

Children's Gardening: Cultivating a Legacy of Hope

The American GARDENER

The magazine of the American Horticultural Society

March/April 2000

Windflowers

Colorful, early-blooming anemones
bring cheer to the spring garden

\$4.95



America's Violets Cold-Hardy Cacti Garden Writer Louise Beebe Wilder



Mother Nature meets Motherboard

LandDesigner® software from SierraHome gives you everything you need to plan and plant your landscape and garden. Before getting your hands dirty, you can easily design virtually any landscaping project on your personal computer.

What's more, practically any question you may have— from "How much shade do ranunculus need?" to "Which flowers attract humming birds?"—LandDesigner has the answer. And when you're finished creating your masterpiece, take a 3D stroll through your landscape or garden design. You can even view how the seasons, years and shadows will affect your design.

With all these features and more, you'll soon see how LandDesigner brings nature and technology together—beautifully.



SIERRAHome™

1-800-757-7707 www.gardening.com

©2000 Sierra On-Line, Inc. Sierra, the "S" logo, SierraHome and LandDesigner are trademarks or registered trademarks of Sierra On-Line, Inc. Digital imagery © copyright 1999 PhotoDisc, Inc.

Contents

Volume 79, Number 2 • March / April 2000



FEATURES

27 NATIVE VIOLETS

BY KIM BLAXLAND

Found in a surprisingly diverse range of habitats throughout North America and adaptable to garden culture, many of our native violets are uncommonly beautiful.

33 LOUISE BEEBE WILDER

BY SUSAN DAVIS PRICE

Louise Beebe Wilder's evocative writing style, horticultural expertise, and passion for her subject matter have made her one of America's most enduring garden writers.

38 WINDFLOWERS

BY C. COLSTON BURRELL

Braving the last chilly blasts of winter, these cheerful, bulbous perennials are mainstays of the early spring garden.

45 COLD-HARDY CACTI

BY DAVID SALMAN

Everyone knows cacti are heat tolerant. But a number of North American species are much cold hardier than you might expect.



ON THE COVER: *Anemone x fulgens*, appropriately known as scarlet windflower, opens its dramatically red blossoms in April and May. Photograph by Michael S. Thompson.

DEPARTMENTS

5 AN INSIDE LOOK

6 MEMBERS' FORUM

Tree advocacy, roof gardens revisited.

8 NEWS FROM AHS

New award for children's gardening, AHS encyclopedia honored, Plant a Row for the Hungry, scientists redefine plant kingdom.

10 SMARTGARDEN™

The importance of pH.

11 MEMBER IN FOCUS

Award winner Frank Cabot.

12 OFFSHOOTS

The itch to pinch.

15 GARDENERS INFORMATION SERVICE

Voles, broad beans, fire blight.

16 HABITAT GARDENING

Natural inspirations from California.

18 CONSERVATIONIST'S NOTEBOOK

Restoring a museum garden in Hawaii.

19 MILLENNIUM FOCUS

Stimulating our children's interest in gardening is an investment in their future.

52 BOOK REVIEWS

Herbs and vegetables, penstemons, Penelope Hobhouse on natural plantings.

56 REGIONAL HAPPENINGS

New gardens in Florida, tulips in Washington, garden days in Napa Valley.

58 NEW PRODUCTS

Coffee-based fertilizer, space-saving gardening system, cedar furniture, pruner.

61 HARDINESS AND HEAT ZONES AND PRONUNCIATIONS

62 NOTES FROM RIVER FARM

The violets are coming!





AMERICAN HORTICULTURAL SOCIETY

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

www.ahs.org

The American Horticultural Society (AHS) educates and inspires people of all ages to become successful and environmentally responsible gardeners by advancing the art and science of horticulture.

PRESIDENT / CEO Linda D. Hallman

BOARD OF DIRECTORS OFFICERS 1999-2000

CHAIRMAN Katy Moss Warner *Lake Buena Vista, Florida*
FIRST VICE CHAIRMAN Nancy S. Thomas *Houston, Texas*
SECOND VICE CHAIRMAN Paul Ecke Jr. *Encinitas, California*
SECRETARY William A. Pusey *Washington, D.C.*
TREASURER Charles Henry Smith Jr. *Middleburg, Virginia*
IMMEDIATE PAST CHAIRMAN William E. Barrick, Ph.D. *Theodore, Alabama*
Sherman Adler *West Palm Beach, Florida*
Katherine McKay Belk *Charlotte, North Carolina*
James L. Corfield *Geneva, Illinois*
Arabella S. Dane *Boston, Massachusetts*
John Alex Floyd Jr. *Birmingham, Alabama*
Dorothy T. Ireland *Birmingham, Alabama*
William R. Marken *Los Altos, California*
Theodore R. Marston *Kirkland, Washington*
Egon Molbak *Seattle, Washington*
Carol C. Morrison *Palatine, Illinois*
Jeanne Otis Shields *Greenville, Delaware*
Valerie L. Thomas *Alexandria, Virginia*
Howard McK. Tucker *Alexandria, Virginia*
Susie Usrey *Dayton, Oregon*
Robert D. Volk *San Marino, California*

PRESIDENT EMERITUS Dr. H. Marc Cathey

AHS HORTICULTURAL PARTNER
Oklahoma Horticultural Society

AHS PRESIDENT'S COUNCIL

CHAIRMAN'S CIRCLE Mrs. James L. Bartlett • Mr. and Mrs. Paul Ecke Jr. • Mrs. Enid Haupt • Mrs. Paul Mellon • Mrs. Diana Carter Samples • Mr. Charles H. Smith, Jr. • Mrs. Nancy S. Thomas • Mr. and Mrs. Robert D. Volk **LIBERTY HYDE**
BAILEY ASSOCIATES Mrs. Katherine McKay Belk • Mrs. Mary Ann Charles • Mrs. Arabella S. Dane • Mrs. William C. Ireland • Mrs. Dudley Morgan • Miss Jane Steffey **HAUPT ASSOCIATES** Dr. and Mrs. William E. Barrick • Mrs. Peg Dunnigan • Mr. Gerald T. Halpin • Mrs. Robert E. Kulp, Jr. • Ms. Carol C. Morrison • Dr. and Mrs. Walter Morgan, III • Mrs. Helen H. Spalding **PRESIDENT'S COUNCIL** Mr. and Mrs. Richard C. Angino • Mrs. Suzanne F. Bales • Ms. Norma M. Benton • Mrs. JoAnne R. Bearb • Mrs. William Beckett • Ms. Sylvia Black • Mr. and Mrs. C. William Black • Dr. Sherran Blair • Mrs. Mary K. Blount • Mr. Kurt Bluemel • Ms. Susan G. Bradford • Dr. H. Marc Cathey • Mr. and Mrs. Cason Callaway, Jr. • Ms. Barbara L. Carr • Mr. Russell Clark • Ms. Jesse Colton • Mrs. William Cooper • Mrs. Lammot du P. Copeland • Mr. James L. Corfield • Mrs. Margery H. Crane • Mr. Edward N. Dane • Mrs. Beverley W. Dunn • Mr. Thomas J. Fannon • Dr. John Alex Floyd • Ms. Carolyn V. E. Foil • Mrs. Ethel W. Foley • Mrs. Karin Gelotte • Mrs. Marion E. Greene • Mr. George Griffith • Ms. Linda Hallman • Mrs. Richard W. Hamming • Mrs. Richard W. Hanselman • Mr. and Mrs. Max Hartl • Mrs. Shirley Heberton • Mr. and Mrs. George J. Hill, III • Mr. Claude Hope • Ms. Patricia Jodasas • Ron Kline • Mr. Joseph Marko • Mrs. Elizabeth Marshall • Mr. and Mrs. Ted Marston • Mrs. Frances B. McAllister • Mr. and Mrs. Harold McClendon Jr. • Mrs. Nora M. McGowan • Mrs. Gene Miller • Mr. Egon Molbak • Mr. and Mrs. Samuel Moerman • Mr. and Mrs. Arthur Motch • Mrs. John G. Palmer • Mr. Michael Panas • Mr. William G. Pannill • Mrs. Polly Pierce • Ms. Patricia L. Pierce • Mrs. Joseph Poetker • Mr. and Mrs. Norris Preyer • Mr. and Mrs. William A. Pusey • Dr. Julia W. Rappaport • Mr. and Mrs. Alfred G. Rindler • Mr. Harry A. Risetto, Esq. • Mrs. Louisa S. Sarofim • Mrs. Josephine M. Shanks • Mr. Emanuel Shemin • Ms. Jeanne Otis Shields • Dr. and Mrs. Ralph E. Smith • Mrs. George Strawbridge • Mr. Burnley Taylor • Mr. John A. and Mrs. Valerie Thomas • Mrs. Harry J. Van de Kamp • Ms. Katy Moss Warner • Ms. Agnes Binder Weisiger • Ms. Jean S. Wells • Mrs. Harvey White • Mr. John White • Mrs. Marilyn B. Wilson • Miss Marie V. Wright

MEMBERSHIP BENEFITS

For general information about your membership, call (800) 777-7931. Send change of address notifications to our membership department at the address on the left. If your magazine is lost or damaged in the mail, e-mail to membership@ahs.org or call the number above.

THE AMERICAN GARDENER

To send a letter to the editor of *The American Gardener*, write to the address on the left or e-mail to editor@ahs.org.

ANNUAL MEETING

For information about the Society's Annual Meeting, call (800) 777-7931 or visit the annual meeting section of our Web site at www.ahs.org.

DEVELOPMENT

To make a gift to the American Horticultural Society, or for information about a donation you have already made, call our Development department at (800) 777-7931 ext. 118.

GARDENERS INFORMATION SERVICE

Need help with a gardening problem? Call the AHS Gardeners Information Service at (800) 777-7931 ext. 131 or 124 from 10 a.m. to 4 p.m. Eastern time on weekdays. Or e-mail questions to gis@ahs.org, anytime.

HORTICULTURAL BOOK SERVICE

Gardening books can be ordered at a discount from the Society's Book Service. Call (800) 777-7931 ext. 136 or e-mail to bookservice@ahs.org. Members also receive special discounts on books by linking to Amazon.com through our Web site at www.ahs.org.

INTERN PROGRAM

To receive an application for the Society's Intern Program, write to Janet Walker, director of horticulture, at the address above or e-mail her at jwalker@ahs.org. Intern application forms can also be downloaded from the Society's Web site at www.ahs.org.

RECIPROCAL ADMISSION PROGRAM

The AHS Reciprocal Admission Program offers members free and discounted admission to flower shows and botanical gardens throughout North America. A complete list of participating shows and gardens can be found in this year's *Directory of Member Benefits* and also on the Web site at www.ahs.org.

TRAVEL STUDY PROGRAM

AHS members and friends can visit spectacular private and public gardens around the world through the Society's exclusive arrangement with the Leonard Haerter Travel Company. For information about upcoming trips, call (800) 777-7931 ext. 121 or view the tour schedule on our Web site.

WEB SITE: WWW.AHS.ORG

The AHS Web site is a valuable source of information about the Society's programs and activities. It is also an important resource for getting the answers to gardening questions, finding out about gardening events in your area, and linking to other useful Web sites. AHS members can reach the members-only section of the Web site by typing in this year's password: *clematis*.

YOUTH GARDEN SYMPOSIA

For information about the Society's annual Youth Garden Symposia (YGS), call (800) 777-7931, or visit the YGS section of our Web site.

THE AMERICAN GARDENER

DIRECTOR OF MEMBERSHIP

Joe Lamoglia

EDITOR

David J. Ellis

MANAGING EDITOR

Mary Yee

ASSOCIATE EDITOR

Rita Pelczar

COMMUNICATIONS ASSISTANT

Margaret T. Baird

DESIGN CONSULTANT

Brian Noyes

EDITORIAL ADVISORY BOARD

CHAIR John Alex Floyd Jr.

Birmingham, Alabama

Nina L. Bassuk

Ithaca, New York

Richard E. Bir

Brevard, North Carolina

John E. Bryan

San Francisco, California

John L. Creech

Hendersonville, North Carolina

Keith Crotz

Chillicothe, Illinois

Panayoti Kelaidis

Denver, Colorado

Richard W. Lighty

Greenville, Delaware

Elvin McDonald

West Des Moines, Iowa

ADVERTISING AHS Advertising Office
4350 DiPaolo Center
Suite B
Glenview, IL 60025
(847) 699-1707
FAX: (847) 699-1703

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 *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 \$5 per copy.

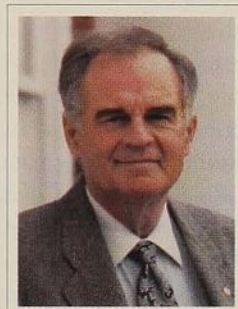
Copyright ©2000 by the American Horticultural Society.
Printed in the U.S.A.

An Inside Look

"At 11 my hands were small enough to gently arrange miniature bunches of violets in discarded glass pimento jars."

I HAD THE RIGHT-SIZED HANDS, free time after school, and an abundant crop of violets growing on vacant lots near my childhood home in Winston-Salem, North Carolina. At 11 my hands were small enough to gently arrange miniature bunches of violets in discarded glass pimento jars. I sold all I could pick at the heady sum of five cents a bunch, and each person who bought a tiny bouquet had a different story about where and when the color and fragrance of violets first enthralled them.

Spring forward 30 years to when uninvited violets invaded the perfect green lawn that was then a gardener's badge of honor. To remove them without using herbicides, I applied lime and gypsum to reduce the acidity and the water-holding capacity of the soil. By understanding the selectivity of pH, I knew it was possible to grow desired forms of violets successfully in a soil with a pH range between 5 and 6, yet eliminate unwanted ones in a lawn by making sure the soil there is maintained at or near 7. This is one example of what we at AHS are calling SMARTGARDEN™ practices. Along with understanding plants' needs for light and water, and knowing the USDA Hardiness and AHS Heat zones they will thrive in, we need to take advantage of centuries of research and experience to be *smart* about how to site, select, and design our gardens. As part of the SMARTGARDEN™ program, the Society is in the process of coding plants with descriptive icons that will guide gardeners in selecting the right plants for their gardens. Coded plants will be released on the AHS Web site (www.ahs.org) as they become available.



In this issue, Kim Blaxland tells us about the best North American violets for naturalistic gardens, where—as we already know—most will thrive in soils with a pH of 5 to 6. C. Colston Burrell follows up his article on fall-blooming anemones with one on spring-flowering selections. And David Salman describes cold-hardy native cacti, which do best in slightly alkaline soils.

In addition, Susan Davis Price chronicles the life of Louise Beebe Wilder and explains why Wilder's books are an important part of our gardening heritage.

Our Millennium Focus section reports on how improved educational programs and a better understanding of how to accommodate children's needs in home gardens are helping children get an early start on environmentally responsible gardening practices.

My hands are now too large to pick the violets and medication has dulled my sense of smell, but I still have a vivid memory of the aroma. Purple went on to become my favorite color and my granddaughters—Misses Pink, Peach, Emerald, and Ruby—call me Dr. Purple.

Ever in green—and purple,

H. Marc Cathey

—H. Marc Cathey, AHS President Emeritus

Members' Forum

"I encourage readers to monitor the significant trees in their own neighborhoods. When necessary, take positions of advocacy to ensure that special trees live on for the benefit of our successors. Even champion trees...are not always safe from the chainsaw."

TREE ADVOCACY

THANK YOU for Guy Sternberg's most inspiring article on big trees (November/December 1999). It is so heartening to learn that work goes on and is encouraged. My fear is that identifying these majestic trees is not enough. We need strong, ongoing legislation that protects these trees and others that, while not "champions," are big, historic trees that contribute so much to our communities. These great trees are often "in the way" of developers who have different goals, and the developers just as often win their way. In my own community of Towson, Maryland, we recently saw three perfectly healthy 50-year-old willow oaks cut down because a developer wanted people to be able to see his signs.

What do others think? Are there any success stories?

Camay Woodall
Towson, Maryland

GUY STERNBERG REPLIES: Camay Woodall's observations about protection of special trees are very much on target. A tree's hazardous condition always must be balanced against its historic value, but some really ragged old trees—such as the 300-year-old Balmville cottonwood (*Populus deltoides*) in Newburgh, New York—have been stabilized and saved when citizens are willing to get involved. There are some success stories out there, but each success lasts only until the next threat, so continued vigilance is manda-

tory. I encourage readers to monitor the significant trees in their own neighborhoods. When necessary, take positions of advocacy to ensure that special trees live on for the benefit of our successors.

Even champion trees in good condition

are not always safe from the chainsaw. A number of advocates for champion and historic trees are engaged in an ongoing campaign to save the National Co-Champion American smoke tree (*Cotinus obovatus*), located in West Lafayette, Indiana, from removal to make way for a new building at Purdue University. Transplanting is the only

remaining option because—as so often happens—the architect's plans for the proposed building ignored the tree.

University officials are sympathetic but have been hesitant to transplant the tree because of the cost involved, and because success is not guaranteed. Of course, nothing is certain when dealing with living organisms, but experts who have moved the largest trees ever transplanted believe this tree can be moved successfully. It would be the first time a National Champion tree has been transplanted. Just think about the great publicity such a project would generate for the university—and the awareness it could awaken in people regarding the value of special trees!

A good start toward advocacy would

be to write to President Steven Beering, Purdue University, West Lafayette, IN 47907 to reassure him that he would be investing in the future by saving his university's National Champion smoke tree. A fund has been set up to help Purdue defray the cost of the transplanting; to contribute, send a check payable to "Purdue Foundation" and marked "Smoke Tree Fund" to the Agricultural Development Office, 1140 Agricultural Administration Building, Purdue University, West Lafayette, IN 47907.

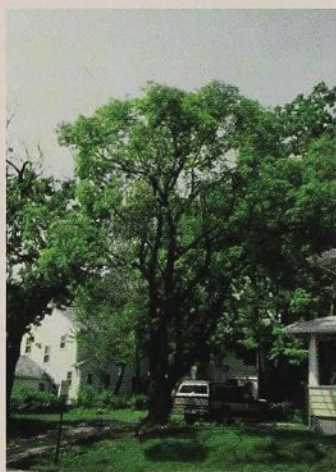
Remember the Lorax in one of the Dr. Seuss books? He said, "I speak for the trees, for the trees have no tongues!"

ROOFTOPS REDUX

AN AMERICAN HORTICULTURAL SOCIETY member's "green roof" is about to join the short list of eco-roofs you described in "Updated Rooftops" in the September/October issue of *The American Gardener*. I am having a Soprema Sopranature Eco-Roof—the first in the United States—installed on my garage in Washington, D.C.

Since I live on the "mount" in the Mount Pleasant neighborhood, the roof of my garage is level with my backyard. Most of my neighbors have built wooden decks on their garage roofs, but I wanted instead to expand my garden. The Humane Society had previously certified my backyard as an "Urban Wildlife Sanctuary" and I was hoping to attract an even greater variety of birds, butterflies, and other animals by adding a sunny 20-by-20-foot extension to my shady garden.

I found the Soprema Web site on the Internet and eventually contacted the company's local representative, Rob



Endangered champion smoke tree in West Lafayette, Indiana.



Soprema employees lay down a waterproof membrane on Iris Rothman's garage roof to prepare it for "green" roofing.

Bushnell in nearby Takoma Park, Maryland. Soprema, a company based in France but with branches in Canada and the United States—has installed over one million square feet of its "green" roofs in France and in Canada. Mine is the first Soprema roof to be built in the United States.

The Soprema system consists of a waterproofing membrane—which also contains root-repelling agents to keep plant roots in check—a drainage layer, a layer of filter fabric to keep the soil from clogging the drainage layer, and several inches of Sopraflor substrate, a lightweight artificial soil specially designed to support plants grown on a roof.

In return for help with the design and installation, I am allowing Soprema to use my garage roof as a "demonstration garden." It will be open to the public by appointment this year. If you are interested in seeing it or learning more about the system, please contact Rob Bushnell at (301) 270-0522, or visit Soprema's Web site at www.sopremacanada.com.

*Iris Rothman
Washington, D.C.*

MAKING WAVES IN THE GENE POOL

THERE ARE BOTH advantages and disadvantages to "maintaining the integrity of regional plant genotypes," a prominent idea in the prairie restoration movement as described in your article on prairie nurseries (November/December 1999). Certainly, plants often are adapted to regional environmental factors, such as climate, pollinators, or diseases. A plant that

thrives in Minnesota may languish in Indiana. But this will often depend on the particular species involved. Species with high levels of gene movement among populations may not be strongly regionally differentiated. The idea that nature is static, and that it is ecologically imperative to preserve the state of nature exactly as we find it as we enter the 21st century, ignores the evolu-

tionary reality of gene flow and indeed the ebb and flow of entire species that has taken place over even fairly recent time. After all, only 20,000 years ago glaciers covered much of North America's current prairie habitat.

Attempting to maintain a static regional gene pool can also have detrimental long-term effects. Long-term viability of populations and species may often depend on genetic variation. Such variation provides the raw material for evolutionary response to changes in climate or biotic conditions—global warming, a new disease, or loss of a pollinator, for example. A thousand years ago, a beneficial gene conferring disease resistance may have spread by gene flow from Minnesota, where it originated, to Indiana, where it helped plants resist disease. Today, fragmentation of prairie habitat has made such a journey nearly impossible. Currently, humans may be the primary means by which beneficial gene flow can occur.

Ideally, nurseries and backyard gardeners should act to preserve as much of a species's gene pool as possible by propagating from local stock and, in particular, from different ecological settings within a region. But I believe less concern should be shown about "polluting" the "purity" of regional gene pools with plants from outside the region. That is a natural process that has always taken place and may be essential for long-term viability of populations and species.

*Francis Groeters
Catskill Native Nursery
Kerhonkson, New York*

CALL FOR THE WILD

THANK YOU for my first issue of *The American Gardener*, which replaced my subscription to *Wild Garden*. I have reviewed *The American Gardener*, and I am pleased with the magazine's format and the American Horticultural Society's mission statement: "...educates and inspires people of all ages to become...environmentally responsible gardeners..."

But I miss *Wild Garden*. Please consider as many articles as possible that address naturalistic gardening practices. I am making the transition toward natural landscaping, attracting wildlife by adding ponds and feeders, and similar activities. I am also an active member of Wild Ones, and I read as much as I can find on such topics.

Although your magazine currently includes such topics, please consider this request to increase your coverage. Thanks.

*Ken Horvath
Shelby Township, Michigan*

EDITOR'S NOTE: Thanks for your letter and for the continuing support of you and other *Wild Garden* subscribers. Our "Habitat Gardening" department, which explores how gardeners throughout North America can replicate regionally native plant communities and natural habitats in their landscapes, debuts in this issue. And our feature articles on windflowers, hardy cacti, and native violets include information about how these plant groups can be incorporated in naturalistic garden settings.

We will continue to seek out and publish informative articles on "wild gardening," but our overall content will continue to reflect the broad range of horticultural interests and geographical diversity represented in the American Horticultural Society's international membership.

WRITE US! Do you want to voice an opinion or share some gardening information? We'd like to hear from you. Letters to the editor 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.



News

AHS Programs and Events • Horticultural News and Research

New AHS Award in 2000



IN RECOGNITION OF her pioneering contributions to the field of youth gardening, Michigan State University horticulturist Jane L. Taylor has been honored as the namesake for a new AHS Great American Gardeners Award that will recognize excellence in youth gardening. Appropriately, Taylor has also been declared the award's first winner. In 1987, Taylor founded and served as first curator of

the Michigan 4-H Children's Garden, located on the Michigan State University campus in East Lansing. The first of its kind—and a hit since its inception—the 4-H Children's Garden has served as the design model for youth gardens at public garden sites nationwide. Although now retired from her curatorial duties, Taylor continues to serve as an adjunct faculty member in the university's Department of Horticulture and is at work on a book about designing interactive gardens for children and families. "There is a desperate need for public gardens to present plants in a special child's area in a creative, fun way, to emphasize the importance of plants in a child's everyday life," she says. Taylor, who also serves on the AHS National Children and Youth Garden Advisory Panel, will receive her award during the opening banquet at this year's AHS National Youth Garden Symposium, June 8 to 10 in Lake Buena Vista, Florida. For more on the symposium, see page 22 or visit the youth gardening section of the AHS Web site (www.ahs.org).

Plant a Row for the Hungry

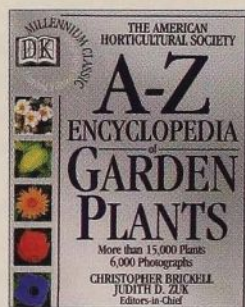
AS YOU START PREPARING your vegetable garden this spring, think about joining gardeners around the country in supporting the Plant A Row For the Hungry campaign. This nationwide program, initiated and sponsored by the Garden Writers Association of America (GWAA), encourages gardeners to set aside space in their garden to grow fresh vegetables and fruit to be donated to soup kitchens, homeless shelters, and other community-based organizations that feed the hungry.

Vegetables harvested from the Plant A Row (PAR) garden at River Farm last year benefited a local soup kitchen in the

Alexandria, Virginia, area. Our staff, interns, and volunteers are already planting early spring crops for this year.

Before planting, it's a good idea to discuss your plans with the group to which you will be donating the food to find out what produce is most useful. If you are not sure where to donate produce, contact your local chamber of commerce or community service organization, or call PAR's toll-free number, (877) GWAA-PAR. For more information about the Plant a Row program, visit the GWAA Web site at www.gwaa.org.

AHS Encyclopedia Honored



The American Horticultural Society A-Z Encyclopedia of Garden Plants, published in 1997 by Dorling Kindersley in New York, has been named the official plant reference guide for the internationally acclaimed Philadelphia Flower Show. The encyclopedia will be used as the official general standard for all horticultural entries at the show, hosted

annually by the Pennsylvania Horticultural Society. This year's flower show is being held March 5 to 12 at the Pennsylvania Convention Center.

Southern Gardening School

THIS SPRING, AHS and *Southern Living* magazine are once again co-sponsoring a series of gardening schools at prominent garden destinations in the Southeast and South. Taught by *Southern Living* gardening experts, the schools are hour-long lectures on topics such as landscape design, use of color in the garden, and plant selection. A complete listing of garden schools—including dates and ticket information for individual schools—can be found in the ad on the back cover of this magazine.

Plant Kingdom Overthrown?

BASED ON A BETTER UNDERSTANDING OF the genetic makeup of plants, an international group of researchers has proposed radically altering the structure of the plant family tree, splitting the plant kingdom into three parts.

Five years ago the Green Plant Phylogeny Research Coordination Group—better known as "Deep Green"—set out to examine the evolutionary relationships among green plants. Two

hundred scientists from 12 countries contributed to this effort to develop an accurate family tree for green plants, merging molecular, fossil, and morphological data. The initial findings of the project were presented last August at the 16th International Botanical Congress held at the Missouri Botanical Garden in St. Louis.

The project's findings challenge long accepted notions about the relationships among plant species. Limited by the information available to him 250 years ago, Carolus Linnaeus based his classification system for plant groups primarily on the number and arrangement of reproductive organs. In contrast, Deep Green delved into the genetic make-up and microscopic internal structures of plants to better understand how they are related. Employing recent advances in cladistics—comparing evolutionarily relevant traits among organisms—and genomics—tracking genetic changes over time—the project made some surprising discoveries.

Among the most important of these is that relationships among organisms should be viewed as “nested” according to their genetic similarities rather than “ranked” according to an artificial, superimposed order. Based on this new analysis, the Deep Green team proposes that plants should no longer be considered as a single kingdom. Instead, they should be divided into three kingdoms: green plants including all land plants, red plants, and brown plants—the last two representing primarily algae and seaweeds. Research indicates that each kingdom developed independently, descending from a different single-celled organism. Investigations also revealed that fungi, formerly classified as part of the plant kingdom, are more closely related to animals.

The evolution of flowering plants has long baffled scientists. In an effort to throw some light on the conundrum, Deep Green researchers studied three common, rapidly mutating DNA sequences in chloroplasts—cells in leaf and green stem tissue that are the sites of photosynthesis—that serve as useful tools for differentiating species. According to Brent Mishler, professor of integrative biology at the University of California at Berkeley and co-principal investigator of the project, this research identified a little-known shrub from New Caledonia in the South Pacific called *amborella* as the closest living relative of the first flowering plant. Working independently, three other research teams confirmed this finding.

Understanding the genetic relationships among organisms provides researchers with clues that are helpful in locating useful products in unknown organisms. “It’s like a roadmap to biodiversity,” explains Mishler. Potential applications include identifying likely sources of new medical compounds in plants, engineering for useful traits such as drought tolerance, identifying disease-causing organisms, and controlling invasive species.

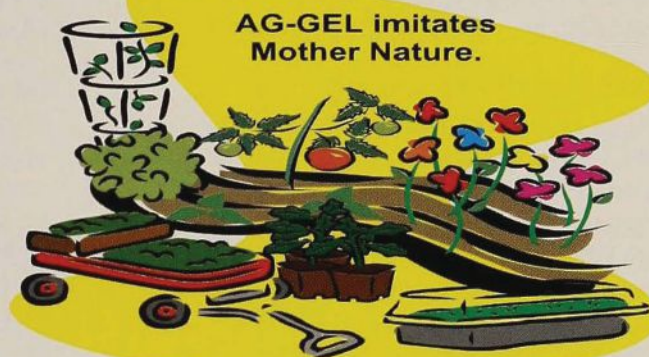
Deep Green’s findings may soon change the way taxonomy is taught in the classroom. Mishler has already adopted the phylogenetic approach to classification in courses he teaches at Berkeley. He reports that response to this taxonomic revolution has in general been quite positive.

For more information about the Deep Green Project visit its Web page at ucjeps.herb.berkeley.edu/bryolab/greenplantpage.html

Ag-Gel™

Professional formula plant food is now available for home use !

This amazing patent pending formula will give your plants the essential nutrients needed for vigorous growth, beautiful flowers and more from your garden. Try AG-GEL on your indoor and outdoor plants and you will be *amazed!* You can expect larger more beautiful flowers, more vegetables and fruits, faster growth, all from this natural formula. Why? Because healthy soil means healthy roots, healthy roots mean healthy plants, and healthy plants mean a fabulous garden.



For more information call: Essential Solutions
Toll Free: 1-877-435-4769
WEBSITE: ag-gel.com

The Cedar Store

We Carry A Full Line of Cedar Swings and Gliders, Garden Benches, Tables, Chairs and Accessories.

