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The Magazine of the American Horticultural Society November/December 2003

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ON THE COVER: The coppery-red flowers of *Hamamelis x intermedia* 'Diane' light up the garden in February and impart a delicate fragrance to the winter air. Photograph by Alan and Linda Detrick

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### NATIONAL CHILDREN AND YOUTH GARDEN SYMPOSIUM (NCYGS)

Cornell University in Ithaca, New York, is the setting for the 12th annual NCYGS, to be held July 29 to 31, 2004. For more information, call (800) 777-7931, ext. 117 or visit [www.ahs.org](http://www.ahs.org).

### RECIPROCAL ADMISSIONS PROGRAM

Through this program, AHS members receive free and discounted admission to botanical gardens throughout North America. Participating gardens are listed in this year's *AHS Member Guide* and also in the Membership area of our Web site. For more information, call (800) 777-7931 ext. 127.

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### WASHINGTON BLOOMS!

AHS's annual celebration of spring will be held April 1 to 25, 2004, at River Farm. This year is the debut of the AHS Garden School, a series of in-depth workshops on exciting new gardening trends. To register, call (800) 777-7931 ext. 121 or visit [www.ahs.org](http://www.ahs.org).

### WEB SITE: WWW.AHS.ORG

The AHS Web site contains information about AHS programs and activities, gardening events in your area, and links to other useful Web sites. AHS members can reach the members-only area of the site by typing in this year's password: **sunflower**.



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## NOTES FROM RIVER FARM

**W**E TEND TO TAKE the beauty of the natural world around us for granted. So it's a shock to us when bulldozers arrive in the name of progress and destroy it. Faced with this situation, we try our best to counter the depressing effects of this destruction and rally our family and friends to plant trees and flowers, to create new parks and gardens. But while this is a worthy accomplishment in its own right, it can never match what was lost.

It is not the same to replace the magnificence of a giant live oak, sugar maple, or osage orange with a parking lot full of sapling trees next to a large, imposing building, no matter how beautiful or architecturally creative the building. If we are to ensure that the beauty of our natural environment is to be sustained in our communities, we have a major challenge in front of us.

We are challenged to determine ways to protect natural areas—areas with big trees, native soils, and unspoiled water systems—in our communities. We are challenged to understand just what it takes to deliver beauty in our communities through cultivated plants and plantings. Just how big do the trees need to be? How much land do we need to set aside for parks and gardens? What kind of design and what level of maintenance will be required to ensure that the residents in our communities can treasure the beauty of the natural environment for years to come?

The American Horticultural Society is very focused on these issues. Our members and our board of directors care deeply about their communities and the important role that plants and gardens play in them. What we need is a way to identify role models, to find out who is already doing this well so that we can adopt similar programs in our own communities.

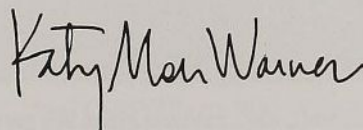
Recently, I have had the special privilege of working closely with two of AHS's partnering organizations—America in Bloom and Communities in Bloom—that are doing exactly that. They are recognizing communities, large and small, that are setting new standards for urban beautification.

This past September I attended the annual symposium for Communities in Bloom (CIB), held in Stratford, Ontario. During the symposium, more than 100 communities in Canada, the United States, and Europe were honored for their efforts in fostering civic pride, environmental responsibility, and beautification.

At its own award ceremony in Chicago, Illinois, America in Bloom (AIB) recognized 40 communities in the United States that have taken the extra step to add beauty to their communities and demonstrate respect for the natural environment (You can read more about the AIB program in an article on page 11.)

I encourage each of you to look for ways to participate in this effort. Contact America in Bloom ([www.americainbloom.org](http://www.americainbloom.org)), bring your community leaders together, do what it takes, and then nominate your community for an award. Let's truly make this continent bloom with the beauty of plants and flowers and gardens. Together, day by day, person by person, plant by plant, outstanding effort by outstanding effort, we can do it.

Happy Gardening!



—Katy Moss Warner, AHS President





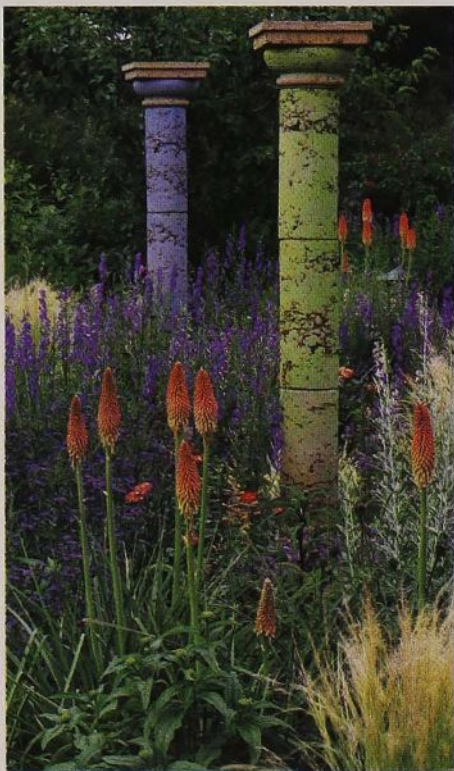
## MEMBERS' FORUM

### GIVING CREDIT WHERE IT IS DUE

We were excited to see Karen Bussolini's photograph of our columns at the Denver Botanic Gardens in your "Perfect Plant Companions" column in the July/August issue. But it was disappointing that you did not give us a mention or credit as the artists of these sculptures. Too often photographs, especially garden images, are published without proper credit or recognition other than the photographer. Garden owners, artists, and other significant contributors are regularly ignored even though they are the ones who were instrumental in creating the image seen in the photograph.

