenwort (<i>Epimedium</i> spp.)	3–24/12–24	flowers in a variety of colors, including yellow, beige, red, and purple from spring to early summer	Mediterranean to temperate Asia	5–9, 9–4
Bear's-foot hellebore (<i>Helleborus foetidus</i>)	to 32/18	bell-shaped green flowers; self-sows	western and central Europe	6–9, 9–6
Bunchberry (<i>Cornus canadensis</i>)	to 6/indefinite	green flowers with white, sometimes pink-flushed, bracts, followed by bright red fruit; prefers cool summers and acidic soil	Asia, North America, and Greenland	2–7, 7–1
Creeping forget-me-not (<i>Omphalodes verna</i>)	to 8/12 or more	white-eyed, bright blue flowers	southeast Alps to Romania	6–9, 9–6
Creeping phlox (<i>Phlox stolonifera</i>)	4–6/12 or more	upright stems produce pale to deep purple flowers	central United States	4–8, 8–1
Green and gold (<i>Chrysogonum virginianum</i>)	10/to 24	branched stems bear star-shaped yellow flowerheads; evergreen in mild winters; tolerates dry shade	eastern United States	5–9, 9–2
Hardy wood geranium (<i>Geranium maculatum</i>)	24–30/to 18	lilac-pink to bright pink flowers; prefers moist soil	eastern North America	4–8, 8–1
Hostas (<i>Hosta</i> spp.)	6–30/12–48	clump-forming, with bold, thick foliage and white to lavender flowers; prone to deer and slug damage	Asia and eastern Russia	3–9, 9–2
Leadwort (<i>Ceratostigma plumbaginoides</i>)	18/12 in or more	bears spikelike clusters of brilliant blue flowers; red-tinted leaves in autumn	western China	5–9, 9–4
Lenten rose (<i>Helleborus ×hybridus</i> , syn. <i>H. orientalis</i>)	18/18	saucer-shaped, white or greenish cream flowers, turning pinker with age	Greece, Turkey, Caucasus	4–8, 8–3
Peacock lilies (<i>Kaempferia</i> spp.)	6/8–18	subtropical with white, pink, or lilac three-petaled flowers, often fragrant	tropical Asia	10–15, 12–10
Strawberry begonia (<i>Saxifraga stolonifera</i>)	12/12	white flowers with yellow or red spots	eastern Asia	7–9, 9–5
Yellowroot (<i>Xanthorhiza simplicissima</i>)	24/60 or more	bright green leaves bronze at first, often yellow and red-purple in autumn; tiny, brownish purple flowers	eastern United States	3–9, 9–1



Epimedium × rubrum



Helleborus foetidus



turning a new leaf on
Fall Cleanup

When it comes to tidying up the garden in fall, a little restraint can go a long way toward keeping the natural ecosystem in balance.

BY KRIS WETHERBEE PHOTOGRAPHS BY RICK WETHERBEE

EVERY FALL, most gardeners engage in the annual ritual of raking, mowing, pruning, and generally hauling off yards of garden trimmings and grass clippings—all in the name of fall cleanup. But this last-ditch effort to tidy up the garden wastes a precious amount of resources in the process. In fact, overzealous cleaning actually can be more damaging to the ecological landscape and less fruitful to the outcome of next year's garden than not doing anything at all.



Above: Leave some herbaceous perennials and grasses standing to lend visual interest to the garden in winter and to provide food and shelter for wildlife. **Opposite:** Disease-free branches and clippings should be recycled in the compost pile or chipped and used as mulch.

Making a few changes in your autumn routine benefits the soil and, ultimately, the health of your plants. Keeping fallen leaves and trimmings in the garden adds essential organic matter to the soil. This, in turn, provides food for worms and a host of other beneficial soil-dwelling creatures that break down the material, improving soil structure and delivering valuable nutrients to plants. In addition, leaving a few things undone—allowing spent flowers to remain or leaving a patch of tall grasses to linger in a corner of your yard, for instance—creates a hospitable place for wildlife to spend the winter.

In regards to removing garden debris or leaving it be, there are a multitude of reasons why gardeners should forego the traditional course of action in favor of a more relaxed approach. For starters, how about conserving resources—including your time, energy, and the fuel it takes to haul leaves, sticks, and other yard trimmings away? Rather than sending valuable organic matter to the local landfill, why not recycle it? The leftover organic matter can

be turned into nutrient-rich compost, used for mulch, put in piles to provide winter habitat for wildlife, or left to decompose naturally.

LEAVE THEM STANDING

Removing spent flowers during the growing season will help keep plants blooming longer. However, once fall has arrived and plants near the end of their flowering cycle,



Sunflowers left in the garden provide a nutritious food source for a variety of birds.

the flowers of many plants can be left to mature so they will produce seeds. The attractive seed heads that remain will not only add a dimension of winter interest in the garden, they also serve as an important food source for seed-eating birds like finches, sparrows, grosbeaks, and siskins. And, letting seedpods form on desired self-sowing annuals—nasturtiums, poppies, nicotianas, and cosmos, for example—provides a welcome source for next year's blooms. Just be sure to remove the seedpods of any plants that you *don't* want to reseed.

Use a light hand with the pruners and leave at least a few dead stalks of disease-free perennials and vines in the garden to serve as protection for the plant's crown and roots. By leaving some garden trimmings in planting beds, you'll be creating a natural habitat of protective cover for a host of birds as well as a variety of overwintering wildlife, such as adult ladybeetles, pollinating bees, praying mantids, and other insects.

Insects, too, need protection from winter cold, and in warmer climates they also

SIMPLE FALL TASKS

■ Prune out or rake up any diseased plant stems or leaves. Discard these in the trash or burn them if your community allows it.

■ Apply a two- to four-inch-thick layer of organic mulch to tender shrubs and perennials, leaving a mulch-free zone of a foot or so around the base of deciduous trees, and several inches away from hardy shrubs and crowns of herbaceous perennial plants. If you live in a cold winter region, horticulturists advise waiting till the first frost before applying mulch.

■ If you have a chipper, convert your yard trimmings into wood chips that can be used as mulch. Chips made from freshly trimmed branches should be allowed to decompose for a few months before they are spread on planted beds because they would otherwise use up soil nitrogen as they break down.

■ Instead of focusing on clearing things out of the garden, think of early fall as a time to add plants and other elements that support winter wildlife. Consider trees and shrubs that offer winter berries for birds; cover crops that shelter amphibians, nourish soil microorganisms, and reduce erosion; add bird feeders and baths for resident songbirds.



■ Divide and replant mature ornamental grasses and herbaceous perennials that have developed vigorous clumps, show barren and dead centers, or whose flowers have become less abundant. —K.W.



Fallen leaves and other plant debris create a protective environment for overwintering insects.

need protection from winter elements, like moisture, as well as their enemies. At summer's end, insects take refuge in garden debris and in dry stems. "Insects, whether they be beneficial or pest, need overwinter protection," says Jack Schultz, a professor of entomology at Penn State University in State College, Pennsylvania. "Without it they're sitting ducks for everything from having their blood freeze to being eaten by their enemies."

On the flip side, removing all this garden debris in fall can actually upset the balance of nature. Insects are a necessary component to plant pollination, beneficial insects help keep bad bugs under control, and insects and other invertebrates serve as an essential food source for many birds and other animals. It's a natural synergy that makes for a healthy ecosystem and lively garden.

LET IT LAY

One of the most labor-saving, cost-effective, and environmentally-friendly things you can do—or in this case, *not* do—is to leave your grass clippings on the lawn. Since grass clippings are mostly water, they decompose rapidly so there is no thatch buildup.

Grasscycling also adds organic matter, stimulates the activity of earthworms, which act as nature's soil aerators, and re-

turns a natural source of nitrogen back to the soil. This can add up to two pounds of elemental nitrogen per 1,000 square feet each season. If you have a mulching mower and mow your grass frequently, the clippings should be the perfect size to leave on the lawn.

A heavy fall of leaves on the lawn should be raked up to avoid smothering the grass or encouraging fungal diseases. But those that fall into garden beds can be left in place. As long as the layer of leaves isn't too thick, it will form an insulating mat around trees and shrubs that conserves soil moisture, modulates soil temperatures, reduces erosion, encourages beneficial soil organisms, and naturally breaks down to improve soil structure. Some leaves may need to be removed from perennial beds where winter moisture can promote crown rot.

If you can't bear to leave your leaves naturally strewn in beds, then gently rake them out and add them to the compost bin. Consider leaving a few small piles tucked away for hibernating insects as well as lizards, frogs, and toads that seek winter cover.

Unless your garden is huge, consider raking your leaves rather than using a blower or vacuum. Raking does not produce the noise or air pollution of machinery, and it is a healthy form of exercise.

BREAKING AN UNHEALTHY CYCLE

Debbie Hillman, a professional gardener in the northern suburbs of Chicago, says the ritual of fall cleanup—part of what she calls an overall “neatness aesthetic” in landscape care—has led many American homeowners to unwittingly support “scraped earth” tactics. “Every fall, homeowners rake up every leaf from their yards...lawn-service crews cut down every seed stalk and vacuum up every last crumb of loose organic matter, serving more as outdoor cleaning services than as horticultural stewards,” she says.

“In the name of neatness, we pay to throw this resource away, compounding this folly by the injurious techniques we use,” she adds. “By using leafblowers, we’ve given ourselves excruciating noise and air pollution. By having to truck this ‘waste material’ ever further away, we use up nonrenewable fuels and create more air pollution.”

Hillman urges homeowners who hire landscape crews to carefully monitor how they do the fall cleanup. “For several years, I tried making suggestions to clients or their lawn crews about how to deal with fallen leaves (leave some in

ground cover or rake them from the lawn into the shrub beds), but it didn’t work,” says Hillman. “If I was successful in getting the leaves left in the fall, at the first sign of spring they would be vacuumed up. Now I make it simple for homeowners and landscape crews alike: I tell them to stay out of the beds!”



The benefit to retaining organic debris, says Hillman, is both environmental and economic. Those gardens where fallen leaves were allowed to remain, she says, “were the ones that survived the last two dry Chicago winters with little or no plant loss; the yards scraped clean lost mature trees, shrubs, ground covers, etc. on an enormous scale, with equally enormous replacement costs.”

Hillman’s strong feelings on this topic led her to write an essay that was originally published in *HortIdeas*, an informative gardening newsletter published by Greg and Pat Williams of Gravel Switch, Kentucky (for information on *HortIdeas*, visit www.users.mis.net/~gwill). You can read Hillman’s full essay by clicking on the special link to this article on the AHS Web site (www.ahs.org). —K.W.

If you have a leaf shredder, put your leaves through it so they will decompose faster. Those shredded leaves can be added back to beds or put in the compost pile. Even if you don’t have a shredder, you can

chop up leaf piles by running over them several times with a mulching mower.

Don’t know what to do with your branches and other yard trimmings? Use them as a base layer to start a compost pile

and cover them with grass clippings or leaves. You can also create loosely stacked brush piles in out-of-the-way spots in your yard. Use a mix of thinner and thicker branches and twigs to create different-sized spaces that will accommodate a variety of backyard creatures from reptiles and amphibians to birds, bees, and other winged wildlife. Top it off with a layer of evergreen branches for added protection in colder climates.

Fall cleanup needn’t be a complicated chore. Just remember that less is more in the grand scheme of things—our environment, our resources, and our day-to-day lives as well as the ecosystem of our garden. After all, wouldn’t you rather spend a little less time working in your garden and more time enjoying it? 🍂

Kris Wetherbee and her husband, Rick, a photographer, are regular contributors to The American Gardener. Their most recent book is Attracting Birds, Butterflies & Other Wonders to Your Backyard (Lark Books, 2005).



Leaves not used as mulch should be added to the compost pile along with twigs and branches.



Adding Bulbs to Fill in Borders

BY BECKY HEATH

Integrating bulbs with herbaceous perennials and shrubs can extend a garden's flowering season and create new color combinations.



AS FALL APPROACHES, the siren call of bulb catalogs accumulated over the summer comes to a crescendo. If you have a new garden with oodles of space to fill, then you have the luxury of crafting a plan to blend bulbs with herbaceous perennials and shrubs to create a harmonious, seasonally changing symphony of colors, textures, and shapes.

But even if your garden, like mine, is already well established, you can always find a little more space to tuck some bulbs within, among, around, or under other plants to create a complementary effect and that amazing spring payoff. Gardens are not static, after all; they are constantly evolving as plants outgrow their space or die and have to be replaced. Gardeners' tastes and interests change over time, too, in response

to new trends, changing conditions, and an ever expanding plant palette.

FINDING SPACE

So how do you add bulbs to an already existing garden? The best answer is: *carefully*. But it isn't impossible, and it's actually fun to test out new color combinations and even create changing color displays from year to year.

Opposite: Planting tulips that bloom at the same time as flowering shrubs like this rhododendron produces a multilayered show. **Above:** Spring bulbs can be strategically woven among herbaceous perennials and shrubs to create a long lasting and texturally satisfying display.

PLANTING TIPS

The best time to plant spring-flowering bulbs is after the first hard frost. Before then, the soil normally remains warm from the summer heat, and early autumn rains may cause newly planted, non-established bulbs to rot.

The basic rule of thumb for planting depth is three times the height of the bulb. So if the bulb is two inches tall, then the bottom of the hole should be about six inches deep. Tulips and lilies, which prefer really cool soil, benefit from being planted even deeper—I often suggest placing them eight to 10 inches deep.

The roots of spring-flowering bulbs emerge in the autumn, so, after planting, add a topdressing of compost or a slow-release fertilizer that is low in nitrogen and high in potash (10-10-20). —B.H.

There are several approaches to combining bulbs with herbaceous perennials, shrubs, and trees.

Choosing combinations that will bloom at the same time creates the biggest impact, like the finale of a fireworks display. Combining plants so that they bloom sequentially with a slight overlap, however, keeps a garden pleasing to the eye for the longest time. With careful selection, you can create a display where something is in bloom the entire season.

Planting for maximum effect is important, but it's even more critical to match bulbs and plants with similar cultural needs. After all, if your bulbs don't flourish, then you won't get much of a show. So assess your site for exposure to sun or shade, and check the soil to determine how wet or dry it stays as well as its acidity or alkalinity. And, of course, be sure your bulbs are hardy and heat tolerant in your region. If you live in a warm-weather region, you may have to pre-chill your bulbs.

HERBACEOUS PERENNIALS

Combining bulbs with herbaceous perennials and low-growing shrubs is a great way to mask the maturing foliage of the spring bulbs after they have flowered. The colors



Top: Variegated hostas emerge at the perfect time to hide grape hyacinth foliage. **Above:** Dark pink peonies and deep purple-blue Dutch irises make an attractive combination.

of the early-blooming perennials are what attract your attention—and that means you'll be less tempted to cut down the bulb foliage too early. Remember, after bulb flowers have faded, the foliage needs six to eight weeks of sunlight to help replenish

the energy for the following year's bloom.

Some of the best herbaceous perennials to help camouflage the maturing foliage of spring bulbs include daylilies (*Hemerocallis* spp.), peonies, hellebores, catmint (*Nepeta x faasini*), and hostas.