To Order Visit Our Online Store

www.cedarstore.com/ag.html

**OR Call Toll Free
(888) 293-2339
Free Brochure**

GREAT GIFTS!



**Order Today
Any Swing 4', 5', or 6'
Receive FREE Hardware
and FREE Comfort Springs
(\$45.00 Savings!)**



Handmade by PA Amish Craftsmen

SMARTGARDEN™ — Soil pH



Understanding soil chemistry and how it affects plants

Most gardeners understand that plants generally grow best in a soil with a pH between 6.0 and 7.0. But why is the pH of the soil so critical to plant health? A brief foray into the world of soil chemistry will explain its significant influence on plant growth and SMARTGARDEN™ practices.

pH is a measurement of the degree of acidity or alkalinity of a solution as determined by the concentration of hydrogen ions. The pH scale is a continuum that rates solutions from most acidic—0—to most alkaline—14—with 7 being neutral.

WHAT DETERMINES SOIL pH?

The inherent pH of a soil is determined by many factors, such as the type of rock from which the soil originated, the amount of precipitation, and the type of vegetation growing in it. Most plants can survive in soils with a fairly wide pH range—from about 4 to 9—but they may not thrive at the extremes of that range because mineral elements important to plant growth become chemically bound in the soil (see chart below). Deficiencies of these essential nutrients damage plants and make them more susceptible to pests and diseases. In alkaline soils, elements such as copper, iron, and manganese become less available. In acidic soils, phosphorus, potassium, and calcium are locked up.

Additionally, acidic soils inhibit the survival of certain beneficial organisms, including earthworms, my-

corrhizal fungi, and many bacteria. These organisms are responsible for the decay of organic matter and help plants obtain nutrients.

While most plants grow best in a nearly neutral soil, there are exceptions. Members of the heath family (Ericaceae) such as blueberries, azaleas, rhododendrons, and camellias grow better in a soil with a somewhat lower pH—usually between 4.5 and 6.0. When grown in neutral or slightly alkaline soils, these plants often display symptoms of iron deficiency such as yellowing of leaves between the veins.

Another indirect effect of soil pH is its influence on the control of certain disease-causing soil microorganisms. For example, the pathogen that causes common potato scab, *Streptomyces scabies*, is not active below a pH of 5.4. By maintaining a pH below this level for growing potatoes, the disease is effectively controlled with a cultural practice rather than a pesticide.

HOW TO ADJUST SOIL pH

Before planting a garden, test your soil to determine its pH. Several types of soil test kits are available for home gardeners, but a professional soil test laboratory will provide the most reliable results. These labs, often associated with state universities, can provide an accurate assessment of your soil type and its pH as well as recommendations for adjusting the pH and nutrient levels for the plants you want to grow.

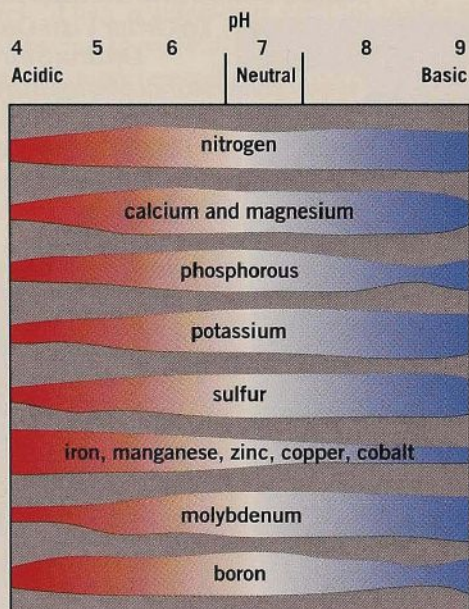
Selecting plants suited to your soil's existing pH minimizes or eliminates the need for adjustments. However, if your soil pH restricts you from growing the plants you desire, you will need to amend the soil and monitor it to keep it within the desired range. Limestone—usually ground or dolomitic—is applied to raise the pH, or decrease the acidity. Sulfur or aluminum sulfate are the most commonly recommended supplements for lowering the pH—or increasing the acidity.

The amounts needed to produce the desired pH level will vary depending on the texture of your soil—the relative quantities of sand, silt, and clay—and the amount of change needed. Modifying the pH of your soil takes time; it may require repeated applications of limestone or sulfur over several seasons to achieve the correct level. You will benefit most from soil amendments that are thoroughly worked into the soil.

Even in an established garden, it's advisable to monitor your soil pH regularly; it may fluctuate with the decomposition of organic matter, the assimilation of nutrients by plants, and the leaching of elements beyond the root zone. Maintaining an appropriate soil pH is an important part of creating a healthy, well-balanced environment for your plants—and it is a key element of the SMARTGARDEN™ program.

Rita Pelczar, Associate Editor

Soil pH and Nutrient Availability



The chart above shows the relationship of soil pH and the availability of various nutrients to plants. A pH in the neutral range enables most plants to maximize intake.

member IN FOCUS

Frank Cabot: AHS Award Winner

by Margaret T. Baird

ON PAPER, HE DESCRIBES himself simply as “a horticultural enthusiast who has gardened in Cold Spring, New York, and La Malbaie, Quebec.” Period. If you aren’t acquainted with Frank Cabot, that modest assessment of his botanical career might conjure up a vision of the average weekend gardener puttering about his backyard. And when we tell you that Frank Cabot has been honored as the 2000 recipient of the American Horticultural Society’s Liberty Hyde Bailey Award, given for all-around horticultural excellence, it might really set you to wondering: What could make the gardening accomplishments of this “horticultural enthusiast” so noteworthy?

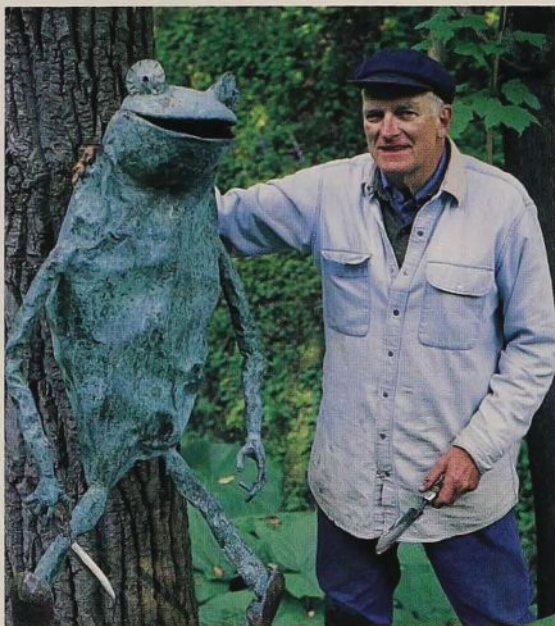
NOT-SO-AVERAGE GARDENER

It’s a good thing Frank Cabot’s deeds have been recorded by other than his own hand, for Cabot is no mere enthusiast, and he’s certainly no average gardener. While Cabot’s interest in gardening developed from his family background—two of his uncles were landscape architects—he received no formal training in horticulture. Besides his long-held leadership positions in horticultural organizations in both the United States and Canada—the U.S. National Arboretum, the New York Botanical Garden, Wave Hill, and the Royal Botanic Gardens among them—both of the places Cabot has “gardened” are also private-turned-public gardens: Stonecrop Gardens in Cold Spring, and Les Quatre Vents in Quebec. In addition, he’s the founder and chairman of The Garden Conservancy, a non-profit organization devoted to the preservation of exceptional private gardens in North America. In that role, Cabot has championed the conservation of eighteen historic, private landscapes in eleven states—all of which now open their gates to visitors at various times throughout the year.

The site of Cabot’s original brainstorm—and what became the Garden Conservancy’s flagship project—is the Ruth Bancroft Garden, an extraordinary, four-acre private collection of succulents and cacti in Walnut Creek, California. Cabot’s introduction to the garden was an impromptu visit on the way to a plant society meeting. What Cabot found there was most unexpected. “It’s a dry garden—mostly cactus, and I’m not a cactus person at all—but I found it terribly exciting,” he says. “The way it all fit together was so beautiful! I’d never seen anything like it, and I literally felt shivers run up my spine as we walked through.” On inquiry, Cabot realized that the garden’s elderly owner, Ruth

people, myself included, were skeptical of the Garden Conservancy at first—wondering if it could ever go national. It’s clear now it’s really a movement that’s continuing to expand.”

According to another long-time Cabot colleague, Marco Polo Stufano—director of horticulture at New York City’s Wave Hill and also a 1999 AHS award winner—Cabot “is the consummate plantsman. He’s so respected in horticulture in this country,” says Stufano. “I can’t think of any single person anywhere who has influenced American gardening more—in a hands-on, down-to-earth sort of way. And he’s a bit of a madman, really! Everyone wonders when he’s going to stop, but thank goodness he hasn’t yet.”



Frank Cabot and an amphibious friend take a break from weeding at Les Quatre Vents, his garden in Quebec.

Bancroft, had no one to help with its upkeep. “I thought: I’ve got to figure out a way to help her preserve this poetry, this artwork, before it’s lost forever.”

That was back in 1988. Now 6,000 members strong and entering its eleventh year, the Garden Conservancy, headquartered in Cold Spring, continues its mission of locating and preserving fine American gardens. “Frank thinks large,” says colleague Richard Lighty, the 1999 winner of the Liberty Hyde Bailey Award and former director of the Mt. Cuba Center for the study of Piedmont Flora in Greenville, Delaware. “Many

FORGING AHEAD

The 75-year-old Cabot continues to travel extensively, satisfying his penchant for alpine flora and checking in on pet projects. “I’m just a promoter by nature,” he explains. He’s in the process of writing a book about Les Quatre Vents, his garden in Canada, and he is involved in a new garden rescue across the Atlantic. He and his wife, Anne, have been the catalysts in saving the gardens at Aberglasney, a 16th-century estate in Llangathen, Wales.

“We’ve got Graham Rankin, the best gardener in Britain, taking care of the eight-acre garden and its two acres of walls,” says Cabot.

Previously abandoned for 75 years, the historic garden’s infrastructure—and popularity—has now been restored after a four-year effort and is the subject of both a recent BBC documentary and a book co-written by Penelope Hobhouse. Just another feather in Cabot’s already crowded cap of achievements. “Frank is certainly one of 20th-century America’s greatest and most generous gardeners,” Lighty states unequivocally. “And,” he adds, “he should be one of the most celebrated.”

Margaret T. Baird is communications assistant for The American Gardener.

Offshoots

The Itch to Pinch

by Tim Morehouse

FROM THE JOURNAL of a garden tour a few years ago: "...the upper garden appeared to be completely private. Marcy and I noticed a pot of succulents covered with golden, Margueritelike blooms. We admired the plant in front of our hostess—but alas, she didn't offer us a snippet. When

no one was looking, I pinched generous tendrils of it and discreetly handed them to Marcy. Of course, we made certain that our hostess knew nothing of the heist. At lunch, I sat opposite Marcy. We could barely finish our meal because each time we caught the other's eye, we laughed."

I brought home that snippet—it was ice plant, *Delosperma nubigenum*—concealed in a dirty sock. A few days after I planted it, it bloomed. My grandmother always said that nothing grows like a stolen plant.

But the plundered plant came back to haunt me. Shortly after my tour, I gave a lecture and slide show on hardy English ferns to about 50 attendees at a local garden center. After the talk, we toured the center's grounds, and I pointed out examples of rare ferns that were popular in the 19th century.

The next day, I received a call from the garden center's chief horticulturist. He told me the center's collection of ferns had been raided overnight, and only the rarest ferns had been taken—those I had featured in my lecture. He was almost in tears: "Tim, I feel as if I've been violated!"

When some gardeners see a plant they don't have, they feel they *must* have it, and if you are growing it, you *must* offer a snippet—or else. It's the "or else" that now pricks my conscience, although I'm by no means alone in having resorted to desperate measures to satisfy my yearning.

The supervisor of a public conservatory claims the worst offenders are little old ladies with shopping bags. He once caught a woman using scissors on the conservatory's tropical plants; she had filled her bag by the time he stopped her, yet she was indignant when confronted: "But you have more than enough. You can't



even see where I've taken my cuttings!" That conservatory's cactus collection is now surrounded by a glass wall three feet high. At another botanical garden, some of the outdoor displays are ringed with wire fencing—the kind ranchers use to protect livestock from predators.

Plant stealing is not a modern-day phenomenon. In *Rural Hours by a Lady* (G.P. Putnam, 1850), Susan Fenimore Cooper wrote, "Many people...consider [flowers] as public property, though cultivated at private expense. [T]he other day...[I] saw a little girl...put her hand within the railing of a garden and break off several very fine plants, whose growth the owner had been watching with care and interest for many weeks."

In another example, Cooper wrote, "The offender was a full grown man dressed in broadcloth to boot and evidently a stranger; he passed before a pretty yard, gay with flowers, and unchecked by any scruple of good manners, or good morals, proceeded to make up a handsome bouquet."

And the itch to pinch does not affect only amateur gardeners. During the Victorian fern craze in England, there was a case of plant pinching that involved two prominent rival collectors: Edward J. Lowe, author of *Ferns, British, and Exotic* (8 vols., London, 1867), who roamed the British Isles for new varieties—in most cases naming them after himself—and Charles Drury, author of *British Ferns and Their Varieties* (London, 1910). Drury had named a fern *Athyrium filix-femina* Grantiae—after receiving a division of the plant from a Mrs. Grant. As Drury related, "Sometime afterwards a person whose individuality we think it only kind not to particularize further, and who had heard of its beauty, came to see it, and was so interested that he asked to take another parting look. It was afterwards remarked that the plant seemed rather in a state of confusion, and that the soil had been a little agitated, but nothing more was thought of it, until a year or so later, when it became known that a plant exactly similar had been exhibited at one of the Royal Horticultural Society's shows as *Edwardsii*, and had received a First Class Certificate."

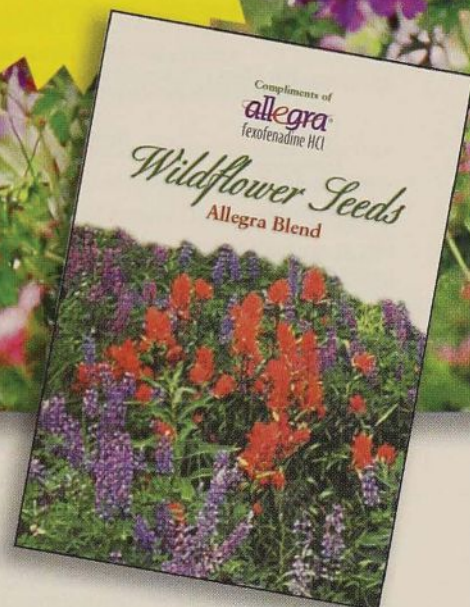
Most of us don't name a stolen plant after ourselves, and we're not bad people—but we somehow convince ourselves that taking part of someone else's plants is not really *stealing*. As Marco Polo Stufano, director of horticulture at New York's Wave Hill, once confessed in an article in *Lawn and Garden* magazine, "I...remember stealing a cutting and rooting it at home...you might say I also have a career in crime."

I still get the itch to pinch, but I've resolved to control it. I have a book by Oscar Wilde with the following quotation: "The only way to get rid of temptation is to yield to it." In the margin in red ink, I have written—and emphatically underscored—the word: NO.

Tim Morehouse is a free-lance writer living in Cincinnati, Ohio.



FREE
packet of
wildflower seeds
from Allegra®!
Plus a \$5 rebate on
your next purchase!



Be A Part of Your Garden.

Don't let allergies rob you of life's everyday pleasures. Whether you're gardening in the yard, going for a walk, or relaxing on a park bench, Allegra gives you the ability to *enjoy the world around you.*™

Receive a \$5 rebate and a complimentary packet of wildflower seeds from Allegra! It's easy. After filling your prescription for Allegra, fill out and send in the mail-in certificate below along with your original pharmacy receipt.

Only Allegra has fexofenadine for effective nondrowsy relief of seasonal allergy symptoms. For people twelve and older. Ask your doctor or pharmacist for more information. Side effects are low and may include drowsiness (1.3%), cold or flu (2.5%), nausea (1.6%), or menstrual pain (1.5%).

allegra®
fexofenadine HCl 60mg capsules

So go outside and... *Enjoy the world around you.*™

visit us at www.allegra.com Please see additional important information on the next page.

To receive your \$5 rebate and FREE Allegra® wildflower seeds:

After filling your prescription for an Allegra product, complete this certificate (front and back) and mail it with your proof of purchase (original pharmacy receipt).

Offer Expires: 7/31/00.

Name _____

Address _____

City, State, Zip _____

This certificate may not be reproduced and must accompany this request. Proof of purchase will not be returned. This is a prescription product; therefore, a prescription must have been filled in order to receive an Allegra rebate and an Allegra wildflower seed packet. The rebate redemption amount is considered a discount on the purchase price of the product. Not valid for prescriptions covered by Medicare or Medicaid or similar federal or state health care programs. Amount of rebate not to exceed \$5.00 or copay, whichever is less, and shall not be submitted to any third party payer, public (e.g. Medicaid) or private, for reimbursement. Void where prohibited by law. Void outside the U.S.A. or if taxed, restricted, prohibited, assigned, reproduced or transferred. It is illegal for any person to sell, purchase, or trade or offer to sell, purchase, or trade or to counterfeit this certificate. Limited to one rebate and one seed packet per person. Please allow 4-6 weeks for delivery of your rebate check and your seed packet. Complete this mail-in certificate and attach your proof of purchase (original pharmacy receipt).

Mail to: Southern Living Gardening Offer
P.O. Box 29277
Shawnee Mission, KS 66201-9697

Brief Summary of Prescribing Information as of June 1998A

ALLEGRA® (fexofenadine hydrochloride) Capsules 60 mg

INDICATIONS AND USAGE

ALLEGRA is indicated for the relief of symptoms associated with seasonal allergic rhinitis in adults and children 12 years of age and older. Symptoms treated effectively include sneezing, rhinorrhea, itchy nose/palate/throat, itchy/watery/red eyes.

CONTRAINDICATIONS

ALLEGRA is contraindicated in patients with known hypersensitivity to any of its ingredients.

PRECAUTIONS

Drug Interactions

Fexofenadine has been shown to exhibit minimal (ca. 5%) metabolism. However, co-administration of fexofenadine with ketoconazole and erythromycin led to increased plasma levels of fexofenadine. Fexofenadine had no effect on the pharmacokinetics of erythromycin and ketoconazole. In two separate studies, fexofenadine HCl 120 mg BID (twice the recommended dose) was co-administered with erythromycin 500 mg every 8 hours or ketoconazole 400 mg once daily under steady-state conditions to normal, healthy volunteers (n=24, each study). No differences in adverse events or QTc interval were observed when subjects were administered fexofenadine HCl alone or in combination with erythromycin or ketoconazole. The findings of these studies are summarized in the following table:

**Effects on Steady-State Fexofenadine Pharmacokinetics
After 7 Days of Co-Administration with Fexofenadine Hydrochloride 120 mg
Every 12 Hours (twice recommended dose) in Normal Volunteers (n=24)**

Concomitant Drug	C _{max} SS (Peak plasma concentration)	AUC _{0-12h} (Extent of systemic exposure)
Erythromycin (500 mg every 8 hrs)	+82%	+109%
Ketoconazole (400 mg once daily)	+135%	+164%

The changes in plasma levels were within the range of plasma levels achieved in adequate and well-controlled clinical trials. The mechanism of these interactions has been evaluated in *in vitro*, *in situ* and *in vivo* animal models. These studies indicate that ketoconazole or erythromycin co-administration enhances fexofenadine gastrointestinal absorption. In vivo animal studies also suggest that in addition to enhancing absorption, ketoconazole decreases fexofenadine gastrointestinal secretion, while erythromycin may also decrease biliary excretion.

Carcinogenesis, Mutagenesis, Impairment of Fertility

The carcinogenic potential and reproductive toxicity of fexofenadine hydrochloride were assessed using terfenadine studies with adequate fexofenadine exposure (based on plasma area-under-the-curve [AUC] values). No evidence of carcinogenicity was observed when mice and rats were given daily oral doses of 50 and 150 mg/kg of terfenadine for 18 and 24 months, respectively; these doses resulted in plasma AUC values of fexofenadine that were up to four times the human therapeutic value (based on a 60-mg twice-daily fexofenadine hydrochloride dose).

In *in vitro* (Bacterial Reverse Mutation, CHO/HGPRT Forward Mutation, and Rat Lymphocyte Chromosomal Aberration assays) and *in vivo* (Mouse Bone Marrow Micronucleus assay) tests, fexofenadine hydrochloride revealed no evidence of mutagenicity.

In rat fertility studies, dose-related reductions in implants and increases in postimplantation losses were observed at oral doses equal to or greater than 150 mg/kg of terfenadine; these doses produced plasma AUC values of fexofenadine that were equal to or greater than three times the human therapeutic value (based on a 60-mg twice-daily fexofenadine hydrochloride dose).

Pregnancy

Teratogenic Effects: Category C. There was no evidence of teratogenicity in rats or rabbits at oral terfenadine doses up to 300 mg/kg; these doses produced fexofenadine plasma AUC values that were up to 4 and 37 times the human therapeutic value (based on a 60-mg twice-daily fexofenadine hydrochloride dose), respectively.

There are no adequate and well-controlled studies in pregnant women. Fexofenadine hydrochloride should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nonteratogenic Effects. Dose-related decreases in pup weight gain and survival were observed in rats exposed to oral doses equal to and greater than 150 mg/kg of terfenadine; at these doses the plasma AUC values of fexofenadine were equal to or greater than 3 times the human therapeutic values (based on a 60-mg twice-daily fexofenadine hydrochloride dose).

Nursing Mothers

There are no adequate and well-controlled studies in women during lactation. Because many drugs are excreted in human milk, caution should be exercised when fexofenadine hydrochloride is administered to a nursing woman.

Pediatric Use

Safety and effectiveness of ALLEGRA in pediatric patients under the age of 12 years have not been established. Across well-controlled clinical trials in patients with seasonal allergic rhinitis, a total of 205 patients between the ages of 12 to 16 years received doses ranging from 20 mg to 240 mg twice daily for up to two weeks. Adverse events were similar in this group compared to patients above the age of 16 years.

Geriatric Use

In placebo-controlled trials, 42 patients, age 60 to 68 years, received doses of 20 mg to 240 mg of fexofenadine twice daily for up to two weeks. Adverse events were similar in this group to patients under age 60 years.

ADVERSE REACTIONS

In placebo-controlled clinical trials, which included 2461 patients receiving fexofenadine hydrochloride at doses of 20 mg to 240 mg twice daily, adverse events were similar in fexofenadine hydrochloride and placebo-treated patients. The incidence of adverse events, including drowsiness, was not dose related and was similar across subgroups defined by age, gender, and race. The percent of patients who withdrew prematurely because of adverse events was 2.2% with fexofenadine hydrochloride vs 3.3% with placebo. All adverse events that were reported by greater than 1% of patients who received the recommended daily dose of fexofenadine hydrochloride (60 mg twice-daily), and that were more common with fexofenadine than placebo, are listed in the following table.

**Adverse Experiences Reported in Placebo-Controlled
Seasonal Allergic Rhinitis Clinical Trials at Rates of Greater Than 1%**

Adverse Experience	Fexofenadine 60 mg Twice Daily (n=679)	Placebo Twice Daily (n=671)
Viral Infection (cold, flu)	2.5%	1.5%
Nausea	1.6%	1.5%
Dysmenorrhea	1.5%	0.3%
Drowsiness	1.3%	0.9%
Dyspepsia	1.3%	0.6%
Fatigue	1.3%	0.9%

Adverse events occurring in greater than 1% of fexofenadine hydrochloride-treated patients (60 mg twice daily), but that were more common in the placebo-treated group, include headache and throat irritation.

The frequency and magnitude of laboratory abnormalities were similar in fexofenadine hydrochloride and placebo-treated patients.

Prescribing Information as of June 1998A

Hoechst Marion Roussel, Inc.
Kansas City, MO 64137 USA

US Patents 4,254,129; 5,375,693; 5,578,610.

allb0698Ag

Hoechst Marion Roussel

The Pharmaceutical Company of Hoechst
Kansas City, MO 64137 USA

Hoechst

- Gender. Check one:
☐ 1. Male ☐ 2. Female
- What is your date of birth?

- Which ALLEGRA® product did you purchase with this offer? Check one:
☐ 1. ALLEGRA® Capsules 60 mg
☐ 2. Other _____
- Please indicate the number of times you have filled an ALLEGRA® prescription in the last 12 months. Check only one:
☐ 1. 0 ☐ 3. 4 - 7
☐ 2. 1 - 3 ☐ 4. 8 or more
- Check the seasons during which you suffer from seasonal allergies. Check all that apply:
☐ 1. Summer ☐ 3. Fall
☐ 2. Spring ☐ 4. Winter
- How many days, per year, do you, yourself, medicate/take medicine (prescription or over-the-counter), to relieve allergy symptoms? Check only one:
☐ 1. 1 to 30 days ☐ 3. 61 to 120 days
☐ 2. 31 to 60 days ☐ 4. 121 days or more
- Which of the following are you allergic to? Check all that apply:
☐ 1. Grass ☐ 3. Weeds
☐ 2. Trees
- What allergy medication(s) have you taken in the past year? Check all that apply:
☐ 1. Allegra® ☐ 7. Hismanal®
☐ 2. Benadryl® ☐ 8. Tylenol® Allergy/Sinus
☐ 3. Chlor-Trimeton® ☐ 9. Vancenase®
☐ 4. Claritin® ☐ 10. Zyrtec®
☐ 5. Claritin-D® ☐ 11. Other _____
☐ 6. Flonase® ☐ 12. None
- Other than yourself, do any other members of your household suffer from seasonal allergies? Check all that apply:
☐ 1. Spouse ☐ 3. Other _____
☐ 2. Child 12 or older ☐ 4. No one else suffers from allergies

allegra®

Gardeners Information Service

DETERRING VOLES

Two more of my most promising new shrubs have been chewed off just below the soil line by voles. I can see the tell-tale marks from their nasty little teeth! I have tried traps, Ramik pellets, and castor oil-based repellent drenches—with only mild success. I have some hardware cloth to make protective “root cages” for replacement plantings, but I need suggestions on the best way to make them.

—C. W., RICHMOND, VIRGINIA

Young trees and shrubs can be protected from voles by installing cylindrical tree guards made of quarter-inch wire mesh. The guards should be taller than the average snow depth and extend three inches into the soil. The diameter of

the wire mesh cylinder should be large enough to allow for five years of growth.

Herb Reed, an extension educator in Calvert County, Maryland, also suggests keeping mulch shallow—

no deeper than one inch—because thick layers of organic mulch provide an ideal habitat for voles. Mulching with pebbles or crushed stone will create a less inviting habitat to voles; they will either avoid the area or be more easily spotted by predators.

Encouraging predators is an effective way of keeping rodent populations under control. Hawks, owls, crows, black snakes, and king snakes feed on voles.

Try placing ordinary mouse traps, baited with peanut butter or a small piece of apple peel, in or near the open end of the tunnel. A cardboard box placed over the trap and the end of the tunnel will reduce the likelihood of other an-

SHARE YOUR GARDENING

problems or successes with AHS members from around the country on the Society's Gardening Community Listserve. Questions posed on the listserve are often answered within minutes by one or more of the many knowledgeable gardeners and horticulturists who participate in this on-line discussion group. Joining the listserve is easy; just visit the AHS Web site at www.ahs.org and follow the directions on the home page.

imals being trapped. The use of poison baits is not recommended because of the risks to children and non-target animals. Long-term management of vole populations should be based on habitat reduction and predator encouragement rather than reliance on chemical controls.

GROWING BROAD BEANS

What are the different types of broad beans and their botanical names? What are they used for, and where are the commonly grown?

—P. W., WASHINGTON, D.C.

One of the oldest known cultivated plants, the broad bean or fava bean (*Vicia faba*) is a legume related to vetch. Native to Africa and the Middle East, it is also known as Windsor bean, Scotch bean, and horse bean.

Broad beans make an excellent substitute for lima beans in cold, short-season areas where the latter cannot be grown successfully. Plant them in the spring as soon as the ground can be worked (at the same time as peas). They need the long cool springs to set their pods; warm weather—above 70 degrees Fahrenheit—inhibits flowering and pod setting. Broad beans will survive frost but not a heavy freeze. Their taste has

been described as between that of a garden pea and a lima bean, with rich nutty overtones.

FIRE BLIGHT CONTROLS

During the last growing season I think I identified fire blight on my cotoneasters and spireas. Branches are turning brown and drying up at random spots. All the books I've consulted recommend streptomycin. What is this and will it do the job?

—P. D., DOVER, NEW HAMPSHIRE

Fire blight is a serious disease caused by the bacterium *Erwinia amylovora*, which afflicts members of the rose family (Rosaceae), including pears, apples, and ornamentals such as cotoneasters and spireas. Scott Aker, integrated pest management specialist at the U. S. National Arboretum in Washington, D.C., recommends the following measures to protect your plants from the disease's spread. Carefully inspect all branches for holdover cankers—darkened irregular collars or ridges on the bark—that serve as a reservoir for resting fire blight bacteria. Cut back affected branches well below the canker, at least six to 12 inches into healthy tissue; dispose of pruning debris with household garbage. Make sure to dip pruners into a mild bleach solution (one part bleach to 10 parts water) between plants and after completing the job to prevent cross-contamination.

Streptomycin, an antibiotic, is no longer recommended as a control because the fire blight bacterium has developed a resistance to it. Spray instead with Bordeaux mix—a blend of copper sulfate and hydrated lime—when plants are dormant, just before they leaf out in the spring. Follow manufacturers directions for spraying precautions.

William May, Gardeners Information Service, and Marianne Polito, Gardeners Information Service Manager

WE'RE READY TO HELP: For answers to your gardening questions, call Gardeners Information Service at (800) 777-7931, extension 131, between 10 a.m. and 4 p.m. Eastern time, or e-mail us anytime at gis@ahs.org.



Habitat Gardening

Natural Inspirations: California

article and photographs by Judy Adler

ISOMETIMES SIT ON THE BENCH in my front garden, watching as hummingbirds flash back and forth between my arbutus trees and purple velvet-flowered Mexican sages. At times like this my eyes often rise to the scrub-covered hill that serves as the natural backdrop to this scene, and I reflect upon how the lessons I have learned from the wild landscape around me have borne fruit in my garden.