*David Neil Lewis and George Little  
Bainbridge Island, Washington*

**Editor's note:** The names of artists David Neil Lewis and George Little were inadvertently removed during editing, for which we apologize. We have reproduced the image, below.



Lewis and Little's columns grace this garden, designed by Lauren Springer.

### MORE ON FRANKLIAS

I was pleased to see *Franklinia* mentioned in Carole Ottesen's article "10 Great Small Native Trees" (May/June 2003), but was surprised to read that all franklinias are thought to be the progeny of a single tree that grew in John Bartram's garden.



A franklinia shows off its late-summer blossoms at AHS's River Farm headquarters.

The staff at Historic Bartram's Garden conducted a worldwide Internet census of *Franklinia* trees at the time of the 300th anniversary of Bartram's birth. As a respondent to this census, I was contacted by Pam Mercure of Holden Arboretum in Kirtland, Ohio, to whom I sent tissue samples for a study there of *Franklinia* biodiversity.

I later received a letter from her stating that a preliminary study had established that biodiversity exists in the *Franklinia* population, and that the arboretum planned further DNA studies. Could such biodiversity exist from only one tree?

*Ellen Terry  
Freehold, New Jersey*

**Editor's note:** Pam Mercure confirmed that preliminary testing conducted at Holden "does indicate the possibility of there having been two separate plants that the plants in our study descended from." An application for a grant to fund a more detailed genetic analysis was not approved.

We also contacted Curator Joel Fry of Historic Bartram's Garden in Philadelphia, who sent us the following note:

We recently came across a long overlooked letter that William Bartram wrote to Carl Linnaeus Jr. in Uppsala, Sweden, on August 16, 1783. The letter indicates how many *Franklinia* plants Bartram raised from seed he brought back from Georgia in 1777. Here is what Bartram wrote:

*"This very beautiful Shrub I discovered growing in Florida [sic] about 5 years ago & brought the ripe seed to Philadelphia, from these seed grew 5 plants, two of which were taken to France by Monsr. Gerard Embassador to these States & were to be planted in the Royal garden at Versailles. Two plants are here now finely in Flower in the open ground, & perfectly resist our hardest Winters.*

*The seed are above a year ripening. When I collected the ripe seed in Florida the Tree which yielded the seed was then fully in Flower And The Trees in Jno. Bartram's Garden near Philadelphia now in its gayity of flowering is full of seed nearly ripe."*

[Fry continues] There is good evidence that at least one of the plants sent to France with Ambassador Gerard survived into the middle of the 19th century in the Trianon gardens at Versailles. Two plants survived and flowered at Bartram's Garden at least until around 1850, and one of the original plants was still alive as late as 1890. We do not yet know what became of the fifth plant.

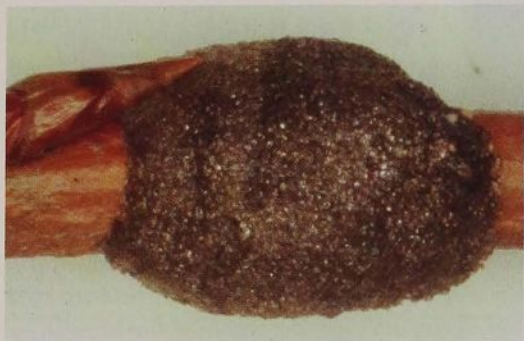
I have not found evidence that anyone, except William Bartram, successfully collected franklinia plants or seeds from the wild. It was in an obscure location and only a few sightings of it in the wild are known. It is highly likely that all the franklinias now in cultivation descend from the two plants William grew here.

*Joel T. Fry, Curator  
Historic Bartram's Garden  
Philadelphia, Pennsylvania*

### TENT CATERPILLARS

I enjoyed Branley Allan Branson's article on tent caterpillars ("Natural Connections," May/June 2003) because I have encountered these insects at my homes in





The forest tent caterpillar's other guises: An egg mass on a tree, left, and the adult moth, right. This insect is most destructive in its caterpillar stage.

both Chicago and Atlanta. The photograph used with the article is excellent, but I would have liked to have seen a photo of the egg mass and moth as well to help identify them in those two stages.

Marcia Winchester  
Woodstock, Georgia

**Editor's note:** Please see the photos above.

#### MORE ON RED ORCHID CACTUS

I wanted to respond to the person who asked how to get a red orchid cactus to bloom ("Gardener's Information Service,"

July/August 2003). I have had success hanging mine under my pear tree all summer, beginning in mid-May once there's no chance of frost. I feed it regularly while it's outdoors and keep it well watered, because it dries out rapidly. When I bring it inside in fall, it blooms like crazy, with beautiful fire-engine-red blossoms.