Using bulbs to echo the color of spring-blooming perennials and shrubs can create a dramatic effect. Above: Upright tulips harmonize with the dangling flowers of bleeding heart. Top right: Yellow daffodils provide a horizontal swath of color at the feet of white-barked Himalayan birches and yellow-twig dogwood. Right: ‘Renown’ tulips and heather bloom simultaneously.

For example, in our Gloucester, Virginia, garden, my husband Brent and I have a two-square-foot area that has white daffodils emerging through the dark burgundy foliage of a peony in mid-spring. Later, when that peony matures, masking the daffodil foliage, its dark green leaves and rose-pink flowers look beautiful with blue Dutch irises coming right up through them, blooming at the same time. Actually, this combination was quite serendipitous. We planted the daffodils and Dutch irises one year, and the next season we planted a peony on top of the bulbs, forgetting they were there.

Most spring-flowering bulbs prefer to be dry and cool in the summer, when they are dormant. The perennials planted in the same bed as the bulbs make useful neighbors to the bulbs by helping to soak up the

moisture from the summer thunderstorms as well as shading the bulbs during the hottest summer months. That is just one more reason for mixing bulbs, perennials, and annuals in the same border.

As perennials grow, their branches and foliage often spread out, covering part of the bed's surface, even though their actual root bases cover much less territory. Often you can carefully lift the foliage of a perennial to make space to dig a hole for some bulbs. In most cases, the bulbs will have no problem coming up through or around the perennial—or may even bloom while it is still dormant.

Where there is very limited garden space, you can still have a long-lasting bulb display if you think “vertical” and take advantage of staggered bloom times. You can plant tulips or lilies eight to 10 inches deep,

then above them place daffodils, hyacinths, or alliums at about six inches. Smaller early-blooming bulbs—such as crocuses, anemones, and dwarf irises—can even be planted in the top three inches.

AROUND TREES AND SHRUBS

Flowering trees are one of the most effective companions for bulbs. For example, planting bulbs in front of a weeping cherry or a flowering plum helps the garden to be seen from great distances and is well worth the effort. Choosing bulbs with flowers that echo the color of the tree's flowers is one attractive design idea. For a different visual effect, try bulbs



White-flowered bulbs like these tulips show up particularly well against evergreen shrubs.

whose flowers offer an appealing contrast to those of the tree.

The area around the base of a tree is the perfect place to plant small bulbs such as crocuses, grape hyacinths (*Muscari* spp.), squills (*Scilla* spp.), or miniature daffodils. The tree offers the bulbs some added protection from severe weather during the winter and early spring, and the bulbs can be planted shallowly so they won't damage tree roots. It's a great symbiotic relationship and attractive to boot. Some other effective small flowering trees for this purpose are crabapples, pears, dogwoods, redbuds, magnolias, and serviceberries (*Amelanchier* spp.)—or shadbushes, as we call them here in coastal Virginia.

Very early-blooming small spring bulbs such as crocuses, dwarf irises, and snowdrops (*Galanthus* spp.) are also very complimentary to deciduous shrubs. Plant them around the base of red- and yellow-twig dogwoods (*Cornus sericea* cultivars), winter hazels (*Corylopsis* spp.), and deutzias.

Evergreen shrubs such as rhododendrons, skimmias, and heathers provide a dark backdrop against which to display pale-flowered early spring bulbs.

White daffodils and tulips are so lovely, but if planted in the wrong place, they may not be noticed. When white flowers are planted in front of dark-leaved shrubs, they really stand out and shine. Later in the spring, the blooming shrubs shift attention away from the spent foliage of the bulbs. If you plant later-



Crocuses and other small, shallowly planted bulbs are very effective growing up through ground covers like this cyclamen.

blooming bulbs to coincide with the bloom of the shrubs, it makes an eye-popping sight!

A nearby shrub that picks up the bulb's color is even better. In our garden, we have the tulip 'Juan' growing up through a ground cover of *Vinca minor*. A nearby variegated euonymus echoes the tulip's yellow heart, making for an incredibly beautiful display.

Another successful combination in our garden is the tulip 'China Pink' planted with fothergilla. Other deciduous shrubs suitable for this situation include azaleas, forsythias, viburnums, and witch hazels (*Hamamelis* spp.).

UNDERPLANTING GROUND COVERS

An area of established ground cover is a perfect spot for adding strong, sturdy bulbs to extend seasonal interest. Ground covers suited to this process include evergreens such as periwinkle (*Vinca minor*), pachysandra, lysimachia, sedums, lamium—and even prostrate conifers like creeping juniper—and deciduous ones such as leadwort (*Ceratostigma plumbaginoides*) and certain St. Johnsworts (*Hypericum* spp.).

The dark backdrop provided by evergreens shows off the bulb flower's face and coloration to its best advantage.

The foliage over the bulbs during the winter can also serve as a living mulch, providing insulation to help bulbs survive in areas where their winter hardiness is questionable.

With most of these plants, small bulbs can be planted directly through the ground cover by digging small slots with a sharp, narrow bladed trowel. For larger bulbs, you will need to carefully make slots with a narrow spade or larger bulb planting tool, taking care to avoid cutting major roots.

SELECTING BULBS

When you get to the exciting point of choosing what bulbs to integrate into your garden, there are several things to keep in mind.

For instance, if you want something perennial that will come back reliably year after year, think about daffodils, snowflakes (*Leucojum* spp.), grape hy-

KEEPING TRACK OF YOUR TREASURES

All of us have occasionally stabbed a bulb or the crown of a dormant perennial when planting in an established flower bed. Before I start digging in a spot where I'm not sure what is below, I usually gently explore with my fingers to see if something that I had forgotten is on the verge of trying to emerge. I also keep a map or drawing of our garden that shows approximate placement of bulbs and perennials in relationship to woody shrubs that remain above ground.

Sydney Eddison, a garden writer who lives in Connecticut, has established a simple but effective system for marking where her bulbs and perennials are in a mixed border. She places sturdy metal planting labels at the back center of each clump. "It doesn't really matter whether you put them at the back or the front," Eddison says, "as long as you are consistent."

Marking bulbs with labels not only helps in keeping them from being damaged, but is also an aid for remembering which color scheme was

In early spring, Sydney Eddison's daffodils bloom in just as the foliage of herbaceous perennials emerges. As the daffodils decline, the perennials reach full stature and put on their summer show.

used in a particular spot—this is especially helpful as you plan for future additions.

Eddison says one of her initial mistakes was planting bulbs near the front of her mixed border, because without anything to hide the dying foliage they become an eyesore. "What I subsequently discovered was to look for holes or spaces among leafy perennials like daylilies," she says. Eddison relies heavily on daylilies and daffodils, which, she says "are truly a match made in heaven because daylily foliage comes up at the perfect time to cover the sins of the declining daffodils."

—B.H.



acinths (*Muscari* spp.), colchicums (*Colchicum* spp.), and perennial tulips. Non-perennial tulips make relatively inexpensive annuals.

Another consideration is your climate. If you live south of USDA Zone 8 or where there is not a discernible winter, you may need to order pre-chilled bulbs or specific types whose ancestors

hail from warmer climates. Jonquilla- and Tazettas-type daffodils are an example of this type of bulb, but there are many more. Check with your bulb supplier, local Extension agent, or gardening friend if you're not sure which bulbs will thrive in your garden.

And, of course, there are critter issues. If deer, voles, or rabbits are a problem in

Resources

Bulbs by John E. Bryan. Timber Press, Portland, Oregon, 2002.

Daffodils for North American Gardens by Brent and Becky Heath. Bright Sky Press, Albany, Texas, 2001.

Taylor's Guide to Bulbs by Barbara W. Ellis. Houghton Mifflin, Boston, Massachusetts, 2001.

Tulips for North American Gardens by Brent and Becky Heath. Bright Sky Press, Albany, Texas, 2001.

Sources

Brent and Becky's Bulbs, Gloucester, VA. (804) 693-3966. www.brentandbeckysbulbs.com. Catalog free.

Charles H. Mueller Co., New Hope, PA. (215) 862-2033. www.chmuellerco.com. Catalog free.

Dutch Gardens, Burlington, VT. (800) 950-4470. www.dutchgardens.com. Catalog free and online.

John Scheepers, Inc., Bantam, CT. (860) 657-0838. www.kitchengardenseeds.com. Catalog free.

your area, then certain bulbs, such as tulips, require some form of protection. If this is the case, planting daffodils, snowflakes, and colchicums would be a better strategy.

TAKE THE FIRST STEP—AND ENJOY

Adding new bulbs to an existing garden can be a bit daunting. However, once you take the first step and see some successes, you'll find yourself digging bulbs and dividing perennials and passing them on to your friends. To me, one of the best things in life is sharing happy gardening experiences with friends!

Becky Heath and her husband, Brent, are co-owners of Brent and Becky's Bulbs, a nursery in Gloucester, Virginia, that specializes in bulbous plants for all seasons.



Simplifying the Garden

At one time or another, all gardeners look for ways to reduce maintenance. Here's some expert advice for doing this in your garden.

BY CAROLE OTTESEN

FOR EVERYTHING there is a season. There is a time to expand the garden and a time to simplify it. There is a time to experiment with new perennials and a time to rely on the long-lived and well-behaved. There is a time to expand borders and a time to fill at least some of the beds with labor-saving ground cover. There is a time to move forward with new projects and a time to fine-tune what is already there. For every gardener the time will come, finally, to hang up the hoe. Until then, there is time to let one's garden, along with oneself, adjust gracefully to the seasons of life.

Life brings change—often unexpected, not always welcome, but continual. We may change jobs, start volunteering, have grandchildren, buy a vacation home and, suddenly, find that our free hours are few. Sometimes, it is the garden that gets bumped—at least temporarily—from an overbusy schedule.



Top: Wide paths allow easy access to densely planted beds of perennials and shrubs. **Above:** Creating raised beds is a boon for gardeners who want to save their backs from bending.

In any case, as we get older, garden chores become more onerous. The bags of mulch seem heavier with each passing year. Nature begins to drop discreet hints that youth is, after all, finite: a sore back, a little stiffness in the joints, fallible knees, and fatigue. What was—only a few short years ago—a seemingly endless flow of energy trickles down to shorter and shorter bursts spanned by the need for longer and longer periods of rest.

Somewhere along the way energy begins to lag behind intentions. Before you get around to it, it is suddenly August and those perennials you bought in May have grown through the holes in their pots and anchored themselves to the ground. The branch you pruned all winter in your mind is still as ill-placed as it was and growing ever larger. The too-tall perennials at the edge of the bed that were meant for the back of the border somehow didn't get moved—again—this year. The peonies that gradually came under the shade

TOP: SAXON HOLT; BOTTOM: RICK WETTERBEE

of an extending canopy are still yearning for lost sunlight.

GARDENING SMARTER

The way to offset diminishing energy and time is to garden smarter. Mike Zajic, former horticulturist at Brookside Gardens in Wheaton, Maryland, believes that “one gets smarter as one gets older in ways to save effort.” Zajic’s former Washington, D.C., garden was a spacious quarter-acre-plus showplace that included annual beds, flowering trees, a mossy-floored garden room, a stream, and a pond with a covered outdoor room where he and his wife, Elizabeth, entertained in sylvan splendor. Typically Zajic planted 1,000 white tulips every autumn for a spectacular spring show of color. Friends wandered through the garden, open-mouthed at the impeccably maintained status of thousands of plants.

And then one day, Zajic decided he’d had enough of his labor-intensive garden.

Resources

The Garden Reborn by Ruby Weinberg is available from Green Valley Press, Box 542, Califon, NJ 07830 for \$24.95 plus \$3 shipping & handling.

The Well Designed Mixed Garden by Tracy DiSabato-Aust. Timber Press, Portland, Oregon, 2003.

“I got tired of Harry Homeowner stuff. I had done all of the work of establishing the garden, it was just the maintenance that was getting to me,” says Zajic. “You start to get a little creaky. That wasn’t the main reason, but it was pinching at me.”

After moving to an apartment for a few years and taking a nearly complete break from gardening, Zajic is now developing a new garden at a beach house. “I’ve definitely scaled back,” he says. “In picking a

new garden, I’m creating one that is less ambitious. It’s a simpler layout and there will be a lot less to take care of.”

Instead of replicating the large bed of annuals at his former house, he has all but ruled them out except to fill some holes and “a few tubs on the deck.” Instead of the 1,000 tulips he planted and dug up every year, he says, “I’m using bulbs that come back every year.” He concludes, “in vigorous youth many of us create fantastic gardens, but they’re too labor intensive.”

Unlike Zajic, who started over with a clean slate, most people have to deal with the same garden in which they have spent decades adding more and more labor-intensive features.

“All too often, the aging gardener, or the all-too-busy gardener, is confronted with a landscape that needs more time and attention than he or she now has the time or strength to summon,” says Ruby Weinberg, author of *The Garden Reborn*, a book that tackles the problem of dealing



Mike Zajic's showplace garden in Washington, D.C., included a pond and waterfall, sunny and shady borders, and seasonal displays of bulbs and annuals. After years of taking care of the landscaping, he is moving on to a new garden with a simpler, less labor-intensive design.

WAYS TO REDUCE GARDEN CHORES

Some of these tips are adapted from ideas in Ruby Weinberg's book *The Garden Reborn* (see "Resources" on page 35).



■ *Eliminate formally pruned hedges and topiaries and replace them with shrubs that have attractive natural shapes. This is especially true of overgrown foundation plantings or shrubs that line pathways, like the ones shown above.*

■ *Remove trees that are diseased or require constant pruning, watering, or other maintenance. Replace them with selections that require less care.*

■ *Rid the garden of overly rambunctious plants, or, at the very least, relegate these to peripheral areas where they don't compete with less aggressive subjects. Some of the worst offenders include English ivy (*Hedera helix*), bishop's weed (*Aegopodium podagraria*), and hardy ageratum (*Eupatorium coelestinum*).*

■ *Replace high-maintenance perennials with those that are well-behaved and long-lived, such as bear's breeches (*Acanthus* spp.), hardy geraniums, coneflowers (*Echinacea* spp.), ornamental grasses, and *Sedum 'Autumn Joy'*.*



with a demanding garden in the face of limited time and energy. "This is a special dilemma for those of us who have long been dedicated gardeners."

Dedicated gardeners have high standards and a clear idea of how things should look. They suffer when the reality falls short of the vision. For them, Weinberg and *The Garden Reborn* offer some "modifications to simplify and ease garden maintenance." (See this page and opposite for a list of work-saving tips.)

DOWNSIZING

The time to modify is "NOW," counsels Weinberg. Problems get out of hand swiftly—especially in large gardens. Few of those who garden passionately seem to have the good sense to do so on a small scale. National Public Radio's garden guru Ketzelt Levine, aka "the doyenne of dirt," is an exception.

"No modifications have been needed as yet," says Levine, who prudently bought a house with "a tiny garden" in Portland, Oregon. So far, she's been able to keep up with a demanding schedule and her garden because, she says, "I'm working on a small and manageable scale." Nevertheless, she adds, she is "relieved that shrubs are getting huge and taking up vast amounts of real estate."

TALENTED REPLACEMENTS

"Replacing some perennials with shrubs," says Rick Darke, AHS award-winning author of *The American Woodland Garden* and other books, is a good way to ease up on the many chores that accompany perennials—dividing, dead-heading, cutting back. Slow-growing shrubs that don't require frequent pruning reduce general maintenance and satisfy plant lust.