As a habitat gardener, I look to the natural features of our region for inspiration in planning and planting my garden. This means taking into account the soils, climate, and topography of the land on which I live and observing what is growing here successfully.

Located at the base of the Diablo foothills 20 miles east of San Francisco, my half-acre suburban garden is sufficiently inland from the Pacific Ocean and adjoining bays to escape their moderating influence on its weather. Thus, temperatures can range from over 100 degrees Fahrenheit in the summer to the 20s in winter. These weather extremes and our heavy clay soils define the limits of what will grow well here without radical soil amendments or heavy infusions of supplemental water and fertilizers.

The habitats in my garden replicate portions of the floristically diverse California landscape, in particular those plant communities represented in nearby Mt. Diablo State Park. An outdoor educator by profession, I teach ecology, geology, aquatic biology, botany, and land stewardship to more than 2,000 students each year. The park is my usual classroom, but I also use my home garden as a teaching site. Younger students love peeking into the pond, discovering what lives in soil, and observing insects on the plants.

My garden often provides me with ecological lessons I share with my students: Noticing animal visitors and their habits in my own backyard aids in my

teaching about wildlife in our open spaces. Conversely, observing plant and animal associations in the wild has helped me to properly place plants in my garden.

Evolution of Garden and Gardener

When my husband and I purchased our home in 1978, not a single plant was left on our graded site and I was a gardening novice with only vague notions about what my garden should be. My landscape designer, Ron Lutsko, who designed each phase of the garden, started me on the path of using plants appropriate for my region.

My garden now consists of a series of loosely ordered, small-scale habitats in-

cluding a pond, a low elevation rock garden, and a small redwood grove. California plants predominate because they attract local species of wildlife, support migrating birds and butterflies, require less watering and synthetic amendments, and bring us in touch with the natural history of our area. But I have also incorporated plants from other regions with Mediterranean climates that are well adapted to California's wet winter, dry summer conditions. These are grouped in relationship to their water needs so irrigation could be designed effectively. Since I live on the suburban fringe, I am careful to avoid planting invasive exotics that



A bench in the author's garden provides a perfect spot to watch birds and butterflies enticed by the birdbath and diverse mix of grasses and herbaceous perennials.



Left: Evening primrose, bottom, blossoms near a boardwalk that allows close access to a pond in the author's garden. In the background, a variety of herbaceous perennials, grasses, shrubs, and trees provide abundant habitat for wildlife. **Below:** The author, center, gives a visiting group of children an up-close-and-personal introduction to the diversity of life in a pond.



could escape into the wild and threaten native plants communities.

In my habitat gardens, regionally native plants are for the most part grouped according to the natural communities in which they are found. The rock garden includes herbaceous perennials and annuals such as sulfur buckwheat (*Eriogonum umbellatum*), foothills penstemon (*Penstemon heterophyllus*), beach aster (*Erigeron glaucus*), and sticky monkey flower (*Mimulus aurantiacus*). These are planted between large field stones covered with lichens and mosses.

Around the pond, common and scarlet monkey flowers (*M. guttatus* and *M. cardinalis*) flourish in an environment akin to their moist natural setting. A variety of sedges (*Carex nudata*) and rushes (*Juncus effusus*) also border the pond.

Arranged under a grove of coastal redwoods (*Sequoia sempervirens*) are western azaleas (*Rhododendron occidentale*), western sword ferns (*Polystichum munitum*), redwood sorrel (*Oxalis oregana*), and wild ginger (*Asarum caudatum*). Nearby, valley oaks (*Quercus lobata*) provide shade for hummingbird sage (*Salvia spathacea*) and

California blue-eyed grass (*Sisyrinchium idahoense*, formerly listed as *S. bellum*).

Throughout the garden, boulders and rocks are incorporated as textural elements, lizard sunning spots, and plant root insulators. I compost routinely and rejoice that after years of slowly amending the soil with organic matter, I have managed to tip the scales in the direction of success when installing a new plant. To increase the diversity of the wildlife that visits, I have included plants that bloom and set seed at different seasons and offer a mix of deciduous and evergreen trees. Mine is not a manicured garden, for this would discourage the wildlife I wish to lure. Plants have been selected for their appeal to hummingbirds, butterflies, and other important pollinators. The garden is not neat in the sense of orderly, but in the sense of interesting, inviting, and full of life.

Welcoming Wildlife

My garden was one of the first to be designated as a Backyard Wildlife Habitat

by the National Wildlife Federation. Such certification requires both a demonstrated awareness of what living things need for survival and a continuous effort to provide these. No matter where you live, shelter, food, perching and nesting places, and water year round are the essential elements of any wildlife habitat garden.

The habitat garden provides more than the usual amount of entertainment. Sometimes the gardener is the director, sometimes a mere player, but for the most part a habitat gardener is a spectator expectantly awaiting the next twist or turn in nature's plot.

In my garden, all species of wildlife are welcome. It is a thrill to discover evidence of an animal's visit, whether it is a track in moist soil or the intricate pouch-style nest of a bush tit in the same tree for the second year in a row. I watch tree squirrels chase each other around my trees and look in awe at a garden spider that has strung a lovely web across the rosemary plants in the front garden. Once in a while I find a squirrel's forgotten acorn germinat-

ing in a container or accidentally roust a tiny tree frog from its hiding place in my nursery. My garden teems with life because I have teamed with life to create a safe and healthy place for them all. I have learned that what is good for them sustains me as well.

Partnering with Nature

Rooted in ecology, habitat gardening is a dignified pursuit in which art and science are integral. Those who subscribe to its tenets can help prevent further loss of species diversity on earth. In creating my own garden I have found enlightenment, a heightened aesthetic sensitivity, a quiet joy, and the deep sense of satisfaction that comes from being in partnership with nature.

Judy Adler is director of Diablo Nature Adventures and owner of Mountain Mama's Nursery in Walnut Creek, California. She is a co-founder of LifeGarden (www.lifegarden.org), a nonprofit community organization that teaches ecology through gardening.

Conservationist's Notebook

Ecology is the Focus of Museum Garden Renovation

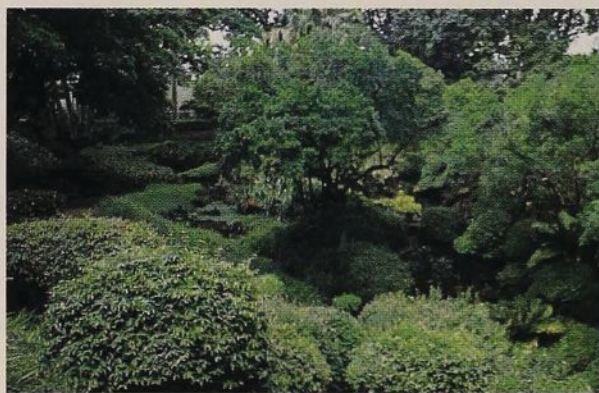
article and photograph by Michelle Teresa Lopez

THE CONTEMPORARY MUSEUM OF HONOLULU is a three-and-a-half-acre museum located in a low to midland mesic forest overlooking the city and the Pacific Ocean. Its lawn is speckled with art sculptures, but over half of the museum's visitors go to see the grounds, especially Nu'umealani—Hawaiian for heavenly terraces—a sunken garden built in 1928 when the estate was privately owned.

Nu'umealani is receiving even more attention now that a renovation project has been launched to update the garden to reflect the museum's contemporary theme, and to develop an ecologically responsible design that includes both non-invasive alien flora and native species.

Hawaii's endemic flora is in serious danger. According to Clifford W. Smith, professor emeritus in botany at the University of Hawaii, over the last 200 years some 4,600 species of plants have been introduced to the delicate Hawaiian ecosystem. Leland Miyano, garden designer for the renovation project and avid conservationist, estimates that about 90 percent of the lowland flora in Hawaii are introduced species.

The Contemporary Museum's garden renovation project germinated in 1998 following a conversation between the museum director, Georgianna Lagoria, and a former trustee, Phyllis Spalding Bowen. It was Bowen who recommended Miyano as the landscape designer, and his environmentally sensitive approach was embraced by the museum's administration. "Today's wisdom," Lagoria explains, "is to be con-



Surinam cherries will be removed from the sunken garden.

scious of the effect that every decision—including aesthetic ones—has on the environment." With an endowment from the Atherton Family Foundation, and a special project grant from the Garden Club of Honolulu, the renovation commenced.

Originally designed by K. H. Inagaki, the garden combines the wildness of the lush Hawaiian landscape with the principals of formal Asian garden design.

But Miyano prefers a less formal approach. He selects plants that, when fully matured, will nestle comfortably into their chosen space, and incorporates minimal maintenance concepts into his plan. He avoids using large populations of any particular species of plant, reasoning that pests will prefer areas where host plants occur in higher density. Because fresh water is a precious resource in Hawaii, Miyano studies run-off patterns, placing stones or other material to block and slow

the water, increasing the opportunity for absorption. This reduces the need for supplemental watering once plants have acclimated.

As each area of renovation is addressed, unwanted elements are removed first. Diseased mountain apple trees (*Syzygium malaccense*) were replaced with a ground cover. The non-native, self-seeding Surinam cherries (*Eugenia uniflora*) will be removed from the sunken garden and replaced with ground covers.

Among the native plants he has included are the ground cover known by the Hawaiian name of 'akia (*Wikstroemia uva-ursi*), the Hawaiian cotton plant called ma'o (*Gossypium tomentosum*), and the shrub 'ulei (*Osteomeles anthyllidifolia*). Thanks to a recent change in the State of Hawaii's administrative rules, Miyano will be able to obtain and plant the endangered endemic shrub 'ohai (*Sesbania tomentosa*). Miyano hopes that this garden will inspire visitors to use more endemics in their gardens.

This year the Contemporary Museum received one of 363 American Society of Landscape Architect Medallions, created to honor landscapes that improve the quality of life in communities located in the United States. Honolulu has four honored sites.

VISITING: The Contemporary Museum is located at 2411 Makiki Heights Drive in Honolulu, HI 96822. Telephone (808) 526-1322.

Michelle Teresa Lopez is a free-lance writer and resident of Honolulu, Hawaii.

Millennium Focus

Children's Gardening

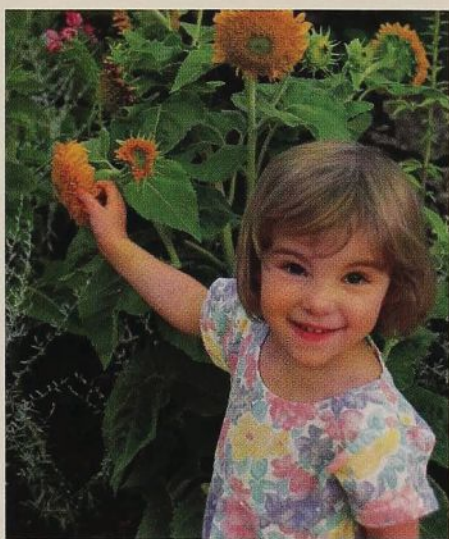
One of the most exciting areas in horticulture today is the resurgence of interest in children's gardening. Recognizing the value of gardening in teaching a broad range of subjects, schools and communities across the country are planting gardens as instructional tools and outdoor classrooms. Public gardens are developing innovative interactive displays and programs that are often coordinated with state and national educational learning objectives.

And in our home gardens we are discovering new ways to provide an environment for children to experience nature first hand.



Growing the Next Generation

BY NORMAN LOWNDS



Above: A child enjoys 'Teddy Bear' sunflowers at the colorful Michigan 4-H Children's Garden, shown at top. **Inset:** Another young visitor there takes time out to smell the roses.

"COME AND LOOK AT OUR GARDEN!" That's the first thing I heard when I visited Wardcliff Elementary School in East Lansing, Michigan, last fall. The kids couldn't wait to show me the school garden they had planted in the spring.

The overall design was a large circle divided into segments by a star-shaped arrangement of stepping stones. Each grade had propriety of one segment. The kids themselves had decided on a theme for each that related to their studies. Why the star? The children at this school are the "All Stars." These children are part of one of the most exciting trends in gardening: the development of gardens designed to inspire, teach, and entertain kids.

What can we expect for children's gardens in the new millennium? What forces will shape and influence future children's gardens? And what opportunities do we,

as gardeners everywhere, have to ensure the continued success of children's gardens? The answers to these questions lie in the new programs, initiatives, and goals that this trend is generating.

Access to Children's Gardens

Children's gardens are certainly not new; in 1918 Brooklyn Botanical Garden opened the first public garden designed for children in the United States. Eighty years later only a handful of other public children's gardens were in existence, notably the Children's Garden at Longwood Gardens, The Everett Children's Adventure Garden at The New York Botanical Garden, the Michigan 4-H Children's Garden, and the Children's Demonstration Gardens at the American Horticultural Society's River Farm headquarters. But in just the past year children's gardens have opened or are nearing com-

William Tricker, Inc.® America's Oldest Water Gardeners est. 1895



Tricker's Year 2000 WATER GARDEN CATALOG

Discover our immense collection of beautiful, colorful **WATER LILIES** some dating from the 1890s. Also a fine collection of Bog Plants, Lotus, Fish, Fountains, Liners, etc.

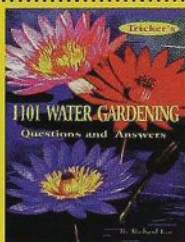
Everything to make a
Water Lily Pool!
ONLY \$2.00

FREE offers in Catalog!
Plants, Videos, Fish
Food, Newsletter

Tricker's BEST Seller

1101 Star Gardening Questions and Answers

by Richard Lee,
president of historic
William Tricker, Inc.® Over
1000 Questions and

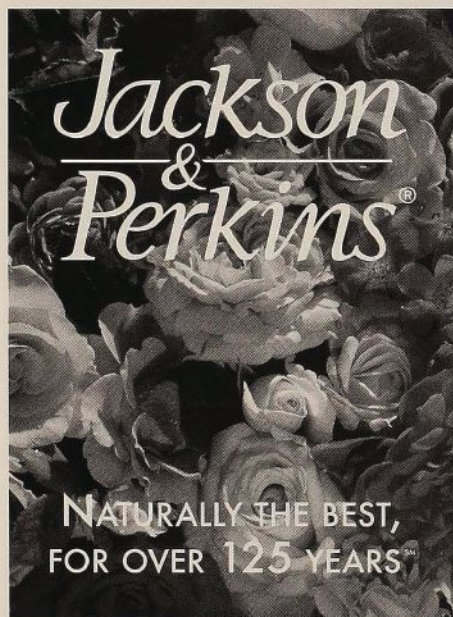


Answers on Water Gardening! Find
Answers on Making a Garden Pool, Growing
Water Lilies, Lotus, Fish, Plant Diseases,
Scavengers, etc. 23 chapters, 335 pgs., 36 color
photos and over 120 figures! **ONLY \$24.95**

SPECIAL OFFER: Order a Book
TODAY and receive a **FREE** Water
Garden Catalog AND **FREE** shipping!

1-800-524-3492

7125 Tanglewood Drive, Independence OH 44131



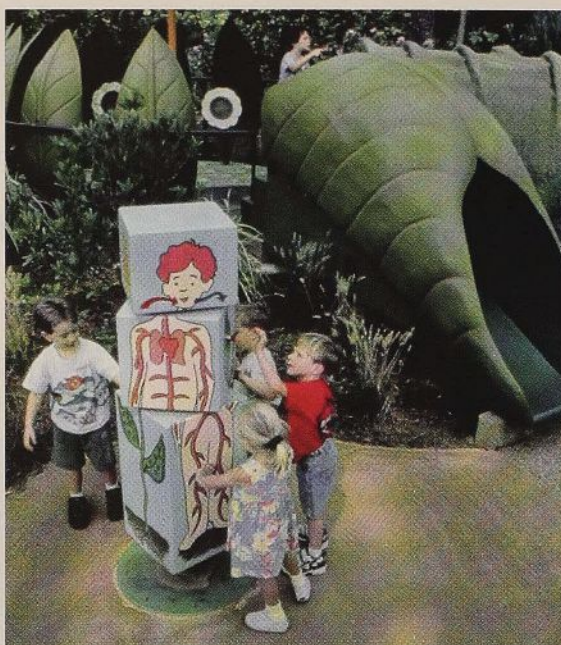
Award-winning roses with gorgeous
color, delicious fragrance and land-
scape versatility – all in our **FREE**
New Roses 2000 catalog. Call today

1-800-854-6200

www.jacksonandperkins.com

1 Rose Lane, Dept. 013K, Medford, OR 97501

©1999, Jackson & Perkins Company



One of the new generation of
public gardens for children, the
Children's Garden at The Atlanta
Botanical Garden opened in
September. In the Air Factory,
left, an interactive and
innovative exhibit that teaches
children about the exchange of
gases between animals and
plants, larger-than-life
magnolia leaves blow air on
children as they listen to
recorded messages about
oxygen and carbon dioxide
exchange, and plant and animal
"respiratory systems."

pletion at the Atlanta Botanical Garden,
The Cleveland Botanical Garden, and in
Camden, New Jersey. More are in the de-
sign or early construction stage at Quail
Botanical Garden in California, Rio Grande
Botanic Garden in New Mexico, Above and
Beyond Children's Museum in Wisconsin,
and Squam Lakes Natural Science Center
in New Hampshire.

School gardens are also gaining popular-
ity. In the not-too-distant future the school
garden may be so vital to the educational
program that it will not fall prey to budget
cuts. The development of these school gar-
dens will likely happen school by school,
rather than on a statewide basis as has been
the case in California, where last fall the state
legislature passed, and the governor signed
into law, Bill AB 1014—Instructional School
Gardens—which encourages every public
school to include a garden as an instruction-
al tool, and acknowledges the value of gar-
dens in teaching a wide range of subjects. In-
creasing access to public and school-based
children's gardens will prompt interest in de-
veloping children's gardens elsewhere in the
community.

Home gardens that invite children to
explore the natural world are also critical
if we are to be successful in passing on an
understanding and appreciation of the re-
sponsibilities involved in stewardship of
the earth to the next generation.

Community Involvement

"School gardens are a great vehicle for in-
volving the community in non-traditional

ways including business partnerships, after
school programs, and grounds beautifica-
tion," says Lisa Glick, a consultant who has
been involved in garden-based learning pro-
grams for 15 years. "The school garden as an
outdoor classroom can become a focal point
of the community."

A case in point is Dryden Elementary
School in rural upstate New York, which
draws from a large geographic area. To en-
hance a sense of community among the
widely distributed students and their fami-
lies, Marcia Eames Sheavly and a group of
parent volunteers decided to develop a school
garden two years ago. The day the beds were
prepared, a large and supportive turnout of
120 children, parents, teachers, and adminis-
trators joined in a "bucket brigade" to build
and fill the beds. The plantings in the beds re-
flect themes drawn from the curriculum of
each grade level. The garden has expanded
as the gardeners—young and not-so-
young—have gained confidence and com-
munity interest has grown.

Involving Children

If children's gardens are to be successful,
they must be focused on children's needs
and expectations. What better way to
achieve this focus and to encourage a pro-
prietary attitude toward the garden than to
involve kids as active members of the design
team? The Wardcliff "All Stars" garden is a
good example of how well this approach
works. At the AHS Children and Youth
Gardening Symposium pre-conference
workshop to be held in June, a session called

"Gardens for Kids by Kids" will have children designing their own gardens.

In the school garden, children should be given responsibility for almost everything. It should be theirs in practice, not just in name. In addition to planting and maintenance, children can determine and create the presentation and programming. Older children can 'buddy' with younger children to explore the garden, study plants, or simply read and write stories in the garden.

Well over half of young children in this country today spend significant time in day care and pre-school. These environments can be vital catalysts for learning. Children's gardens must respond to the needs and interests of these children. Seats in the Storybook Garden at the Michigan 4-H Children's Garden are only 10 inches tall. Pint-sized visitors may encounter Winnie the Pooh, Tigger, and their buddies—characters they can relate to—while they climb over the Billy Goats' Gruff bridge or hide beneath the branches of a weeping mulberry. Exposure to engaging children's gardens and natural interactive discovery experiences can influence attitudes that will last a lifetime.

State and National Educational Standards

A garden—both its content and context—offers unique opportunities to address and meet new educational standards. Children's gardens can help achieve the national science goal established by the National Research Council in 1996 that students "experience the richness and excitement of knowing about and understanding the natural world." What better place to gain such experience than in a garden, exploring plants and the interactions among plants, animals, insects, weather, and people?

Public children's gardens are successfully addressing the need to relate their programs to state and national educational standards. "School gardens are not just for teaching science, they can be used to teach any subject," says David Pippin, education coordinator at Lewis Ginter Botanical Garden in Richmond, Virginia. He explains that their children's garden reflects state standards for Virginia schools beyond the science curriculum. Since ancient Egypt is part of the second grade social studies curriculum, the garden established an area re-

THIS MULCH REALLY GROWS ON YOU.



Introducing The Only Planting Mulch With Starting Fertilizer. Emerge® for Lawns and Emerge® for Gardens.

Emerge is a mulch, but not like any you've seen before. Emerge is the **Planting Mulch**. Once you've planted the seeds or bedding plants of your choice, Emerge helps them grow faster, for bigger and better flowers, vegetables and lush grass.

Emerge pellets expand like popcorn to four times their original size when watered. They form a protective cover, keeping seeds and soil in contact, and that's so important for seed germination and early growth. Emerge also delivers nutrients and preserves moisture where seeds and plants need them most, at soil level.

Emerge holds the secret to success for a beautiful lawn or garden.

Without Emerge



With Emerge



See the dramatic difference in growth of these lettuce plants.

Emerge

From the Makers of Preen®

Greenview®, Lebanon, PA 17042 lebsea.com

©2000

AHS SOWS SEEDS OF IMAGINATION

by Jane L. Taylor

Often described as the dean of American horticulture, Liberty Hyde Bailey is less well known as the "father" of hands-on learning for children about the natural world. He considered nature study an affair of the heart. "When the interest passes from the heart to the head nature-love has given way to science," he wrote in *The Nature Study Idea* (1903).

Gardens created for today's children should delight their hearts, spur their imaginations, and open their minds. The American Horticultural Society has been instrumental in the children's garden revival beginning in 1993 with the opening of the Children's Demonstration Gardens at the Society's headquarters at River Farm. That same year, the Society coordinated the first of its national children's garden symposia—the 8th Annual National Youth Garden Symposium will be held this year in Lake Buena Vista, Florida (see box, opposite, for details). Each year the symposium has seen an increasing national and international interest in providing garden-based activities for children and designing special gardens for young people.

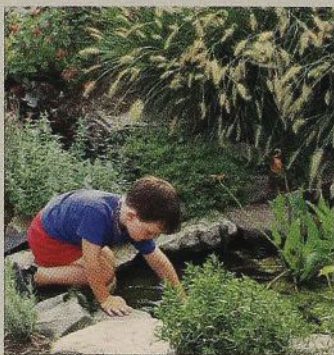
To help coordinate and develop the Society's wide-ranging involvement in youth gardening programs, the AHS National Children and Youth Garden Advisory Panel was formed in 1998. The panel includes professional horticulturists and Master Gardeners; landscape and playground designers; and school administrators and teachers from across the United States.

The following year, the AHS Living Lab Program was initiated. This life science program, based at River Farm, uses hands-on activities in gardens to teach children from local schools about science. AHS's next challenge is to create and manage an Internet clearing-house of information about children's gardening.

It's an unbeatable combination—children connecting with the natural world through garden-based activities, interacting with living plants, then connecting to AHS resources via computer technology. The basic aims are still the same—to create gardens that will open children's minds, to touch their hearts and souls, and to let their imaginations soar, while teaching them basic principles of gardening and science using familiar objects and engaging experiences in their environment. In Bailey's words, "We must define nature-study in terms of its purpose, not in terms of its methods. It is not doing this or that. It is putting the child into intimate and sympathetic contact with the things of the external world."

AHS 2000+ is . . . connecting people, places, and plants that touch our future.

Jane L. Taylor is founder and former curator of the Michigan 4-H Children's Garden at Michigan State University in East Lansing. She is also the first winner of a new AHS Award named in her honor (see page 8).



AHS's bat garden at River Farm.

flecting plants—including dill, papyrus, bay laurel, melons, and basil—grown by ancient Egyptians. Woodcuts depicting Egyptian gods that relate to children and agriculture were constructed on plywood, and placed in the garden. By combining history, art, and science into the lesson,

children are provided a richer educational experience, and teachers are assisted in their efforts to meet state educational standards.

Children's Garden Information

Information on all aspects of children's gardens from the very first planning steps

YOUTH GARDEN SYMPOSIUM

The American Horticultural Society's 8th Annual National Youth Garden



Symposium will be held at Walt Disney World's Coronado Springs Resort Hotel in Lake Buena Vista, Florida, June 8 to 10,

2000. Highlights of the symposium include a swap of garden-integrated curricula, a seed exchange, and a field trip to the Epcot International Flower & Garden Festival. The National Kid's Garden at Epcot was created through a partnership between AHS and Epcot.

Henri Landwirth, a Holocaust survivor who developed the Give Kids the World Village—an organization that provides terminally ill children with opportunities to fulfill their dreams—will deliver the symposium's keynote address.

Visit us online at www.ahs.org/ygs/ygshome.htm for more information or to register. Or call (800) 777-7931 to receive a registration brochure by mail.

to developing programming and integrating technology are becoming more available (see "Resources," page 23). The AHS Children and Youth Gardening symposia and regional workshops are expanding their outreach. In addition, there is an extensive range of resources available on the Internet. The "Growing Gardens" program of the Michigan 4-H Children's Garden is a summer workshop designed for children and adults interested in children's gardens. It includes instruction on: planning and designing, fundraising, constructing, and maintaining the garden as well as suggestions for garden curricula.

Computer Technology

Today, children use computers in almost every facet of their daily lives. Children's gardens must take advantage of the opportunities technology offers to enhance and expand garden experiences.

Through programs like the Michigan 4-H Children's Garden's "Connected

Books

Additional books, resources, and sources can be viewed on the AHS Web site (www.ahs.org).

Better Homes and Gardens New Junior Garden Book by Felder Rushing. Meredith Books, Des Moines, Iowa, 1999.

A Child's Garden by Molly Dannenmaier. Simon & Schuster, New York, 1998.

Garden Crafts for Kids by Diane Rhoades. Sterling Publishing Company, New York, 1998.

The Kids Can Press Jumbo Book of Gardening by Karyn Morris. Kids Can Press, Buffalo, New York, 2000.

Roots, Shoots, Buckets & Boots by Sharon Lovejoy. Workman Publishing, New York, 1999.

Resources

The American Horticultural Society, 7931 East Boulevard Drive, Alexandria, VA 22308-1300. (703) 768-5700. www.ahs.org

■ A database of children's gardens at public gardens throughout North America is available on the Web site.

The Michigan State University 4-H Children's Garden Tour! www.msu.edu/user/reiter/cghome.html

National Gardening Association, 180 Flynn Avenue, Burlington, VT 05401. (802) 863-1308. www.garden.org

■ Publishes a newsletter, "Growing Ideas," for use in school or community gardens and offers grants for children's gardens.

Sources

Gardens for Growing People, P.O. Box 630, Point Reyes, CA 94956. (415) 663-9433. www.svn.net/growpepl

The Green Brick Road, 429 Danforth Avenue, Suite 408, Toronto, Ontario, Canada M4K 1P1. www.gbr.org

Let's Get Growing, 1900 Commercial Way, Santa Cruz, CA 95065. (800) 408-1868. www.letsgetgrowing.com.

The Natural Gardening Company, P.O. Box 750776, Petaluma, CA 94975. (707) 766-9303. www.naturalgardening.com

DRAMM Rain Wand

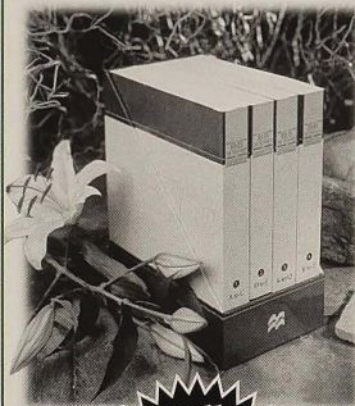
Water your plants like a pro with a quality Colormark Rain Wand™ from Dramm. A heavy-duty brass valve and an original Water Breaker™ nozzle have made the Rain Wand™ the choice of professionals for over 55 years. Available in a rainbow of colors and styles. Ask for Dramm Professional Tools at only the best garden centers and nurseries.



Often imitated, never duplicated... Ask for Dramm Professional Watering Tools by name!

www.RainWand.com

PO Box 1960 • Manitowoc, WI • 54221-1960 USA



Call
Now for
Special
Offers

4 deluxe volumes, hardcover and
paperback editions, illustrated

800-972-9892

THE NEW ROYAL HORTICULTURAL SOCIETY

Dictionary of Gardening

Edited by Anthony Huxley and Mark Griffiths

"You would need to have access to a first-class horticultural library in order to come up with a comparable body of information."

HORTICULTURE

"...the most complete presentation of plants and gardening ever published... will set the standard..."

SOUTHERN ACCENTS

"Informative, up-to-date, and awesome"

LINDA YANG, THE NEW YORK TIMES

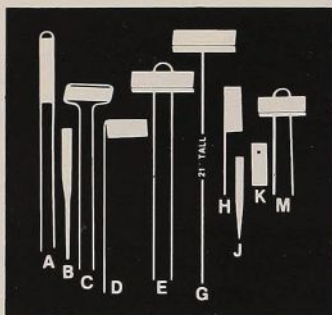
"The New RHS Dictionary of Gardening [provides] the most in-depth and up-to-date information on plants and their cultivation ever presented in one authoritative reference source."

GREEN SPACE



Grove's Dictionaries Inc • www.groverefence.com

To Order: 800-972-9892 • fax 802-864-7626 • gdi.orders@aidcvl.com



THE PERMANENT METAL GARDEN LABEL

A - Hairpin Style Markers	100 For \$25.45
B - Plant/Shrub Labels	100 For \$ 8.90
C - Cap Style Markers	100 For \$22.60
D - Swinging Style Markers	100 For \$21.40
E - Rose Markers	100 For \$25.80
F - Tall Display Markers	100 For \$32.65
G - Tall Single Staff Markers	100 For \$26.50
H - Flag Style Markers	100 For \$20.95
J - Small Plant Labels	100 For \$ 8.30
K - Tie-On Labels	100 For \$13.95
M - Miniature Markers	100 For \$19.20

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 \$3.75

**PAW PAW EVERLAST
LABEL COMPANY**
P.O. Box 93-AH
Paw Paw, Michigan 49079-0093

You'll breathe easier.