Wesley Heacock  
Port Angeles, Washington

#### GILDING THE LILY

**Editor's note:** Two perspicacious readers—including John Bryan, the author of

*Bulbs*—spotted a misidentified lily in the article about Diana Beresford-Kroeger's garden in the July/August 2003 issue. Here are their observations:

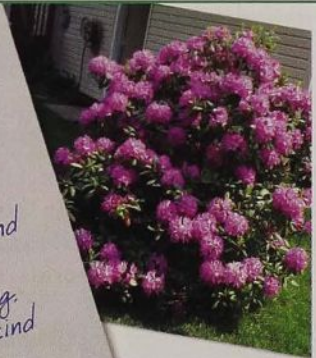
As always, I truly enjoy *The American Gardener*. On rare occasions I note an error such as the misidentification of the lily on page 46 of the July/August issue. The lily is an Asiatic lily, perhaps 'Citronella', 'Nutmegger', or 'Hornback's Gold'.

Fred Winterowd  
St. Louis, Missouri


The lily on page 46 of the July/August 2003 issue is neither *L. auratum* nor 'Golden Splendor'. Possibly it is 'Citronella' or another Asiatic lily selection.

John Bryan  
San Francisco, California

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



Dear Sirs,  
Approximately 10 years ago we decided to plant a Rhododendron in our backyard. We were told by many that it would not survive the winter cold temperatures in Illinois. I discussed this with a local nursery and they suggested I use Wilt-Pruf prior to freezing weather.  
I have used Wilt-Pruf every winter since then and the Rhododendron has done GREAT!  
I am attaching a photo of this year's blossoming. It has continued to grow and produce these kind of results every year. We have never seen a Rhododendron this large.  
The neighborhood is continually impressed every year.  
Thank you,  
Ernie & Edna West  
Peoria, Illinois



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# News

*AHS Programs and Events*

## Excitement Builds for *The Growing Connection*

IT WAS A BUSY AND exciting summer for *The Growing Connection*, as the diverse components of this international educational program began to take shape. The Growing Connection was initiated by the American Horticultural Society (AHS), the Food and Agriculture Organization of the United Nations (FAO), and several other partners.

When the formal phase of the program debuts next year, 10 schools in the United States and

10 schools in the West African nation Ghana will be linked to investigate the science behind growing food plants and learn important lessons about nutrition and sustainability. The schools will be linked through state-of-the-art information technology so exchanges will be possible among students, teachers, and scientists.

Currently EarthBoxes™, the self-contained growing units that will be used to ensure experiments are conducted within a scientifically consistent framework, are undergoing preliminary testing at several schools in Ghana and the United States.

***The Growing Connection* demonstration garden at River Farm produced an abundant summer harvest.**



In Ghana, the EarthBoxes are already in use at the Jukwa Secondary School, the Cape Coast School for the Deaf, and Abeyee District Authority Junior Secondary School.

In the United States, the Garrison School in Garrison, New York, and the Louis B. Johnson Middle School in Bradenton, Florida, have been testing the boxes for several months.

### Participate in *The Growing Connection*

The formal phase of *The Growing Connection* begins in 2004, but youth groups can join in right now. To get involved with these exciting space-seed experiments, order one or more of *The Growing Connection* kits.

In addition to packages of seeds, each kit includes a self-contained growing unit called an EarthBox™, one bag of soilless mix, fertilizer and dolomite, and activity guides describing how to grow and conduct experiments on the plants—everything you need to start your children or youth group growing seeds and learning.

For each kit you purchase for \$59.95 plus \$15 shipping, one-third of your purchase price will be credited toward donation of an additional kit for the program. To order, visit the AHS Web site at [www.ahs.org](http://www.ahs.org) or call AHS at (800) 777-7931.

### SEEDS NEED MORE SPACE

The NASA balloon flight for *The Growing Connection* seeds, originally scheduled for this past spring, met with delays due to uncooperative weather and technical difficulties. During final testing before the balloon launch, NASA scientists determined that the seed packages were too air tight and would expand to five times their original volume by the time the balloon reached the upper atmosphere. This would have overloaded the capacity of the balloon gondola in which the seeds were to be carried.

By resorting to a low-tech solution—poking pinholes in individual seed packets—NASA employees were able to send about 200 seed packets up on an initial balloon flight. The remaining 2,500 packets are being launched this fall and early next spring.

After their return to Earth, the space-traveling seeds, along with packages of “control” seeds that were not sent up in the balloon, will be included in complete growing kits that are available to schools and youth groups for experimentation. Kits with a smaller proportion of space seeds are being shipped now.



## DEMONSTRATION GARDEN AT RIVER FARM

EarthBoxes are also being put through their paces at AHS's River Farm headquarters, where a demonstration garden for *The Growing Connection* was installed this past spring.

In a fenced enclosure, orderly rows of EarthBoxes successfully supported a variety of vegetables, herbs, and ornamental plants, ranging from tomatoes to peppers, basil, and marigolds. A low-volume drip irrigation system on an automatic timer kept the EarthBoxes watered during the hot summer months.

"One of our hardest challenges was groundhog control," says horticulture intern **Natalie Howell**, who monitored the garden. According to Natalie, burying the bottom of the chicken-wire fence and bending the top of the fence outward helped reduce the damage done by the groundhogs.

## BENEFIT CONCERT IN NEW YORK CITY

Funding for *The Growing Connection* is being raised through many sources, including a series of benefit concerts. The first of these was held in September, when jazz great **Bill Frisell** and his band, The Intercontinentals, played to a full house in the newly restored Judy and Arthur Zankel Hall at New York City's Carnegie Hall. In the audience were several members of the First Planters donor group, which includes individuals who have made significant initial financial contributions to *The Growing Connection* program.

Bill and the band later joined the First Planters and other supporters of *The Growing Connection* at an after-show reception.