To avoid trading one set of chores for another, it's a good idea to do a little research. Add only slow-growing, tough, insect-resistant shrubs and those that deer generally avoid, such as mahonias, leucothoes, plum yews (*Cephalotaxus* spp.), and clumping bamboos. This will obviate the chores of spraying, netting, or otherwise protecting them from deer.

SWEET DISORDER

It sounds ridiculously simple, but another way to reduce maintenance is to lower expectations. Sometimes, it is ne-

cessity that forces even the most dedicated of gardeners to lower standards and tolerate more disorder.

"Unfortunately, I don't get to my garden until June," says Alabama nursery-owner Jan Midgley, author of *Southeastern Wildflowers*. Her nursery keeps her busy through the spring months. "And by June, all I manage to do is snatch the most vicious seed-bearing weeds. Luckily," she adds, "we are fond of a wild look and our front meadow looks great to our aging eyes. It does have weeds but the native grasses are gradually pushing them out."

As with housecleaning, there are maintenance shortcuts that work, in a pinch, in the garden. Generally, this involves doing

dle. But there are some gardens that will not allow for modification. They have taken their owners beyond the point of no return. They demand perfection.

Les Quatre Vents, Frank Cabot's masterpiece in Quebec, is one of these. Cabot is the author of *The Greater Perfection*, the tale of Les Quatre Vents that won a 2002 AHS book award. When Cabot was asked if he had any plans to simplify this 20-plus-acre garden, he replied, "Wish I had, but just the reverse, alas." Yet Cabot is sanguine about his future.

"You know the story of the elderly lady who was felled by a stroke in her perennial bed?" asks Cabot. "When they rescued her, they found her quietly weeding away



Keeping the edges of beds and borders neat-looking can hide a bit of neglect elsewhere.

only the barest minimum of what makes it look like the job is done.

Every garden designer will tell you that people "read the edges" of a garden, such as the walks or the edge where a perennial bed meets the lawn. Thus, if you weed the first foot or two of a bed and the path beside it, presto, it will look neat. And only you will know the extent of the weeds hobnobbing with the plants rightfully in that bed.

On the continuum between immaculate and slovenly most of us can find a comfortable place somewhere in the mid-

to the extent she could reach. My philosophy is to keep weeding as long as possible."

Here's hoping the time for us to stop weeding and hang up the hoe is still a long way off. Until then, most of us will find that simplifying our landscape will give us more time to actually sit in and enjoy the garden.

A contributing writer for The American Gardener, Carole Ottesen is simplifying her Potomac, Maryland, garden so she can spend more time at her new summer home in Nova Scotia.

MORE CHORE-SAVING TIPS



■ Expand shady areas under trees and plant shade-loving shrubs and perennial ground covers such as skimmias, hellebores, barrenworts (*Epimedium* spp.), creeping phlox (*Phlox stolonifera*), hostas, and various ferns (see also the article on ground covers, page 18).

■ Plant spreading shrubs to mix with or replace large beds of sun-loving perennials. Look for low-maintenance shrubs such as Knockout roses, which are disease tolerant and don't require deadheading for continuous bloom.



■ Apply a two- to three-inch layer of weed-free organic mulch on all garden beds in early spring to discourage the yearly appearance of weed seedlings.

■ Consider hiring an assistant to relieve you of some of your most time-consuming or labor-intensive garden tasks.



Outlandish Outgrowths

the curious world of plant galls

These defects on many garden plants are caused by various insects and pathogens.

BY KATHRYN LUND JOHNSON



GALLS—those odd growths that appear on many plants—have intrigued people throughout the ages. They probably have been around since the first plants appeared—there is evidence of galls in fossils dating back more than 300 million years. But where do they come from and what exactly are they?

Broadly defined, galls are abnormal plant tissue growths that form in response to chemical or mechanical stimuli by fungi, bacteria, viruses, nematodes, mites, or insects. Collectively, these organisms that cause galls are called *cecidozoa*, but we'll refer to them here as "gallers."

"Galls are abnormal for a plant in the sense that cancer is abnormal in humans. Both are common in populations of their hosts, but are not part of the hosts' intended development," explains Graham N. Stone, of the Institute of Evolutionary Biology at the University of Edinburgh, Scotland. "The gall is necessary for the survival of the galler but, for the plant, it represents hijacked development."

Exactly how this hijacking is accomplished is not thoroughly understood, but it is generally accepted that the galler somehow stimulates the growth of plant tissue in the affected area. It may be the injection of fluid into the plant tissue, a reaction to excretions from the galler, or simply a response to the galler's presence.

INSECT GALLS

An estimated 13,000 species of insects induce plant galls worldwide; approximately 1,500 of these are found in the United States. Gall-making insects include flies, wasps, beetles, aphids and phylloxerans, butterflies and moths, and thrips. An insect gall may form on any part of a plant—fruit, bud, root, leaf, stem, twig, or flower head—depending on the insect creating it. Although some insect gallers inflict fatal damage, most do not permanently harm their hosts. Typically, the survival of the galler is dependent on the survival of the host plant.

The shapes and textures of galls are reliable diagnostic indicators of the galler. Insect galls are described as either open or

Opposite, clockwise from top left: willow cone gall, willow leaf gall, mossy rose gall, and goldenrod ball gall.

THE USES OF GALLS—PAST AND PRESENT

Believe it or not, galls have played an important part in human history—and in its recording. The Romans made iron gall ink from crushed oak and pistachio galls. As it was almost impossible to erase, the ink was used in manuscripts, including Leonardo da Vinci's notebooks. Artists such as Rembrandt and Van Gogh used iron gall ink in their drawings. Here are some other ways galls have affected civilization:

Industrial Uses

Since the 5th century, galls have been valued as important sources of tannic acid, as some are comprised of 60 percent of the substance. Tannic acid was used as an ingredient in both wool and hair dyes during the age of the Greek Empire, and continues to be used by the leather industry for tanning and dyeing skins.

Most of the tannic acid produced until the mid-1900s was harvested from Aleppo galls, also referred to as Smyrna galls or "galls of commerce," that are created by tiny gall wasps on the leaves of an oak tree, *Quercus infectoria*, native to Asia Minor. Gallic acid, isolated from tannic acid, is currently used in photographic development processes and antioxidants.

Gall Cuisine

Some galls are edible. The airborne fungus *Ustilago zaeae*, known as corn smut in the United States, causes the formation of galls on ears of corn. Considered a delicacy in Mexico—where it is more appealingly referred to as Mexican truffle, maize mushroom, and *huitlacoche*—smut is a desired crop. Many Mexican farmers inoculate their corn with the causal fungus and harvest the growths.

Azalea leaf galls, also caused by a fungal infection, are commonly referred to as "pinkster apples," and are reported to be light, delicious, and thirst-quenching. In Greece, galls known as the "galls of sage" that grow on apple sage (*Salvia pomifera*) are made into a conserve. Aphid galls on sumac leaves are a cultivated crop in China. The "gall nuts" are dried and used in traditional Chinese medicines.



It may not look very appetizing, but corn smut is considered a gourmet food by many.

The Great Wine Blight

The gall-forming behavior of the phylloxeran, an insect closely related to aphids, was responsible for wreaking havoc on European wine industries in the 1800s, an event referred to as "The Great Wine Blight." Inadvertently introduced from the United States in the late 1850s, the organism, which can remain on the roots of the grape vine for many years, caused a near collapse of the French economy.

"Vines started to wither and die," says Brian Rehill, a biologist at the U.S. Naval Academy. "By the time people figured out what was causing the problem—a miniscule gall-forming insect—nearly half of France's vineyards were wiped out." Ultimately, resistant rootstock from the United States was grafted onto the French vines and a worse crisis was averted.

—K.L.J.

closed. Open galls are produced by organisms with piercing, sucking mouthparts, such as psyllids, coccids, aphids, and mites, which feed on leaf surfaces, stimulating the leaf tissue to fold and grow inward. Closed galls are created by larvae with chewing mouthparts, including butterflies, moths, flies, sawflies, wasps, and beetles.

Insect galls may be single-chambered, containing a solitary larva, or multi-chambered, with one inhabitant occupying each of a number of chambers.

Why do insects create galls? Graham Stone, along with Karsten Schonrogge of the Centre for Ecology and Hydrology in

Once an insect gall is visible however, the “damage” is done. And most injuries to host plants are not life-threatening, causing only slight to moderate decreases in growth, vigor, and fruit development.

Because healthy plants are less seriously affected than those that are stressed, attention to proper pruning, fertilizing, and watering will minimize the galls’ detrimental affects. The best way to control insect galls is to prune or hand-pick the galled areas. If a problem persists, the application of dormant oil prior to the galls’ appearances in the spring can be helpful, particularly in the case of aphid galls.

MITE GALLS

Eriophyoid mites are responsible for most mite galls. These organisms, about one one-hundredth of an inch long, have elongated bodies and two pairs of legs. Some eriophyoid mites produce erinium galls, dense patches of plant hairs, usually found on the undersurfaces of the leaves of beech, poplar, maple, and alder trees.

An indication of a mite galler on a pecan tree is the appearance of a leaf roll gall, in which the leaf margin is rolled downward or upward. Spindle and bladder galls, found on maple trees, are multi-chambered, each housing up to a hundred mites. Blister galls are blisterlike swellings on the leaves of butternut and

DEALING WITH GALLS

The following suggestions regarding the gardener-gall relationship have been taken, in modified form, from the Web site of the Texas Cooperative Extension (<http://williamson-tx.tamu.edu/IPM/GallMakingInsectsandMites.pdf>):

- To avoid galls, choose plants that are not susceptible to gall-makers.
- Use proper horticultural practices to promote overall plant health.
- Don’t use insecticides on beneficial wasps, which prey on potential gallers.
- Be patient. New susceptible plants may have galls for a time before galler parasites find and attack the gallers.
- While chemical control is sometimes available, its use is generally unwarranted and ineffective. Do your research before acting.
- Learn to recognize the various galls and the organisms responsible for them. Enjoy the amazing natural world around you!



A female oak rough bulletgall wasp prepares to lay eggs in a dormant bud.

Dorset, England, offer possible hypotheses: 1) As galls are rich in protein and carbohydrates, they may provide enhanced nutrition for the galler; 2) gall tissues may protect the galler from unfavorable environmental conditions, especially dessication; 3) galls may provide protection from attack by predators.

Living in a gall, however, does not ensure complete safety for its creator. Organisms called parasitoids sometimes lay their eggs within galls, and their developing larvae feed on the gallers or the gall tissue. Other parasitoids enter the galls and dine on the larvae. Opportunistic organisms called inquiline enter insect galls and use the gall tissue as shelter and/or a source of food; some prey on the gallers, others co-exist peacefully with them. Birds also cause galler mortality. In winter, black-capped chickadees and downy woodpeckers can be observed pecking at goldenrod galls, extracting the protein-rich larvae.

Gardeners are often alarmed by the disfiguring “tumors” on host plants.

walnut trees. While mite damage may seem unattractive to some gardeners, host plants are able to tolerate large populations of the organisms without an adverse affect. If desired, affected areas may be pruned.



The unsightly spindle galls on this maple leaf are caused by mites. These usually appear on the upper leaf surfaces of sugar maples, but may also be found on silver and red maples.



Above: Crown gall on *Euonymus fortunei*.
Right: Cedar apple rust gall on juniper, one of its alternate hosts.

BACTERIAL GALLS

Most rose gardeners are familiar with crown gall. *Agrobacterium tumefaciens*, the bacterium which causes crown gall, can infect most plant species, with the exception of grasses. Another bacterium, *A. rubi*, is responsible for cane and stem galls on stone fruit, grapes, apples, pears, blueberries, and brambles, including raspberries and blackberries.

Both bacteria live in the soil and are able to tolerate broad temperature fluctuations and other adverse conditions. They enter plants through wounds, appearing first as tiny growths on canes, roots, trunks, or crowns. Stimulating the plant to produce compounds that provide food for them, the bacteria exact their toll by interfering with the flow of nutrients and water, leading first to stunting, then death. Prevention is the only means of control of bacterial galls.

Not all bacterial galls are undesirable. Those found on the roots of clover, alfalfa, and other legumes may be those of *Rhizobium* species, nitrogen-fixing bacteria that make nitrogen available for plant uptake. These galls can be distinguished from similar-looking but detrimental root-knot nematode galls by examination of the nodules. If they appear loosely attached to the roots and have a milky liquid inside, they are most likely “good” bacterial galls.

NEMATODE GALLS

Microscopic wormlike organisms called nematodes, which live in soil and plant tissue, sometimes create galls on the roots of



many crop plants, including onions, beans, tomatoes, peanuts, and cotton. Their presence impairs the plants' ability to take up water and critical nutrients, causing stunted growth, loss of vigor, and yellowing.

Several strategies are recommended by the Mississippi State University Extension Service (www.msucare.com) to reduce the number of damaging nematodes in soil to a tolerable level, including using nematode-resistant varieties; leaving the area fallow to deprive nematodes of food; cultivating frequently to expose nematodes to the sun; crop rotation; solarizing with clear plastic on moist, tilled soil; and removing and burning root-knot nematode-



This bitternut hickory (*Carya cordiformis*) stem has been girdled by a *Phomopsis* gall.

infested plants—including the roots—immediately after the final harvest. Currently, research is being done with nematode-eating soil fungi. Contact your local cooperative Extension office for more information on nematode control.

FUNGAL GALLS

Some fungal galls result in serious damage, others are considered gourmet fare (see “Gall Uses—Past and Present,” page 39). Those caused by the fungus *Phomopsis* appear as clusters of compressed nodules on certain trees and shrubs, including hickory, maple, oak, privet, forsythia, and viburnum. *Phomopsis* fungal galls can be fatal to the host if the fungus girdles the affected stems. Maintaining healthy, vigorous plants and removing suspicious-looking branches help stave off infection.

The fungus *Gymnosporangium*, the cause of cedar rusts, requires two distinct hosts to complete its life cycle. *Gymnosporangium juniperi-virginianae*, which causes cedar apple rust, alternates between eastern juniper and, usually, apple or crabapple trees. *G. globosum*, the cause of cedar hawthorn rust, alternates between junipers and apples, crabapple trees, hawthorns, and other members of the rose family. *G. clavipes* requires junipers to be in the proximity of hawthorns or certain other rosaceous hosts.

These pathogens generally do not cause severe damage to the junipers, but fruit yields on the alternate host can be adversely affected. Infection can be avoided by ensuring that members of the juniper and the rose families are not grown within one to two miles of each other—impractical for home gardeners, but important in orchards, nurseries, and landscape businesses. Fungicides are available to combat rusts, but they must be applied proactively. Once the fungus has been detected on a host plant, galls may be removed manually. Resistant plants are available in most areas of the country and their use is encouraged.

For more information about galls in your garden and how you can contribute to gall research, check the online version of this issue by visiting the AHS Web site (www.ahs.org).

Kathryn Lund Johnson is a free-lance writer and photographer living in Middleville, Michigan.

The Importance of Plants

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

OVER THE LAST FEW issues, we have explored the importance of space, function, metaphor, and imagination in creating a garden. Discussions have covered the use of form, texture, fragrance, and other elements to catalyze engaging designs. Actual plants have—up to this point—been considered secondary or tangential. Now they must take center stage.