Trees clean the air
and return pure oxygen.

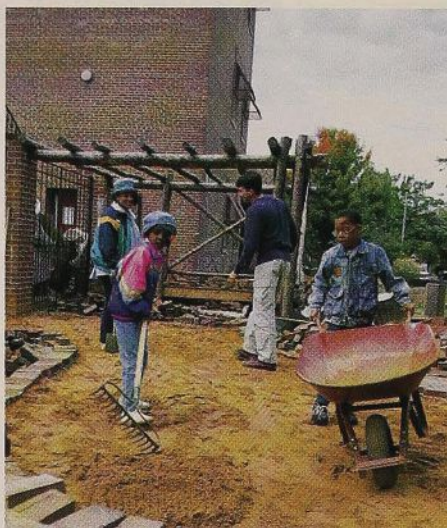
More trees planted in our
Global ReLeaf projects means
breathing relief for all of us.

Every dollar plants a tree.
800-545-TREE

Call now or plant trees online at
www.americanforests.org.



People caring for trees and forests since 1875



School children at Watkins Elementary in Washington, D.C., help lay the groundwork for a new garden.

Classrooms" children will soon be able to link directly with scientists and garden experts for assistance with their questions. Children will take digital photographs of their activities, create Web pages of information, explore increasingly complex problems, and work on individual assignments or group projects in ways that were not possible until recently. Technology will allow exciting linkages and interactions among children's gardens in communities, states, the nation, and the world, helping to grow a new generation of gardeners who have access to resources, information, and experiences we never imagined.

Shaping Our Future

Children's gardens—garden spaces designed to engage children and meet their specific needs—are important components of the gardening landscape today and in the future. Through these gardens children will experience the beauty, wonder, and importance of plants and will establish long-lasting attitudes about gardens and nature. Children's gardens throughout the country are shaping the next generation of American gardeners and citizens!

Norman Lownds is curator of the Michigan 4-H Children's Garden at Michigan State University in Lansing and chairman of the AHS National Youth Garden Advisory Panel.

Making Space for Children

BY MOLLY DANNENMAIER

A CENTURY AGO, most kids navigated the land freely. They climbed trees, swam in creeks, built ramshackle huts in the woods. Swing sets, sliding boards, and other manufactured outdoor children's play equipment had yet to become a part of the American backyard.

Today, a host of inventions and lifestyle changes is creating a young generation with far less intimate knowledge of the physical world. School buses, television, radio, CD players, video games, the Internet, and a myriad of after school lessons all conspire to keep children away from the "dangers" of unsupervised outdoor life. When they do play outdoors, it's often on a sterile playground, field, or flat, chain-linked yard where all the botanical and topographical complexity has been stripped away in favor of "safety" and "ease of care."

A Return to Nature's Play Equipment

But children need to learn about nature from nature itself, asserts Herb Schaal, designer of the Cleveland Botanical Garden's new Children's Garden, who has observed a conscious backlash against the pervasiveness of simulated materials. "As fewer natural experiences are a part of people's everyday lives, the more they crave the chance to get back to environments that are not recreations or simulations of nature but are the real thing itself."

And who, if not the adult passionate about his or her own relationship with nature, is best equipped to pass on a legacy of intimate outdoor experience to the next generation of children? Who will be the next generation of outdoor stewards if we raise children unfamiliar with the joy of nature's everyday caresses?

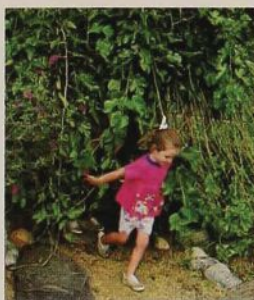
Instilling a Love of Gardens in the Next Generation

Prepare the environment. If you want to create structured activities, planning is

crucial. Think about what your child likes to do: Cut? Draw? Dig? Water? Hunt for slugs? Gather the equipment necessary—scissors, chalk, a trowel, a watering can—to let him choose from a variety of independent adventures during your joint outdoor enterprise. Let him give the weeds a haircut. Let him draw on your garden walls or walkway with chalk. Let him water your plants. Let him dig a hole, fill it with water, and float leaves. Let him hunt through the firewood for invertebrates. Go on with your own gardening activities while he explores through play.

Be patient. Don't be disappointed if your well-crafted plan to plant a moon-flower patch with your three-year-old turns into a free-for-all of flying dirt and spilled seeds. She will have a wonderful time just being outdoors with you if you can maintain a sense of whimsy and flexibility.

Let your activities follow the child. While planning is important, impromptu garden "projects" are often the most enjoy-



Many children enjoy running under the drooping branches of this weeping mulberry in one of the gardens at River Farm.

able for both adults and children. Sometimes you just have to let the child's discoveries and moments of excitement dictate where the project will flow. If the child finds a ladybug while watering a tomato plant, tell her how ladybugs help in the garden by eating up aphids (then see if you can find some aphids and tell her what they do). If the child digs holes close to your lemon balm or any other fragrant plant, rub its leaves or pull its flower forward and let her smell. Take her to other fragrant plants in the garden. Appeal to the child's senses, and she will eventually seek knowledge on her own.

Provide space for experiments. Set aside an area so kids can grow their own unusual plants. Atlanta landscape architect Mary Palmer Dargan says many of the families with whom she works have started plots of miniature vegetables like 'Tom Thumb' lettuce, 'Bambino' eggplant and 'Sugarbaby' watermelon. If you have trouble sharing your garden space, it may be best to designate a specific area as "the kids' garden." It doesn't have to be huge; a window box or large planter filled with pungent herbs, luscious tomatoes, or colorful flowers can be very rewarding for a child, and won't require hours of weeding. Or provide a "teepee" of sticks on which vines can be grown. And if they decide to grow crabgrass and dandelions, well, see "Be patient" above.

A resident of Washington, D.C., Molly Dannenmaier is a children's garden activist and the author of A Child's Garden, published in 1998 by Simon & Schuster.

MIRACLE-GRO® POTTING MIX GROWS PLANTS TWICE AS BIG.



Leading universities tested Miracle-Gro Potting Mix against ordinary potting soil. The results were remarkable. Plants grown in Miracle-Gro Potting Mix were actually twice as large as those grown in ordinary potting soil. With greener, fuller foliage and more blossoms. Only Miracle-Gro Potting Mix

combines a premium blend of dark, rich organic ingredients with just the right amount of Miracle-Gro Plant Food. It's a combination that can turn your potted plants into potted miracles. In fact, Miracle-Gro guarantees it.

For all kinds of great tips on growing beautiful plants, check out www.miracle-gro.com.

MIRACLE-GRO POTTING MIX. The Miracle is in the Mix.



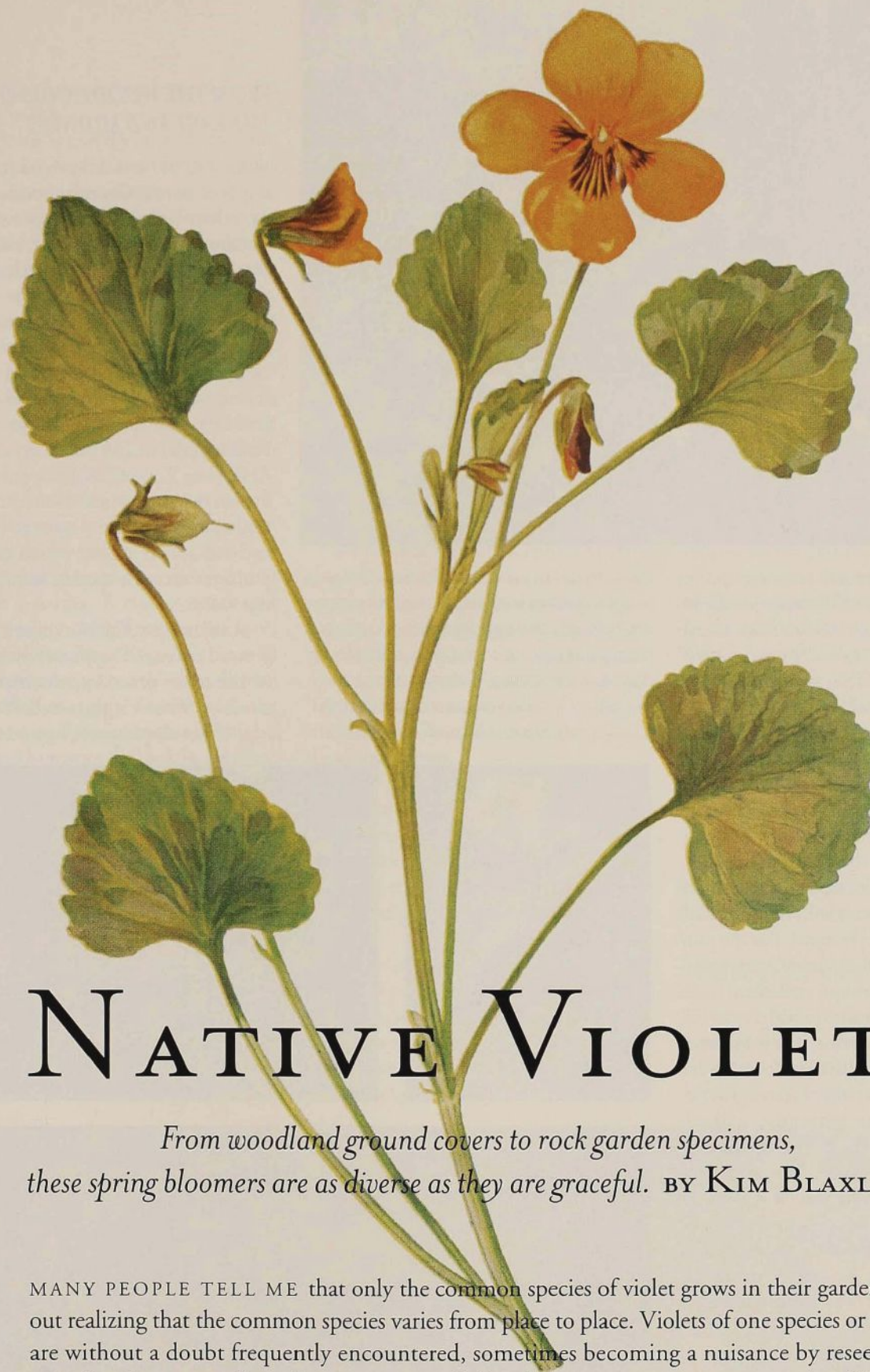
For spectacular blooms throughout the year, buy Encore Azaleas.®

(or keep flipping back to this page)

If you want flowers more than once a year, ask for Encore Azaleas. They have big, vibrant, longer-lasting flowers that bloom repeatedly through spring, summer, and fall. Plus, they're available in a wide selection of plant shapes and bloom colors. With Encore Azaleas, you'll have flowers again and again and again. WWW.ENCOREAZALEA.COM



more blooms. more often.™



NATIVE VIOLETS

From woodland ground covers to rock garden specimens, these spring bloomers are as diverse as they are graceful. BY KIM BLAXLAND

MANY PEOPLE TELL ME that only the common species of violet grows in their garden, without realizing that the common species varies from place to place. Violets of one species or another are without a doubt frequently encountered, sometimes becoming a nuisance by reseeding or spreading into areas where they are unwanted. But they possess some uncommon qualities, with their delicate, unmistakable flowers and a surprising variety of leaf shapes. A close examination of these vigorous natives suggests how well suited many are for a variety of garden settings.

ABOVE: *Viola pedunculata* BY F. SCHUYLER MATHEWS FROM *Wild Violets of North America* BY VIOLA BAIRD.



FROM THE WOODLANDS OF THE EAST AND MIDWEST

VIOLA WALTERI INHABITS the rich, wooded slopes of central Georgia, northern Florida, eastern Tennessee, and western North Carolina. Spreading by short, thick, horizontal stems that root at the nodes, it forms a matlike ground cover. The kidney-shaped leaves are variegated green and light green with purple on the lower surface. New shoots are pink-purple and the flowers are mauve. I have been growing this very attractive species in my garden near Philadelphia (USDA Hardiness Zone 6–7; AHS Heat Zone 6), where it has survived the last two mild winters; it may need protection if the weather is more severe. Slugs and red spider mites, which can cause problems on some species, seem to ignore this violet.

Another useful but much smaller ground cover is *V. appalachensis*, found in the open drier Appalachian woodlands of West Virginia and Pennsylvania. It develops small, rounded leaves

Worldwide there are about 450 species of *Viola*, a member of Violaceae or the violet family; approximately 60 are native to North America. I say “approximately” for two reasons. First, taxonomists are continuing to reclassify species. Although many gardeners may find taxonomic changes infuriating, studies that reveal more information about the genus necessitate this ongoing process of refinement. And second, new species are still being discovered (see sidebar, page 30).

All North American *Viola* species are herbaceous perennials with the exception of the annual, *V. rafinesquii*. For the purposes of classification, violets are separated into two main groups: caulescent (with stems) and acaulescent (without stems). At the time of flowering it is sometimes difficult to tell the difference because the stem may not be extended above ground.

Violets occur in most areas and climates of North America, though different species predominate from region to region. Only five species of American violets occur in other countries. *V. epipsila* and *V. langsдорffii* are also found in eastern Asia, *V. rostrata* in Japan, and *V. selkirkii* and *V. biflora* in northern regions of Asia, Europe, and North America. By knowing the climate and soil of the area in which a species is native, we can identify the conditions needed for its successful cultivation. Since it would be impossible to cover all the species here, this article concentrates on the more attractive plants that have horticultural merit.

Above: *Viola canadensis* and lavender woodland phlox mingle compatibly in this woodland garden. Below left: *Viola hastata* offers bright yellow flowers and attractive silvery green foliage. Below right and bottom: Bird’s-foot violet shows considerable variability in flower color throughout its native range in eastern North America. Its flowers can be pale violet, lavender, and even bicolor.



from short, horizontal stems, and mauve flowers.

The long-spurred violet, *V. rostrata*, grows in dry, sandy loam in deciduous forests. Leaves are evenly distributed along several upright to inclined stems that grow from the crown—the junction of roots with stem or foliage. The pale lilac flowers are marked with dark purple. The spur extending from the back of the lowest petal may be three-quarters of an inch long, often with a little hook at the end. Its North American range extends from Minnesota to eastern Tennessee and western North Carolina and northeast to New Hampshire.

One of the easiest violets to grow is *V. striata*. It grows best in light shade in neutral to acid woodland soils, and is native from Arkansas to Pennsylvania and south to Georgia. A robust species, it produces many upright stems that form rounded plants. In spring, it is covered with a profusion of creamy white flowers with ruffled margins. In summer, the plants grow to about 10 inches in height, but the tall branches die back in autumn, leaving a shorter mound of bright evergreen leaves. It is useful as a border plant, but care must be taken to prevent unwanted spread by seed.

Canada violet (*V. canadensis*) occurs from Minnesota to New Hampshire and south to Tennessee. There is also a separate population in the Rocky Mountains. With this wide distribution, plants display some variation from one location to another. Open river forest with sandy soil is its preferred habitat, but it is fairly adaptable to most woodland situations.



Viola selkirkii is best suited to woodland gardens in the Northeast and upper Midwest.

Plants grow to 12 inches tall. Their relatively large, flat, white to pale pink flowers have a prominent yellow signal patch near the throat of the lowest petal.

V. hirsutula, a stemless, clump-forming species, has oval, heart-shaped leaves with purple veins; some forms display attractive patterns of silvery variegation. Flowers are purple with a dark throat, but tend not to open to a flat face. It grows from eastern Tennessee and western North Carolina to southeastern Pennsylvania in dry pine or deciduous forests.

Many gardeners mistakenly think that all eastern violets need moist, woodland conditions; this is the best way to kill *V. pedata*, commonly known as bird's-foot violet. Its reputation for being short-lived in cultivation likely stems from inappro-

priate planting sites—it does best in poor, very well-drained, acid to neutral soils, usually in full sun. If your garden is too moist, try growing it in a trough, a deep terra cotta pot, or a raised bed filled with a sandy soil mix. The flowers of this species exhibit considerable variability, from pale violet or lavender to bicolors with deep purple upper petals. Its deeply dissected, compound leaves gave rise to its common name.

NORTHERN SPECIES

TWO SPECIES FROM cooler northern regions are *V. selkirkii* and *V. biflora*. The stemless *V. selkirkii* is a small, delicate, woodland plant with pointed, heart-shaped leaves and purple flowers with a prominent spur. It prefers cool woodlands and grows especially well in rotting wood. In the United States, its range extends from Minnesota, south to Pennsylvania and east to Maine.

V. biflora has yellow flowers, trailing stems, and kidney-shaped leaves. Its two lateral petals always point upward. Native to the Rocky Mountains and parts of Canada, it is also widely distributed in northern Europe and Asia. It inhabits cool, shaded woodlands; in warmer climates it requires a cool greenhouse and a moist, humus-rich soil mixture.

THE BEST FROM THE WEST

THE BEST WAY TO GROW all of the West Coast species is to provide *exactly* the same conditions in which they grow naturally. Alternatively, they can be grown in deep

Below left: Adapted to hot, dry sites, clump-forming *Viola pedunculata*, shown here at the University of California at Berkeley Botanical Garden, has upright orange yellow flowers with purple markings. Below right: *Viola lobata* features bright yellow flowers and deeply lobed, almost hand-shaped, leaves.



terra cotta pots or troughs where the conditions, especially soil and water, can be controlled. Soil requirements are important and varied; several will grow only in serpentine soil—a soil containing high levels of certain minerals that may be toxic to some plants, derived from magnesium silicate rock outcrops found along parts of the West and East coasts. They all need a lot of moisture during spring, but very little or none in summer. Most die back in summer to avoid the dry heat.

In the Pacific Northwest, *V. trinervata*, sometimes called sagebrush violet, grows in full sun in crumbling rock (litholsol) soils. It is a stemmed violet, although this is not obvious because the crown is several inches underground. The gray-green leaves are palmately divided. The top two petals of the beautiful flowers are dark velvety purple, while the lower three are pale mauve. A central yellow eye, surrounded by dark purple, adorns the three lower petals. It demands excellent drainage, a cool spring, and a hot, dry summer. It can be grown in a deep terra cotta pot and placed in full sun beneath an overhanging roof during the summer. Add crushed rock to the top of the pot every year to ensure that the crown is well covered. During the winter, sink the pot into a bed of sand for protection against cold.

Similar in appearance to *V. trinervata* is *V. beckwithii*. It grows in very fine, well-drained soils, and is often found growing in exposed sites in California, Oregon, Idaho, Nevada, and Utah. The leaves are more finely divided than *V. trinervata* and are densely covered with short hairs that reduce moisture loss and give the leaves a gray appearance.



Getting the Names Straight

Many researchers have worked to improve understanding of the *Viola* genus. Much of this work has resulted in combining species, thereby reducing the total number. In the early 1900s, the best-known student of violas was Ezra Brainerd. During the last 35 years, three botanists have made significant advances in this field. In 1965 Norman Russell published his self-described attempt to improve the arrangement of the species of this genus, *Violets (Viola)*



Viola labradorica

of the Central and Eastern United States: An Introductory Survey. Landon McKinney continued this work, publishing *A Taxonomic Revision of the Acaulescent Blue Violets (Viola) of North America* in 1992. The 29 acaulescent—stemless—blue *Viola* species listed by Brainerd in 1924 were reduced by Russell to 23 species, and by McKinney to just 10 species. Also in 1992, Harvey Ballard published his *Study of the Systematics of Viola Section Viola in North America North of Mexico*. Despite these efforts to clarify the taxonomy of *Viola*, many anomalies of classification have yet to be resolved.

An example of existing taxonomic confusion within the genus exists in the widely grown, attractive purple-leaved violet that is frequently listed as *V. labradorica*. This name is incorrect—it is not the plant originally described under that name. The original *V. labradorica* is a North American species that many taxonomists now include under the name of *V. adunca*. The purple-leaved plant, which may be of European ancestry, is usually now referred to in seed exchanges as *Viola riviniana* forma *purpurea*.

Adding to the ledger of native species are several recent discoveries. In 1988 botanist Brent Wauer found a colony of 35 plants of a new viola in Guadalupe Mountains National Park, along New Mexico's southern border with Texas. No other plants of this species—named *V. guadalupensis*—have been found. In 1992 botanist Noel Holmgren described two new species, *V. lithion* and *V. frank-smithii*, which were first identified in Nevada and northeastern Utah, respectively. —K.B.

V. hallii develops similar finely divided, gray pubescent leaves and flowers with dark purple top petals, but its lower petals are creamy yellow. It is only found

in southwestern Oregon. Despite their demanding cultural requirements, these three beautiful species are highly valued for gardens.

Three more western stemmed species present the gardener with challenges that are well worth the effort; all have yellow flowers with deep brown-purple on the back of the top two petals. *V. douglasii* grows in full sun, in vernal moist serpentine soils that are high in magnesium and chromium, from southern Oregon to northern Baja California. The finely divided leaves are gray-green and hairy. *V. lobata* has ter-



Far left: Shade is required to grow *Viola ocellata*, which has white petals with purple and yellow markings. Left: The pubescent, blue-gray, linear foliage of *V. beckwithii* offers a clue to its adaptation to dry, exposed sites.

Violets in the Garden

GROUND COVERS FOR A WOODLAND GARDEN

These violets spread to form low mats in a shady or semi-shady garden. They prefer a moist, well-drained, and slightly acidic soil, and combine well with other perennials and shrubs that share these cultural requirements, such as native rhododendrons, hostas, trilliums, Virginia bluebells, and ferns.

SPECIES	HABIT	FOLIAGE	FLOWERS	NATIVE HABITAT
<i>V. canadensis</i> (Canada violet)	vertical stem, 12 inches tall, spreads to form dense patches	heart-shaped	white or pale pink, purple stripes and yellow patch on lowest petal	open forest, rocky floodplains
<i>V. hastata</i> (halberd-leaved violet)	vertical stem, 4–10 inches tall, spreading	long, triangular, or spear-shaped, often mottled green and silver	bright yellow on slender stalks	rich deciduous woods
<i>V. selkirkii</i> (great spurred violet)	stemless, 2–4 inches tall, spreading by stolons	pointed, heart-shaped, obvious teeth on margins	pale lavender-violet with large spur	cool, wet woods
<i>V. walteri</i> (Walter violet)	2-inch-tall, spreading mat of horizontal stems that root at nodes	kidney-shaped, purple on lower surface, fine hairs on leaves and stems	mauve	rich, well-drained woodlands

FOREGROUND OF A PARTLY SHADED HERBACEOUS BORDER

The mounding habit of these violets recommends their use in a mixed herbaceous border or nestled beneath spring-flowering shrubs.

<i>V. hirsutula</i> (southern wood violet)	1–6 inches tall, stemless, leaves arise directly from top of root	heart-shaped, hairy, may display silver variegation	purple with darker throat	northeastern woodlands
<i>V. pubescens</i> (downy yellow violet)	6–16 inches, vertical stems	small, heart-shaped, both leaves and stems hairy and dark green	yellow	dry woodlands and clearings
<i>V. rostrata</i> (long-spurred violet)	to 10 inches tall, erect or semi-erect stems	heart-shaped with serrated margins	pale lilac with dark purple markings, long spur	dry, sandy loam of deciduous woods
<i>V. striata</i> (striped violet)	to 10 inches tall, rounded clumps	evergreen, thin, heart-shaped	fragrant, creamy petals with purple stripes	low woods and streambanks

SUNNY ROCK GARDEN

If you live in an area with wet, cool springs and hot, dry summers, the following western species are attractive possibilities for a sunny rock garden.

<i>V. beckwithii</i> (Great Basin violet)	to 6 inches, multiple stems in clusters from short rhizome	finely divided, hairy, gray-green	top two petals purple, lower petals mauve	exposed western locations
<i>V. douglasii</i> (Douglas's violet)	many stems to 6 inches tall, crown well underground	gray-green, hairy, finely divided	deep golden yellow, brown-purple markings	western serpentine soils
<i>V. hallii</i> (Hall's violet)	forms clumps of 4–6-inch stems	finely dissected, gray-green	dark purple top petals, creamy lower petals, yellow eye	exposed, very well-drained western scree
<i>V. pedunculata</i> (California golden violet)	multiple stems form wide clumps, height to 12 inches	broad with pointed tips, scalloped margins	large, orange-yellow with black markings	hot, dry mountains of California

CONTAINER GARDEN

Outside their native habitat, these species will do best in containers, where their need for excellent drainage can be met.

<i>V. lobata</i> (lobed violet)	erect habit with leaves at top of stem, 6–15 inches tall	green to gray-green, deeply lobed	yellow with purple reverse	shaded or open western woodlands
<i>V. pedata</i> (bird's-foot violet)	stemless, 4–10 inches tall, forms large, self-sown colonies	glabrous, palmately dissected with 9–15 lobes	flat faced, lilac or lilac and dark purple, 4–6-inch stalks	dry meadows, prairies, and roadsides
<i>V. trinervata</i> (sagebrush violet)	crown grows several inches underground, 3–6 inches tall	palmately divided, gray-green	top 2 petals dark purple, lower 3 mauve, yellow central eye	crumbling rock (litholol) soils of Pacific Northwest
<i>V. sheltonii</i> (Shelton's violet)	3–6 inches tall, leaves top of stems only, crown underground	narrow fingerlike lobes, dark gray-green	yellow with brown-purple on the back of the top two petals	western forests in sandy soil that is moist in spring

nately or palmately dissected leaves that are concentrated at the top of stout, vertical stems. There is also a form with undivided, heart-shaped leaves. Found in shaded or open woodlands, it ranges from southern Oregon to northern Baja California. Native to Washington and California, *V. sheltonii* grows in shaded, well-drained sandy soil that is moist in spring. Its smooth, glaucous leaves are narrowly divided and occur only at the tops of the stems.

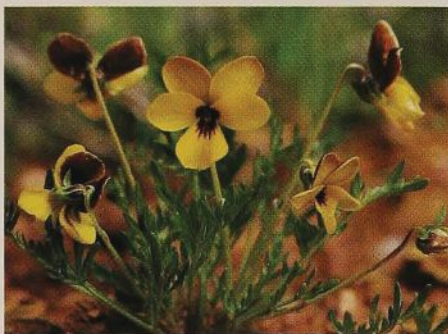
V. ocellata, native to northwestern California and southwestern Oregon, bears white flowers, with dark purple on the reverse sides of the two top petals, dark purple spots on the lateral petals toward the center of the flower, and a central yellow eye. It has heart-shaped leaves on vertical stems and grows in deep leaf litter in full to part shade in the redwood forests of the coastal ranges.

From the hot, dry mountains of Southern California come several species of violets, two of which are very desirable. *V. pedunculata* has huge, orange-yellow flowers that carpet the hills in some areas. Its many stems grow quite tall in the surrounding grasslands to form attractive clumps. *V. aurea*, whose species name reflects its golden flowers, has leaves densely covered with long white hairs. Growing in sandy soil with its crown well underground, it flowers early then dies back before the heat of summer sets in.

SMARTGARDEN™ Tip

VIOLET CONTROL

Many violets make attractive border plants, with their profusion of delicate spring flowers. But if conditions are right, these same plants develop abundant seed that can result in volunteers that crowd out other desirable plants in a border or crop up in areas of the garden where they are not wanted. A SMARTGARDEN™ practice that “outsmarts” this rambunctious multiplier—and other plants with similar self-sowing habits—is to remove flowers as they fade, thereby eliminating the source of the seed. It requires a bit of diligence but saves time in the long run. And pinching flowers is easier than pulling weeds.



Viola douglasii is suitable for a sunny rock garden in areas with wet springs and dry summers.

PROPAGATION AND CULTURE

AS WITH ALL PLANTS, violets should never be dug up in the wild. They are quite easy to germinate from seed. Unfortunately, seeds sent through the mail often arrive damaged after passing through the rollers of automatic sorting machines. To prevent such destruction, all seeds should be wrapped in several layers of bubble plastic. I also usually request that letters be hand-cancelled.

Some *Viola* seeds—those endemic to areas with long, severe winters—need a period of cold conditioning to germinate and are best sown in autumn into pots that remain outside all winter. Alternatively, they can be germinated in the refrigerator in a sealed plastic bag containing moistened soil or a dampened paper towel.

Plant society seed exchanges (see “Resources and Sources,” right) are the best and most comprehensive sources of seeds; membership is generally required to participate. Various collectors who often advertise in the back pages of the journals of the plant societies mentioned above also offer wild-collected seed.

The easiest violets to cultivate are those species whose native conditions are similar to those of the garden in which they are placed. Species that come from widely different climates will offer more of a challenge.

Violets from the eastern and midwestern woodlands are generally easy to grow when given a shady site and humus-rich soil, especially for gardeners living in these areas. The very desirable but more challenging western species demand very good drainage—often in specialized soil—and a dry, hot summer.

Resources and Sources

American Violet Society, Membership, 3901 Jocelyn Street, N.W., Washington, D.C. 22015. www.americanviolet.society.org.

SEEDS

The Alpine Garden Society, AGS Centre, Avon Bank, Pershore, Worcs. WR10 3JP, UK. www.alpinegarden.soc.demon.co.uk/index.html.

North American Rock Garden Society, Jacques Mommens, P.O. Box 67, Millwood, NY 10546. www.nargs.org

Northwest Native Seeds, Ron Ratko, 4441 S. Meridian Street, #363, Puyallup, WA 98373.

Rogue House Seed, Phyllis Gustafson, 250 Maple Street, Central Point, OR 97502.

The Scottish Rock Garden Club, Subscription, P.O. Box 14063, Edinburgh, EH10 4YE, Scotland, UK. E-mail: fbcaudwell@bad.dundee.ac.uk.

Southwestern Native Seeds, Box 50503, Tucson, AZ 85703. Catalog \$2.

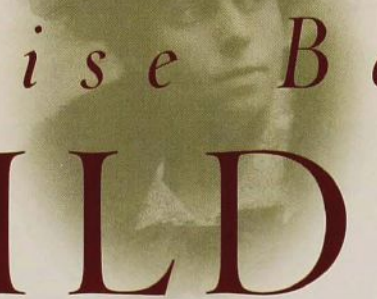
PLANTS

Elk Mountain Nursery, P.O. Box 599, Asheville, NC 28802. (704) 251-9622. www.elk-mountain.com. Catalog \$2.