## Youth Groups to Decorate AHS Holiday Trees

EACH YEAR during the winter holiday season, visitors to River Farm enjoy the colorful poinsettias and festively adorned holiday trees set up throughout the main building at AHS headquarters. Over the past few years, the trees have been decorated with heirloom ornaments on loan from the archives of the Smithsonian Institution in Washington, D.C., but this year youth and school groups across the country have been invited to make thematic ornaments for the holiday trees, which will be on display from December 3, 2003, through early January 2004.

Requests for contributions of handmade ornaments made of flameproof materials have been sent to the many teachers and youth groups leaders who were among the more than 200 children's gardening experts at the 11th AHS Children and Youth Garden Symposium held at River Farm and other locations in the Washington, D.C., area this past summer. "We hope this will offer teachers and others who work with children's groups an opportunity to develop fun and creative projects for kids," says **Nancy Busick**, AHS children's garden coordinator.

The four themes for which ornaments are being requested are: Americana (red, white, and blue colors); Lewis and Clark (silver and gold); George Washington (blue and white); and plants and flowers (multicolored).

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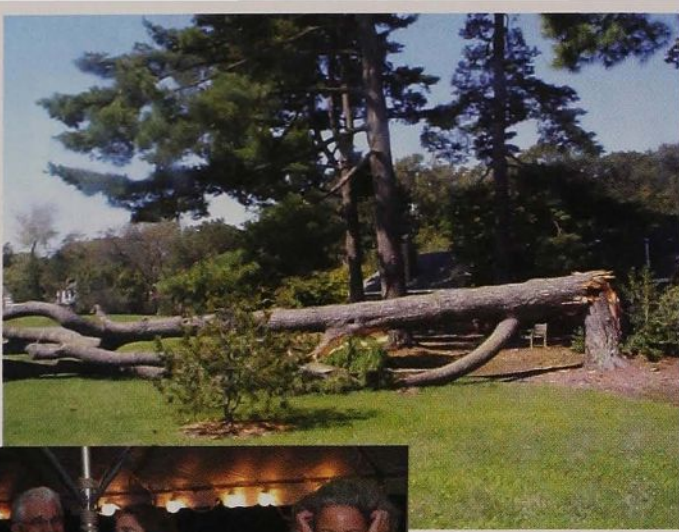
## Gala Shines Despite Hurricane

IT TAKES MORE THAN a mere hurricane to deter the American Horticultural Society staff and the volunteers who worked so hard to make this year's annual Gala a rousing success. But things looked gloomy when Hurricane Isabel blew through the Washington, D.C., area on Thursday, September 18, felling thousands of trees and leaving thousands more homes and businesses—including River Farm—without electrical power for days.

Yet, two days later, the AHS Gala went on as scheduled, illuminated by candles and generator-powered strings of lights. More than 200 guests enjoyed a beautiful evening at River Farm under the stars, a poem reading by multitalented University of Georgia perennial plant expert **Allan M. Armitage**—who was honorary gala chair—and a chance to bid on garden-related items at live and silent auctions.

One of the biggest hits at the live auction was the opportunity to spend a week working with **Kurt Bluemel** at his Baldwin, Maryland, nursery. This auction item was so popular that Kurt donated a second week to the auction as well.

Behind the scenes, the AHS staff and members of the 2003 Gala Committee, chaired by **Lucy Hutchinson**, spent many hours removing fallen trees, cleaning up debris on the grounds, and calling guests individually to let them know the event was still on. "Given the devastation from the hurricane, what our staff and volunteers accomplished in two days was truly amazing," says AHS President **Katy Moss Warner**. ☺



Despite devastation from Hurricane Isabel, top, AHS Board Chair Kurt Bluemel, AHS President Katy Moss Warner, and Gala Committee Chair Lucy Hutchinson, above, could share a laugh at the 2003 AHS Gala. Right: One of the spectacular Gala floral arrangements.



### Colonial Williamsburg Garden 18th Symposium

#### HEIRLOOM GARDENING

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**April 4–6, 2004**

Photo courtesy of Scott Kunst, Old House Gardens



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# AHS NEWS SPECIAL: Community Beautification Rewarded

TEN COMMUNITIES and cities ranging from tiny Lewes, Delaware (population less than 5,000), to Columbus, Ohio (population over one million), received awards for community beautification efforts at the second annual America in Bloom (AIB) Symposium and Awards Program, held September 20 at the Hyatt Regency Chicago. Known internationally for its greening and beautification efforts, Chicago was the grand winner of AIB's largest-population category at the inaugural award ceremony held last year.

Founded in 2002, America in Bloom is a national campaign and contest. It is modeled on successful programs in England and Canada (Communities in



Colorful gardens like this earned Indianapolis an AIB award for overall excellence.

## How to Get Involved

If you'd like to get your community involved in the America in Bloom program, here are tips for getting started:

- Start by seeking approval and support from your mayor, city council, or appropriate municipal officials.
- Then complete and submit the AIB registration form (download from [www.americainbloom.org](http://www.americainbloom.org)).
- Organize a local AIB contest committee comprised of representatives from businesses, the municipal government, and community members.
- Review judging criteria and documents received from AIB. Create a notebook of year-round events in the community that relate to the evaluation criteria.
- Encourage local media outlets to help publicize the competition and program events.
- Make it fun and enjoy the journey!