Whether in the limited palette of classical Italian gardens or the technicolor artifice of English borders, plants are essential to horticulturally-oriented designs. The botanical world offers us the most sensual, dynamic, and unique of all materials ranging from the seductive scent of *Jasminum polyanthum*, to the stygian iridescence of *Iris* 'Superstition'. Plants are ever-changing, evolving, and living entities. They grow, reproduce, and die—unlike the average slab of bluestone or length of metal railing.

So, how does one go about selecting plants for a garden? I have found several effective approaches through my experiences both as a designer and a gardener.

BACK TO THE PLAN

The importance of developing and working from a strong program statement has been a recurring theme in this series of articles (see the November/December 2004 issue of *The American Gardener*). The program statement outlines the roles plants must play and the design intent plants must realize. Whenever I design, I always begin by selecting possible plants based on the guidelines established in the program. That eliminates impulse-buying, to which we are all susceptible. Starting with a broad list of candidates rather than specific plants allows me creative leeway and flexibility.

For example, let's say a design I'm working on in the Philadelphia area (USDA Hardiness Zone 6, AHS Heat Zone 6) calls for a ground cover with winter interest. I would start identifying low-growing plants with winter flowers, evergreen foliage, colorful stems, attractive bark, or persistent fruit.



Initial lists might include sweetflag (*Acorus gramineus*), bugleweed (*Ajuga* spp.), pigsqueak (*Bergenia* spp.), hellebores, periwinkle (*Vinca minor*), English ivy, prostrate junipers, partridge berry (*Mitchella repens*), low-growing azaleas, spreading yews (*Taxus* spp.), and plum yews (*Cephalotaxus* spp.), among many others. The challenge becomes deciding between these choices.

The site's characteristics and your design's color scheme help whittle the list down. If, say, the area is in shade, forget the junipers. The color scheme should have yellows and whites, so delete the yews, plum yews, bugleweed, pigsqueak, and partridge berry. Azaleas bloom too late for winter effect.

Fortunately *Acorus gramineus* 'Variegatus' offers cream-striped leaves; *Hedera helix* 'Goldheart' has evergreen, yellow-variegated leaves; *Helleborus foetidus* has evergreen foliage and yellow-green flowers in February; and evergreen *Vinca minor* 'Aureovariegata' flashes yellow markings.

Still spoilt for choice, I mobilize a second round of selection criteria based on vigor and ease of maintenance.

GARDENING WITH THUGS

My garden has very little room for fussy divas (other than me and my dog, Betti). Plants prone to spreading vigorously,

clumping solidly, and generally thriving in diverse situations are perfect. I would rather mediate between overly enthusiastic players than coddle temperamental sulkers. A yank and a heave should have the plants maintaining their designated boundaries. The removed offenders may then populate new sections of the garden or be “passed along” to other gardens.

Returning to the winter interest candidates, I find three amicable thugs: *Acorus gramineus*, *Helleborus foetidus*, and *Vinca minor*. (I will come to the case of English ivy shortly.) The sweetflag clumps quickly and looks good all winter. It seems to tolerate normal soil as well as complete saturation. The bear’s-foot hellebore is an indestructible horticultural wonder with dark green, fine-textured foliage. It thrives in dry shade and seeds itself, forming a dense ground cover. Periwinkle is also a tough plant. The three together will offer a tapestry with all-season interest, the perfect backdrop for seasonal bursts of color offered by shrubs, bulbs, and other herbaceous perennials.

A NATURAL SELECTION

I digress here to add my opinion to the current debate over the use of native versus non-native plants that rages through our gardens, magazines, and listserves. I generally ignore the melodramatic posturing and pseudo-religious zeal exhibited by people at either extreme of the debate, preferring to take a catholic and cosmopolitan approach to plant selection. If a plant is right for the design and for the conditions, I use it regardless of its country of origin. Some of the non-natives are tougher and better behaved than the locals, anyway.

I *do* refrain from using plants that are clearly invasive in my area. In southern Pennsylvania, these include Norway maple (*Acer platanoides*), winged euonymus (*Euonymus alatus*), and purple loosestrife (*Lythrum virgatum*). Maiden grass (*Miscanthus sinensis*) is also becoming a problem so I avoid it as well. There are plenty of aesthetically appealing substitutes, anyway, so it’s no big loss.

So, what about *Hedera helix* ‘Gold Heart’? Some people consider English ivy to be the foliar font of all evil. However, if a gardener is willing to prune it off of trees and keep it from becoming arborescent and reaching its flowering stage, it will not set seed. The shining, evergreen, yellow-centered foliage, in my opinion, is worth that effort.

PLANT SMALL, PLANT CHEAP

A final consideration is the price and availability of plants. My garden budget and aspirations mandate using plants in small, affordable sizes. I shop anywhere I am able to locate healthy plants at a decent price—mostly “big box” stores (gasp!) and local nurseries’ bargain bins. I also beg and borrow plants from friends. These sources offer a basic range of horticultural fare, often nothing rare or fancy, which is fine with me.

Planting small, readily available, and affordable stock requires some patience over the long term, but the benefit if you are on a budget is that you can install large parts of the garden design at one time. This is important when establishing the bones of the design such as groves, screens, hedges, and masses that define the major spaces and experiences. Once the bulk of the basic garden is in place, you can spend money adding rare and choice plants as accents while the major components mature.

ORDINARY PLANTS, EXTRAORDINARY GARDENS

Pierre du Pont (1870–1954), Longwood Gardens’ designer and founder, said he was interested in growing and using ordinary plants in extraordinary ways. Rare and expensive plants do not necessarily make a strong or even attractive garden. They may impress the horticultural intelligentsia, but how many of us garden for that reason?

Common plants are often common for a reason—they grow well and survive. The trick is to use them in creative ways outside the cliché foundation and parking lot plantings. Plants such as boxwoods, forsythias, panicked hydrangeas, mock orange, spireas, yews, and weigelas—many of which are now derided as “old-fashioned”—can be the backbone of any garden and provide low-maintenance interest in sequence throughout the year.

Remember, plants do not make bad gardens; people make bad gardens.

In the next issue, we will explore a technique I often use to sequence and choreograph horticultural interest in the garden. ☺

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

HANDS GIVING YOU A ROUGH TIME?



“Works wonders.” —*Denver Post*
“Elsie’s beauty secret.” —*Glamour*

It’s remarkable what big things are being reported about the stuff inside our little green can. Try some today. Your skin should be softer tomorrow.

DAIRY ASSOCIATION CO., INC.

P.O. BOX 145, DEPT. AG05, LYNDONVILLE, VT 05851/TEL. 802-626-3610/WWW.BAGBALM.COM
WEST OF ROCKIES: SMITH SALES SERVICE, 16372 S. W. 72ND ST., PORTLAND, OR 97223

Paul Meyer, Director of the Morris Arboretum

by Lynda DeWitt



WHAT BEGAN IN the 1880s as a private estate on barren land has grown into Pennsylvania's official arboretum, a living museum of thousands of woody plants from around the world. The Morris Arboretum of the University of Pennsylvania spreads across 92 acres in Philadelphia, and some of the city's oldest and largest trees are found there. Visitors will also find an international smorgasbord of garden styles—Victorian, English Romantic, Italian Renaissance, and Japanese.

For 30 years, Paul Meyer has been a driving force behind the transformation of this once neglected landscape into a world-class historic garden and educational institution. The director of the arboretum since 1991, Meyer talks with garden writer Lynda DeWitt about his latest plant expedition, his thoughts on urban greening, and what's on the horizon at the arboretum.

Lynda DeWitt: What was—and is—the source of your passion for plants?

Paul Meyer: Our fundamental passions are formed in childhood. From my earliest years, I gardened with my parents and grandparents. When I was six, I had my own tomatoes, and to this day I get a special pleasure in growing vegetables. I also spent many hours in the woods, playing in the creeks, building tree houses and forts. Later, I became active in scouting, where I built on my knowledge of trees and the natural environment. Eventually, I taught younger scouts what I had learned and discovered the joys of teaching and sharing a love of the natural world.

Your first plant-collecting expedition was in 1979 to Korea, and you've been on a dozen trips since then. What was your latest expedition?

My latest expedition was in the autumn of 2004 to the Republic of Georgia. Our goal was to collect new genetic material of some relatively widely known and grown species.

Among landscape plants, a priority target was Nordmann fir (*Abies nordmanniana*). This is one of the best firs for many parts of the United States, including the northeast and midwest. Its foliage is dark green and glossy, and it is one of the most heat tolerant firs. It has been grown in the United States for more than a century, but



The Morris Arboretum has a large collection of non-native trees, which includes this katsura tree (*Cercidiphyllum japonicum*). At over 65 feet high, it is a Pennsylvania State Champion tree.

the genetic representation has been limited. Similarly, we collected Oriental spruce (*Picea orientalis*), arguably the best spruce for the mid-Atlantic region.

We were delighted to also collect laurel cherry (*Prunus laurocerasus*). This widely planted evergreen shrub is marginally

hardy in USDA Zone 6, where it can be damaged in hard winters. The form we collected was from a population growing on a windswept mountain pass. Our hope is that selections from this population will prove to be more winter hardy than other forms already in cultivation.

You've been involved in efforts to re-green our cities. Why do you feel this is important?

Planting trees is the most cost-effective way to improve a neighborhood—whether urban or suburban. On an otherwise barren street, even *one* thriving tree can make a big difference.

In the United States, we tend to trash our existing neighborhoods with uncontrolled development. People then escape the resulting mess by moving out to the countryside. This option is unsustainable; we have to learn to make our old communities more livable and more desirable.

I don't want to oversimplify the solution, but certainly parks, gardens, and street trees go a long way toward turning around a community.

What are some plants that you've identified as candidates for the tough urban landscape?

First, the most important principle of urban planting is *diversity*. No one species, no matter how suitable, should make up more than five percent of the trees in a

For More Information

Morris Arboretum, 100 Northwestern Avenue, Philadelphia, PA 19118. (215) 247-5777.

www.morrisarboretum.org.

■ The Arboretum participates in the AHS Reciprocal Admissions Program, so AHS members showing a current membership card receive free admission on weekdays and a 10 percent discount on purchases in the gift shop.

neighborhood. Diversity helps protect our urban forests from devastating disease and insect plagues, such as the incidence of Dutch elm disease in the 20th century.

One stress-tolerant tree that is underused in urban plantings is the Amur maackia (*Maackia amurensis*). It is a legume, so its roots support nitrogen-fixing bacteria. It is also tolerant of poor soils, drought, and even periodic flooding. I have seen this species growing on a rocky lava flow in a flood plain in China. The trees were stunted but still surviving in the seemingly impossible natural conditions.


I am also enthusiastic about using bald cypress (*Taxodium distichum*) as an urban tree. This tree will grow in standing water and yet is also drought tolerant. Its upright form and fine texture make it especially useful on narrow streets.

What plans do you have for changes at Morris Arboretum in the near future?

We are just now building the Alice and Liddon Pennock Flower Walk, which will consist of a series of mixed flower borders surrounded by an ornamental arbor with climbing plants, such as roses and clematis. The arbor will serve as a beautiful deer fence, allowing us to grow plants deer would otherwise devour.

Also, we are planning a new tree canopy walk that will take visitors high into the trees, where there will be exhibits illustrating what trees do for us and, in turn, what we must do for trees. Our relationship with trees is truly symbiotic, especially in urban and suburban environments.

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



CREATE
the GARDEN
of YOUR
DREAMS

Learn online with the
Horticulture Gardening Institute

visit us at www.gardeninginstitute.com

AMERICAN HORTICULTURAL SOCIETY DK HORTICULTURE GARDENING INSTITUTE PW Osmocote



Ornamental grasses, perennials,
bamboo, ferns. Liners available.

KURT BLUEMEL, INC.
wholesale

earthly pursuits
sales to the public

earthly pursuits, inc.
2901 Kuntz Road Windsor Mill, Maryland 21244
Tel: 410-496-2523 Fax: 410-496-5894
Email: mail@earthlypursuits.net
www.earthlypursuits.net

Kurt Bluemel, Inc.
2740 Greene Lane Baldwin, Maryland 21013
Toll Free: 800-498-1560 Local: 410-557-7229 ext. 6
Fax: 410-557-9785 Email: Sales@kurtbluemel.com
www.kurtbluemel.com

shipping nationwide

the Great Basin Desert

Despite challenges, desert wildlife gardens can be colorful and interesting year round.

FOR MANY gardeners, the word “desert” conjures visions of baking heat, hardpan alkaline soil, and prickly cacti. Gardeners who live in the region known as the Great Basin Desert, however, know it as a land of diverse microclimates, altitudes, and plant communities.

There’s some difference of opinion about whether the Great Basin encompasses parts of four or six states. The desert’s core is the state of Nevada, but the region extends to sections of Utah, Idaho, California, Oregon, and, some say, Wyoming, too. Experts do agree that the Great Basin is considered a cool, or even cold, desert because of its northern latitude and higher elevations, which average 3,000 to 6,000 feet and top out at 13,000-foot Mount Wheeler in eastern Nevada.

This large region encompasses a tremendous diversity of plant and animal communities, so check with local native plant experts to learn about the best plants for your habitat garden. Here are general guidelines to help you plan your garden, as well as suggestions for a handful of plants that should do well throughout much of the Great Basin Desert.

SHRUBS FOR DROUGHT AND COLD

Unlike other North American deserts, the Great Basin’s dominant plant life is semi-alpine rather than subtropical. In this cold, dry climate, native vegetation tends to be ground-hugging and homogeneous. Your best bet is to anchor your habitat garden with groups of hardy native shrubs, whose deep root systems help them survive summer drought, winter cold, and strong desert winds. Shrubs also offer multi-season interest and are sources of food and shelter for birds and other wildlife.

Four-wing saltbush (*Atriplex canescens*, Zones 2–9, II–3) is an exceptionally



A shrubby perennial, desert globe mallow provides welcome color to desert gardens in summer.

drought-tolerant plant that is quite attractive in winter. Popcornlike, edible fruits mature in fall and hang on almost until spring. Each fruit develops four external seeds that resemble large, papery wings, giving the plant strong textural interest. Saltbush also can be sheared to make a hedge. It is fire retardant, will grow in alkaline and salty soils, and does fine with brackish water.

Another hardy shrub, golden rabbitbrush (*Chrysothamnus nauseosus*, Zones 4–9, 9–4) has attractive narrow-leaved, silvery blue foliage and is a preferred habitat plant for Western bluebirds. It grows three to six feet tall and as wide as eight feet and offers brilliant golden flowers in late summer to early fall when many plants are dormant. For a great color combination, plant it with annual autumn sage (*Salvia greggii*,

Zones 7–9, 9–4) or purple Mexican bush sage (*S. leucantha*, Zones 9–II, 12–4). Both will attract hummingbirds.

Many currants and gooseberries are native to the Great Basin, and golden currant



Golden currant attracts many pollinators.

DESERT PLANT ADAPTATIONS

Native desert plants have developed physical and behavioral mechanisms that ensure their survival in a harsh environment. Here are some terms that are helpful to know if you are selecting plants for a desert garden.

■ **Xerophytes** are plants, such as cacti, that have adapted by altering their physical structure to store and conserve water. They have few or no leaves to reduce transpiration (moisture evaporation).