Sunshine Farm & Gardens, Route 5, Renick, WV 24966. (304) 497-2208. www.sunfarm.com. Catalog free.

But easy or difficult, these diminutive wildflowers bring an abundance of old-fashioned charm to a garden.

Australian gardener, photographer, and plant collector Kim Blaxland lives in Radnor, Pennsylvania. She is currently compiling a reference book on Viola species of the world. Violet specialist, writer, and photographer Mike Hardman, of Hampshire, England, contributed to this article.



Louise Beebe WILDER

AMERICA'S FIRST LADY OF GARDEN WRITING STILL INSPIRES
US WITH HER PASSIONATE PROSE. BY SUSAN DAVIS PRICE

IN THE EARLY DECADES of the 20th century, not a few American women turned their hand to garden writing, among them Louisa Yeomans King (Mrs. Francis King), Helena Rutherford Ely, and Louise Beebe Wilder. All were influential in their day, but none so much as Wilder, whose books remain as relevant today as when they were written. Between 1916 and 1938, she published 10 books about gardening and countless articles in the *New York Times*, *Horticulture*, *House & Garden*, *Good Housekeeping*, *Charm*, and others. She was a member and director of the advisory council of the New York Botanical Garden. The year before her death in 1938, the Garden Club of America awarded her its Gold Medal for Horticultural Achievement—a distinction that had been won by only four others previously.

According to her obituary in the *New York Times*, Wilder, more than any other individual, influenced the development of rock gardening in this country. She devoted three books to the topic, winning a reputation abroad as well; her work received praise in the *Journal of the Royal Horticultural Society* of England.

Today her name still turns up everywhere—in nursery catalogs, gardening magazines, and anthologies. “She’s one of the people I quote most often,” observes garden writer Allen Lacy, who frequently includes nuggets of Wilder’s garden wisdom in his newsletter, *Homeground*. “All I have to do is open one of her books

to find something worth quoting.”

Ed Rasmussen, who owns The Fragrant Path—a Calhoun, Nebraska, nursery specializing in fragrant and old-fashioned plants and the namesake of one of Wilder’s books—frequently quotes her in his catalog. Though he has a large collection of references about fragrant plants, Rasmussen says, “When I go to look up a plant to find if it’s fragrant, I still go to her [Wilder]; her book is the Bible, I guess.”

Several of Wilder’s books were reprinted by Dover in the

1970s and by Atlantic Monthly and Collier in the early 1990s. Hartley & Marks reissued three classics in 1999 (see page 37, for a complete list of titles by Wilder). That Wilder’s writings can hold their own against the glossy tomes of today is perhaps the most telling testament to her work. In the foreword to the 1990 edition of *Colour in My Garden*, published by Atlantic Monthly, Penelope Hobhouse underscores Wilder’s widespread appeal. “She has a special value today for the American gardener, the English garden writer who aspires to find readers in America, and for our English home gardener who wants color direction on an intimate scale.”

Perhaps her writing has maintained its appeal because of the depth of her knowledge—she grew all the plants she wrote about—and the strength of her prose. Rarely sentimental, Wilder’s plant descriptions are accurate and evocative;

her discussions of gardening’s joys and failures are engaging. In *The Fragrant Path*, she comments that rosemary “makes a charming pot plant, neat, svelte, with its dark, felt-lined leaves held sleek against its sides. The smell...is keen and heady, resinous, yet sweet, with a hint of Nutmeg.” After such a description, the gardener must run for the rosemary.



ROSEMARY'S SMELL IS "KEEN AND HEADY, RESINOUS, YET SWEET, WITH A HINT OF NUTMEG."

"At no time from early March to November should the garden be without a number of lovely pictures, each complete in itself and that such sections of the borders as are temporarily out of bloom shall be so constructed that their fullness and freshness shall be maintained by luxuriant and beautiful foliage."

—COLOUR IN MY GARDEN, 1918

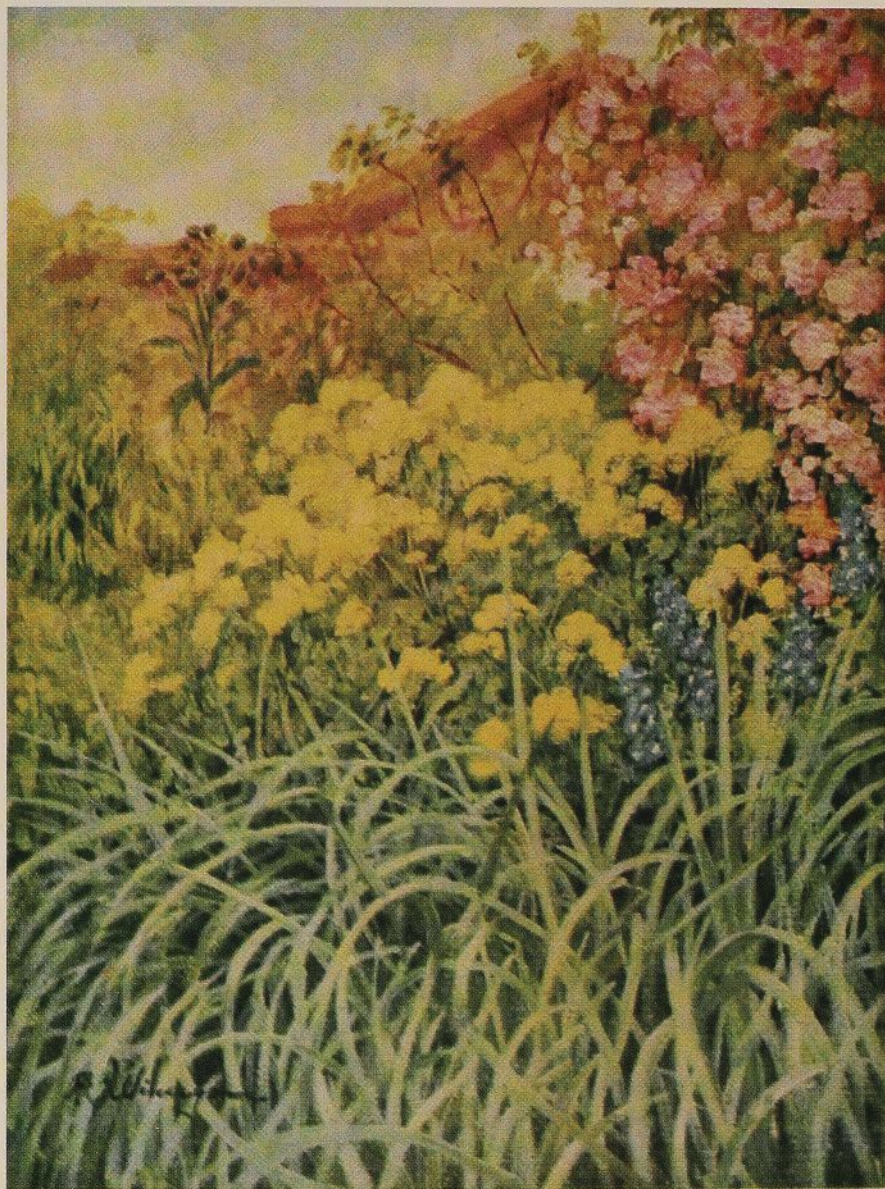
AUSPICIOUS BEGINNINGS

BORN IN BALTIMORE IN 1878, Louise Beebe was a descendant of the royal House of Stuart and a cousin of Lucius Beebe, a columnist for the *New York Herald Tribune* and railroad buff. After a private school education, she married architect Walter Robb Wilder in 1902. Fresh out of Cornell, Wilder was hired by a premier architectural firm that included the famous Stanford White. In 1907, Wilder and Harry Keith White (no relation to Stanford) formed their own partnership; they later received the prestigious commission of designing the capital complex of Washington State.

The Wilders settled in the Lawrence Park neighborhood of Bronxville, a tony suburb of New York City, in 1903. They had two children, a son, Walter Beebe, and a daughter, Harrison. Living and gardening outside of New York for 40 years, Wilder could easily have chosen the conventional life of a suburban matron. Instead, beginning in 1916, she began to churn out practical, well-researched garden essays by the dozen. She continued throughout her life, writing the final piece, "Vines," for *House & Garden* from her hospital bed in 1938.

Indeed, gardening had long been her passion. She recalled lovingly the childhood pleasure of her mother's locally famous rose garden with its great bushes of Provence, damask, and gallica roses, as well as the finest teas and noisettes. On Fridays the young Louise helped distribute bunches of the fragrant blooms to the "sick, sad, and disgruntled" in her hometown of Baltimore. The scents of her grandfather's Massachusetts garden, with its pungent boxwoods and herbs, were etched on her memory as "blossomy enclosures with generations of bloom and sweetness behind them."

Her own first garden, designed at age six, was a rectangle, six feet by 12, enclosed



In The Fragrant Path, Wilder noted that the scent of roses remains "pure, transparent," no matter how deeply one sniffs.

"Our country is rich in valuable material for the garden, but nowhere is it more conspicuously gifted than in its broad marshes along the water courses and lake shores. We need not bring in a single stranger to achieve a waterside garden of the greatest interest and variety."

—COLOUR IN MY GARDEN, 1918

with a fence of clothespins and set off on each corner by a pink conch shell. In the center a sunken milk pan served as a pond; zinnias and portulacas added color.

SOURCES OF INSPIRATION

AS AN ADULT, Wilder tended several gardens, writing primarily about her last two. "Balderbrae" in rural Suffern County, New York, was on 220 acres of land surrounding an old farmhouse. Here the Wilders designed a formal walled garden, with a geometric herb bed, a small reflecting pool, and walls of buff-colored stone. Long, straight paths led past fine shrubbery and flowering trees, a fountain and benches. Built on several levels, the terraces were connected with low flights of stone steps, softened with mats of snow-in-summer, bellflowers, thymes, sedums, alyssum, saxifrages, and violets. It was pictured extensively in *Colour in My Garden*, a book selected as one of 75 Great American Garden Books in honor of the American Horticultural Society's 75th Anniversary in 1997.

In 1920 the Wilders built a smaller house on an acre of land in Bronxville. Their property, cut from an old estate, was quickly surrounded by development. Wilder met the challenge of leaving the established garden at Balderbrae for what she described as "an acre of weedy, sodden pastureland" with her usual energy and resolve. By the second summer, she was tending a rose garden, a primrose path and small piece of woodland, a shrubbery collection, and herbaceous borders. Her "housewife's border" contained plum trees and currant bushes, in addition to herbs and vegetables. Later she also planted quince and cherry trees. The plan, described in *Adventures in a Suburban Garden*, was "formal in design, but most informal in execution."

In a distant corner lay the rock garden, which eventually contained more



Clematis crispa: "Allowed to clamber over a bush, or swinging from the cross-piece of a cedar pergola, this is an attractive and graceful species."

than 2,000 plants from all the corners of the globe. Wilder raised many of these from seed. A rock gardener was a collector, she explained, ever on the lookout for exquisite specimens. Wilder purchased seed from foreign catalogs and exchanged plants with other collectors. She embraced both what she called the "pleasure of the chase" to find a choice specimen and the challenge "to satisfy its whims and needs and make it live in a new and alien atmosphere."

In the rockery and in her borders and shrubbery, Wilder amassed a representative collection of American plants from throughout the United States. In her interest in native plants, she was something of a pioneer. Wilder was thrilled to observe:

"...great amethyst-hued *Anemones* from Montana and Dakota unfold as happily on the slopes of [her] rock gar-

den as if it had been their mountain home; to see a collection of Colorado's wondrous *Penstemons* (raised from seed) develop their arched stems of opalescent blooms; to watch the gray expanse of *Malvastrum coccineum* (from Western prairies) [now *Sphaeralcea coccinea*] gradually take fire until it made a small conflagration on the sunny slopes of the rock garden."

—from *Adventures in My Garden and Rock Garden*

She recommended many native wildflowers that are in vogue today: Joe-Pye weed, cattails, red osier dogwood, great blue lobelia, several native species of clematis (*C. coccinea*—now *C. texensis*—of Texas, *C. crispa* of the Southeast, and *C. virginiana*), and others. They were hard to find commercially, she noted; so she listed sources and urged readers to lobby nurseries and query state botanists for a supply.

IMMERSED IN HER WORK

THE DAILY ROUNDS in Wilder's gardens must have been long, arduous ones. But except for a neighborhood boy to mow the lawn and a weekly "by-the-day-man," she did the work herself. In addition, she kept meticulous notecards on each plant; from these she authored her books and numerous articles—141 for *House & Garden* alone. These wonderful achievements were somewhat unusual for a woman in Wilder's position. Some clues may lie with her home life.

In her writings, Louise mentioned her parents and grandparents fondly. She spoke of her children and neighbors. She dedicated books to her father and mother, the two children, and her gardening mentors. But, for the most part, she is strangely silent about her husband. Walter Wilder seems to have been mostly absent from the garden.

"But of all the coloured leaved plants and shrubs none is so really beautiful and so entirely indispensable as those that wear the silvery or bluish tones. These fill a place in the garden that no other plants can fill; among the gay garden flowers, the trails and mounds and breadths of soft neutral foliage soothe our colour-excited nerves and give us great aesthetic pleasure."

—COLOUR IN MY GARDEN, 1918

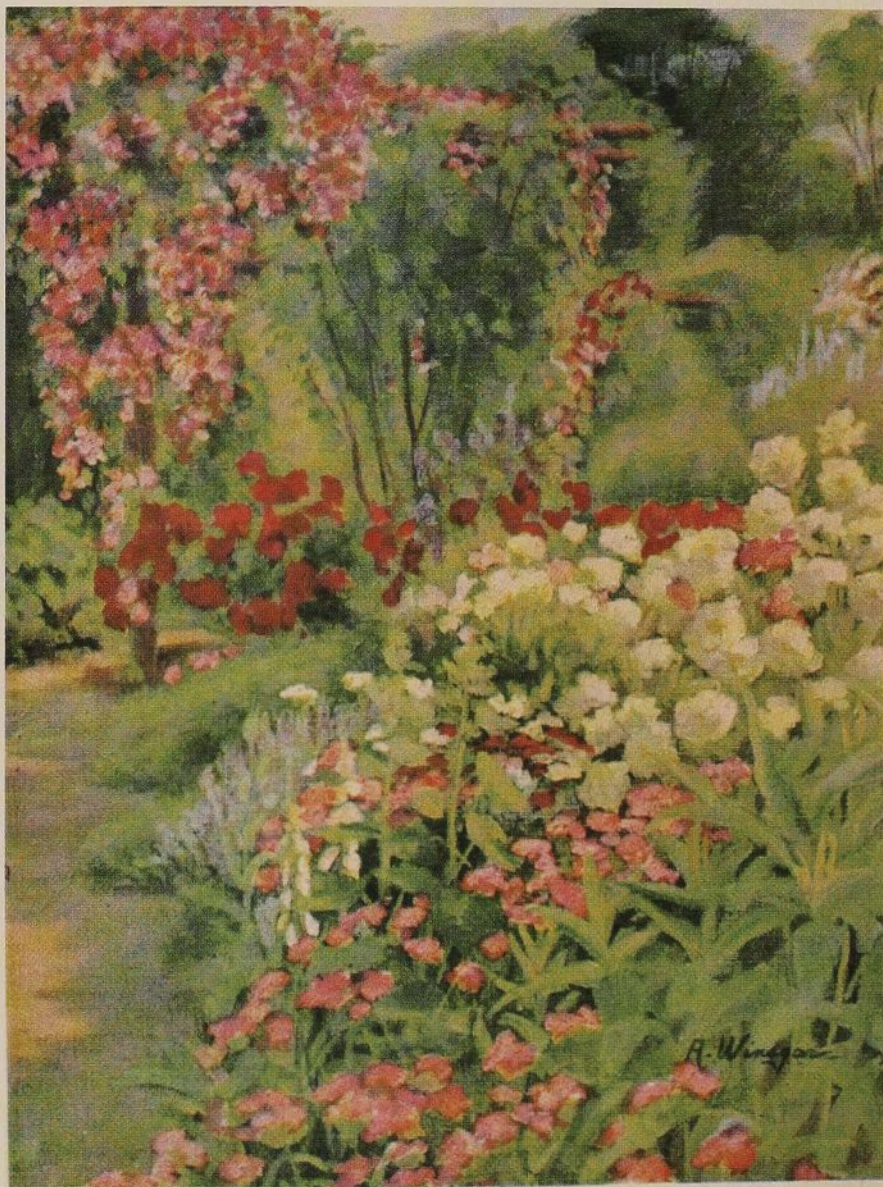
Starting in 1911 when his firm won the monumental commission for the Washington State Capital complex at Olympia, Wilder spent 18 years traveling to and from the site. He, more than his partner White, was the man on location, making the five-day train trip west. In 1928, the project done, Wilder returned home. During the same year, he and Louise became estranged, living apart but never divorcing.

As it was for many architects, the Depression was a huge blow to Walter Wilder. Commissions were small and difficult to secure, and he and White dissolved the firm in 1930. Wilder lapsed into despair, taking his own life in 1934.

These years of separation and perhaps turmoil must have been difficult ones for Louise, but she never mentioned the troubles in her writings. Not only her personality, but the privacy of the age precluded it. Instead, she wrote of the solace of the garden, returning to that theme again and again. In *Adventures in a Suburban Garden*, she referred to the garden as "a collection of plants, an experiment station, a workshop...full of defects,...but an unfailing source of interest, of peace of mind, of joy to its owner." And in *The Fragrant Path* she described gardening as a "friend that never fails, a never-ending source of refreshment, comfort, and entertainment."

AN EYE FOR DETAIL

FORTUNATELY FOR HER READERS, Wilder committed to paper her keen insights on garden care and design. These practical guides were based on years of personal experience as well as extensive self-directed study and observation of gardens during holidays abroad. Detailed notebooks compiled over decades enabled her to report precisely on each plant—its bloom period, soil preference, growth habit, and hardiness.



A chapter is devoted to "Magenta the Maligned," in which Wilder offers a lively defense of this color "so universally despised and shunned."

"Let one stout-hearted weed—and they are all stout-hearted—become firmly rooted among the stones, it is there for a long stay, probably forever. Thence will its roots set out to prowl and creep, insinuating themselves under and over and around the stones, relentlessly threading themselves among the growths and tender rootlets of the choicest among our collection and eventually squeezing them to death."

—PLEASURES AND PROBLEMS OF A ROCK GARDEN, 1928

So vivid are her plant descriptions that the reader can picture them even without photographs. Of one of her favorite asters, *A. linariifolius*, she wrote, "[It] is a bristly, tufted little plant, not more than a foot in height. Its rough, erect stems are closely set with narrow, stiff leaves and bear a single lavender flower of a peculiar porcelain-like quality." A photograph could hardly improve on the information.

Wilder is delightfully perceptive when writing of fragrance. In *The Fragrant Path*, she noted that the scent of roses remains "pure, transparent," no matter how deeply one sniffs. On the other hand, "Inhale too long the perfume of the trailing arbutus and we come upon bitter almond; the scent of the peony is rose-like on the surface, but rather coarse and earthy if pursued past a certain point."

Wilder took pains to tell readers of her own struggles with weather, soil, errant animals, and invasive plants. Avoid *Campanula punctata*, she advised in *Adventures in a Suburban Garden*, because it has the "predatory manners and habits of the proverbial Hun." August is problematic because it is a month of "coarse foliage and robust



Aster linariifolius: "This makes a nice show in September when stationed next to a planting of the common pink heather, *Calluna vulgaris*."

colours," she explained in *Colour in My Garden*. "The pretty disorder, so easily tolerated in the spring, is no longer attractive."

Refreshing, too, is Wilder's challenge of accepted norms. In *Colour in My Garden* she devotes a chapter to "Magenta the Maligned," in which she offers a lively defense of this color "so universally despised and shunned."

Wilder also spoke of plants and gardens in their cultural context and provided wonderful asides on plant names and histories. In *What Happens in My Garden*, Wilder wrote seven charming pages about celandine (*Ranunculus ficaria*), "Wordsworth's flower," describing how it uplifts the mood of country folk who have "long warmed their spirits at its cheery matutinal flickering, and found various remedial uses for its little tuberous roots."

Practical and authoritative, Wilder's books are as inspirational for gardeners today as they were in 1930. In them, she conveys gardening's great appeal. It "opens a way of escape," she observed in *What Happens in My Garden*, "provides the tugging spirit with wings to carry it beyond...the cramping circumference of that communal round. It is more than beauty, it is a release to seek beauty, which is better by a long shot than finding it done up in a parcel on the doorstep."

Author of Minnesota Gardens and Growing Home, both published by the University of Minnesota Press, Susan Davis Price lives and gardens in St. Paul, Minnesota.

Books by Louise Beebe Wilder

The original publication dates and publishers are in parentheses.

Adventures with Hardy Bulbs. The Lyons Press, New York, 1998, \$16.95. (Macmillan, 1936)

The Fragrant Path: A Book About Sweet Scented Flowers and Leaves. Hartley & Marks, Point Roberts, Washington, 1996, \$11.95. (Macmillan, 1932)

Pleasures and Problems of a Rock Garden. Hartley & Marks, Point Roberts, Washington, 1998, \$14.95. (Doubleday, 1928)

What Happens in My Garden. Hartley & Marks, Point Roberts, Washington, 1996, \$14.95. (Macmillan, 1935)

The following books by Wilder are out of print, but they may be available through antiquarian booksellers.

Adventures in My Garden and Rock Garden. Doubleday, New York, 1923.

Adventures in A Suburban Garden. Macmillan, New York, 1931.

Colour in My Garden. Doubleday, New York, 1918.

The Garden in Color. Macmillan, New York, 1937.

My Garden. Doubleday, New York, 1916.

The Rock Garden. Doubleday, New York, 1933.

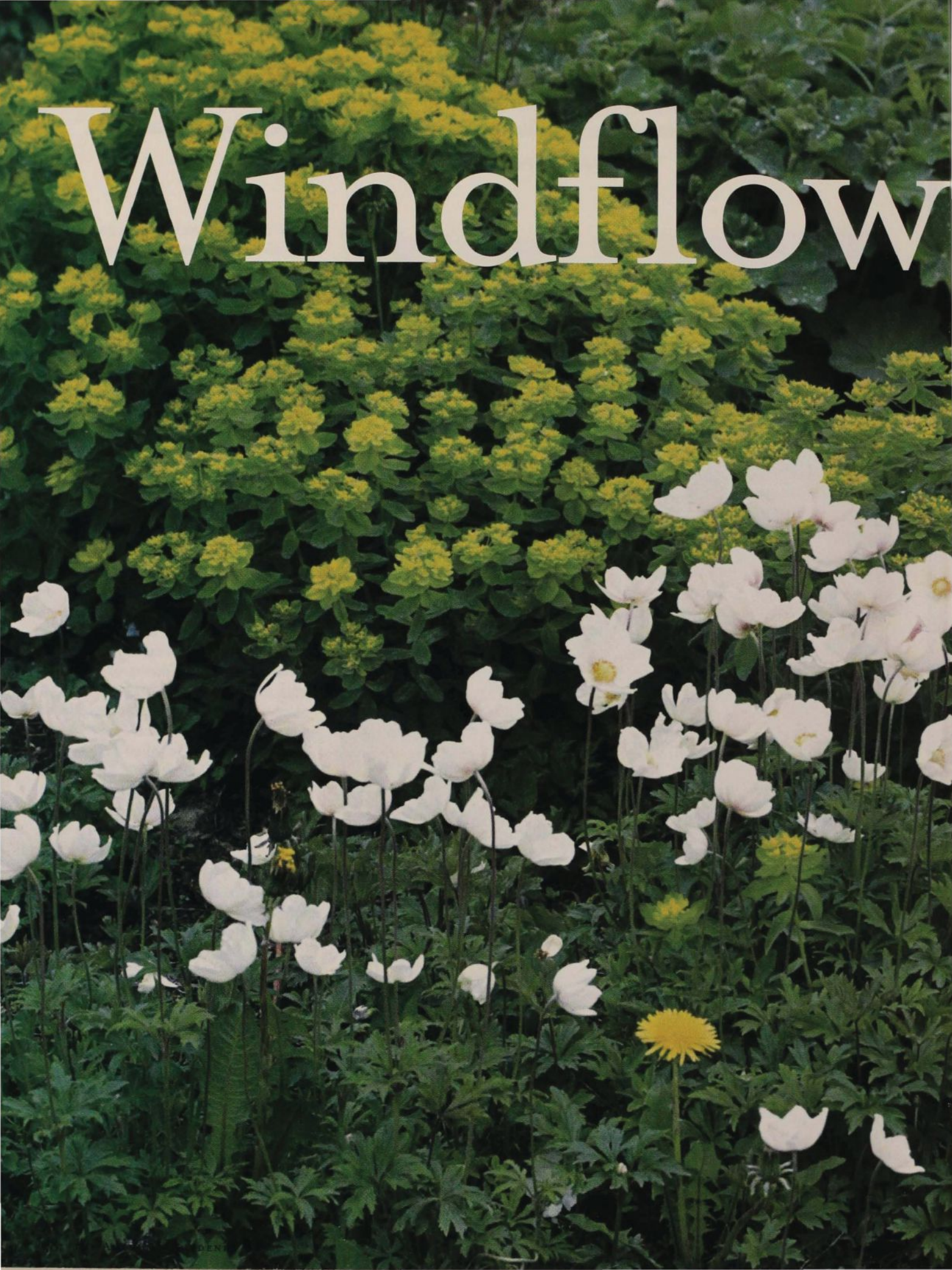
Antiquarian Booksellers

Advanced Book Exchange, www.abebooks.com. Web-based network of booksellers.

The American Botanist Booksellers, P.O. Box 532, 210 W. Pine Street, Chillicothe, IL 61523. (309) 274-5254. www.amerbot.com.

Calendula Horticultural Books, 160 SW Alfred Street, Chehalis, WA 98532. (360) 740-1784. www.localaccess.com/calendula/hortbooks.htm

Raymond M. Sutton Jr., P.O. Box 330, Williamsburg, KY 40769. (606) 549-3464. www.suttonbooks.com.



Windflow

Breaking through winter's frozen ground, the colorful, cheery flowers of anemones warm the gardener's soul.

BY C. COLSTON BURRELL

ers

SO POPULAR ARE THE ANEMONES OF SPRING, commonly known as windflowers, that florid praise drips from the tongues of all who extol their beauty or garden virtues. Clearly writer Louise Beebe Wilder—profiled elsewhere in this issue—was smitten when she wrote in *Adventures with Hardy Bulbs*: “Of all the flowers that flicker briefly across the worn brown garment of early spring, none are more tenderly beguiling than the anemones. They do not charm by splurge, but by far gentler arts.... And I know of no more wholly enchanting experience than to come upon a wide group of them in animated dance beneath the pale green veil of the early year’s weaving before the snow feel has gone out of the air.”

F. F. Rockwell, in *The Complete Book of Bulbs*, counted them “amongst the gayest, cheeriest and most brightly colored of all flowers.” In *My Garden in Spring*, E. A. Bowles proclaimed, “There is a charm in the simple form of a single anemone that goes straight to my heart.” Who can blame these writers for this effusive exaltation? The very name windflower speaks to the poet in all of us, as do their colorful blossoms, which lift our spirits as they rise from the frozen soil in late winter.

Anemones are members of the buttercup family (Ranunculaceae), which also includes such ornamental standards as *Clematis*, *Delphinium*, *Helleborus*, and *Thalictrum*. More than 120 anemone species have been identified and hundreds of cultivars have been selected. For garden purposes, anemones are usually divided into three groups: spring-flowering species with tuberous or rhizomatous roots; tuberous-rooted spring- and summer-flowering species native to regions with hot, dry summers; and taller, fibrous rooted, late summer- and autumn-blooming species. The last group was described in an article in the September/October 1999 issue of *The American Gardener*.

It is the diminutive spring- to early summer-flowering species that are the focus of this article. Most of these species are native to temperate woodlands or sub-alpine meadows in Europe, Asia, and North America. The majority are cold hardy to at least USDA Hardiness Zone 5, but as a group they are not very heat-tolerant, doing best in regions cooler than AHS Plant Heat Zone 8 or 9.

Left: Snowdrop anemone (*A. sylvestris*) pairs with yellow-flowered *Euphorbia polychroma* in the spring garden. Below: Early-blooming *A. blanda*.

WORTHY SPECIES

THE MOST POPULAR, and arguably the most beautiful early anemone is Grecian windflower (*A. blanda*). These “starry, dapper little daisies,” as writer Ann Lovejoy calls them, are borne six to eight inches above a triad of three-lobed leaves. When the flowers open, they obscure the leaves so they seem to have burst forth from the ground without stems or foliage. This is the earliest bloomer, often opening its first flowers in late winter with the first of the hellebores. The shriveled, stubby, tuberlike rhizomes



that arrive in the fall look like petrified raisins. These should be soaked in tepid water for 24 hours before planting so they will establish more easily. Despite their beyond-death appearance when you plant them in autumn, the cheery flowers spring forth like magic in March and April. Give them a spot with rich, evenly moist but well aerated soil and full spring sun. They become completely dormant in summer, so shade is not an issue. Established plants spread to form sizeable clumps, and self-sown seedlings will appear in USDA Zones 4 to 8; AHS Zones 8 to 1.

The Heaths of Brent and Becky's Bulbs, a mail-order nursery in Gloucester, Virginia, report that 'White Splendour', with its snowy sepals, is the most popular selection of their best-selling anemone species. Other excellent selections include the hard to find 'Blue Star'—whose two-and-a-half-inch dark blue flowers are my personal favorite—and the widely available 'Blue Shades', which offers medium to dark blue flowers that vary from plant to plant. 'Violet Star' has white-centered purple flowers. Three pink selections include 'Pink Star', 'Rosea', and the deeper colored 'Charmer'. 'Radar' has mauve flowers.

Apennine windflower (*A. apennina*), from southern Europe, has a similar floral constellation to Grecian windflower, but the leaves are less intricately divided. The blue flowers open as those of *A. blanda* are fading. When planted together, the two

make for a long bloom season of three to four weeks. Plants grow taller—five to 10 inches—from fleshy tuberous rhizomes, and established plants are free flowering and free seeding. The selection 'Alba' has white flowers. This species does best in Zones 5 to 8; 9 to 3, though I grew it with winter protection in USDA Zone 4.