For more information about America in Bloom, contact AIB Administrator Laura Kunkle at (614) 487-1117 or visit [www.americainbloom.org](http://www.americainbloom.org). For information on Communities in Bloom, visit [www.communitiesinbloom.ca](http://www.communitiesinbloom.ca).

Bloom) that have fostered urban beautification efforts and civic pride. In the friendly competition, communities are evaluated in a wide range of categories such as floral displays, urban forestry, landscaped areas, turf and ground-covers, environmental awareness, heritage conservation, and community involvement.

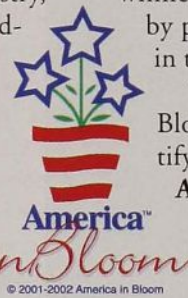
"We are proud to count both America in Bloom and Communities in Bloom among our horticultural partners," says AHS President **Katy Moss Warner**. "Both organizations share our belief that plants and greenspace are critical to the quality of life in our cities and communities."

Nearly 40 communities from all regions of the United States received

recognition in the second year of the AIB program. Judges visited all the communities this past summer prior to making the award decisions. The 2003 winners for overall excellence, listed by population category, are shown in the box below.

"I really appreciate America In Bloom's mission of trying to beautify communities of all sizes," says **Anne Maschmeyer**, beautification manager for the city of Indianapolis, which received the AIB overall award for

cities with a population between a half million and a million. "Beauty goes beyond aesthetics; it conveys a message to residents, employees, and visitors that a community is healthy, vibrant, and a great place to live in."



### 2003 AIB AWARD-WINNING COMMUNITIES

- |                        |                       |
|------------------------|-----------------------|
| ■ 5,000 or less        | Lewes, Delaware       |
| ■ 5,001-10,000         | Warwick, New York     |
| ■ 10,001-15,000        | Brecksville, Ohio     |
| ■ 15,001-20,000        | Berea, Ohio           |
| ■ 20,001-25,000        | Batavia, Illinois     |
| ■ 25,001-50,000        | Lake Oswego, Oregon   |
| ■ 50,001-100,000       | Reston, Virginia      |
| ■ 100,001-300,000      | Akron, Ohio           |
| ■ 500,001-1,000,000    | Indianapolis, Indiana |
| ■ 1,000,001 or greater | Columbus, Ohio        |



A winning view from Berea, Ohio



# Washington Blooms! Celebrate Spring with the American Horticultural Society



April is National Garden Month! Mark your calendar for a month of exciting garden events and programs in the National Capital area.

- 🌸 Join us in honoring the Great American Gardeners Award winners at an intimate Friday evening banquet—and meet your horticultural heroes! April 2
- 🌸 Attend the new AHS Garden School—three exciting two-day programs at AHS headquarters, River Farm:

**Indoor Tropicals** House plant connoisseurs and tropical plant lovers, prepare to be inspired! Get plant selection, growing, and propagation tips from renowned experts and visit outstanding indoor gardens that highlight the diverse world of tropical plants. April 1 & 2

**SMARTGARDEN™** The AHS SMARTGARDEN™ gardening practices help you pick the right plants and grow them successfully and in harmony with the environment. This program will include lectures and the chance to design a “smartgarden” under the guidance of respected design experts. April 8 & 9

**Garden Photography** Sharpen your photography skills! Expert gardeners who take their photography seriously as well as expert photographers who take their gardens seriously will offer advice and demonstrate techniques for taking the best photos of plants and gardens. April 15 & 16

- 🌸 Discover the National Capital Area Federation of Garden Clubs, Inc., District II flower show. April 21–24
- 🌸 Shop the spectacular AHS Annual Plant Sale. April 22–24
- 🌸 View the Washington Landscape Artists’ exhibit. April 1–30
- 🌸 Enjoy the beauty of River Farm’s gardens and bulb display. April 1–30
- 🌸 Explore River Farm’s innovative and engaging children’s gardens. April 1–30

## Other events in the National Capital area during National Garden Month:

- 🌸 April 18–24—National Wildlife Week, sponsored by the National Wildlife Federation.
- 🌸 March 27–April 11—the National Cherry Blossom Festival.
- 🌸 April—an exhibit of rare botanical books at the United States Botanical Garden.
- 🌸 April 17—Historic Garden Week in Virginia.



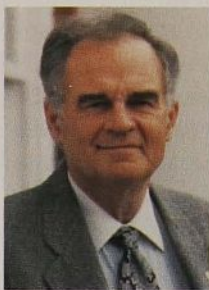


## Orchid Research Benefits All Plants

by Dr. H. Marc Cathey

**W**E LIVE IN AN age where advances in plant science are allowing breeders to create an amazing variety of new hybrids, colors, and forms of all kinds of plants. Breakthrough micropropagation techniques such as tissue culture permit millions of plants to be propagated rapidly from only a few parents. And with the advent of new genetic screening measures, scientists can now cleanse plants of viruses and other diseases.

One group of plants that has particularly benefited from these advances is orchids, which are fast becoming the most popular house plants in the world (for more on this, read the article on growing windowsill orchids starting on page 27).



### OVERCOMING CHALLENGES

It was not always this way. In the early 1700s, when orchids first began to make their way to Europe from colonial outposts in the tropics, they were so rare that only the wealthy—who could afford both the expense of orchids and a special hothouse to grow them—owned them.