■ **Phreatophytes** are plants that have adapted by growing extremely long roots, which allow them to retrieve moisture from near or at the water table.

■ **Desert perennials** are not perennial in the way most of us typically use the word; instead, they grow when water is present and go dormant during drought.

■ **Desert annuals** (ephemerals) germinate and grow only after a heavy rain, bloom heavily, and complete their lifecycles quickly. Their heat- and drought-resistant seeds remain dormant in the soil until the next cycle of moisture brings them to life.



Four-wing saltbush has adapted well to desert life.

(*Ribes aureum*, Zones 6–8, 8–6) not only attracts a variety of pollinators—humans and wildlife enjoy its fruits. The deciduous shrub grows from three to six feet tall and glows with scented yellow flowers in late spring. Yellow, red, or purple berries follow. Hummingbirds, bees, and butterflies pollinate the showy flowers.

Ground covers help conserve moisture, and pine-mat manzanita (*Arctostaphylos nevadensis*, Zones 7–9, 9–7) is one of the best alpine ground covers for multi-season interest. This mat-forming shrub grows a foot tall and spreads to eight feet across. Dark green foliage on red stems, white summer flowers, and edible red berries make this plant a plus for any habitat garden. It grows best in areas that receive some winter snow cover.

BLOOMING CHOICES

The large selection of native wildflowers is daunting, but for wildlife you can't go wrong with locally native penstemons.

Species to consider include scarlet bugler (*Penstemon barbatus*), Eaton's penstemon (*P. eatonii*), or large-flowered penstemon (*P. grandiflorus*), all of which

are hardy to at least USDA Zone 4 and heat tolerant to AHS Zone 9.

To attract hummingbirds, try orange honeysuckle (*Lonicera ciliosa*, Zones 6–9, 9–1). It needs frequent watering and sun protection, however, so it is best planted near a doorway or patio where you can enjoy the show.

In a rock garden, consider white-flowered spreading phlox (*Phlox diffusa*, Zones 5–8, 7–1), night-blooming tufted evening primrose (*Oenothera caespitosa*, Zones 4–9, 9–2), or the prolific yellow daisies of butterweed (*Senecio douglasii*, Zones 6–10, 10–2).

For an eye-popping ground cover, try desert four-o'clock (*Mirabilis multiflora*, Zones 7–10, 10–7), which forms a spreading mound of greenery several feet in diameter, covered with magenta flowers.

Many desert plants bloom in spring, leaving your garden in the summer doldrums. To jazz up your hot-weather color palette, add summer-blooming desert prince's plume (*Stanleya pinnata*, Zones 5–10, 10–5), annual sunflower (*Helianthus annuus*, Zones 0–0, 12–1), Rocky Mountain bee plant (*Cleome serrulata*,

Resources

DesertUSA.com. (www.desertusa.com/du_basin.html) has a section on plants and natural resources in the Great Basin Desert region.

Western Garden Book edited by Kathleen Norris Brenzel. Sunset Publishing, Menlo Park, California, 2001.

Sources

Great Basin Natives, Holden, UT. (435) 795-2303. www.greatbasinnatives.com. Catalog online.

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

Las Pilitas Nursery, Escondido, CA. (760) 749-5930 (San Diego County) or (805) 438-5992 (San Luis Obispo County). www.laspilitas.com. Catalog online.

Zones 0–0, 12–1), prickly poppy (*Argemone munita*, Zones 5–10, 10–5), and desert globe mallow (*Sphaeralcea ambigua*, Zones 4–10, 10–4).

PLANT CARE

Most native plants of the Great Basin region grow best in a lean, well-drained soil that has not been amended with fertilizers or organic matter. A few will thrive on twice yearly topdressings of compost. Water as recommended by your native plant nursery for the first year until they have established strong root systems. After that, they should survive on rainfall.

Group the most drought-tolerant species together and place those that need more attention closest to the house. For good drainage and to conserve soil moisture, use gravel or other forms of crushed rock as mulch rather than organic mulches. Choosing light-colored rocks will help to reflect heat.

Joanne Wolfe is a contributing editor for *The American Gardener* and a key voice in the habitat gardening movement.

Horticultural News and Research Important to American Gardeners

FLOWERS WITH ENVIRONMENTAL APPEAL

Next time you're thinking of buying a bouquet for a special someone or maybe yourself, you might want to tune in to a growing trend and buy organic. Because



of increased awareness of pesticide use in the cut flower industry, the demand for posies without poisons has escalated markedly in the last few years.

A recent article in *USA Today* notes that the sale of organic flowers doubled from 2002 to 2003. The article also stated that organic flowers will likely experience a 13 percent revenue increase through 2008, making them a noteworthy market contender.

Gerald Prolman, the founder and CEO of Organic Bouquet Inc., which bills itself as the world's first online organic florist, believes that "organic production means new growth for the floral industry, especially as consumer awareness of social and environmental issues relating to floral production continues to rise."

However, there are less than 100 organic flower growers in the world, according to *USA Today*. With fewer

resources and smaller facilities, these growers aren't yet able to produce many of the well-known cut flower favorites such as roses, orchids, and carnations. This could well change, along with the total number of organic flower growers, if the current demand for organic flowers continues.

NATIVE CALIFORNIA PLANT REDISCOVERED

Since no one had seen Mount Diablo buckwheat (*Eriogonum truncatum*) in almost 70 years, the plant was presumed extinct, though local botanists never gave up hope of finding it again. An annual

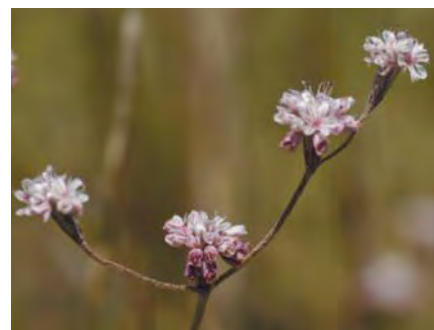
wildflower endemic to Mount Diablo in the East Bay area of California, the elusive buckwheat species was rediscovered this past spring by Michael Park, a graduate student at the University of California, Berkeley, as he conducted a plant survey in the area.

"Because it's so celebrated in the botanical community, it had grown in my imagination," says Park of the buckwheat. "It's a surprisingly dainty plant once you see it in the field." The plants grow between three and eight inches in height, bearing small, pinkish flowers that resemble baby's breath (*Gypsophila*).

Several factors may explain the reappearance of the native buckwheat. One is that Save Mount Diablo, a local conservationist organization, had recently placed the land where the plant was found under preservation. Interestingly, rabbits may have had an important role to play as well. "It seems as though rabbit browsing

may be a main positive factor," explains Barbara Ertter, curator of Western North American Flora at UC Berkeley's Jepson Herbarium. "The plant probably can't compete well against the flood of Eurasian annual grasses that dominate California's landscape and the rabbits thin those plants."

Efforts are underway to propagate the buckwheat at the UC Botanical Garden, which is part of the Center for Plant Conservation network. Botanists hope to produce a reserve of seeds in case the species declines further, and will continue to monitor the population in the wild.



Top: Michael Park, a graduate student at the University of California-Berkeley, poses in front of the tiny flowers (shown closeup, above) of the rare Mount Diablo buckwheat.

BUY LOW, PLANT HIGH

If you're planning to do some planting this fall, you may do well to heed the advice of horticulture researchers at Cornell University, particularly if you've purchased bare-root perennials. During a two-year study, they discovered that planting depth can have a dramatic impact on the performance and even survival of bare-root perennials.

The standard advice when planting perennials already growing in containers is to place them at the same level they were planted in the container. While this still holds true, with bare-root perennials, it can be impossible to tell where that point was. "Our advice would be to plant so that any young developing buds would be fully exposed to light, and the crown is at or slightly above the soil line," says William B. Miller of the Horticulture Department at Cornell. For a pictorial guide to planting bare-root perennials on the high side, log on to www.hort.cornell.edu/miller/Planting_Perennials_High.pdf.

For those unfamiliar with the term, "bare-root" indicates that the plant

comes without soil and usually in a dormant or semi-dormant state. Many gardeners know that buying bare-root plants from mail order nurseries can be a more economical option as the lack of heavy soil keeps shipping costs down. Some perennials commonly sold bare-root include peonies, daylilies, irises, and hostas.

NEW RESOURCE FOR GARDENERS

Garden Literature Index™ by EBSCO Publishing may be coming to a library near you. Designed for gardening enthusiasts, students, and professionals, this new database allows users to research articles pertaining to plants and gardens from more than 300 core titles, going back more than a decade. This includes *The American Gardener* from the May/June 1996 issue to present, with selected articles to 1992.

The tool lists serial titles as well as specialty publications. With a special focus on environmentally sustainable horticulture and design practices, topics in the database include botany, ecology, plant conservation, garden history, and land-

GARDEN TRENDS

A recent poll of over 1,000 households throughout the continental United States found that three-quarters of them have some form of lawn or garden. Of these households,

- 39% planned to water with movable sprinklers or soaker hoses.
- 26% expected to rely on rainfall only.
- 38% had no plans for conserving water.
- 24% practice backyard composting.
- 91% noted having insect problems.
- 32% planned to use a combination of organic and chemical products to deal with pests.
- 32% planned to do nothing about pest problems.

(From the 2005 Summer Gardening Trends Research Report issued by the Garden Writers Association Foundation.)

Wake up your Garden

distinctive focal points & accents



**GARDEN
ARTISANS.COM**
...because the garden is your canvas
410.721.6185
www.gardenartisans.com

HORTICULTURAL HISTORY: A LOOK BACK

Liberty Hyde Bailey, an icon of American horticulture, lived through one of the most turbulent and devastating periods in United States and world history. Born in 1858, he lived through the Civil War, two World Wars, the Great Depression, and the atomic bomb.



Liberty Hyde Bailey as portrayed on the AHS award medal named in his honor.

Through all this, nothing could shake his love of plants and their ability to provide a sense of renewal.

In the October 1955 issue of the *National Horticultural Magazine*, which later became *The American Gardener*, the editors republished an essay titled “The Joy of Growing Plants” that Bailey had written in 1946. It reflects Bailey’s faith in the natural world and in its

regeneration in the midst of turbulence and change. (The first two paragraphs are excerpted here. The full version of

Bailey’s essay may be read in the online version of the magazine at www.ahs.org.)

The shadows of life grow long. They stretch back over eventful and confusing years. Great wars have been fought, the difficult discussions of peace spread their alarms, old friends have died, new names have come on the stage of life, accustomed ideas have vanished, and new subjects engage the people. Yet my plants remain, full of vigor, bright in their colors, bringing memories and mementoes of other lands; and they are silent.

These plants are desired for their joy and the surprise of growing them. The wonder of it grows with the years—how an inert item called a seed can spring into life and from it come an aspiring organism true exactly to its own kind and relationship even though planted half way around the world from the place of its origin and in soils and climates wholly strange to it. This is a perpetual miracle, none the less amazing because we are now so inquisitive about it with microscope and retort.

Though much has changed—both in horticulture and in the world—since Bailey penned this essay, gardeners still look to plants to provide them with joy wherever they garden.

—William Clattenburg, Editorial Intern

scape design. For more information, visit www.epnet.com/public/gardenlit.asp.

BANDING TOGETHER FOR NATIVE PLANTS

Last May, Denver Botanic Gardens (DBG) reaffirmed its commitment to preserving native plants by becoming an affiliate of the Lady Bird Johnson Wildflower Center in Austin, Texas, the nation’s most prominent promoter of native plants and their habitats. This affiliation links the DBG at Chatfield, a 750-acre nature preserve along the Deer Creek waterway, to the Wildflower Center, named for the former First Lady, in a partnership based on a shared vision.

“Both Denver Botanic Gardens at Chatfield and The Lady Bird Johnson Wildflower Center are dedicated to native plants and educating people about the environmental necessity, economic value, and natural beauty of native plants,” says John Scully, chief executive officer at DBG.

Considered one of the top botanic gardens in the United States, DBG has researched and cared for native plants for

more than half a century. The Chatfield location is one of three satellite gardens; its picturesque location and hands-on educational exhibits already make it a popular draw for children and their families, and the garden provides an impres-

sive living laboratory for scientists, too.

With the Lady Bird Wildflower Center’s help, DBG at Chatfield will continue to offer research and educational programs, while promoting native plants throughout the country.



Mountains provide a backdrop for an antique tractor ride for visitors to the Denver Botanic Gardens at Chatfield, which works to preserve native plants and their ecosystems.

PEOPLE and PLACES in the NEWS

Two Gardens, One Director

Naples Botanical Garden in Naples, Florida, and Cleveland Botanical Garden (CBG) in Cleveland, Ohio, have formed a new affiliation to share personnel and ideas. Under the affiliation, Brian Holley, a member of the AHS Board of Directors and the executive director of CBG, now serves as executive director of Naples Botanical Garden in addition to his CBG post. "I see the alliance with Naples as yet another iteration of CBG's role as an industry leader and role model," Holley says. "It is my hope that we can leverage the resources of both gardens to develop a great botanical garden in Naples and to continue to grow the great one that we have now in Cleveland."



"Each affiliate takes on its own personality," says Damon Waitt, who heads the Wildflower Center's affiliate program, with a current total of eight affiliates nationwide. "It's about banding together and pooling resources to spread the message of native plant conservation."

PLANT BANNING REACHES NEW LEVEL

Connecticut is one of only five states in the nation to have implemented a ban on invasive plants. Now, because of legislative stalling on the passage of the old plant-banning bill, the authority to ban invasives will move from the state to in-

dividual towns. Beginning October 1, towns will be able to add plants to the preexisting list of invasives.

Bob Heffernan, executive director of Connecticut Green Industries, hopes towns won't add any plants to the list. "No state has gone as far as Connecticut," he says. "And every state that has tackled invasive plant policy has kept it on the state level." Heffernan and colleagues have met with the Nature Conservancy and the National Audubon Society to draft a new statewide bill limiting town power.

Many scientists and researchers favor a statewide bill as well. Donna Ellis, extension educator and co-chair of the Invasive Plant Working Group, which is affiliated with the University of Connecticut and provides significant input on invasives, says, "I don't think anyone knows how complicated local bans would be to enforce. If people are told they can't buy plants in one town, they'll just go to the next town over."

Written by Assistant Editor Viveka Neveln and Editorial Intern William Clattenburg.



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.



"That's one smart garden!"

- Carol F., Greenwood IN

Join the 1000's of gardeners who praise the EarthBox

"It's simply the Easiest Garden Ever Developed!"

- Gil Whitton, Host
The National Lawn and Garden Show

SO SIMPLE

There's no digging, weeding, or guessing. The EarthBox grows automatically - year after year.

WORKS ANYWHERE

Your deck or patio - even the back forty! all you need is sunlight for fresh vegetables and herbs.

MORE PRODUCTIVE

The EarthBox out produces any gardening method - with less water, less fertilizer and less care.

100% NATURAL

No chemicals or expensive hydroponics. The EarthBox grows healthy produce, the way nature intended.



"62 pounds of tomatoes right from our patio!"