Top: Selections of *A. blanda* display the variable colors available in the species. **Above:** *A. nemorosa* 'Bracteata Pleniflora' and 'Flore Pleno' growing together. **Below:** *A. nemorosa* 'Vestal' blooming with foamflowers, tulips, and bleeding heart.



The starry white flowers of European wood anemone (*A. nemorosa*)—hardy in Zones 4 to 8 and heat tolerant in Zones 8 to 1—carpet the ground like drifts of windblown snow in early spring. In the deciduous woodlands of Europe, wood anemones consort with hellebores, primroses, and scillas. Deemed "the best spring Anemone" by legendary American rock gardener Linc Foster, this European woodlander adapts beautifully to gardens in North America. Few ephemerals offer so much beauty for so little care. The spidery shoots push from the cold ground in early spring, with the buds poised to pop open in the warm spring sunshine. Five oval sepals surround a bright yellow cluster of stamens. Flower color varies from white to pink, blue or lilac, depending on the cultivar. The shy flowers close their petals and droop in the cool of the evening, revealing a faint blue blush on the backs of the petals. Plants grow from creeping rhizomes that look like slender cocktail pretzel sticks, the eyes being the baked-on salt. They rise five to six inches tall, and established clumps are easily two to three feet wide. Give these beguiling plants rich, humusy, evenly moist soil in full sun to dappled shade. Crowded clumps flower poorly, so divide periodically.

Numerous superior selections have been named for their varied colors and large single or double flowers. My favorites are the large lavender flowers of 'Robinsoniana', the small but colorful pale violet flowered 'Bowles Purple' and the large, snow-white *A. nemorosa* var. *grandiflora*. 'Vestal' is a charmer with wide white petals accented by a subtle white pompon at the center of the flower. For sheer whimsy, try 'Bracteata', which has ragged white and green double flowers that remind me of sea anemones but are aptly described by Bowles as "the Mad Hatter and March Hare in one."

The glowing yellow flowers of buttercup anemone (*A. ranunculoides*) add a splash of sunlight to the brown earth of early to mid-spring. The half-inch rich yellow flowers are carried two to four inches high, just above a ring of three leaves with long, fingerlike lobes. A showier selection, often listed in catalogs as "large-flowered form," has flowers close to an inch across. The semi-double 'Pleniflora' is a tad



Anemone flower colors range from sedate to flashy. The pale yellow of *A. x lipsiensis* harmonizes with *Hacquetia epipactis* in the author's woodland garden, above. Below, the red and purple flowers of *A. coronaria* De Caen strain are among spring's showiest.

showier and the blooms last a few days longer than the wild form, but I still prefer the single flowers. This easy-care plant thrives with the same culture as the closely related European wood anemone and also grows in Zones 4 to 8; 8 to 1.

A. x lipsiensis (sometimes listed as *A. x seemanii*) was produced by crossing *A. nemorosa* with *A. ranunculoides*. Its early to

mid-spring flowers—a delicious pale lemon-chiffon color that I find irresistible—are intermediate between its parents. It grows in Zones 5 to 8; 8 to 5. In my garden I have paired this three- to six-inch-tall beauty with the acid yellow bracts of *Hacquetia epipactis*, a plant with which this hybrid's wild parents share their woodland home in Europe.

Growing eight to 12 inches tall, the poppy anemone (*A. coronaria*) is undeniably the showiest species. Huge single or double flowers in shades of red, purple, and rose, as well as pure white seem to dare you to try them time and time again, despite multiple failures. No matter where I have gardened, I find them temperamental and frustrating. I echo the sentiments of Elizabeth Lawrence, who wrote, "The single flowers are ostentatious at this early date, and the fine foliage comes so early that it makes a pretty pattern when the ground is bare. Since the tubers are cheap, it is worth planting on the buy and die system, for they seldom persist more than a year." This Mediterranean native is only reliably cold hardy in Zones 7 to 9 (AHS 10 to 7), but in colder zones, you can set out tubers in early spring—after danger of a hard freeze has passed—for bloom the same season.

A number of cultivars and strains of poppy anemone are available. 'The Bride' has single, pure white sepals with contrasting dark pistils. The De Caen strain offers single scarlet, violet, or white flowers, while the St. Brigid strain has double

Best Early Bloomers

Plants are arranged in sequence of bloom time, beginning with the earliest.

Grecian Anemone (*A. blanda*)

blooms Mar.—Apr.
flowers white to purple
height 6–8 inches
USDA Zones 4–8;
AHS Zones 8–4
sun to part shade



Poppy Anemone (*A. coronaria*)

blooms Mar.—Apr.
flowers white, red, purple
height 8–12 inches
Zones 7–9; 10–7
sun



Buttercup Anemone (*A. ranunculoides*)

blooms Mar.—Apr.
flowers buttery yellow
height 2–4 inches
Zones 4–8; 8–4
sun to part shade



Wood Anemone (*A. nemorosa*)

blooms Mar.—May
flowers white to purple
height 4–6 inches
Zones 4–8; 8–4
sun to part shade



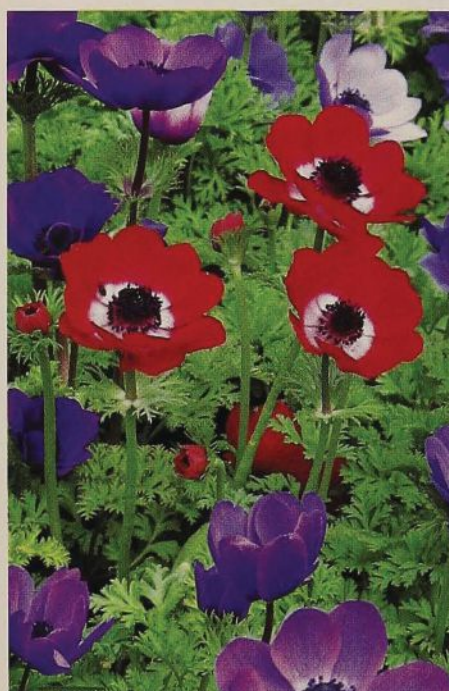
A. x lipsiensis

blooms Mar.—May
flowers cream to pale yellow
height 3–6 inches
Zones 5–8; 8–5
part shade



Scarlet Windflower (*A. x fulgens*)

blooms Apr.—May
flowers red
height 8–12 inches
Zones 7–10; 10–7
sun



TOP: C. COLSTON BURRELL; BOTTOM: LYNN HARRISON; FAR RIGHT, TOP TO BOTTOM: ALEXANDRA SZYWALA, LYNN HARRISON (3); C. COLSTON BURRELL; MICHAEL S. THOMPSON

flowers. All are prized as cut flowers.

The related scarlet windflower (*A. ×fulgens*) is also coveted for its huge scarlet flowers. Louise Beebe Wilder declared that “One flower coming up...rivets all eyes upon it. Could anything be redder?” This hybrid species is hardier and more reliable than poppy anemone and will establish long-lived clumps where conditions are amenable. Try a sheltered, sunny spot with rich, well-drained soil composed of humus and fine gravel. It grows to a foot tall in Zones 7 to 10; 10 to 7.

A. flaccida, found wild in low woodlands and meadows from Siberia east to Japan, demands extra moisture to thrive. Having just acquired the plant, I have little experience with it, so I defer to E. A. Bowles, who said its foliage varies in color as it matures: “At first they are golden bronze, then turn a bright green spotted with white, and end by being dark green marbled with gray, and a good-sized clump will bear many shades of green at one time.” The snowy to egg-shell-white flowers bloom in late spring on 12- to 15-inch stems above a pair of five-lobed, toothed leaves that resemble a cranesbill leaf. Set out plants when young, and avoid disturbance, which damages the long wiry rhizomes. It grows in Zones 4 (with protection) to 8; 8 to 1.

FOR COOLER GARDENS

THE FOLLOWING SPECIES are native to mountainous regions and will do well only in areas that aren't subject to hot, humid summers. Most of these plants have fibrous or woody rootstocks, and in general they grow taller and bloom later than the tuberous and rhizomatous species described above.

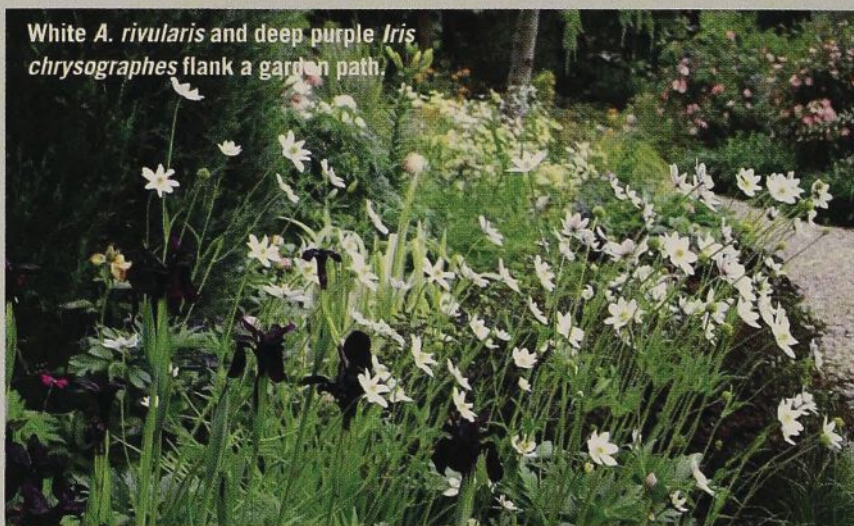
A. narcissiflora, which hails from the high mountains of central and southern Europe, is tricky to grow. The creamy to pale yellow flowers are carried in open clusters atop woolly stems that emerge soon after the snow melts in the alpine meadows. Success in the garden depends on cool nights and low humidity. Plants do best in the west and in northern New England, languishing in the steam bath of Virginia in August. Plants grow well in Zones 4 to 7; 7 to 4.

The fibrous-rooted *A. rivularis* has a rather open, gangly form compared to its

more compact kin. The white flowers, flushed blue on their backsides, bloom in clusters in late spring on wiry stalks of uneven length well above the foliage on two-and-a-half-foot stems. A whorl of three-part leaves sits below the flowers, each narrow leaflet sporting toothed, fingerlike lobes. Plants are found wild in mountain meadows from Tibet to China, and south as far as Sri Lanka. Give plants rich, consistently moist soil in light to part shade, or full sun in the north. They are cold hardy in Zones 4 to 8, but intolerant of summer heat.

Despite its unearthly beauty, the snowdrop anemone (*A. sylvestris*) may

turn from treasure to pariah in a single season. The plants spread at the speed of lightning from wiry rhizomes that exploit any open ground. To the plant's credit, it tolerates all manner of adversity, including the dreaded dry shade, freely producing a virginal crop of fragrant, snowy flowers on 12- to 20-inch stems in late spring. British garden books mention the superior selection called “Major,” sometimes listed as the cultivar ‘Grandiflora’. Whether or not a cultivar name is listed, the bulk of the plants available in North America seem to be of this superior selection. Plants thrive in Zones 3 to 8; 8 to 1.



White *A. rivularis* and deep purple *Iris chrysographes* flank a garden path.

ANEMONE MYTH AND LORE

Anemones seem inextricably intertwined with folklore and legend. In his new book *A Contemplation of Flowers*, Bobby Ward offers a number of plausible origins for the romantic common name. The genus name *Anemone* has long been thought to derive from the Greek *anemos*, meaning “wind,” thus giving rise to windflower. Ward proposes a possible origin from the Semitic na‘aman, meaning the “handsome one.” This derivation may explain the confusion through time between anemone and the closely related genus *Adonis*, both of which belong to the buttercup family (Ranunculaceae).

In Greek mythology, Adonis was adored by Aphrodite—Venus to the Romans—but Ares killed Adonis because he jealously loved Aphrodite. Upon Adonis's death on the tusks of Ares, disguised as a boar, Aphrodite transformed her slain lover into a flower. Another telling of the story suggests that anemones sprang from the ground touched by Aphrodite's tears.

My favorite story that Ward tells holds that Anemone was a nymph favored by Zephyr, the god of the west wind. Flora, the goddess of flowers and spring, was enraged by this favoritism, and banished Anemone from the court and transformed her into a vulnerable spring flower. Fickle Zephyr abandoned the flower to Boreas, the brusque god of the north wind, whose chilly caresses cause the blossoms to quickly fade in the cold air of early spring.

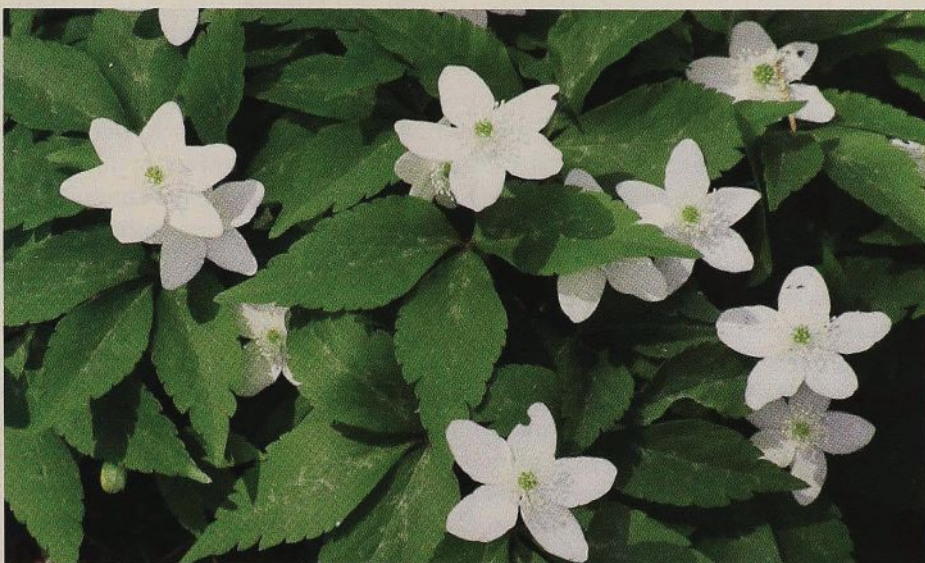
—C. C. B.

Native to the woodlands of Europe, *A. trifolia* closely resembles the American mountain anemone (*A. lancifolia*). White flowers are borne singly above the standard triad of palmately lobed leaves. Reginald Farrer considered it one of the best, but Dan Hinkley of Heronswood Nursery writes that while it conducts itself "with grace and dignity," it also possesses a "certain air of holier than thou." Give plants rich, spring-moist soil in part shade. Where the plant is happy, it will form a tight mat of foliage and flowers up to six inches tall. It grows in Zones 4 (with protection) to 8; 8 to 5.

Another fibrous-rooted species is *A. rupicola*, which hails from the Himalayas. This species has large white flowers with a pink reverse held singly above silky, coarsely cut leaves. I have no personal experience with it, but Linc Foster prized this species, which he says is easy to grow in rich, well drained soil in part shade. Zones 4 to 7; 7 to 1.

The Andes of South America are home to the Magellan anemone (*A. magellanica*), which opens its one-inch creamy white flowers in early spring atop six- to 12-inch stalks in early to mid-spring. The flowers are freely produced above the hairy, finely cut foliage that forms dense clumps. Plants grow best in rich, moist soil in full sun or light shade. As its mountainous habitat indicates, it is extremely hardy; it thrives from Zones 2 to 7; 7 to 1.

Pristine white flowers of *A. trifolia* are held above three-lobed palmate leaves, which give this woodland species its name.



This species resembles *A. multifida*, a native of North America, and some plants listed under the name *A. magellanica* may actually be the former species.

AMERICAN NATIVES

THOUGH REGINALD FARRER considered the American anemones "for the most part vastly inferior," our natives are not without their proponents. Mrs. William Starr Dana, author of *How to Know the Wild Flowers* believed the wood anemone "hold[s] the very essence of spring and purity in its quivering cup." While blossom for blossom decidedly less showy, our native woodlanders have their own quiet charm. Their reputation as plants that are difficult to establish has perhaps more to do with their relative scarcity in gardens than their aesthetics.

The wood anemone (*A. quinquefolia*) is a dainty plant that carpets open, often rocky, woods as well as shaded pine and hemlock forests. Plants seem equally tolerant of growing wild in northern woods on acidic humusy soils as well as in circumneutral limestone soils throughout the Appalachians and the Midwest. Plants grow to eight inches tall from thin, brittle rhizomes that roam widely. Some colonies may produce a wealth of foliage and intermittent flowers, while others are packed with flowering stalks. A single, snow-white flower is held above a triad of five-lobed leaves. Plants can be tricky to establish, but once past the initial hurdle, they will perform well under most garden conditions in Zones 3 to 8; 8 to 3.

The mountain anemone (*A. lancifolia*) is often mistaken for the wood anemone at first glance. A second look reveals this species to be a more robust plant, growing to 10 inches tall, with broad, bright green leaves sporting three broad lobes instead of five. Plants are generally easy to establish, and more free flowering than their more northern cousins. This is a plant of dry to mesic woods, and seems to grow best in slightly acidic soils in Zones 4 to 8; 8 to 1. Plants spread by creeping, fleshy white rhizomes.

Sources

Arrowhead Alpines, P.O. Box 857, Fowlerville, MI 48836. (517) 223-3581. Catalog \$2.

Brent and Becky's Bulbs, 7463 Heath Trail, Gloucester, VA 23061. (877) 661-2852. www.brentandbeckysbulbs.com. Catalog free.

Heronswood Nursery, Ltd., 7530 N.E. 288th Street, Kingston, WA 98346-9502. (360) 297-4172. www.heronswood.com. Catalog \$8.

Joy Creek Nursery, 20300 N.W. Watson Road, Scappoose, OR 97056. (503) 543-7474. Catalog \$2.

Roslyn Nursery, 211 Burrs Lane, Dix Hills, NY 11746. (516) 643-9347. Catalog \$3.

Resources

The American Gardener's World of Bulbs by Judy Glatstein. Little, Brown and Company, Boston, 1994. \$24.95.

The Explorer's Garden by Daniel J. Hinkley. Timber Press, Portland, Oregon, 1999. \$39.95.

Rock Gardening: A Guide to Growing Alpines and Other Wildflowers in the American Garden by H. Lincoln Foster. Timber Press, Portland, Oregon, 1982. \$24.95.

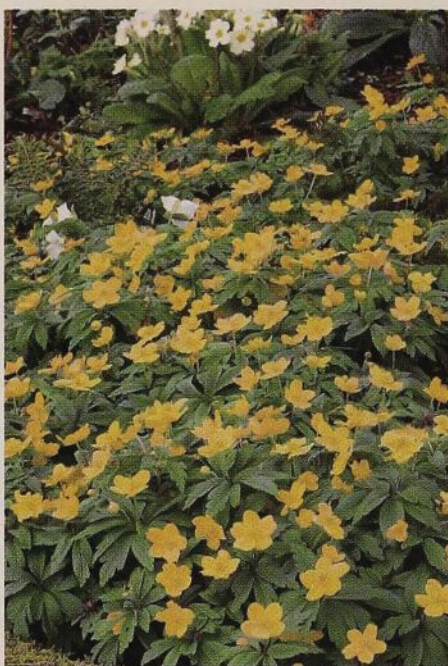
A. caroliniana is seldom seen in gardens, though it was a favorite of Claude Barr, guru of high plains flora, who considered it “one of the world’s prime treasures” and praised the beauty and adaptability of its “brave and dainty flowers.” Plants reach scarcely a foot tall in gardens, and may often rise only four to five inches above a carpet of dried grama grasses on their native prairies. The customary triad of stalkless, three-lobed stem leaves form a fringe beneath solitary, daisylike flowers that may be white, pink, or blue depending on the individual plant. Barr noted that the leaves emerge with autumn rains and persist through the winter. This species is largely central in distribution, preferring dry prairies and sand barrens from Indiana and Georgia west to the Rocky Mountains in Zones 3 to 8; 8 to 1.

Two western species of exceptional beauty but scarce supply are Columbia windflower (*A. deltoidea*) and blue anemone (*A. oregana*, sometimes listed as a variety of *A. quinquefolia*). Linc Foster considered Columbia windflower “the finest of the American wood anemones and quite the equal of the European.” Though I have not grown this species, I have admired it in its native Douglas fir forest in the Pacific Northwest. This plant differs from other anemones in having simple, undivided stem leaves rather than compound leaves. Each stem bears a single one-inch snow-white flower in spring.

The deep blue flowers of blue anemone carpet the ground in dense to somewhat open conifer forests within the same region. This species has three leaves, each divided into three to five lobes. Though seldom offered, it is worthy of cultivation because of its beauty. In stature and color it resembles *A. nemorosa* ‘Robinsoniana’. Both species thrive in Zones 4 to 8; 8 to 1.

PLANTING AND PROPAGATING

WINDFLOWERS ARE FOR THE MOST PART readily available from nurseries and as a group are relatively easy to grow. The tuberous species are best planted from mid-October, in the North, to late November, in the South. Plant the tubers two to four inches deep; they will give the best show if they are clustered or massed, and most species form broad carpets over time.



Buttercup anemone grows in luxuriance in this woodland garden in Oregon. This diminutive species can be planted in borders or massed in sun or part shade.

Tuberous-rooted anemones can be dug and divided in midsummer once they have become dormant. Rhizomatous species can be divided in spring or as soon as the foliage has disappeared.

Most anemones can also be grown easily from fresh seed, but will take two to three years to flower. Sow seeds as soon as they are ripe in a soilless mix that includes at least half coarse sand. Place the container in a cold frame or cool, sunny room and keep the soil just moist. Germination can take up to a year and may require alternating cycles of cold and warm conditioning.

ANEMONES IN THE GARDEN

FOR AN ENCHANTING GROUND COVER at the front of a woodland border, I allow the rhizomes to creep amongst ferns, foamflower (*Tiarella cordifolia*), wild gingers (*Asarum* spp.), and sedges that will cover the gaps left when the plants retreat below ground in summer. My favorite combination features carpets of wood anemones in mixed colors, punctuated by luscious clumps of Lenten roses (*Helleborus ×hybridus*) with dangling chalice. I add height to the combination with variegated Japanese Solomon’s seal

(*Polygonatum odoratum* ‘Variegatum’) and the furry, unfurling fiddleheads of shield or wood ferns (*Dryopteris* spp.).

I use buttercup anemone to accentuate the golden variegation of *Hosta rohdeifolia* and variegated black sedge (*Carex nigra* ‘Variegata’), while the paler *Narcissus* ‘Hawera’ and barrenwort (*Epimedium ×versicolor* ‘Sulphureum’) create a pleasing color echo. Plant *A. rivularis* in a perennially moist spot where the late spring flowers make a bright show with irises, primroses, quamashes (*Camassia* spp.), astilbes, and ferns—such as royal (*Osmunda regalis*), log fern (*Dryopteris celsa*), and chain ferns (*Woodwardia* spp.)—that tolerate wet feet.

In a native plant garden, blend wood or mountain anemones with ephemeral wildflowers like Dutchman’s breeches (*Dicentra cucullaria*), toothworts (*Cardamine* spp.), trilliums, and shooting stars (*Dodecatheon* spp.). Anemones are also good companions for persistent wildflowers such as blue phlox (*Phlox divaricata*), wild bleeding heart (*Dicentra eximia*), plantain-leaf sedge (*Carex plantaginea*) and wood ferns (*Dryopteris* spp.). They also make an enchanting carpet under native azaleas and rhododendrons.

The most difficult anemone to please in a garden setting is *A. narcissiflora*, which is so intolerant of heat and humidity that it is virtually impossible to grow in the South and lower Midwest. For gardeners in other regions, the best chance of success is in a rock garden situation, with rich moist soil and excellent drainage. In the right spot the plants are stunning in combination with harebells (*Campanula* spp.), pasque flowers (*Pulsatilla* spp.), primroses, columbines, and other alpine.

Whether you pair them with other spring-blooming flowers or naturalize them in massed glory, anemones are among the most treasured inhabitants of the early spring garden. Their ephemeral beauty may inspire you—as it has so many others—to unrestrained eloquence. 🌸

Author, landscape designer, and avid plant collector C. Colston Burrell gardens in the Blue Ridge Mountains near Charlottesville, Virginia. His latest book, Perennials for Today’s Gardeners, will be published by Meredith Books this year.



COLD-HARDY CACTI

Cacti needn't be relegated to desert gardens. In addition to being drought tolerant and dramatically shaped, many are surprisingly hardy. BY DAVID SALMAN

FEW GARDENERS OUTSIDE the American Southwest think of cacti as anything more than grocery store curiosities. Yet there are a significant number of cold-hardy members of this large and diverse family that have the potential for much broader use. As more and more gardeners experiment with the various cold-hardy species, their usefulness as garden plants is expanding into a much larger portion of North America. Mixed with other succulents or with herbaceous plants in outdoor plantings, their spectacular flowers, fascinating spine patterning, and bold evergreen stems add interest and diversity.

NEW WORLD PLANTS

THE MORE THAN 100 GENERA and some 1,600 species that comprise the cactus family (Cactaceae) are native only in the Western Hemisphere. They are found throughout North and South America and the Caribbean, but the greatest concentration of species is found from Mexico northward into Arizona, New Mexico, and western Texas. The majority of cold-hardy species are concentrated in a

dozen or so genera whose habitats extend into the mountains of northern Mexico and the western United States, although a few are native to the mountains of southernmost Argentina.

In the United States, several hardy cacti genera are native to the western Great Plains from Oklahoma northward into Montana and the Dakotas. One species of the genus *Escobaria* can even be found venturing into the southern edge of central Canada! The mountains and high, cold desert plateaus of the vast intermountain region are also home to numerous species, as is the Chihuahuan Desert in western Texas and southern New Mexico. The cold hardiness of many species from western Texas and the Southwest exceeds what might be expected given the historic low temperatures for the region recorded in the 20th century. Researchers suspect these plants have retained a genetic tolerance of cold acquired many thousands of years ago when the area was much colder.

For the purposes of this article, "cold hardy" is defined as being tolerant of temperatures of zero degrees Fahrenheit or lower. The most cold-hardy

Springtime color in a desert garden: Here the magenta-pink blooms of *Echinocereus reichenbachii* var. *baileyi* are set off by the vivid yellow flowers of *Hymenoxys scaposa*.

genera include Great Plains natives such as *Escobaria*, the wide-ranging prickly pear cacti (*Opuntia* spp.), and mountain dwellers such as *Echinocereus* and *Pediocactus*, which can withstand winter lows of -30 degrees and colder.

HEDGEHOG CACTI

THE LARGEST GENUS of cold-hardy cacti is *Echinocereus*, commonly known as hedgehog cacti. Because of the vast numbers of subspecies and variants that can be found, many cactus collectors concentrate solely on this huge group. The red- to orange-flowered *Echinocereus triglochidiatus* (USDA Zones 5-10, AHS Zones 12-7) includes numerous subspecies and geographic variants that range from huge three-foot-wide clumps with hundreds of spiny stems to small, nearly spineless types that inhabit the mountains of central New Mexico and the plateaus of western Colorado.

Another accommodating garden dweller is *E. reichenbachii* (5-10, 12-7), which produces masses of pink to magenta flowers. The showiest forms of this clump-forming species are found on the rocky hills of south central and western Oklahoma. The attractive pure white to pinkish brown comblike spines are among the most gardener friendly of the cactus family. *E. reichenbachii* is a fast grower—for a cactus—and blooms at an early age. It also readily reseeds, given the right garden conditions.

E. viridiflorus (6-10, 11-7) is a small barrel-type cactus found principally on the shortgrass prairies of eastern New Mexico, Colorado, and Wyoming. The nickel-sized flowers vary in color from yellow-green to green. The most desirable selections have attractive, deep red spines. It is very easy to grow and, being a prairie species, tolerates more moisture than some cacti. An even smaller species that usually doesn't form more than a few stems per clump is *E. fendleri* (8-10, 11-9), which is most common in central and western New Mexico and southeastern Arizona. It has very attractive spine patterning and huge magenta flowers up to three inches in diameter.

The spectacular large magenta flowers and individual stems of *E. engelmannii*—native to Arizona, Utah, and southern Nevada and California—look similar to those of *E. fendleri*, but *E. engelmannii*



A wonderful interplay of color and texture can be achieved by combining *Echinocereus* and *Escobaria* species with drought-tolerant plants such as yuccas and penstemons.

forms much larger clumps. Of its numerous subspecies, *E. engelmannii* var. *variegatus* is the most cold hardy (7-10, 11-8). Because *E. engelmannii* hails from very dry areas, it is not tolerant of much soil moisture once established.

GOOD FOR BEGINNERS

MAGENTA-FLOWERED *Escobaria vivipara* and its subspecies (4-9, 10-5) are the widest ranging of all the hardy cacti species, occurring from the Great Basin in Nevada and Utah southeast into Arizona and New Mexico and then northward through eastern Colorado and the central and northern prairie states into southernmost Saskatchewan. This clustering species is long blooming—late spring through early summer—and adapts readily to cultivation. It is a good starter species for some-

one who doesn't have much experience gardening with cacti. Among its many interesting varieties are: *E. vivipara* var. *rosea* from the mountains of Nevada, which has large purple flowers, and the small-stemmed *E. vivipara* var. *bisbeeana* from southeastern Arizona, which features tight white spines and pale pink flowers.

Another extremely cold-hardy species, *E. missouriensis* (4-9, 10-5) is native to the western Great Plains. This species typically forms clusters, with a profusion of greenish yellow flowers appearing in late spring. Readily adaptable to garden culture, it mixes well with a variety of herbaceous prairie wildflowers.

One of my favorite *Coryphantha* species is the little-known *C. echinus* (6-10, 10-6) from western Texas, which is a durable and reliably cold-hardy gem.

The symmetrical patterning of its white spines makes a fine backdrop to the glowing yellow flowers with orange centers, which bloom for a long period in the heat of early summer.

Another fascinating species sharing the same range as *C. echinus* is *Echinocactus texensis* (5–10, 10–5). Because the stout spines of this species can puncture hooves, Texas ranchers have dubbed it “horse crippler.” As a garden specimen, however, this barrel-type species can be of value: It can grow to a foot or more in diameter and its thick, clawlike spines are very ornamental, as are the large burnt orange flowers that ring the top of the flat stems. In late summer, large showy orange fruits crown the plant. If you have children or pets, however, this may not be a good choice for the garden.