Even when orchids started becoming more accessible, their spread to a wider audience was slow because they proved demanding to propagate. Dividing plants was the most successful propagation method, but it often took years to produce enough units of a single plant for commercial sale. Growing orchids from seed was next to impossible at the time—it wasn't until the early 1900s that researchers discovered orchid seeds needed specific fungi present in the growing medium in order to germinate.

In the 18th and 19th centuries, the only way to satisfy the growing demand for orchids was to collect new plants from the wild and ship them back by boat. Because few people had the means or knowledge to offer orchids a suitable growing environment—English botanist and plant explorer Sir Joseph Dalton Hooker called 19th-century England a

“grave for tropical orchids”—thousands perished and many unique species were undoubtedly lost to posterity.

### AMATEURS AND PROFESSIONALS UNITE

The development of successful micropropagation techniques for orchids in the 1950s and '60s, owes much to the work of hobbyists, who aided professional scientists in unraveling the mysteries of orchid biology. Writing in the *Botanical Journal* of the Linnean Society in 1996, biologists Joseph Arditti and Abraham Krikorian documented the scientists (56) and published studies (568) that comprise the many contributions to the realization of this research.

The studies recounted by Arditti and Krikorian did not focus exclusively on micropropagation of orchids; indeed, many of the experiments they cited were performed on a wide variety of plants. Researchers tested many different growing mediums and additives—such as sugars, proteins, charcoal, auxins, cytokinins, gib-

berellins and abscisic acid—in a wide range of concentrations.

Some of the research was based on the keen observational skills of amateurs and hobbyists, whose work appeared in amateur plant publications. Other research was the result of scientifically quantified studies published in juried scientific journals.

As noted by Arditti and Krikorian, three different lines of research came together to establish micropropagation methods for orchids. These were:

- In vitro propagation—in which plant stem tips are placed in an artificial growing medium, often in a test tube, for the regeneration of plantlets.
- Production of disease-free, genetically identical organisms (clones).
- Clonal propagation—in which genetically identical descendants of a single cell are generated by asexual reproduction.

The end result of all this groundbreaking research is that we can now take a single cell of almost any plant and generate millions of genetically identical cells. We have the means to clean up any plant, freeing it of viruses or other disease-causing organisms. Last but not least, the application of these processes in the production of plants does not involve introduction of foreign DNA, climate controls, or use of hazardous chemicals.

And, most excitingly, it's an area where amateur gardeners and plant breeders can still play a major role. Despite all the advances that have been made, there is still so much more to do!



Orchids such as these hybrid phalaenopsis are now readily available for even casual growers.

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



Horticultural News and Research Important to American Gardeners

*North America's Ash Trees Under Threat*

Not since the Dutch elm disease early in the last century has there been a threat as potentially deadly to North America's trees as the emerald ash borer (EAB). The metallic green beetle is only a half-inch long, but it ravages ash trees (*Fraxinus* spp.) and is now spreading rapidly in the eastern half of North America.

In Michigan alone, where the EAB was first identified a year and a half ago, it has caused the death of some seven million ash trees. And "there are probably two million more infested," says Howard Russell, an entomologist at Michigan State University's Extension Service. "The beetle is real aggressive," adds Russell. "It doesn't care whether a tree is healthy or stressed, old, sapling, forest grown, or a landscape specimen."

EAB larvae tunnel under bark and starve a tree by choking off its supply of water and nutrients. This results in die-back of the upper third of the tree, vertical splits in the bark, D-shaped holes where adult EABs emerge, and, when the bark is removed, serpentine tunnels revealed in the cambium. Most affected trees do not survive.

At first, infestation was confined to five Detroit-area counties, but by August 2003, seven more Michigan counties reported the occurrence of the borers. The Michigan Department of Agriculture placed a one-year quarantine on all 13 affected

counties, prohibiting the sale and movement of ash nursery stock from, into, and within Michigan's lower peninsula. It also suspended the movement of any ash materials—including logs, branches, and other items unless chipped to one inch or less, and firewood of any tree species—from within the core

EAB-infested zone to anywhere else in the quarantined area or state.

Michigan isn't the only place affected. EABs have infested ash trees in the city of Windsor and the towns of Amherstburg, Essex, LaSalle, and Tecumseh in Ontario, Canada, as well as in Ohio's Lucas and De Finance Counties.

Previously unknown in North America, the insect is indigenous to eastern Russia, Japan, Korea, and northern China. Scientists speculate that the borer arrived as long as a decade ago in wood packaging from Asia. It poses a grave threat to the landscape and forestry industries. According to the American Nursery and Landscape Association, "ash is estimated to be the single most important

shade and landscape tree in the northern United States. It is also an economically important forestry species and a valued component of ecosystems across most of the United States."

For more information about EABs and how to report a sighting, visit the U.S. Forest Service Web site at [www.na.fs.fed.us/spfo/eab](http://www.na.fs.fed.us/spfo/eab).



**Above: An ash borer larvae tunnels into the trunk of an ash tree. Right: The adult is smaller than a penny but has caused millions in damage.**



**CARING FOR LIVE CHRISTMAS TREES**

With the winter holidays approaching, the International Society of Arboriculture (ISA) is encouraging gardeners to purchase and plant live holiday trees rather than buying cut ones. A live Christmas tree can beautify a home landscape for years and provide habitat for wildlife.

But, ISA cautions, homeowners considering planting live conifers should re-

member that trees, like puppies, eventually grow up. Most species used for Christmas trees (pine, spruce, and fir) grow to be more than 50 feet tall and 20 feet wide at maturity, so select a site that will accommodate a fully-grown tree. Be sure also that the tree you select is suited to your USDA hardiness and AHS heat zones.