"My brother has 14 tomato plants, I out produce him with just three." - Jim N., Scranton PA

"My EarthBox garden made me feel like a pro!" - Elizabeth H., Passaic NJ

ONLY \$29.95 + \$6.95 S&H



Call NOW To Order 1-888-502-7336

Or mail your check to: Dept P-AH153
P.O. Box 1966, St. Petersburg, FL 33731

Gardeners Can Aid Bees and Other Pollinators

by William Clattenburg

WE HUMANS take a lot of credit for our gardening successes, but no amount of horticultural innovation can outdo the job done by bees. Bees—along with many other insects—are pollinators, creatures that help to fertilize plants that would otherwise not be able to set fruit and bear seeds. Worldwide, insects pollinate around 80 percent of the flowers growing outdoors, including crop plants.

Bees account for the majority of insect pollination. They are one of the most noticeable pollinators in the garden, producing their familiar buzz. In the United States alone, there are around 4,000 species of native bees that help to pollinate the nation's crops as well as wildflowers and garden plants.

Despite their significant roles in the ecosystem, bees are threatened by habitat loss and the use of pesticides. Nonnative diseases, competitors, and parasitic organisms—in some cases spread by commercial bee colonies, which many nurseries, farms, and orchards use to enhance crop production—also take their toll on native bees.

TAKING STOCK

The Xerces Society for Invertebrate Conservation, based in Portland, Oregon, recently compiled a Red List of North America's Most Vulnerable Pollinators. The list includes 56 species and subspecies of bees, 57 butterflies, and two moths. Each of the insects on the list is marked with its current status from "vulnerable" on one end to "possibly extinct" on the other, or simply "data deficient." The list provides further information on life history, distribution, threats, and conservation



According to scientists, this pollen-foraging Franklin's bumblebee may be extinct.

needs, as well as book citations and links to other informational Web sites.

A work in progress, the list is a major step towards both learning about and classifying native insects and their needs, yet it is also a reminder that, even in the most up-to-date insect database, there are still a lot of information gaps.

"No one's really attempted to pull this information together," says Matthew Shepherd, director of the Pollinator Conservation Program at the Xerces Society. "We wanted to establish some baseline information in what we hope is an easily accessible format, covering a huge group of animals that are not really considered or discussed," he explains. "We hope people will say 'Hey, this bee or this butterfly is in decline,' and that this will stimulate debate

For more information on the Xerces Society and the Red List of Endangered Pollinators, visit www.xerces.org.

in policy circles, help land managers put more emphasis on conservation, and spur more research."

WHAT GARDENERS CAN DO

Although some native bees are social and live in groups in hives structured around a queen bee, the majority of pollinating bees native to the United States are known as "solitary bees," meaning they live and gather food on their own. These bees nest and lay their eggs in dead trees or in bare soil. "The trend towards tidier landscapes eliminates nesting sites for bees that live in these habitats," Shepherd says.

By leaving a little disorder in your garden (for more on how to do this, see the article on fall cleanup on page 24), you will preserve potential nesting sites for bees and other pollinators. Bees favor mud and sometimes build their nests in protected areas under the cover of leaves and twigs. Also, if you plant a variety of native plants that bloom successively, you will expand the pollen and nectar buffet available to bees and other insects.

As for pesticides, the best advice is to use them sparingly or not at all. "If you have a diverse garden, many natural predators will take care of pests on their own," says Shepherd.

Even the so-called natural pesticides such as pyrethroids or biological controls like Bt (*Bacillus thuringiensis*, a bacterium that kills caterpillars) can destroy the good guys as well as pests. If you choose to apply them, make sure they are designed specifically for the target pest and applied at the correct time in its life cycle. "Not all pesticides are the same, and there are some that will only be harmful to bees for six or eight hours after application," Shepherd adds.

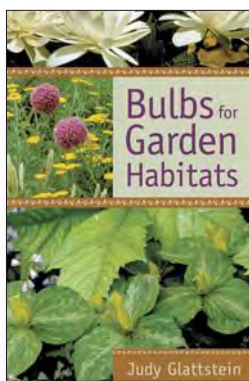
William Clattenburg is an editorial intern for The American Gardener.

Recommendations for Your Gardening Library

Bulbs for Garden Habitats

Judy Glattstein. Timber Press, Portland, Oregon, 2005. 256 pages. Publisher's price, hardcover: \$29.95.

EVERYONE LOVES BULBS—they are familiar, easy to grow, and so colorful. If you think you know all about bulbs, however, think again. Veteran and neophyte gardeners alike are sure to benefit from the breadth and depth of knowledge and experience contained in *Bulbs for Garden Habitats*.



Author Judy Glattstein moves far beyond familiar tulips and daffodils to acquaint readers with the full range of geophytes (a catch-all term for bulbs, corms, tubers, tuberous roots, and rhizomes) that thrive across the ecologically diverse North American continent. In addition to familiar Dutch export bulbs, the author introduces us to a full range of native American bulbs, as well as South African and tropical species. Readers will be pleased to learn about the myriad hardy and tender bulbs for wet spots, and that a host of bulbs bloom in autumn, when most plants are shutting down for the season.

Glattstein innovates further by placing bulbs in natural, complimentary associations based on what she calls "garden habitats." Though the chapter titles alternate between regional ("Bulbs for the Southeast") and habitat ("Bulbs for the Mediterranean Garden"), the message is clear: Choose the right bulbs for your climate, light, soil, and moisture.

The excellent chapter, "Geophyte Care and Cultivation," thoroughly covers planting, aftercare, and propagation. Deer-resistant bulbs are amply discussed, as the author gardens on nine acres with a thriving deer herd. Appendices cover invasive bulbs, sources, and "Quick Picks," a set of short lists arranged by garden situations and ornamental attributes. Line drawings clearly show the distinctions between different geophyte life cycles. Many of the photos are also instructive, but overall the quality is uneven.

Glattstein, a veteran gardener, skillfully instructs and educates in a friendly, accessible style. She weaves stories of her experiences into the narrative as well as those of gardeners around the world who love geophytes. *Bulbs for Garden Habitats* will inspire anyone who has an appreciation for beauty and a mind for ecology.

—C. Colston Burrell

C. Colston Burrell is a plantsman, garden designer, and author of *Perennial Combinations* and the forthcoming *Hellebores: A Comprehensive Guide* (Timber Press, 2006).

On Foreign Soil: American Gardeners Abroad

May Brawley Hill. Harry N. Abrams Inc, New York, New York, 2005. 160 pages. Publisher's price, hardcover: \$40.

ELEGANT WOMEN strolling in sun-dappled gardens in Italy and France were a recurring theme among Impressionist painters, but the focus has always been on the artists who painted the pictures rather than on the gardens themselves. From the French Riviera to the Tuscan hills and the Weald of Sussex, a privileged group of American expatriate artists and literary figures brought practices and ideals from home to their gardens abroad.



Art historian May Hill's new book takes us on a whirlwind tour of gardens created by Americans in England, France,

and Italy. Among them, Isabella Stewart Gardner, Edith Wharton, and Peggy Guggenheim will be familiar, but other, more elusive, individuals also shared their passion for making gardens.

As the book explains, in the 19th century, Italy attracted wealthy businessmen, artists, and those escaping failed marriages or adjusting to widowhood. As a result, American dollars were often used to aid the restoration of historic gardens. For example, the inheritance of Mrs. Arthur Acton, an American married to an English painter, helped to transform La Pietra in Tuscany into a magnificent Renaissance-style garden, renowned today as a premier Anglo-Italian garden.

Transatlantic marriages, career changes, and family ties still provide impetus for gardening abroad, a topic the book's final chapter explores. One example is Mississippi-born Carla Carlisle, who married an English squire in the 1980s and gave her husband's ancestral home a dose of American enterprise. Today, Wyken Hall produces award-winning wine and boasts a splendid formal garden.

Beautifully illustrated with period paintings and photographs, this delightful chronicle is more about the luxury of living abroad than the finer points of garden-making and horticulture. The book's appeal will be to art historians, literary buffs, armchair travelers, and those interested in historic gardens.

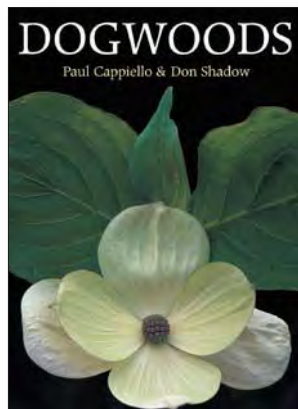
—Judith B. Tankard

Judith B. Tankard is a garden historian and writer based in Massachusetts. Her most recent book, *Gardens of the Arts and Crafts Movement: Reality and Imagination*, was published by Abrams in 2004.

Dogwoods

Paul Cappiello and Don Shadow. Timber Press, Portland, Oregon, 2005. 224 pages. Publisher's price, hardcover: \$39.95.

THIS IS THE FIRST book on the genus *Cornus* directed at gardeners. As co-author Paul Cappiello writes, "The taxonomists have scores of textbooks and journals that treat the genus as their realm. To date, this is the only work on *Cornus* devoted entirely to the gardening use of the genus."



Through experience and thorough research, the authors know their subject well. The voice of the book is Cappiello's—informative, enthusiastic, and often self-deprecating or cynical—resulting in a humorous as well as enlightening read.

Organized into six chapters, the book begins with a general

discussion on the dogwood family. The next five chapters focus on specific groups of dogwoods that should logically be treated in common by serious gardeners: *Cornus canadensis*, *Cornus alba*, *Cornus alternifolia*, *Cornus florida*, and *Cornus*

mas. Within these groupings, we are taken from ground cover dogwoods to large trees with spectacular beauty, often shown in gorgeous photographs taken mostly by Cappiello.

The information about cultivars of *Cornus florida* and *Cornus kousa*, in particular, is unparalleled. In fact, this book has changed some of what I thought I had accurately known for decades.

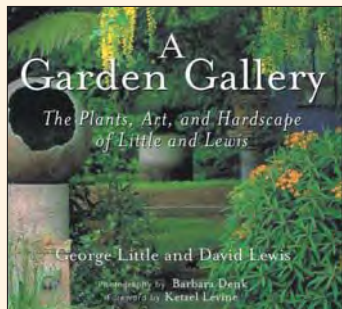
However, the greatest asset in *Dogwoods* is the honesty and thoroughness of certain discussions. The authors tell readers which cultivars are thought to be the same as something by another name. They candidly tell us about the confusion that exists regarding dogwood nomenclature. They tell us which dogwoods belong in our gardens when there is only space for one or two new plants and which ones should only be considered by those with plenty of time, space, and a willingness to deal with ugly, struggling plants.

The genus *Cornus* contains some of the most beautiful garden specimens in the world as well as species that have no place in most gardens. Sharing this information in a beautiful book and telling readers the truth with humor is part of what makes *Dogwoods* a ground-breaking and worthy text.

—Dick Bir

Dick Bir is the author of Growing and Propagating Showy Native Woody Plants. He recently retired after exactly 25 years on the horticulture faculty at North Carolina State University.

GEORGE LITTLE and David Lewis have knocked down the walls of convention and taken risks that have made them world-renowned artist-gardeners. In their debut book,



A Garden Gallery: The Plants, Art, and Hardscape of Little and Lewis, they invite the reader into their garden located on Bainbridge Island, Washington. "Although our colorful, diverse style may not appeal to the faint of heart," Lewis writes, "our garden and our work are

meant to awaken the creativity and adventure within us." Their inspirational approach to gardening as a whimsical adventure is captured in the bold clarity of the photographs by Barbara Denk.

This book reveals the secrets Little and Lewis skillfully use to pull their visitors into a labyrinth of color and design, often of Mediterranean inspiration. Tantalizing fragrances, sounds of fountains and nature, transcendence of light, and homemade sculptures pique the senses and guide the way through this garden. Whether it's a hidden fountain so that you hear but do not see the water, or a vibrant blue wall in the backdrop, or even a giant pomegranate sculpture nestled among fuchsias, each element pushes the boundaries of tradition.

—Jessica Rozmus, Horticultural Intern

IF YOU HAVE questions about pruning, look no further than *The Pruner's Bible, A Step-By-Step Guide to Pruning Every Plant In Your Garden* (Rodale Inc., 2005, \$21.95) by Steve



Bradley. The author lets his clippers do the talking, so to speak, with a to-the-point introduction on the particulars of pruning. The opening pages cover tools, safety, and basic pruning techniques, setting the stage for the heart of the book, which looks at 70 common garden plants and how best to prune them.

Pruning, as Bradley explains, is about much more than making a plant look nice—in many cases it is necessary for a plant's life and health. Bradley discusses formative pruning, routine pruning, and remedial pruning in the context of all 70 plant species so that gardeners can take care of plants in all stages of their growth. Color photographs are juxtaposed with helpful diagrams.

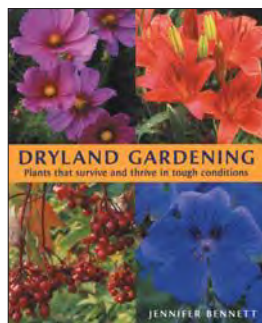
Most of the plants covered are roses, shrubs, and specimen trees but a "Special Features" section at the end of the book takes an in-depth look at ground covers, conifers, and climbers, too. This section also explains how to prune hedges, and discusses specialized techniques such as pollarding, pleaching, and root pruning.

—William Clattenburg, Editorial Intern

Garden Themes

WHETHER A THEME IS dictated by your garden's conditions or your own sensibilities, following one can help to give focus and direction to a garden space. A theme can also help to narrow down which plants you choose to grow. Perhaps they are plants that suit your particular site—an alpine location, dry soil, or shade, for example—or plants that work well for their intended purpose, such as those that belong in kitchen gardens or perform well in containers. Here are some books that not only suggest plants for various themes but explain how to use them to create beautiful and successful gardens.

Because demands on fresh water supplies are ever increasing and weather patterns often bring dry spells, following a “drought tolerance” theme often makes good sense. Whether you garden in a dry region or just have a periodically dry corner of the yard,



Dryland Gardening: Plants That Survive and Thrive in Tough Conditions by Jennifer Bennett (Firefly Books LTD, 2005, softcover, \$24.95) has plenty to offer. It begins with a discussion of water management strategies as well as design considerations. The remainder of the book covers drought-tolerant plants organized by categories such as ground covers, bulbs, and shrubs—many shown in

color photographs. As the author writes, “Using the techniques in this book and growing these plants, you will not only have a garden better able to survive extreme weather but a garden that conserves water and is easier to mind and manage.”

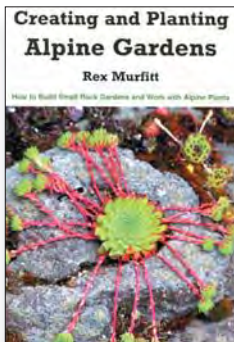
For a different take on a low-maintenance and drought tolerant form of gardening, there's ***Sharp Gardening*** by Christopher Holliday (Timber Press, 2005, \$29.95). Organized into chapters such as “Swords and Lances” and “Spiky Flowers, Spires, and Straps,” the book focuses on plants that fit a spiky, spiny, pointy theme. Many of the plants described, such as members of the cactus family, “are low maintenance because they are not rich feeders and do not require mollycoddling in the form of staking or need excessive cutting back,” explains Holliday. They do, however, provide a dramatic architectural impact in



gardens large or small, as nearly 200

stunning photographs by Jerry Harpur illustrate. Many drought-tolerant and even “sharp” plants fall under an alpine theme. In ***Creating and Planting Alpine Gardens*** (B.B. Mackey Books, 2005, \$22.50) author Rex Murfitt writes, “The charm of small plants artfully arranged in a mountainlike land-

scape is hard to match. If you are interested in learning to grow alpenes well in a small rock garden or containers, this book is for you.” The co-author of *Creating and Planting Garden Troughs*, which received an AHS Book Award in 2000, Murfitt delves into the art of building rock gardens, from design and site preparation to planting and maintenance. Diagrams and black-and-white photographs accompany the text, and a small collection of color photographs depicts some of the alpine species the author describes.