OTHER WORTHY SPECIES

FEROCACTUS HAMATACANTHUS (6–10, 11–7) is the most cold-hardy member of its genus, which is best known for the whopper-sized specimens found in the Sonoran and Mojave deserts. *F. hamatacanthus* is from western Texas, however, and is considerably smaller, growing to 15 inches in height and a foot or more in diameter. It has three- to four-inch-long, hooked pink or straw-colored spines and large showy yellow flowers.

The subalpine *Pediocactus simpsonii* (4–7, 8–5) is most often seen at higher altitudes of mountain ranges in New Mexico, Colorado, Utah, Nevada, and southern Idaho. As you might expect, *P. simpsonii* detests humid heat and is happiest in gardens located above 5,000 feet in elevation. This species—which varies in form from tiny single plants to large clusters of tall stems—will tolerate part shade, especially at lower altitudes. When properly situated in the garden, the pink, white, and—occasionally—yellow flowers are a welcome sight in early spring.

Though many *Opuntia* species are spiny and difficult to handle, I do recommend *O. basilaris* (5–10, 11–6), sometimes known as beavertail cactus, from the Mojave Desert. The naked pads are ornamen-



Opuntia basilaris, a prickly pear cactus, bears double yellow or pink flowers.

tal in their own right, but the double pink or yellow flowers are breathtaking. For best growth and flowering, place it where it will receive baking heat.

Other prickly pear species that are cold hardy include *O. compressa*—sometimes listed as *O. humifusa*—(6–8, 9–5), *O. fragilis* (7–8, 9–7), and *O. polycantha* (5–8, 9–6).

CACTI CULTURE

COLD-HARDY CACTI are not difficult to grow in the garden if you keep their basic requirements in mind. First and foremost, cacti require excellent drainage; it is excessive winter moisture rather than cold temperatures that causes most winter mortality. Second, they do best growing in alkaline, mineral-based soils. And third, they should be situated to receive full sun, especially during the winter months.

Drainage is critical to the health of a cactus plant's root system. Planting cacti in soils that retain

water, such as heavy clays and rich loams, will lead to root rot. Low spots that collect water should also be avoided. Excellent drainage is particularly important during the winter, especially in areas that

receive frequent rain or snow. I recommend planting cacti in raised or mounded beds, especially in gardens where the native—or contractor-supplied—soils tend to remain wet.

To create a lean, fast-draining soil for these raised beds and mounds, mix the native soil with one half coarse sand by volume. Add to this mix the minerals cacti crave by incorporating rock dust—an organic trace mineral fertilizer—and phosphate at recommended rates. Working larger rocks into the planting area

Resources

Cacti and Succulents in Habitat, by Ken Mafham-Preston. Cassell Wellington House, London, 1994.

The Cacti of the United States and Canada, by Lyman Benson. Stanford University Press, California, 1982.

Growing Winter Hardy Cacti in Cold/Wet Conditions, by John Spain. Elisabeth Harmon, Waterbury, Connecticut, 1994. (Available through High Country Gardens.)

The Plantfinder's Guide to Cacti & Other Succulents, by Keith Grantham and Paul Klaassen. Timber Press, Portland, Oregon, 1999.

Sources

High Country Gardens, 2902 Rufina Street, Santa Fe, NM 87505–2929. (800) 925-9387. www.highcountrygardens.com. Catalog free.

Intermountain Cactus, 1478 North 175 East, Kaysville, UT 84037. Catalog \$1.

Mesa Garden, P.O. Box 72, Belen, NM 87002. www.mesagarden.com. Catalog: Send self-addressed envelope with two stamps.

Yucca Do Nursery, Route 3, Box 104, Hempstead, TX 77445. (409) 826-4580. E-mail: yuccado@nettexas.net. Catalog \$4.



Echinocereus fendleri bears large red flowers that can be up to three inches across.

also adds a pleasing landscape element. Well-placed rocks can be used to create pockets of soil that duplicate spots where cacti are found growing in the wild.

Situating the planting area properly is also critical. Locate planting beds in full sun against south- and west-facing walls, or in hot, dry areas surrounded by cement sidewalks and driveways. When looking for a planting spot, be sure that a garden bed in full summer sun isn't shaded as the sun drops lower in the winter sky.

TIPS FOR PLANTING CACTI

BEFORE PLANTING CACTI, always remove the potting medium from around their roots; experience has shown that a dense mass of cactus roots will not grow out of its potting soil. And if the potting soil is more moisture retentive than the surrounding soil, the root ball will stay too wet and rot.

Allow the soil in the pot to dry out before planting. Then gently loosen the soil in the root ball with your fingers and shake it off. Once the soil is gone, trim the roots back by one-third with sharp scissors or pruning shears; each time a cactus is transplanted and the roots are trimmed, the root system becomes more fibrous and the plant grows more vigorously afterwards. Place the roots in a shallow hole and spread them out evenly. Backfill the hole

SmartGarden™ Tip

XERISCAPING

In areas that regularly experience droughts or periods when water use is restricted, cacti and other drought-tolerant plants are important components of Xeriscape landscape schemes that reduce overall water usage. Group plants with similar watering needs together in the garden so irrigation can be tailored to large areas rather than to individual plants—this practice conserves water and streamlines maintenance. Plants that require little or no supplemental watering once established should be planted in sites where water will drain away from them. Plants that require regular watering during the growing season should be planted close to water fixtures and in areas that receive run-off from gutters or slopes.

GROWING CACTI OUT OF HABITAT

Growing a variety of cacti species outside their native range requires some special accommodations. In the Midwest and East, this means proper site preparation and plant selection. Because winter moisture is the greatest threat to barrel cacti, wet climates such as the Pacific Northwest are unsuitable for most species. Subtropical areas of the Southeast are also not very cactus friendly because of winter moisture and high humidity. *Opuntia* species are the most adaptable, however, and some species—*Opuntia tuna* (also listed as *O. humilis*), for instance—and hybrids from the Midwest and eastern United States will thrive even in the Northwest.

Prepare a site for planting cacti by following the cultural directions described in the main article (below), but use a soil mixture with a higher percentage—up to three-quarters—of coarse sand to loam or native soil. If the loam is acidic, add lime to the suggested amendments. Be sure to mulch cacti with a one- to two-inch layer of crushed gravel.

If you haven't grown cacti outside before, start off with moisture-tolerant species such as *Echinocereus reichenbachii*, *Echinocereus viridiflorus*, *Escobaria vivipara*, *Escobaria missouriensis*, and the various *Opuntia* species and hybrids—these are good for beginners. Try more difficult cacti after you gain experience with the easier-to-grow selections. If you become a serious cactus aficionado, you can consider placing a plastic-covered hoop house—with open ends for good air circulation—over the cactus bed during the winter and spring months to shelter cacti from rain and snow.

—D.S.



Escobaria missouriensis is a moisture-tolerant cactus.

while holding the cactus so the crown—junction of root and stem—is just above the surrounding soil level. Settle the soil between the roots by gently vibrating the plant up and down. Then mulch with crushed—not round—gravel to a depth of one to two inches, depending on the size of the plant.

I wait a day or two to water in the new transplants. This allows time for calluses to form over the cut ends of the roots. At that point, I water thoroughly with a root-stimulating mixture of seaweed and a dilute high phosphate fertilizer. When watering cacti, it is usually better to err on the side of dryness, especially in the colder months. During the heat of the summer, however, cacti will thrive if given a weekly soaking.

A well-designed planting of cacti and companion plants makes for a low-maintenance garden. Apply a single application of a balanced granular fertilizer in late fall or spring. I prefer organic formulations, especially those with alfalfa

meal. This should be supplemented with a dose of liquid seaweed several times through the summer. With the arrival of fall, watering and fertilizing should be discontinued to allow the cacti to shrivel and harden off for winter.

Fall cleanup is also important. Remove fallen leaves and prune back the stems of neighboring plants that have grown over or around the cacti. This helps the cacti stay dry during the winter by facilitating maximum sunlight and air circulation around the plants.

DESIGNING WITH CACTI

HERE IN SANTA FE and throughout the western United States, water-wise garden designs are becoming increasingly popular. Xeriscaping not only promotes water conservation, it emphasizes the importance of using plants that are well suited to our rugged, arid climates. Indeed, cacti are ideal xeric plants and will greatly enhance any landscape planting by adding colorful flowers and a year-

round structural element with their handsome evergreen stems.

It is important to dispel the misconception that cacti can only be planted with other cacti. This type of design fails to take advantage of the beautiful plant combinations made possible by blending herbaceous plants with cacti. In habitat, cacti are found growing among a variety of succulent and non-succulent plants.

There are several design philosophies that can be used as guidelines for creating an attractive garden that includes cacti. From the standpoint of native plant use, I recommend making a plant list based on species found in a given region of the western United States. This approach allows replication of a landscape you might encounter in the Colorado foothills or along a mountain path in the Chihuahuan Desert. Done in an aesthetically pleasing manner, this type of garden can be beautiful, educational, and attractive to hummingbirds and other creatures that recognize home.

The other approach that I often suggest is to use a variety of compatible cold-hardy and drought-tolerant plants. These might include a blend of the native and adapted non-native plants listed in the box on this page. Plants from the Mediterranean region and places with similar climates, such as South Africa, are particularly suited as companions for cacti. This more cosmopolitan design technique is particularly useful in areas where xeric western native species are not well adapted.

When using either design approach, avoid pairing large, fast-growing companion plants with the smaller, slower-growing species of cacti. Unless kept in check by regular pruning, after a year or two the more vigorous plants are likely to overshadow the cacti and eventually kill them.

To avoid unwanted contact with cacti spines, plant larger or especially well-armed species well away from sidewalks and paths. Century plants (*Agave* spp.), which are often planted with cacti, have very stout, potentially dangerous spines on the tips of their leaves. But it is the pad-type cacti (*Opuntia* spp.) that can be the most hazardous. They have barbed spines that will embed themselves in the skin and pull away from the pads. With the exception of *O. basilaris* these are not

COMPANION PLANT LIST

WESTERN AMERICAN NATIVES

Agastaches (*Agastache* spp.)
 Calylophus (*Calylophus* spp.)
 Century plants (*Agave parryi* and *A. utahensis*)
 Dasyliirions (*Dasyliirion wheeleri*)
 Fameflower (*Talinum calycinum*)
 Hens and chicks (*Sempervivum* spp.)
Hesperaloe parviflora
Hymenoxys spp.
 Penstemons (*Penstemon pinifolius* and other small species)
 Salvias (*Salvia greggii* 'Furman's Red')
 Skullcaps (*Scutellaria resinosa* and *S. suffrutescens*)



MEDITERRANEAN AND SOUTH AFRICAN PLANTS

Alyssums (*Alyssum* spp.)
 Lavender (*Lavandula* spp.)
 Mount Atlas daisy (*Anacyclus pyrethrum* var. *depressus*)
 Rosemary (*Rosmarinus officinalis* 'Madaline Hill')
Ruschia spp.
 Salvia (*Salvia officinalis* 'Berggarten')
 Speedwells (*Veronica oltensis*)
 Stone cresses (*Aethionema* spp.)
Tanacetum argenteum (formerly *Achillea argentea*)



Opuntia basilaris and other succulents are creatively displayed above a carpet of moss verbena (*Verbena tenuisecta*) in the courtyard of this Arizona home.

recommended, particularly if you have children or pets.

Designing gardens to include the use of cold-hardy cacti opens the door to a new way of thinking about this family of stunning native plants. The excitement of discovering them will no doubt have you walking your landscape, looking for

a suitable spot to plant a grouping of cacti and companion plants.

David Salman owns High Country Gardens, a mail-order nursery in Santa Fe, New Mexico, specializing in plants native or adapted to the Southwest. He has been growing and propagating succulents for 20 years.

Horticulturists are
standing by.



garden.com
everything under the sun

plants | tools | **advice** | delivery | chat | 110% guarantee

email tips@garden.com to get **free** cool weekly gardening tips

Book Reviews

Growing Herbs and Vegetables from Seed to Harvest.

Terry and Mark Silber, Alfred A. Knopf, New York, 1999. 274 pages. 8³/₄" x 11¹/₄". Publisher's price, hardcover: \$35. AHS price: \$25.

100 Heirloom Tomatoes for the American Garden.

Carolyn J. Male, Workman Publishing, New York, 1999. 246 pages. 5¹/₄" x 10¹/₂". Publisher's price, softcover: \$17.95. AHS price: \$14.50.

JUST WHEN YOU IMAGINE everything known about vegetable gardening has been written and rewritten, along come two new books that vegetable gardeners are sure to welcome.

Growing Herbs and Vegetables from Seed to Harvest is a compendium of information based on Terry and Mark Silbers' many years of organic growing experience. Their explanations of organic techniques, the finer points of seed saving, and growing

open-pollinated plants are welcome to those of us wandering on the fringes of these trends.

Of particular value are the drawings at the start of each vegetable and herb entry. These display the shape and relative sizes of the plant cotyledons and first true leaves—a great help in distinguishing desirable seedlings from weeds.

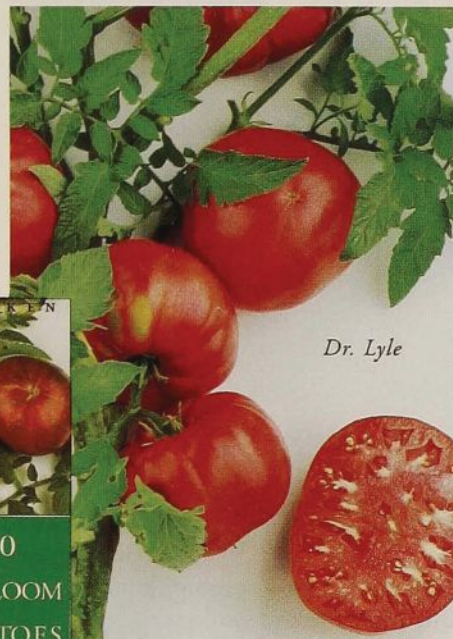
Aside from the fact that gardeners in regions outside the Northeast may need to adapt the Silbers' practices for their own zones, this book is an excellent all-around growing guide. The couple, who are also professional writers, have suc-

cessfully blended practical advice, history, and scientific lore. It is both a good read and an easily consulted guide for planning and growing your own garden.

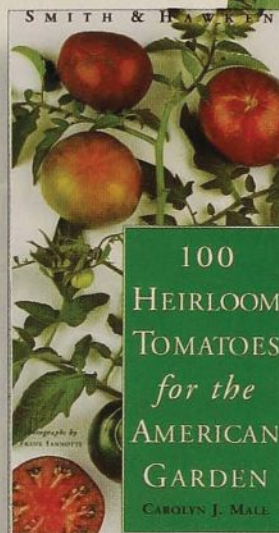
100 Heirloom Tomatoes for the American Garden is a handy how-to field guide to 100 heirlooms that Carolyn J. Male has grown in her gardens in upstate New York. There is a brief and informative history of the tomato, and an explanation of the differences among commercial, family, and created heirlooms. Male also provides concise cultivation information targeted to growers of heirloom varieties, as well as tips on saving seed and creating your own heirlooms.

What most readers will want to know, however, is which tomato varieties will work best for them. While Male's descriptions of each variety—its texture, appearance, and taste, as well as what is known of its origin—are welcome, her book unfortunately will *not* tell you if you can grow these varieties in regions outside the Northeast. Nevertheless, the photographs are inviting, and the names—from 'Boxcar Willie' to 'Mortgage Lifter'—are intriguing. *100 Heirloom Tomatoes for the American Garden* serves as a good starting point from which the rest of us can help contribute to the resurrection of heirloom plants by growing them in diverse regions, under differing conditions.

Linda Thornton is a freelance writer and editor who lives in Tucumcari, New Mexico, where she grows heirloom vegetables, herbs, and flowers organically.



Dr. Lyle



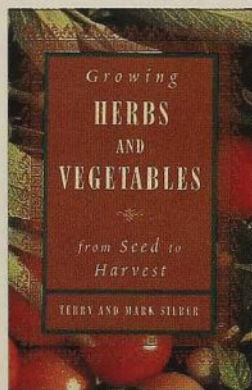
Unusual varieties of tomatoes bearing intriguing names, such as 'Dr. Lyle', are featured in *100 Heirloom Tomatoes*. Photo from book by Frank Iannotti.

Penstemons.

Robert Nold. Timber Press, Portland, Oregon, 1999. 307 pages. 6" x 9". Publisher's price, hardcover: \$29.95. AHS price: \$22.

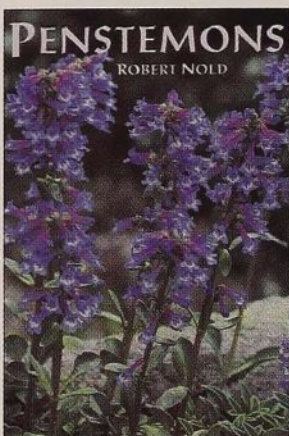
GARDENERS WITH A BOTANICAL bent will love this book. Robert Nold provides a thorough taxonomic treatment of *Penstemon*—the largest genus of flowering plants endemic to North America—and gives practical information on growing them.

Although the arid West is home to most *Penstemon* species, they are found in every state in the United States and many provinces in Canada, in habitats ranging from prairies to forests to rocky mountainsides. Nold devotes a chapter to cultivation, discussing winter hardiness, drought tolerance, and how to prolong the life span of penstemons which, with some exceptions, are relatively short-lived plants. Nold provides



suggestions regarding soil preparation, but he makes it clear that the best gardening strategy is to choose plants that are suited to the local soils. "Soils do not need to be improved," he states, "the plants do."

Cultural information, including planting and transplanting, propagation, and managing pests and diseases, is geared mostly toward cold climates,



appropriately enough, I suppose, since the majority of penstemons come from areas with cold weather—like Colorado, where Nold gardens.

Chapters on "Habitat and Distribution" and "Division of the Genus"

not only address taxonomic questions, but also give the gardener good guidance in selecting and growing penstemons, because the subdivisions used for taxonomic clarity also indicate the general form of the plant, flower color, and habitat. I learned that two of my favorite species, *P. parryi* and *P. superbus*, are in section *Peltanthera*, subsection *Centranthifolii*, and because this group is native to the Southwest, the eight other related species are pretty good bets for my garden.

More than 250 species descriptions make up the heart of the book. Nold describes vividly the plant form, leaves, flowers, flowering time, origin, and culture; 43 color photographs and 30 botanical prints and illustrations are a bonus. A glossary helps the reader through the more technical topics in the book, such as morphology and pollination. Four useful appendices round out Nold's book: Societies and Mail-order Sources; Watering Schedule and Gardener's Calendar; Selected Penstemons by Color; and Further Reading.

Nold's dual perspectives—botany and horticulture—have merged into a beautifully written book about a genus he clearly loves, *Penstemon*, with its "drought tolerance, relative freedom

from disease, ease of garden culture, and beautiful flowers."

Judy Mielke is a landscape architect and author of Native Plants For Southwestern Landscapes.

Penelope Hobhouse's Natural Planting.

Penelope Hobhouse. Pavilion, distributed by Trafalgar Square, North Pomfret, Vermont, 1999. 192 pages. 10" x 10". Publisher's price, softcover: \$29.95. AHS price: \$24.50.

BECAUSE I LIVE NEAR the eastern edge of what was once the great American prairie, the cover of *Penelope Hobhouse's Natural Planting* spoke to me instantly. The photograph features masses of rosy-pink queen of the prairie (*Filipendula rubra*) growing lushly in a boggy garden. I assumed the photo was taken somewhere in the Midwest, but I was wrong. It was Ton der Linden's garden in northeastern Holland.

Therein lies the key to this readable, informative, and gorgeously illustrated book by British gardener and author

PENELOPE HOBHOUSE'S Natural Planting

PHOTOGRAPHS BY JERRY HARPUR



Penelope Hobhouse. It shows why, both for ecological reasons and for the benefit of plants, we should consider natural gardening. She asks us to look not only to our indigenous plants but to those from all parts of the world where climate and soil match our own. Photographs by Jerry Harpur of gardens worldwide make it abundantly clear that natural plantings work.

Hobhouse begins with a history of natural gardening. She focuses on

William Robinson, a natural gardener and prolific writer whose work stretched from 1870 to 1935 and who continues to exert influence on gardening to this day. He insisted on using hardy plants, both native and exotic, in places where they would spread and thrive; he chose plants suitable for a garden site rather than first choosing a style and then adapting the conditions and aspect to accommodate those plants. Following this philosophy, it would be inappropriate to use artificial means to lower pH to grow acid-loving plants such as rhododendrons in an alkaline wood.

The second chapter, "Planting Pleases Plants," is a refresher course on what plants need in order to grow. Perennials, she states, can be grown with very little maintenance given conditions as near as possible to their regions of origin. Fortunately, she goes on, many of the best perennials to grow here are actually natives of our woodlands and more open prairies, while others originate in similar habitats in parts of eastern Asia, Siberia, and eastern Europe.

The final four chapters describe natural gardening for the following situations: woodland and woodland edging; shrub border and shrubbery; open ground; and water, rock and gravel. Each has copious lists of suitable plants.

Photographs of gardens that demonstrate natural gardening principles abound in the book. They invite us to come in and take a stroll. A map showing those open to the public would have been helpful here. Public North American gardens featured in *Natural Planting* include The Mount Cuba Center, Delaware; Winterthur Gardens, Delaware; Chicago Botanic Garden, Illinois; Pierce's Woods at Longwood Gardens, Pennsylvania; and The Garden in the Woods at Framingham, Massachusetts.

Natural Plantings is not a simple how-to book, but one of gardening philosophy that is full of applicable information to be gleaned by the careful reader. I highly recommend it.

Ruth Ann Ingraham is co-founder and immediate past president of the Indiana Native Plant and Wildflower Society. She gardens in Indianapolis and Brown County, Indiana.

Gardeners' Books

AHS has teamed up with Amazon.com to offer our members better discounts on most titles, faster delivery, more inventory, and improved access to hard-to-find titles. The books listed here have not been critically evaluated; they have been chosen for description based on unusual subject matter or substantive content. To order, or for information about other gardening books, call Trish Gibson at (800) 777-7931 ext. 136 or visit our Web site at www.ahs.org and link to Amazon.com.

Natural Gardening

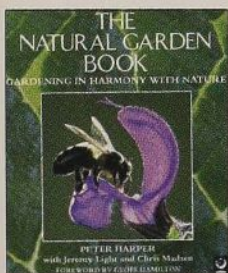
The Woodland Garden: Planting in Harmony with Nature.

Roy Forster and Alex Downie. Raincoast Books, Vancouver, British Columbia, 1999. 224 pages. Publisher's price, softcover: \$24.95. AHS price: \$21.50.

THIS GUIDE SHOWS YOU how to create a natural woodland effect in your garden. It covers all aspects of woodland gardening, from design, plant selection, and initial planting through ongoing maintenance. Easy-to-follow text and drawings facilitate the adaptation of the ideas presented.

The Natural Garden Book: Gardening in Harmony with Nature.

Peter Harper with Jeremy Light and Chris Madsen. Gaia Books Limited, London, England, 1999. 287 pages. Publisher's price, softcover: \$24.95. AHS price: \$22.



THIS BOOK EXPLAINS how to plan several natural gardens: The Useful Garden, The Wildlife Garden, The Water-Efficient Garden, The Resourceful

Garden, The Productive Garden, and The Healing Garden. Several integrated gardens are also described and enhanced by colorful photographs, diagrams, and sketches. There are sections on recycling,

improving the soil, and creating micro-climates in a garden.

Go Native: Gardening with Native Plants and Wildflowers in the Lower Midwest.

Carolyn Harstad. Indiana State University, Bloomington, Indiana, 1999. 304 pages. Publisher's price, hardcover: \$35, softcover: \$27.50. AHS prices: \$27.50; \$20.

THIS BOOK DESCRIBES native plants that are recommended for growing in the lower midwestern states—Ohio, Indiana, Illinois, Missouri, Kentucky, southern Iowa, Michigan, and Wisconsin. By discovering which native species do well in this region, gardeners can create just about any kind of garden—from prairies and meadows to water and woodland gardens. Includes 125 botanically accurate drawings by Jeanette Ming and more than 100 color photographs taken by the author.

Regional Interest

The Garden Lover's Guide to the Northeast.

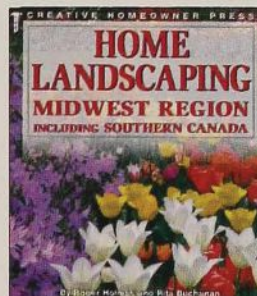
Paul Bennett. Princeton Architectural Press, New York, 1999. 192 pages. Publisher's price, softcover: \$21.95. AHS price: \$19.



ONE OF A SERIES of guidebooks designed for the traveling garden enthusiast, this book covers gardens from Northern New England to the Capital Region—Maryland, Washington, D.C., and Northern Virginia. Included are 140 of the most beautiful gardens in the Northeast, from Acadia in Maine to the colonial gardens of George Washington's Mount Vernon. The book also features three-dimensional garden plans, lush color photographs, key facts for visitors, and highlights of nearby cultural sights.

Home Landscaping: Midwest Region, including Southern Canada.

Roger Holmes and Rita Buchanan. Creative Homeowner Press, Upper Saddle River, New Jersey, 1999. 208 pages. Publisher's price, softcover: \$19.95. AHS price: \$16.50.



HOME LANDSCAPING is filled with landscaping ideas and methods for the Midwest. Designs cover 23 of the most commonly

planted areas, such as patios, foundation plantings, and steep slopes. There are detailed descriptions of more than 200 plants that will grow well in this region. Step-by-step instructions for building features, such as paths, patios, ponds, walls, fences, arbors, and trellises are accompanied by color photographs, labeled diagrams, and close-up views of works in progress.

The California Landscape Garden: Ecology, Culture, and Design.

Mark Francis and Andreas Reimann. University of California Press, Berkeley, California, 1999. 272 pages. Publisher's price, softcover: \$29.95; hardcover: \$50. AHS price, softcover: \$26.50; hardcover: \$37.50.

FRANCIS AND REIMANN USE California's natural beauty and habitat as a starting point for inspiring Californians to see their gardens as extensions of the surrounding landscape. By doing this, they provide important information on native plants and wildlife, ecology, land history, and design concepts. There are numerous examples, accompanied by color photographs, explaining how to integrate environmental principles into one's own garden. An appendix lists books for further reading and sources for plants and additional information.

Landscaping

Gardening with Stone: Using Stone Features to Add Mystery, Magic and Meaning to Your Garden.

Jan Kowalczewski Whitner. Macmillan USA,

Prices in effect until April 30, 2000. After expiration date, orders will be filled pending availability. Please allow four to six weeks for delivery. Prices subject to change without notice.



Shop at acehardware.com or OurHouse.com

©2000 Ace Hardware Corporation



With the right help, not only will your grass be this color, your neighbors will be too.





Regional Happenings

NORTHEAST

MAR. 23. **Creating a Resonant Garden: Blending Both the Natural and the Personal Landscape.** Lecture by Lauren Springer. Hunter College School of Social Work Auditorium, New York, New York. (718) 549-3200.

MAR. 24-26. **Capital District Garden and Flower Show.** Hudson Valley Community College, Troy, New York. (518) 356-6410.

APR. 5-9. **Central Park Garden Show.** Rumsey Playfield, Central Park, New York, New York. (212) 255-0020.

APR. 28-30. **Nantucket Daffodil Festival.** Nantucket, Massachusetts. (508) 228-1700.

MID-ATLANTIC

MAR. 31. **Perennial Plant Workshop: Hellebores.** With David Culp of Sunny Border Nurseries. The Scott Arboretum of Swarthmore College, Swarthmore, Pennsylvania. (610) 328-8001.

AHS APR. 2-5. 54th Colonial Williamsburg Garden Symposium. Co-sponsored by AHS, this year's annual symposium is titled "A Focus on Plants: History, Culture, Future." The symposium will offer an array of lectures and clinics by outstanding horticulturists, in addition to a variety of optional tours of gardens, golf courses, and Colonial Williamsburg. The discounted registration fee for AHS members is \$300. For more information, call (757) 220-7174, fax (757) 565-8630, or e-mail dcountryman@cwf.org.

APR. 14 & 15. **Spring Garden Fair and Plant Sale.** Louis Ginter Botanical Garden, Richmond, Virginia. (804) 262-9887.

APR. 22. **Azalea Plant Sale.** Brookside Chapter of the Azalea Society of America. U.S. National Arboretum, Washington, D.C. (202) 245-2726.

APR. 22-30. **Historic Garden Week.** Garden Club of Virginia. (804) 644-7776.

APR. 28. **20th Annual Rare Plant Auction.** Longwood Gardens, Kennett Square, Pennsylvania. (302) 658-6262.

APR. 29. **Historic Garden Week on the Eastern Shore.** Garden Club of the Eastern Shore and Garden Club of Virginia. (757) 787-3945.

SOUTHEAST

MAR. 16-APR. 15. **Annual Festival of Houses and Gardens.** Historic Charleston Foundation. Charleston, South Carolina. (843) 722-3405.

MAR. 23-26. **Festival of Flowers.** Providence Hospital Foundation. Spring Hill College, Mobile, Alabama. (334) 639-2050.

MAR. 24. **Southern Living Gardening School.** Lectures by Rick Ludwig. Callaway Gardens, Pine Mountain, Georgia. (800) 225-5292.

MAR. 31-APR. 2. **Gardeners' Weekend.** Tryon Palace, New Bern, North Carolina. (252) 514-4900.

APR. 1-30. **Festival of Flowers.** Biltmore Estate, Asheville, North Carolina. (800) 242-6480.

APR. 6-8. **Fiesta 2000.** Plant sale. Birmingham Botanical Gardens, Birmingham, Alabama. (205) 414-3950.

AHS APR. 28-JUNE 11. Epcot International Flower & Garden Festival. Walt Disney World, Orlando, Florida. (407) 938-3900.

NORTH CENTRAL

MAR. 13-APR. 9. **Butterflies in Bloom Festival.** Dow Gardens, Midland, Michigan. (800) 362-4874.

MAR. 23-26. **GMC Builders Home & Detroit Flower Show.** Cobo Center, Detroit, Michigan. (248) 862-1019.

APR. 6-9. **DTE Energy Detroit International Bloomfest.** Michigan Horticultural Society. Cobo Conference/Exhibition Center, Detroit, Michigan. (248) 646-2990.

APR. 14-16. **Chicago Antiques & Garden Fair.** Chicago Botanic Garden, Glencoe, Illinois. (847) 835-5440.

AHS Events

Events sponsored or co-sponsored by AHS are indicated by this **AHS** symbol. An expanded and updated Regional Happenings listing can be viewed on the Society's Web site at www.ahs.org.