Here are some pointers ISA offers for success with a live Christmas tree.

- When purchasing a live tree, be sure it appears vigorous and healthy and that its root ball has not dried out.
- After you get the tree home, water it well and store it for a week in a cool/cold place such as an unheated garage that is out of the wind and direct sun.
- Prepare a planting hole in a sunny, well-drained location. Dig the hole twice as wide as the root ball and as deep. Mix the



soil from the hole with organic matter such as composted manure or peat and pine bark, and sand for drainage. Fill the hole one-third of the way with this mixture. Store the rest on a tarp to use later for backfilling around the planted tree.

■ Soak the root ball in water, wrap it in heavy plastic, and bring it inside to stand in a barrel or tub. Check the root ball daily. It should be moist, but not sitting in water.

■ Trees should stay inside no longer than three to five days. A longer stay in warm temperatures can cause the tree to break dormancy and be damaged by cold when it goes back outside. To help the tree adjust to conditions outside again, store it for a week in a cool place such as an unheated garage.

■ Plant the tree with one-third of the root ball above soil grade. Make sure to loosen the burlap wrapping and cut off any rope around the ball. Cut or bury any burlap above the soil line so it cannot wick moisture. Fill the hole, mulch the tree, and water it well. Continue to water once a week when the ground isn't frozen.

## SURVEY OF AMERICAN GARDENERS

This past May, the Garden Writers Association (GWA) sponsored a survey of 1,000 American gardeners to find out who and where they are and what they do. Here's what the survey disclosed about our gardening habits:

■ The majority of Americans (81%) have a yard or garden and planned garden-related activities last summer.

■ The most popular use of a yard or garden, especially for wealthy Americans (71 percent of those with incomes over \$75K) and Midwesterners (61%) was for relaxation.

■ The next most popular use was to grow flowers, plants, or shrubs (51%).

■ Almost three-quarters of respondents (73%) were planning to do maintenance in their yards or gardens.

■ Weeds are most likely to be removed by hand (56%). This percentage can be bro-

ken down to Westerners (71%), the wealthiest Americans (62 percent of those earning \$75K+), urban dwellers and females (61%), and those between 25 and 44 (60%).

■ Of those who raised fruit, vegetables, and herbs, the majority (85%) did so in order to eat them fresh and to share with friends (70%). Over two-thirds (69%) did so for satisfaction, 58 percent for better flavor, and 34 percent to have pesticide-free produce.

■ The percentage of those willing to donate their produce to the needy decreased with increasing income (27 percent with incomes under \$30K versus 10 percent with incomes of \$75K+).

■ Gardeners get most of their information about gardening from friends

(29%), the Internet (26%), magazines (25%), and books (23%).



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## THE WOLLEMI PINE

How would you like to have a prehistoric plant growing in your garden? You will get a chance in 2005 or 2006 if all goes according to the plans of Wollemi Pine International, an Australian company that is now preparing to market its name-sake plant worldwide.

The Wollemi pine (*Wollemia nobilis*), a conifer known from fossils dating back 90 million years, was considered extinct until 1994, when David Noble, a New South Wales Nation-

**The Wollemi pine can be grown successfully in a container indoors or outdoors.**

al Parks and Wildlife Service officer came upon this unusual tree while bushwalking in Wollemi National Park, located

some 90 miles northwest of Sydney, Australia. The trees, over 100 feet tall with multiple trunks and bark that resembles bubbling chocolate, were growing in a sheltered rainforest canyon.

After studying the ferny foliage samples Noble had collected from the trees, botanists at the National Parks and Wildlife Service (NPWS) and the Royal Botanic Gardens (RBG) in Sydney concluded that the tree was a previously unknown genus and species. It belongs to Araucariaceae, an ancient family that includes the Norfolk Island pine (*Araucaria heterophylla*) and monkey puzzle tree (*A. araucana*).

RBG horticultural scientist and conservationist Cathy Offord calls the Wollemi pine “a link to Australia’s prehistoric past.” Offord has been conducting research on the tree since its discovery and has encouraged investigation of its commercial potential.

“The Wollemi pine is a fantastic indoor plant,” says Sally McGeoch, marketing manager for Wollemi Pine International. “It responds very well to low light and stands up really well to air conditioning.” The plant is reportedly able to survive temperatures ranging from 23 to 133 degrees

Fahrenheit. Trials for the Wollemi pine in the United States, says McGeoch, “should be underway by the end of the year.”

Royalties from the sale of Wollemi pines will go to the NPWS and RBG for conservation of the tree and other threatened plants in the wild.

For more information about the Wollemi pine, visit [www.wollemipine.com](http://www.wollemipine.com).

## VITAMIN C FOR STRESSED-OUT PLANTS

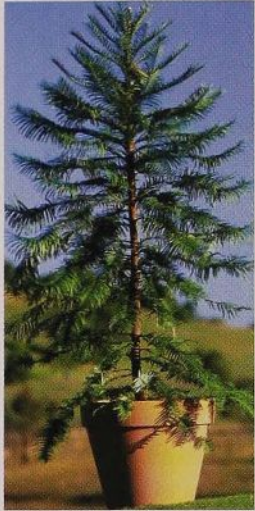
Just as with humans, plants can suffer from exposure to tropospheric or ground-level ozone—atmospheric molecules that form when air pollutants react with oxygen and sunlight. When ground-level ozone enters plants, it forms unstable molecules called reactive oxygen intermediates (ROIs), which can injure plants if they are not neutralized by antioxidants. And as it does with people, vitamin C (ascorbic acid) is an antioxidant that protects plants.