Those interested in gardens with an edible theme may enjoy ***The Moosewood Restaurant Kitchen Garden: Creative Gardening for the Adventurous Cook*** by David Hirsch (revised edition, Ten Speed Press, 2005, \$19.95). Known for its innovative restaurant in Ithaca, New York, the



Moosewood Collective also has published a popular line of cookbooks. While this particular title does contain recipes, it focuses more on how to grow the herbs, vegetables, and edible flowers used in them. In the plant section, each entry includes cultural requirements from sowing to harvesting as well as tips on their culinary uses. Chapters on design considerations and growing techniques outline other important elements of an edible

garden. And since, according to the author, “properly cooked, flavorful, and attractively presented vegetables are the happy ending to this story,” the final section is devoted to cooking techniques, complete with recipes for everything from soup to dessert.

If you enjoy growing a wide variety of plants, be they edible, alpine, spiky, or other, containers can help to enhance a garden



theme or can become a theme of their own. ***Can't Miss Container Gardening*** by Felder Rushing and Teri Dunn (Cool Springs Press, 2005, \$18.99) provides plenty of ideas for doing both. As the authors advise, “Whether you like formal or informal, flowers or foliage, food or fun, use container plants to complement your home and garden, and your life.” Color photographs supplement chapters on container selection, cultural requirements, and design. The directory of “can't miss” plants also features helpful photographs of each listing.

—Viveka Neveln, Assistant Editor

REGIONAL HAPPENINGS

Horticultural Events from Around the Country

NORTHEAST

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

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

RAP SEPT. 24. **Edible Landscaping with Uncommon Fruits.** Demonstration. Wave Hill. Bronx, New York. (718) 549-3200. www.wavehill.org.

RAP OCT. 2. **Chili Pepper Fiesta.** Brooklyn Botanical Garden. Brooklyn, New York. (718) 623-7200. www.bbg.org.

OCT. 16. **Fall Family Festival.** New England Wildflower Society. Framingham, Massachusetts. (508) 877-7630. www.newfs.org.

Looking ahead

NOV. 4–6. **Orchid Sale.** Lyman Estate Green-

house. Waltham, Massachusetts. (781) 891-4882. www.HistoricNewEngland.org.

MID-ATLANTIC

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

RAP SEPT. 15–OCT. 15. **Herbs Used In Hispanic Cultures.** Walking tour. U.S. National Arboretum. Washington, D.C. (202) 544-8733. www.usna.usda.gov.

RAP SEPT. 24. **Children's Garden Grand Opening.** Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. www.lewisginter.org.

OCT. 1. **Azalea Auction.** Brookside Gardens. Wheaton, Maryland. (301) 962-1400. www.brooksidegardens.org.

OCT. 7. **Green Roof Gardening.** Lecture. U.S. Botanic Garden. Washington, D.C. (202) 225-8333. www.usbg.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.

OCT. 8. **Tufton Fern Walk.** Thomas Jefferson Monticello Foundation, Inc. Charlottesville, Virginia. (434) 984-9822. www.monticello.org.

OCT. 14. **2005 Perennial Plant Conference.** The Scott Arboretum of Swarthmore College.

Free Seed Catalog!

Create the Beauty and Enjoy the Compliments!

Reserve your '06 edition now.

Quality English Seeds since 1855



Thompson & Morgan

TOLL FREE 800.274.7333
www.thompson-morgan.com

Offer #619

Hurry! Don't Miss Out!

Log on to www.ahs.org and support the American Horticultural Society. Just click on the Thompson & Morgan link to place your order.



2006 "Gardener's" Calendar

\$6.95 (\$59.00 for 10) Postpaid

2004 Computer Screen Saver

\$5.00 Postpaid

13 prize color photos in both items

The Gardeners of America Men's Garden Club of America

Box 241
Johnston, IA 50131-0241
Phone: 515-278-0295
www.tgoa-mgca.org

Swarthmore, Pennsylvania. (610) 328-8025. www.scottarboretum.org.

RAP OCT. 15. **Fall Family Fun Fest at Hershey Gardens.** Hershey Gardens. Hershey, Pennsylvania. (717) 534-3492. www.hersheygardens.org.

OCT. 29. **A Bartram Trail Tour through Hawk Mountain, Conrad Weiser House and Mons Jones House.** Bartram's Garden. Philadelphia, Pennsylvania. (215) 729-5281. www.bartramsgarden.org.

SOUTHEAST

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

SEPT. 29. **American Rose Society National Convention 2005.** Memphis Rose Society. Memphis, Tennessee. (901) 755-1273. www.sw-greenhouse.com/rosesocieties/memphisrosesociety.

OCT. 1. **Southeastern Forests Symposium.** Georgia Native Plant Society. Acworth, Georgia. (707) 343-6000. www.gnps.org.

OCT. 7-10. **ASLA 2005 Annual Meeting & Expo.** American Society of Landscape Architects. Fort Lauderdale, Florida. (202) 898-2444. www.asla.org/meetings/am2005.

OCT. 21-23. **Charleston Garden Festival.** Charleston Horticultural Society. Charleston, South Carolina. (843) 579-9922. www.charlestonhorticulturalsociety.org.

OCT. 22. **Bromeliad Extravaganza.** Florida Council of Bromeliad Societies. Sarasota, Florida. (941) 388-2181. www.fcbs.org.

NORTH CENTRAL

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

SEPT. 23-OCT. 1. **Scarecrows in the Gardens.** Children's contest. Friends of Boerner Botanical Gardens. Hales Corner, Wisconsin. (414) 525-5657. www.boernerbotanicalgardens.org.

RAP SEPT. 24. **An Introduction to Micro-propagation.** Lecture. Klehm Arboretum. Rockford, Illinois. (815) 965-8146. www.klehm.org.

RAP OCT. 8. **The Western Reserve Herb Society Herb Fair.** Cleveland Botanical Garden. Cleveland, Ohio. (216) 721-1600. www.cbgsociety.org.

RAP OCT. 15 & 16. **State African Violet Show and Sale.** Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

RAP OCT. 21. **Janet Meakin Poor Research Symposium.** Chicago Botanic Garden. Glen-

Fall Festival in New York

AUTUMN'S HARVEST and autumn's planting will grace the 6th annual Cincinnati Flower & Farm Fest, held in Coney Island, New York, on the weekends of October 1 and 2 and October 8 and 9. The event, which last year famously broke the



world record for the largest number of scarecrows ever assembled in one place, features exhibits, displays, treats, and rides for all ages.

For gardeners and decorators fascinated by the colors and fragrances of autumn, three different "markets" will be on offer: the Autumn Décor, Harvest, and Fall Planting Picks. Each market will specialize in seasonal items, with Autumn Décor offering handcrafts and cut and dried flowers, Harvest offering gourds,

pumpkins, squash, heirloom apples, mustards, and honeys, and Fall Planting Picks offering perennials, cool-weather annuals, grasses, chrysanthemums, and spring bulbs.

Not all flowers at the show will be for sale, however. The festival's "larger than life" giant peacock, with several hundred mums in its tail, will make an appearance. And the "First Thanksgiving" floral display, a centerpiece of the show, will recreate the legendary meal shared by pilgrims and Native Americans.

As for the scarecrows that stole the show last year? "We'll probably bring back a few of the scarecrows too," says Jeanne Elliott, marketing director for the Cincinnati Horticultural Society, adding that there will be vignettes of several memorable straw people.

For more information or for advance ticket purchase call (518) 872-5194 or (800) 670-6808 or visit www.cincyflowershow.com.

New Conference for Independent Plant Breeders

THOSE INTERESTED IN creating hybrid plants will have plenty of reason to head to the first ever Independent Plant Breeder's Conference from November 18 to 20 in Fort Lauderdale, Florida. The conference, organized by the University of Florida, is open to all and is specially designed for "anyone interested in taking their plant breeding further," says Mandy Stage, the conference coordinator.

Plant breeders involved with every variety of plant are encouraged to participate, whether they have a passion for orchids, roses, trees, or even turf. "The conference will help bring communication closer so plant patenters will know what the industry is looking for," Stage says. She believes the conference will "help alleviate delays before patenting" and allow the patenting process to run smoother.

Conference participants may choose from a series of lectures by experts in the plant-breeding field. These will cover every aspect from plant selection to understanding the legalities of the patenting process. In addition, a "breeder showcase" will give attendees the opportunity to discuss their work with professional breeders as well as get a glimpse of what others are developing.

"Independent breeders have the vision of what kind of new plants we need—plants that can thrive in areas of sun and shade complete with features that consumers love," says Terril Nell, program organizer for the conference and chair of the University of Florida Environmental Horticulture Department. "The conference will link [these breeders] with people doing breeding on an international level, so that they can be recognized and finally get their plants to gardeners."

Early registration ends October 21. Attendees may register on site at the conference for an additional fee. For more information, call (352) 392-5930 or log on to <http://conference.ifas.ufl.edu/IPBC>.

—William Clattenburg, Editorial Intern

Cultivate Your Checkbook

Now you can support the
American Horticultural Society
with every check you write.

FREE
Shipping &
Handling



American Horticultural Society Checks

AHS Address Labels

CHRIS B. WALKER
125 FOREST LANE
ANYWHERE, USA 54321

AHS Cotton Checkbook Cover

- 10% from each purchase goes directly to AHS.
- Our checks meet all U.S. bank standards and are guaranteed to work with your bank.
- 100% Satisfaction Guaranteed.

Order Form

Name _____

Address _____

E-mail _____ Confidential. For shipment verification.

Phone (____) _____

Check Start # _____ (If no start number is given, #1001 will be used.)

☐ n (8M33U) AHS Checks \$

☐ \$14.95 (150 Singles) ☐ \$16.95 (150 Duplicates)

☐ Check Custom Lettering add \$2.50 \$

☐ cursive ☐ Modern ☐ Old English

☐ (8M33C) Cotton Checkbook Cover add \$11.95 \$

☐ (8M33) 240 Address Labels add \$9.95 \$

☐ Label Custom Lettering add \$2.50 \$

☐ cursive ☐ Modern ☐ Old English

Shipping & Handling add \$1.95 per item \$ **FREE**

Rush Delivery add \$4.95 per item \$

EZShield Check Fraud Protection Program™:

add \$1.00 for EACH box of checks you order \$

OFFER CODE: **8MG078** SUBTOTAL \$

Sales Tax only AR (7.5%); MD (5%) \$

TOTAL \$

IMPORTANT! Include the following with this order form:

- ☐ Voided check or reorder form with changes indicated.
- ☐ Deposit ticket from the same account.
- ☐ Three lines of personalization for address labels. (Max. 32 letters/spaces per line.)
- ☐ Payment choice:
 - ☐ Check made payable to **Message!Products®**
 - ☐ Charge to: ☐ Visa® ☐ MasterCard®

Acc# _____ Exp. Date ____/____/____

Sig. _____

☐ Automatically debit my checking account (for Auto Debit option, orders must include checks)

MAIL COMPLETE ORDER TO:

Message!Products® • PO Box 700 • Edgewood, MD 21040-0700

Order Online! www.messageproducts.com or call toll free 1-800-243-2565

To redeem this offer, use OFFER CODE 8MG078 during online checkout.

Allow 2-3 weeks for regular delivery; Alaska and Hawaii delivery may take longer. Items shipped separately.

Offer expires 12/31/06.



EZShield Check Fraud Protection Program™ (Pat. Pend.):
Guard your checks from unauthorized use of up to \$25,000
for only \$1.00 per box. Underwritten by Lloyd's of London.
See Order Form. To learn more, visit www.ezshield.org.

co, Illinois. (847) 835-6829. www.chicago-botanic.org.

Looking ahead

RAP NOV. 12. **Herb Fair.** Olbrich Botanical Gardens. Madison, Wisconsin. (608) 246-4550. www.olbrich.org.

SOUTH CENTRAL

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

OCT. 7. **Using Native Plants in the Residential Landscape.** Seminar. Oklahoma Horticultural Society. Oklahoma City, Oklahoma. (405) 943-0827. www.okhort.org.

OCT. 7 & 8. **Exploring Southern Gardens.** Southern Garden Symposium. St. Francisville, Louisiana. (225) 635-3738.

RAP OCT. 15. **Daffodil Sale.** Botanica, The Wichita Gardens. Wichita, Kansas. (316) 264-0448. www.botanica.org.

RAP OCT. 15. **Opening of George Washington Carver Garden.** Missouri Botanical Garden. Saint Louis, Missouri. (314) 577-5100. www.mobot.org.

RAP OCT. 15 & 16. **Cacti Show & Sale.** Tulsa Garden Center. Tulsa, Oklahoma. (918) 746-5125. www.tulsagardencenters.com.

OCT. 20-23. **The Native Plant Society of Texas 2005 Symposium.** Fort Davis, Texas. (512) 868-8799. www.npsot.org.

RAP OCT. 22. **Arboretum Scavenger Hunt.** Crosby Arboretum. Picayune, Mississippi. (601) 799-2311. www.msstate.edu/dept/crec/camain.html.

SOUTHWEST

AZ, NM, CO, UT

OCT. 1. **Fall Plant Sale.** Tucson Botanical Gardens. Tucson, Arizona. (520) 326-9686. www.tucsonbotanical.org.

RAP OCT 7-9. **Fall Plant Sale Festival.** Desert Botanical Garden. Phoenix, Arizona. (480) 941-1225. www.dbg.org.

RAP OCT. 8. **Pumpkin Festival.** Denver Botanic Gardens at Chatfield. Littleton, Colorado. (720) 865-3500. www.botanicgardens.org.

Looking ahead

NOV. 6-8. **Irrigation Show: Caliente!** The Irrigation Association. Phoenix, Arizona. (703) 536-7080. E-mail: exporegistration@irrigation.org.

WEST COAST

CA, NV, HI

RAP SEPT. 25. **Fall Plant Sale.** University of California Botanical Garden. Berkeley,

California. (510) 643-2755. www.botanicalgarden.berkeley.edu.

SEPT. 28-OCT. 1. **Society of American Florists Annual Convention.** Society of American Florists. Las Vegas, Nevada. (703) 836-8700. www.safnow.org/meetings/index.cfm.

OCT. 1 & 2. **OrchidFest.** San Francisco Orchid Society. San Francisco, California. (415) 990-1314. www.orchidsanfrancisco.org.

OCT. 14. **Practical Pruning: A Workshop for Arborists.** University of California-Davis Extension. Davis, California. (800) 752-0881. www.extension.ucdavis.edu/agriculture.

OCT. 22 & 23. **Gathering of Gardeners.** Festival. Cambria Nursery & Florist. Cambria, California. (800) 414-6915. www.cambrianursery.com/events.htm.