MAY 5-7. **Spring Herb Festival.** Asheville Farmer's Market, Asheville, North Carolina. (828) 689-5974.

SOUTH CENTRAL

AHS MAR. 16-18. Celebrating the American Gardener. Annual Meeting of the American Horticultural Society. Includes lectures and tours. Houston Omni Hotel, Houston, Texas. (800) 777-7931.

New in South Florida

STIRRING UP INTEREST—and dust—in Delray Beach, Florida, are side-by-side horticultural projects that promise to become two of South Florida's leading cultural and educational attractions once construction on both is completed later this year.

After more than 15 years of fundraising efforts, a groundbreaking ceremony for the American Orchid Society's (AOS) new international headquarters was held last fall. The 79-year-old organization's new facility will include an information resource center, library, and three acres of public gardens and greenhouses showcasing orchids from around the world.

With nearly 30,000 AOS members worldwide, the state-of-the-art facility is expected to attract thousands of visitors each year—and nicely complement the adjacent Morikami Museum and Japanese Gardens, where the construction of six gardens, each representing a different historical period and type of Japanese garden design, is also underway. Upon its completion, the 16-acre Morikami will be home to one of the largest, most comprehensive Japanese-style gardens in the world.

For more information on the Morikami, call (561) 495-0233 or visit its Web site at www.morikami.org. The AOS may be reached at (561) 585-8666, or on the Web at www.orchidweb.org.

Margaret T. Baird
Communications Assistant

MAR. 16, 23, & 30. **Wildlife Gardens.** Lecture series. Botanica: The Wichita Gardens, Wichita, Kansas. (316) 264-0448.

MAR. 18. **5th Annual Herb Forum at Round Top.** The McAshan Herb Gardens at Festival Hill, Round Top, Texas. (409) 249-5283.

APR. 11, 18, & 25. **Herb Gardens.** Lecture series. Botanica: The Wichita Gardens, Wichita, Kansas. (316) 264-0448.

APR. 19-24. **Texas 2000 World of Roses Convention.** JW Marriott Hotel, Houston, Texas. (713) 944-3437.

NORTHWEST

APR. 1. **Early Rhododendron Show and Sale.** Crystal Springs Rhododendron Gardens, Portland, Oregon. (503) 771-8386.

APR. 8. **Early Bloomers Plant Sale.** Washington Park Arboretum, Seattle, Washington. (206) 325-4510.

APR. 29 & 30. **34th Glide Wildflower Show.** Glide Community Building, Glide, Oregon. (541) 496-3616.

SOUTHWEST

MAR. 18 & 19. **Spring Plant Sale.** Tucson Botanical Gardens, Tucson, Arizona. (602) 326-9686.

APR. 2. **Wildflower Festival.** Tohono Chul Park, Tucson, Arizona. (520) 742-6455.

APR. 22. **12th Annual Herb Fair.** Tucson Botanical Gardens, Tucson, Arizona. (602) 326-9686.

WEST

MAR. 25 & 26. **Bonsai Show.** California Bonsai Society. The Huntington, San Marino, California. (626) 405-2141.

MAR. 31-APR. 2. **Santa Barbara International Orchid Show.** Earl Warren Show Grounds, Santa Barbara, California. (805) 967-6331.

APR. 15 & 16. **Rose Festival.** The Huntington, San Marino, California. (626) 405-2141.

MAY 6-14. **Spring Fling Garden Celebration.** San Diego Zoo, San Diego, California. (619) 234-3153.

CANADA

MAR. 17-19. **Manitoba Orchid Show.** Manitoba Orchid Society. Assiniboine Park Conservatory, Winnipeg, Manitoba. (204) 654-0459.

MAR. 22-26. **Toronto Flower and Garden Show.** Metro Toronto Convention Centre South Building, Toronto, Canada. (800) 730-1020.

Skagit Valley Tulip Festival Blooms Big



FROM MARCH 31 THROUGH APRIL 16, 2,000 acres of river-rich land will swell into a sea of tulips, a dazzling sight expected to attract more than half a million visitors from around the world to the 16th annual Skagit Valley Tulip Festival in Washington State. Located midway between Seattle and Canada, this corner of the Pacific Northwest has one of the nation's greatest concentrations of tulip bulb farms, with an annual harvest worth more than \$5 million.

Daffodils provide the opening act and irises the curtain call to a show that has colors rivaled only by the hot air balloons from which many visitors enjoy bird's-eye views of nature's palette. In addition to the bulb displays, the festival offers a generous bouquet of events, including parades, gardening demonstrations, athletic events, art exhibits, children's activities and a jazz dinner dance. "Tulipomaniacs," as tulip enthusiasts are affectionately known, can follow the bloom line from scenic La Conner with its cozy bed-and-breakfasts, past Burlington, the hub of agricultural activity, through the charming waterfront community of Anacortes, on into Mount Vernon, where the festival is headquartered. So popular has the event become that the *Skagit Valley Herald* recently set up dozens of 24-hour hotlines to handle the flood of inquiries. By calling (360) 424-3228, ext. 2100, you can get up-to-the minute information on everything from the current bloom situation to the festival events calendar, food and lodging, and road conditions. Or visit the festival Web site at www.tulipfestival.org.

Joyce McGreevy, special from Pacific Grove, California

Days of Vines and Roses

LONG SYNONYMOUS WITH FINE WINES and world-renowned vineyards, California's verdant Napa Valley is now a destination for another botanical highlight—its lush gardens. The Meadowood Luxury Resort in St. Helena, situated on 250 acres of forested land artfully enhanced by spectacular gardens, will be holding its second annual Garden Week May 15 through 18, featuring gardening experts, tours of some of the area's most exceptional gardens, gourmet meals, and—of course—fine wines.

The program includes morning lectures, lunch at Meadowood's famed restaurant and an afternoon lecture. San Francisco Bay area floral designers Pat Friday and Barbara Erfani will lecture on May 15, designated "Floral Artistry Day." On May 16, Jacques Ferare, spokesman for Meillard-Star Roses—a French hybridizer and wholesale grower—and rose expert and author Ray Reddell will share their knowledge of shrub roses. May 17 is devoted to "Artistic Rooms" and will feature a garden tour of France through the eyes of botanical artist Catherine Watters and garden designer Bob Clark.

The event culminates with "Organic Heaven Day" on May 18, featuring tours of Forni Brown's organic vegetable and herb gardens and organic winemaker Frog's Leap Winery. Lunch at the famed Culinary Institute of America in St. Helena and a tour of its organic gardens concludes Garden Week 2000. Prices are \$75 per day except May 18, which is \$100. For details, call Meadowood at (800) 458-8080, or visit www.meadowood.com.

Karen L. Dardick, special from Los Angeles, California

New Products

1. Grow Joe®

Pennsylvania coffee shop owners Mike Theuer and Linda Brown have hit upon a profitable and environmentally sound alternative to throwing away their daily accumulation of used coffee grounds: Grow Joe®, their general-purpose plant food that uses coffee grounds as its main ingredient. Tests at a local greenhouse indicated that Grow Joe was as effective as commercial fertilizers on seedlings; Robert Berghage, a Penn State horticulture professor, plans to test Grow Joe this spring—he suspects that the coffee grounds in Grow Joe promote the growth of soil microorganisms, which continue to nourish plants well after the fertilizer's direct effects have ceased. A 2-lb. bag sells for \$9.95.

Cool Beans Coffee & Tea, 141 W. High Street, Bellefonte, PA 16823. (814) 353-4355. www.growjoeplantfood.com



1

2. Space Saver Garden System®

Selected as one of the "Best New Products of 1999" by the Lawn & Garden Marketing and Distribution Association, the Space Saver Garden System® provides the benefits of both raised bed and vertical gardening simultaneously. The complete "system" includes six stackable, adjustable, raised bed corners made of tough plastic, a Grow'em Up® Trellis and a Grow'em Up® Teepee for vertical plant support, a weed barrier fabric, plant identification labels, and a reference guide. Suggested retail is \$129.95. The individual pieces are also sold separately.

VegHerb, LLC, 784 Union Valley Road, Carmel, NY 10512. (914) 277-8069. www.spacesavergardening.com

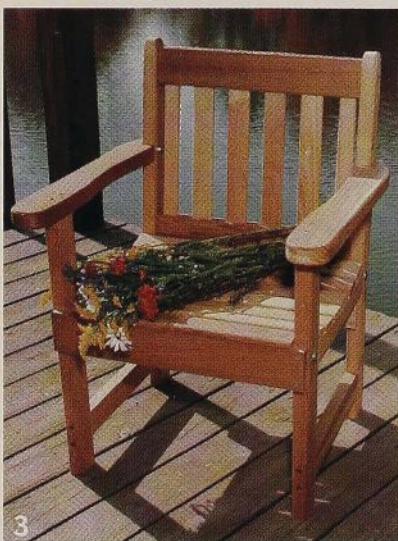


2

3. The Cedar Store

A new source for durable cedar garden furniture is The Cedar Store, a family-owned company located in Western Pennsylvania's Amish Country. Over 100 different pieces of outdoor furniture made exclusively of Western red cedar and hand-made by local Amish craftsmen can be ordered from its Web site. These include a variety of garden porch swings and gliders, and a new line of "English Garden" benches and chairs.

The Cedar Store, 1620 Route 8, Glenshaw, PA 15116. (888) 293-2339. www.cedarstore.com



3



4

4. E-Z Pruner®

Arcoa's new E-Z Pruner® pruning tool provides extended range for pruning and shaping those hard-to-reach places in your garden. The lightweight pruner has a pistol-grip handle, and the blades have a "cut-and-hold" feature. The half-inch-capacity cutting blade is also replaceable. Available in both 24-inch and 36-inch lengths; the suggested retail prices are \$44.95 and \$49.95, respectively.

Arcoa Industries, Inc., 2348 Meyers Avenue, Escondido, CA 92029. (877) 842-7262. www.arcoaindustries.com

Products profiled are chosen based on qualities such as innovative design, horticultural utility, and environmental responsibility; they have not been tested by the American Horticultural Society. Send new product information to New Products, *The American Gardener*, 7931 East Boulevard Drive, Alexandria, VA 22308.



Worldlife Preservation Foundation™
announces the development of a new tropical garden oasis.

Anuenue Gardens

Lovers of travel and gardens will soon have a new and exotic venue to visit the objects of their admiration. The Worldlife Preservation Foundation, a non-profit organization based in Hawai'i, is set to break ground on a 200 acre site on the picturesque eastern shore of the island of O'ahu. Anuenue Gardens will be the largest and most innovative private garden in the islands. As well as being a center for the propagation and preservation of many rare and exotic floral species, the gardens will also play host to WPF's exotic and rare animal programs, as well. More than 1,000 birds, reptiles, primates, and small mammals will live in spacious habitats scaped with vines, shrubs, trees, and flowers from their regions of origin.

These gardens of extraordinary beauty are being created as we look back at how we humans have managed the gifts of our world and what we should do differently as a new millennium dawns. As January 1-2001 approaches, we are deciding—in large numbers—that we must learn more about the needs of this living planet and teach each other how to nurture and care for our earth and all its diverse and incredibly beautiful inhabitants.

ONE OF THE VERY SPECIAL FEATURES PLANNED FOR THESE GARDENS:

The Bamboo Hideaway Retreat Center will be available for:
Weddings & Receptions—Seminars & Workshops
with 24 bungalows for guests

*We need more beautiful, restful places in our
communities where we can go to remember our soul.
Gardens are just such places.*

Anuenue (pronounced a-new-eh-new-eh) is the Hawaiian word for rainbow, where every color we can see is displayed in brilliance—if only we will learn to look closely and appreciate. Anuenue Gardens has been designed to be a center of education as well as preservation. It is our goal to reach out and connect nature lovers from one end of our world to the other.

Be sure to visit our website at www.worldlife.com

Become a Worldlife member **TODAY!** and receive:

- ✓ 1 yr. subscription to "Stepping Stones", WPF's bi-monthly newsletter,
- ✓ Quarterly color journal
- ✓ Special offers on seeds & plants of rare and exotic plants

Members & Homesteaders™
needed **now** to help make
these gardens grow.

Won't you help?

Worldlife Preservation
Foundation™

Helping humanity find its niche
in the scheme of the natural world.
WPF is dedicated to
understanding of how
various research
institutions
designed to help
learn why it
is the only and
great home
are and our hope
vigor. Anuenue
Gardens of life are
improve the
and entire species
helping those in
design and
programs that
evolution, and spiritual

Anuenue Gardens is the first of several facilities to be designed and operated by WPF.

A VIEW INTO ANUENUE GARDENS—A PLACE OF HORTICULTURAL, ZOOLOGICAL, AND SPIRITUAL BEAUTY

Classifieds

CLASSIFIED AD RATES: All classified advertising must be prepaid. \$2.50 per word; minimum \$60 per insertion. Copy and prepayment must be received on the 20th of the month three months prior to publication date. Send orders to: AHS Advertising Office, 4350 DiPaolo Center, Suite B, Glenview, IL 60025, or call (847) 699-1707.

BOOKS

Hortica: Color Cyclopedic of Garden Flora with Hardiness Zones and Indoor Plants, 8,100 color photos by Dr. A. B. Graf, \$238.

Tropica 4: 7,000 color photos of plants and trees for warm environments, \$165.

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

Shipping additional. Circulars gladly sent.

ROEHRS CO., Box 125, East Rutherford, NJ 07073. (201) 939-0090. FAX (201) 939-0091.

Bargain Books

America's Biggest Catalog Selection!

• **Save up to 80%** on recent publishers' overstocks, imports, reprints. Save on current books and today's best sellers!

• **Gardening, Nature, Travel, Biography, Cooking**—over 60 subject areas.

Free Catalog

1-800-677-3483

HAMILTON 6204 Oak Falls Village, CT 06031-5005

DO YOU HAVE UNIDENTIFIED PENSTEMONS? Key to the Genus Penstemon has all 272 species. \$15. Ken Lodewick, 2526 University St., Eugene, OR 97403.

GARDEN STATUARY

LADY BUG'S PLANTERY 'N SUCH—Whimsical garden treasures for your garden, patio, home. All statuary weatherproofed to withstand weather. Handpainted, handrubbed verdigris finish. Send now for free color brochure. P.O. Box 926, Holly Springs, GA 30142. (800) 700-9210. Tel. (770) 345-3910; Fax: (770) 345-5241; E-mail: ladybugsplantery@mindspring.com; Web: ladybugsplantery.com.

GREENHOUSE PLASTICS

BOB'S SUPER-STRONG GREENHOUSE PLASTIC—Pond Liners. Resists hailstones, yellowing, leafburning. Samples: 2 stamps appreciated. Box 42AG, Neche, ND 58265; (204) 327-5540 daily.

INTERNET

GARDENWEB. Come visit with other gardeners from around the world at GardenWeb, the Internet's garden community: www.gardenweb.com.

NURSERY STOCK

TREE-SHRUB SEEDLINGS. Wholesale prices. Beautify, make money. FREE color catalog. CARINO NURSERIES, P.O. Box 538AG, Indiana, PA 15701. www.carinonurseries.com.

PEONIES

BEAUTIFUL JAPANESE/CHINESE TREE PEONIES. Wide variety of exotic, INEXPENSIVE peonies available. Catalog \$3. All plants 3 years old and older. SMIRNOW'S SON'S PEONIES, Dept. AG, 168 Maple Hill Road, Huntington, NY 11743. Phone: 631-421-0836.

ROSES

DON'T BUY ROSE BUSHES this year until you have the *2000 Handbook for Selecting Roses*. The American Rose Society's most requested reference guide rates over 2,000 commercially available roses and includes other valuable rose information. Send \$4 (U.S.) to: AMERICAN ROSE SOCIETY, P.O. Box 30,000, Shreveport, LA 71130-0030, or phone (800) 637-6534 for fast delivery. For more information about ARS, visit our Web site at www.ars.org.

OVER 700 VARIETIES: new show roses and ground covers; English and old garden roses; antique and classic roses by Beales; new Ben Williams roses; hardy Ottawa explorers; Manitoba Parkland varieties; and our fabulous Pavement roses that are disease-free, low-maintenance types suitable for harsh prairie winters. A superb collection. Our fields are known to be virus-free. Orders shipped with our temperature-controlled truck to UPS depots in the USA for local distribution. Catalog \$3. Please submit retail orders by fax at (905) 689-6566, or call in on (905) 689-9323. HORTICO INC., 723 Robson Road, Waterdown, Ontario LOR 2H1. Tel: (905) 689-6984 or (905) 689-3002. E-mail: office@hortico.com; Web site: <http://www.hortico.com/>

SEEDS

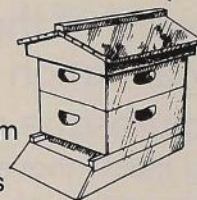
WWW.SEEDS OF DISTINCTION.COM, P.O. Box 86 Station A (Etob), Toronto, ON, M9C 4V2, CANADA. Toll-free fax/voice mail (888) 327-9193 or (416) 255-3060 mailorder catalog.

STOCK REDUCTION SALE 25% TO 75% OFF

Seeds, seedlings and plants of subtropicals and tropical ornamentals, fruits, herbs, and palms. Many rare and uncommon species. Free catalog. Pacific Coast Tropical Gardens 1259 El Camino Real #297, Menlo Park, CA 94025. <http://www.pctgardens.com> Email: steve@pctgardens.com

English Garden Hive
PUT THE BUZZ BACK IN YOUR GARDEN

- Yard art that works for you
- Copper roof
- Simplified system designed for home gardeners



FOR MORE INFORMATION CONTACT
BRUSHY MOUNTAIN BEE FARM, INC.
1-800-233-7929 • www.beeequipment.com

SEXY NATIVES & LEGAL EXOTICS seek discriminating gardeners who enjoy unique, rare, good quality trees, shrubs, vines and perennials for fun and mutual pleasure. Catalog \$3 (refundable)

Wilkerson Mill Gardens
9595 Wilkerson Mill Rd. • Palmetto, GA 30268
WWW.WILKERSONMILL.COM

HARDY MAINE PERENNIALS

We provide your garden with only the best!!
Many new and hard to find.

Descriptive catalog listing over 1000 varieties \$2.50
www.FieldstoneGardens.com

Fieldstone Gardens, Inc.
620 FG Quaker Lane
Yassalboro, Maine 04989-9713
Ph/Fax: (207) 923-3836



Welcome to Paradise

Mention where you saw this AD and receive our new A-23 Catalog and Guide to Water Gardening **FREE!** Save \$3.00.
92 full color shop at home pages. Our most comprehensive catalog ever.

Visit our Web Site at www.paradisewatergardens.com

CALL TOLL FREE 1-800-955-0161

E-mail: psstetson@paradisewatergardens.com

Paradise WATER GARDENS
14 May St., Dept. AM, Whitman, MA 02382

FREE DEBT RELIEF!

Lower your monthly payments by up to 50%!

Not a loan. Not bankruptcy. A Debt Management system designed to get you out of debt-FREE! Direct referral to Non-Profit credit counseling.
Gather your bills and call today!



www.amerix.com

1-800-847-5869 (Ext 4357)

NEW

ALUMINUM LANDSCAPE EDGING

PROFESSIONAL GAUGE ALUMINUM LANDSCAPE EDGING.

Used by contractors for over a decade. Product is now available to home owners.

Flexible, Permanent, Easy To Install

PROLINE EDGING 1-800-356-9660
13505 Barry Street, Holland, MI 49424



FREE CATALOG

Pronunciations and Planting Zones

Most of the cultivated plants in this issue are listed here with their pronunciations and USDA Plant Hardiness and AHS Plant Heat Zones. If 0 is listed in place of USDA hardiness zones, it means that plant is a true annual—it completes its life cycle and dies in a year or less. Tropical plants that are hardy only in USDA Zone 11 are listed by minimum average temperature. To purchase an AHS Heat-Zone Map, call (800) 777-7931 ext. 136.

A-C

Anemone apennina uh-NEM-o-nee ah-pen-NEEN-uh USDA 5-8, AHS 9-3
A. blanda A. BLAN-duh 4-8, 8-1
A. caroliniana A. kair-o-lin-ee-AN-uh 4-8, 8-1
A. coronaria 'Bride' A. kor-o-NAIR-ee-uh 7-9, 10-7
A. deltoidea A. del-TOY-dee-uh 4-8, 8-1
A. xfulgens A. xFUL-jenz 7-10, 10-7
A. flaccida A. FLAS-sih-duh 4-8, 8-1
A. lancifolia A. lan-sih-FO-lee-uh 4-8, 8-1
A. xlipsiensis A. xlip-see-EN-siss 5-8, 8-5
A. magellanica A. maj-el-LAN-ih-kuh 2-7, 7-1
A. narcissiflora A. nar-sis-sih-FLOR-uh 4-7, 7-4
A. nemorosa A. neh-mor-O-suh 4-8, 8-1
A. oregana A. or-eh-GAN-uh 4-8, 8-1
A. ranunculoides A. ruh-nung-kyew-LOY-deez 4-8, 8-1
A. rivularis A. riv-yew-LAIR-iss 4-8, 8-1
A. rupicola A. roo-PIH-ko-luh 4-7, 7-1
A. quinquefolia A. kwin-kweh-FO-lee-uh 4-8, 8-1
A. sylvestris A. sil-VES-triss 3-8, 8-1
A. trifolia A. try-FO-lee-uh 4-8, 8-5
Aster linariifolius ASS-ter lih-nair-ee-ih-FO-lee-us 4-8, 8-1
Campanula punctata kam-PAN-yew-luh punk-TAY-tuh 3-9, 9-1
Carex nigra 'Variegata' KAIR-eks NY-gruh 4-8, 8-1
C. plantaginea C. plan-tah-JIN-ee-uh 5-9, 9-5
Clematis crispa KLEM-uh-tiss KRIS-puh 6-9, 9-6

C. texensis C. teks-EN-siss 4-9, 9-6

C. virginiana C. vir-jin-ee-AN-uh 4-8, 8-5

Coryphantha echinus kor-ee-FAN-thuh eh-KEE-niss 6-10, 11-6

D-E

Dicentra cucullaria dy-SEN-truh kew-kew-LAIR-ee-uh 4-8, 8-1

D. eximia D. eks-ZIM-ee-uh 4-8, 8-3

Dryopteris celsa dry-OP-ter-iss SEL-suh 6-8, 8-6

Echinocactus texensis eh-kee-no-KAK-tus teks-EN-siss 5-10, 10-5

Echinocereus engelmannii var. variegatus eh-kee-no-SEER-ee-us en-gul-MAN-ee-eye var. vair-ee-uh-GAY-tus 7-10, 11-8

E. fendleri E. fend-LER-eye 8-10, 11-9

E. reichenbachii E. reyken-BAHK-ee-eye 5-10, 12-7

E. triglochidiatus E. try-glo-kih-dee-AY-tus 5-10, 12-7

E. viridiflorus E. vir-ih-dih-FLOR-us 6-10, 11-7

Epimedium xversicolor 'Sulphureum' ep-ih-MEE-dee-um xvur-SIK-uh-lur 5-8, 8-5

Escobaria missouriensis es-ko-BAR-ee-uh mih-zur-ee-EN-siss 4-9, 10-5

E. vivipara E. vih-VYE-puh-ruh 4-9, 10-5

E. vivipara var. bisbeeana E.v. var. biss-bee-AN-uh 4-9, 10-5

E. vivipara var. rosea E.v. var. ro-ZAY-uh 4-9, 10-5

F-S

Ferocactus hamatacanthus fer-o-KAK-tus huh-mah-tuh-KAN-thus 6-10, 11-7

Hacquetia epipactis ha-KWEE-shee-uh eh-pih-PAK-tiss 5-7, 7-5

Helleborus xhybridus hel-eh-BOR-us xHIGH-brih-dus 4-8, 8-1

Hosta rohdeifolia HAHS-tuh ro-dy-FO-lee-uh 3-9, 9-2

Narcissus 'Hawera' nar-SIS-sus 3-8, 8-1

Opuntia basilaris o-PUN-shuh bas-ih-LAIR-iss 5-10, 11-6

O. compressa O. kum-PRES-uh 6-8, 9-5

O. fragilis O. FRAJ-il-iss 7-8, 9-7

O. polyacantha O. pah-lee-uh-KAN-thuh 5-8, 9-6

Pediocactus simpsonii ped-ee-o-KAK-tus simp-SOWN-ee-eye 4-7, 8-5

Phlox divaricata FLOKS dih-vair-ih-KAY-tuh 3-8, 8-1

Polygonatum odoratum 'Variegatum' pah-lih-GO-nay-tum o-doh-RAY-tum 4-8, 8-1

Ranunculus ficaria ruh-NUNG-kyew-lus fy-KAIR-ee-uh 4-8, 8-2

Sphaeralcea coccinea sfee-AL-see-uh kok-SIN-ee-uh 3-10, 12-8

T-Z

Tiarella cordifolia tee-ah-REL-luh kor-dih-FO-lee-uh 3-7, 7-1

Viola adunca VY-o-luh ah-DUN-kuh 4-8, 8-1

V. appalachiensis V. ah-puh-lay-chee-EN-siss 5-7, 7-4

V. aurea V. AW-ree-uh 6-8, 7-4

V. beckwithii V. bek-WITH-ee-eye 5-8, 8-3

V. biflora V. by-FLOR-uh 4-8, 8-1

V. canadensis V. kan-uh-DEN-siss 3-8, 7-3

V. douglasii V. dug-LASS-ee-eye 7-8, 8-6

V. hallii V. HAW-lee-eye 6-8, 8-6

V. hirsutula V. her-SOOT-yew-luh 6, 7-5

V. lobata V. lo-BAY-tuh 8, 8-6

V. ocellata V. o-seh-LAY-tuh 8, 8-6

V. pedata V. peh-DAY-tuh 3-8, 8-1

V. pedunculata V. peh-dunk-yew-LAY-tuh 8, 8-6

V. riviana forma purpurea V. rih-vee-AN-uh forma per-PER-ee-uh 5-8, 8-5

V. rostrata V. ros-TRAY-tuh 5-8, 8-5

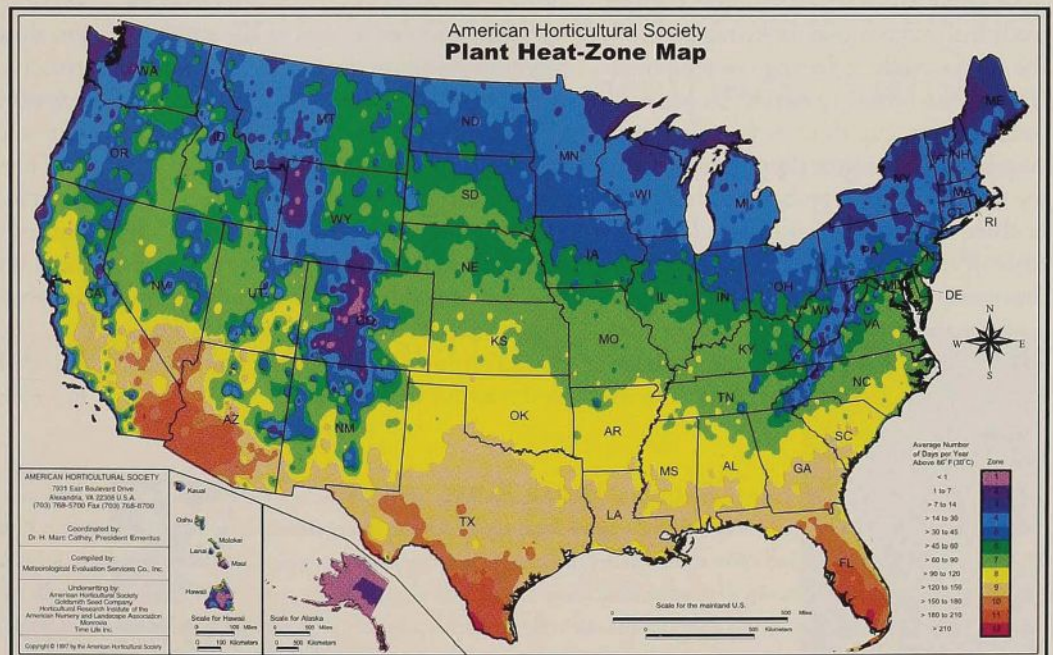
V. selkirkii V. sel-KUR-kee-eye 5-7, 7-5

V. sheltanii V. shel-TONE-ee-eye 7-8, 8-6

V. striata V. stry-AY-tuh 5-8, 8-5

V. trinervata V. try-nur-VAY-tuh 8-9, 9-7

V. walteri V. WALL-tur-eye 8-9, 9-7



How Does Our Garden Grow?

Attend the *Southern Living* Gardening School & Find Out.

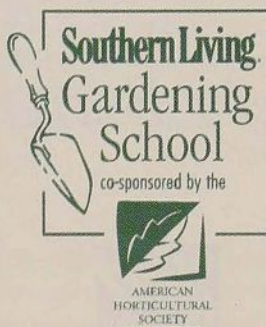
Co-sponsored by the American Horticultural Society

Have you ever wondered how you can grow those great gardens you see in *Southern Living* magazine? Come to the *Southern Living* Gardening School and we'll be happy to share our "secrets" with you. Join us for a fun, live show at one of the South's premier gardens.

A *Southern Living* gardening specialist will offer tips and advice which will make your garden look like it came straight off the pages of our magazine! See you there!

All attendees receive a FREE gift bag and resource guide.

Location	Show Date	For Ticket Information
Atlanta Botanical Garden	March 2	(404) 876-5859 X548
Bellingrath Gardens & Home	March 11	(800) 247-8420 X163
Memphis Botanic Garden	March 14	(901) 685-1566 X152
New Orleans Botanical Garden	March 16	(504) 483-9386
Riverbanks Zoo & Botanical Garden (Columbia, SC)	March 16 & 17	(803) 779-8717 X1117
Callaway Gardens (Pine Mountain, GA)	March 24	(706) 663-5153
San Antonio Botanical Garden	March 30	(210) 829-5100
Myriad Botanical Gardens (Oklahoma City, OK)	April 1	(405) 297-3995
Cypress Gardens	April 6	(800) 282-2123 X383
The Dallas Arboretum	May 3	(214) 327-8263 X193
Biltmore Estate	May 13	(888) 844-4696
Opryland Hotel	May 24	(888) 997-9672



National
Sponsors



garden.com

Preen



allegra
fexofenadine HCl