Looking ahead

NOV. 4-6. **Grow Biointensive, Sustainable Mini-Farming Workshop.** Ecology Action. Willits, California. (707) 459-0150. www.growbiointensive.org.

NORTHWEST

AK, ID, MT, OR, WA, WY

RAP OCT. 2. **Fall Bulb & Plant Sale.**

Washington Park Arboretum. Seattle, Washington. (206) 325-4510. www.arboretumfoundation.org.

OCT. 6-9. **Fall Home & Garden Show.** O'Loughlin Trade Shows. Portland Expo Center. Portland, Oregon. (253) 756-2121. www.portlandhomeshow.com.

OCT. 8. **Autumn Hybrid Test Garden Sale.** Meerkerk Rhododendron Gardens. Whidbey Island, Washington. (360) 678-1912. www.meerkerkgardens.org.

RAP OCT. 15. **Oktoberfest!** Idaho Botanical Garden. Boise, Idaho. (208) 343-8649. www.idahobotanicalgarden.org.

CANADA

RAP OCT. 16. **Connoisseur Herbs.** Class. Horticulture Centre of the Pacific. Victoria, British Columbia. (250) 479-6162. www.hcp.bc.ca.

OCT. 18. **Green Roofs and Sustainable Garden Design.** Lecture. Toronto Botanical Garden. Toronto, Ontario. (416) 387-1340. www.torontobotanicalgarden.ca.

RAP OCT. 20. **Tree Identification.** Workshop. The Arboretum at the University of Guelph. Guelph, Ontario. (519) 824-4120. www.uoguelph.ca/arboretum.



AMERICAN
HORTICULTURAL
SOCIETY

Join us now to take advantage of the many benefits of membership in the American Horticultural Society

As an AHS member, you get

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 Haertler 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.

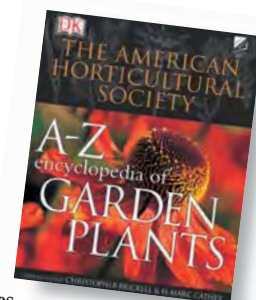
Heat Tolerance Map In 1997, AHS introduced the AHS Plant Heat Zone Map, which has revolutionized the way American gardeners select region-appropriate plants.

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 hand's-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 basic levels (for additional levels, visit www.ahs.org):

- \$35 Individual
- \$100 Family*
- \$50 International
- \$50 Couple
- \$1,000 President's Council
- Corporate Membership (contact our office)
- Horticultural Partner (contact our office)

*Up to four membership cards per household

To become an AHS member, call (703) 768-5700
or visit us at www.ahs.org

GARDEN MARKET

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

BOOKS

Hortica: Color Cyclopaedia of Garden Flora with Hardiness Zones and Indoor Plants, 8,100 color photos by Dr. A. B. Graf, \$195
SPECIAL PRICE \$125

Tropica 5th ed: 7,000 color photos of plants and trees for warm environments, \$185

Exotic House Plants: 1,200 photos, 150 in color, with keys to care, \$8.95
NOW \$5.00

Shipping additional. Circulars gladly sent.

ROEHRS Co., 1230 Hwy 33, Farmingdale, NJ
07727. (732) 938-5111.
fax (732) 938-3075. www.roehrsco.com.

NURSERY STOCK

BOTANYSHOP.COM MAIL ORDER—Princeton & Valley Forge American Elm; Allée Lacebark Elm; Thuja x Green Giant; Pink, Blushing & Red Knock Out Roses; Endless Summer Hydrangea; Dawn Redwood; Autumn Blaze Maple; Butterfly Bushes in Bicolor, Honeycomb, Guinevere; Golden Glory Dogwood; Ann & Centennial Magnolia; Avondale Redbud. Botany Shop Inc., 710 Minnesota, Joplin, MO 64801. 1-888-855-3300. info@botanyshop.com. www.botanyshop.com.

ORGANIC PLANT FERTILIZER

WORM WORLD WORM CASTINGS. All organic, no chemicals. Safe around children and pets. Nature's Perfect Fertilizer. 3# \$4.50, 10# \$9.99. Fantastic results. Worm World, 26 Ihnat Lane, Avella, PA 15312. (724) 356-2397. wormw@hky.com. www.wormworld.com. V/MC accepted. Free catalog.

PLANT LABELS

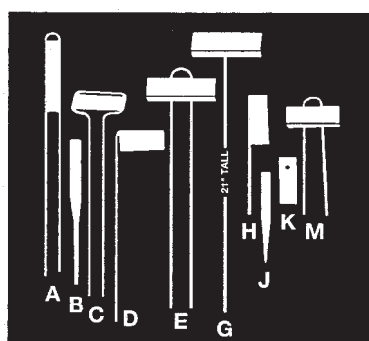
ENGRAVED BOTANICAL PLANT LABELS

PLANT IDENTIFICATION FOR EVERY GARDEN
FAMILY - GENUS - SPECIES - COMMON NAME

Order @ www.gardenmarkers.com

FAX: 434-975-1627

PLANT LABELS - STAKES - TREE TACKS



THE PERMANENT METAL GARDEN LABEL

A - Hairpin Style Markers	100 For \$30.40
B - Plant or Shrub Labels	100 For \$12.85
C - Cap Style Markers	100 For \$25.25
D - Swinging Style Markers	100 For \$23.45
E - Rose Markers	100 For \$29.35
F - Tall Display Markers	100 For \$36.25
G - Tall Single Staff Markers	100 For \$29.10
H - Flag Style Markers	100 For \$23.50
J - Small Plant Labels	100 For \$12.70
K - Tie-On Labels	100 For \$18.75
M - Miniature Markers	100 For \$23.10

Special Quantity Prices Available
Prices Include Prepaid Postage

INTRODUCTORY OFFER:
1-Each; A,B,C,D,E,H,J and K
With Waterproof Crayon, Only \$4.45

PAW PAW EVERLAST LABEL COMPANY

P.O. Box 93-AH

Paw Paw, Michigan 49079-0093

Michigan residents add 6% sales tax.

*The American Horticultural
Society thanks the sponsors of
the 2005 National Children &
Youth Garden Symposium*

MARSHALL • TYLER • RAUSCH
NATURALAWN
VIVA
MONROVIA

Designing Experiences.



MARSHALL
TYLER
RAUSCH

(412) 931-6455 • mtr@mtrla.com



Safer Lawn
Care
Naturally™!

We Offer:

- Lawn, Garden, & Ornamental Fertilizers
- Products And Services That Are Safer For Children, Pets, & The Environment
- Proven Results With Less Chemicals



Contact us at:
800 989-5444 or
www.nl-amer.com
to make your lawn
a Safer Lawn



Garden
for Schools

Providing Free Herbs and
Veggies for Classroom Gardens

Supporting the enrichment of our
children through gardening.

For information on plant donations or
the garden contest, please visit us at:
www.vivagarden.com/schools

MONROVIA®
GROWERS

HORTICULTURAL CRAFTSMEN®
SINCE 1926

www.monrovia.com

Please Support
our
Advertisers

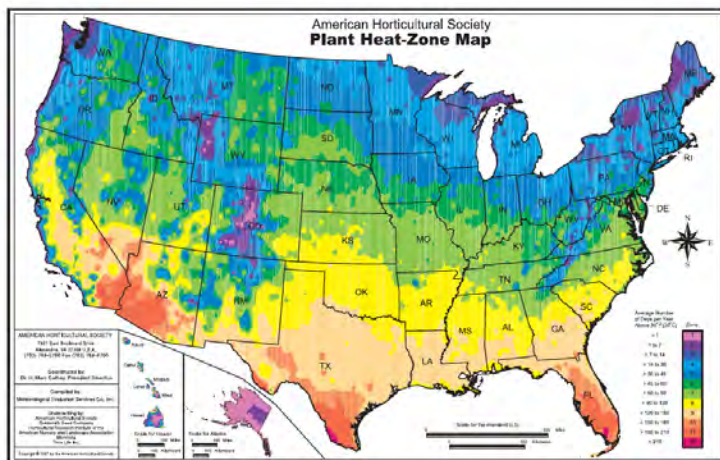
Tell them you saw
their ad in
THE AMERICAN GARDENER

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–H

- Anemone canadensis** uh-NEM-o-nee kan-uh-DEN-siss (USDA 3–7, AHS 7–1)
- A. nemorosa** A. neh-mor-O-suh (4–8, 8–1)
- A. ranunculoides** A. ruh-nung-kyew-LOY-deez (4–8, 8–1)
- Arctostaphylos nevadensis** ark-toh-STAFF-ih-loss neh-vah-DEN-siss (7–9, 9–7)
- Argemone munita** ar-JEM-o-nee mew-NYE-tuh (5–10, 10–5)
- Aronia arbutifolia** uh-RO-nee-uh ar-byew-tih-FO-lee-uh (5–9, 8–4)
- Asarum canadense** uh-SAR-um kan-uh-DEN-see (2–8, 8–1)
- A. caudatum** A. kaw-DAY-tum (5–8, 8–4)
- Asclepias incarnata** as-KLEE-pee-us in-kar-NAY-tuh (3–9, 9–2)
- Athyrium filix-femina** var. **asplenoides** uh-THIH-ree-um FIL-iks-FEM-ih-nuh var. uh-splee-NOY-deez (6–9, 9–1)
- Atriplex canescens** AT-rih-pleks kuh-NES-senz (2–9, 11–3)
- Betula nigra** BET-yew-luh NY-gruh (4–9, 9–1)
- Ceratostigma plumbaginoides** sur-at-o-STIG-muh plum-baj-ih-NOY-deez (5–9, 9–4)
- Chrysanthemum nauseosus** kris-o-THAM-nus naw-zee-O-suss (4–9, 9–4)
- Cleome serrulata** klee-O-mee sur-yew-LAY-tuh (0–0, 12–1)
- Cornus sericea** KOR-nus seh-RISS-ee-uh (3–8, 8–1)
- Cypripedium calceolus** sip-rih-PEE-dee-um kal-see-OH-lus (3–7, 7–1)
- Cystopteris bulbifera** sis-TOP-tur-iss buhl-BIFF-air-uh (4–8, 8–1)
- Dodecatheon meadia** doh-deh-KATH-ee-on MEE-dee-uh (4–8, 8–1)
- Helianthus angustifolius** hee-lee-AN-thus ang-gus-tih-FO-lee-us (6–9, 9–4)
- H. annuus** H. AN-yoo-us (0–0, 12–1)

I–R

- Iris cristata** EYE-riss kris-TAY-tuh (4–10, 10–1)
- Itea virginica** eye-TEE-uh vir-JIN-ih-kuh (6–9, 10–7)
- Lonicera ciliosa** lah-NISS-er-uh sil-ee-O-suh (6–9, 9–1)
- Magnolia × soulangia** mag-NOLE-yuh soo-lan-jee-AN-uh (6–9, 9–5)

- Meehania cordata** me-HAY-nee-uh kor-DAH-tuh (4–8, 8–4)
- Mirabilis multiflora** mih-RAB-ih-liss mul-tih-FLOR-uh (7–10, 10–7)
- Mitchella repens** mih-CHEL-luh REP-enz (4–9, 9–1)
- Nepeta × faassenii** NEP-eh-tuh fas-SEN-ee-eye (4–8, 8–1)
- Nephrolepis cordifolia** neh-FRO-lep-is kor-dih-FO-lee-uh (9–11, 12–1)
- Nyssa aquatica** NISS-uh uh-KWAT-ih-kah (6–9, 9–6)
- Oenothera caespitosa** ee-NOTH-ur-uh sez-pih-TOH-suh (4–9, 9–2)
- Osmunda regalis** ahz-MUN-duh ree-GAL-iss (2–10, 9–1)
- Pachysandra procumbens** pak-ih-SAN-druh pro-KUM-benz (5–9, 9–3)
- Penstemon barbatus** PEN-steh-mon bar-BAY-tus (4–9, 9–2)
- P. eatonii** P. ee-TONE-ee-eye (4–9, 9–1)
- P. grandiflorus** P. gran-dih-FLOR-us (3–9, 9–1)
- Phlox diffusa** FLOKS dih-FEW-suh (5–8, 7–1)
- P. stolonifera** P. sto-lon-IF-ur-uh (4–8, 8–1)
- Polygonatum humile** pah-lih-GO-nay-tum HYEW-mih-lee (5–8, 8–4)
- Polystichum munitum** pah-LISS-tih-kum mew-NY-tum (3–8, 8–1)
- Ribes aureum** RY-beez AW-ree-um (6–8, 8–6)

S–Z

- Salvia greggii** SAL-vee-uh GREG-ee-eye (7–9, 9–4)
- S. leucantha** S. loo-KAN-thuh (9–11, 12–4)
- Senecio douglasii** seh-NEE-see-o dug-LASS-ee-eye (6–10, 10–2)
- Smilacina racemosa** smy-lah-SY-nuh rass-eh-MO-suh (4–9, 9–1)
- Sphaeralcea ambigua** sfeer-AL-see-uh am-BIG-yew-uh (4–10, 10–4)
- Stanleya pinnata** STAN-lee-uh pin-NAY-tuh (5–10, 10–5)
- Taxodium distichum** taks-O-dee-um DIS-tih-kum (5–11, 12–5)
- Tiarella cordifolia** tee-uh-REL-luh kor-dih-FO-lee-uh (3–9, 7–1)
- Uvularia perfoliata** yoo-view-LAR-ee-uh per-fo-lee-AY-tuh (4–10, 10–4)
- Vinca minor** VING-kuh MY-nor (4–9, 9–1)

Autumn Gold



IN AUTUMN, the gardens at River Farm start to wind down as the days grow cooler and shorter. While most of the plants in the perennial borders have already put on their last show, a few are just warming up. One of these is the narrow-leaved or swamp sunflower (*Helianthus angustifolius*, USDA Zones 6–9, AHS Zones 9–4). Native to the eastern and south-central United States, this late-bloomer grows up to seven feet tall and attracts a variety of wildlife. It bears a profusion of golden flowers that look particularly striking when viewed against a clear blue October sky. 🌻

Protecting One of Your Most Valuable Assets

Growing to service you better with new offices in Annapolis, MD and Marshall, VA

Soil is the Key

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

Why choose us to care for your trees?

Our arborists are passionate about trees. They understand how much your trees mean to you and are ready to go the extra mile to ensure proper care.

Your trees are living assets that need ongoing care to thrive. The committed, knowledgeable professionals of The Care of Trees can help you protect them for today and for future generations.



*EXCLUSIVE TREE CARE
company of The American
Horticultural Society*

SERVING METROPOLITAN CHICAGO,
PHILADELPHIA, NEW YORK CITY,
SAN FRANCISCO AND WASHINGTON, D.C.

Alexandria, Virginia **703.922.8733** www.thecareoftrees.com





Every season is a growing season.

Plants thrive in fall's ideal growing conditions. Cooler rains and soil temperatures help to rejuvenate summer-stressed plants and prepare them for the winter ahead. You can help prepare them too. Just make Osmocote® Smart-Release® Plant Food a regular part of your gardening routine. Osmocote adjusts to changing soil temperatures, so your plants always get just the right amount of nutrition. Maybe that's why passionate gardeners have trusted Osmocote for 40 years — no matter what the season.