Ozone-related damage in plants manifests itself differently from one species to another, but in many plants the upper surface of older leaves may become stippled with reddish, purplish, or brownish

spots. Compromised foliage can lead to reduced plant vigor and fruit yield.

Research by Kent Burkey, a plant physiologist at the Air Quality-Plant Growth and Development Research Unit of the U.S. Department of Agriculture’s Agricultural Research Service in Raleigh, North Carolina, suggests that plants with elevated levels of vitamin C in the protective liquid layer surrounding the outer leaf cells—called the apoplast—are more tolerant of ozone. While many plants manufacture ascorbic acid inside their cells, only those capable of transporting it to their apoplasts enjoy protection from ozone injury.

Vitamin C, however, is only one component of ozone tolerance. Future investigations will focus on plants that do not have high levels of ascorbic acid in the leaf apoplast. “We know that ascorbic acid is not the only compound in the apoplast that has antioxidant properties,” says Burkey. “We are trying to identify which plants have other useful compounds.” Once they are identified, he adds, scientists “could potentially develop plants with greater ozone tolerance.”



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## Plants of Glory

by Alan Bennett Ilagan

EVERY GARDENER has at least one heroic plant story—a tale of an unlikely survivor, a plant that should have been killed by winter weather, unexpected storms, simple neglect, or downright abuse, but instead rallied and rebounded in the face of adversity, becoming more than a mere landscape ornament in the process.

I have a fondness for these bold and brazen beauties that have grappled with the odds and overcome them. Respect must be given to the lone bulb that blooms out of hundreds that have long since died out, a choice peony that returns year after year without any fertilization, or the patch of thyme that withstands foot traffic, drought, and an out-of-control lawnmower.

Each year I grant an imaginary award for Best Comeback to a plant in my garden that has shown a remarkable turnaround in growth and appearance or has simply put on a grand show without any special treatment. These plants provide the unexpected pleasures that, year after year, propel my hands into the soil and my feet down upon a shovel. No matter how discouraging a plant's passing is for me, the examples of past plant triumphs keep me pressing onward.

The award for Best Comeback one year went to a clump of golden bearded iris that I had purchased at a supermarket in my early gardening days. In the first season, the iris only sent up a few small silvery swords of foliage. Thinking I might have planted it in the wrong location, I moved it to a sunnier, drier spot in the garden, exposing its rhizomes and sprinkling bone meal around them,

hopeful of being rewarded the next year.

Alas, the plant repeated its previous performance: a measly fan of leaves and no flower buds. When it came time to rearrange the border, I dug up the iris to make room for other plants, throwing it over the bank behind the house to join a pile of grass clippings.

The next summer, as I was puttering around the backyard, something dramatic caught my eye—the architectural spears of a bearded iris, bravely poking through the rubbish behind the house. Without



the benefit of mulch, winter protection, or even proper planting, the iris had managed to survive. Such strength won me over, and I returned it to the border. The following year, it became the garden's prize perennial, producing three sturdy spires of beautiful golden blooms that burgeoned skyward without the need of stakes. It has since bloomed its head off every year.

My variegated Solomon's-seal has a similar though less traumatic tale of survival. After planting it lovingly in the woodland garden in a rich mixture of loamy, humusy soil, I eagerly awaited its grand arching sprays of fragrant bell-like flowers and sumptuous foliage. I had planned for it to be the focal point of the woodland garden, but it steadfastly refused to rise to the occasion, producing only one stalk and two miniscule flowers.

Having gained some patience since the bearded iris resurrection, I kept it where it was. Several years passed, and still the Solomon's-seal refused to yield more than one spindly stalk. Having learned to deal with such disappointments, I simply moved the plant to the back of the garden, where I promptly forgot about it.

The next year—its fifth in the garden—it sent up five majestic stalks, each tall, proud, and bearing rows of fragrant flowers that undulated in the wind. The plant's variegated foliage brightened its dim corner in all its glory. Of course it stole the show in the garden that year and now makes a grand stand each season.

Such comebacks are not limited to outdoor plants. Many a gardener has an indoor plant that has survived the odds.

I know two spider plants whose current brilliance does not in the least betray the punishment they received during an upstate New York winter. Their owner had gone to Florida for a week in February, during which time the furnace had shut down, and for at least two days the inside of the house was as cold as the sub-freezing air outside.

When the owner returned, all the indoor plants had turned brown and wilted. Disheartened, he moved the pots to the basement for storage. When spring arrived, he discovered two pots of spider plants miraculously sporting new growth despite an absence of water and light. He returned them to a warm place with light and began watering them again. The two plants eventually sprang up, stronger than before.

Such is the story of many well-worn plant friends whose unexpected and latent glory makes them shine brighter than their untried counterparts. Gardening can sometimes be a battle between man and nature; I salute our green heroes.

*Alan Bennett Ilagan is a free-lance writer living in Schenectady, New York.*



# SMARTGARDEN™ —Using Gardening Resources

A wealth of gardening information in various media is waiting to be tapped

As Phil Condit, chairman and chief executive officer of The Boeing Company says, "None of us is as smart as all of us." When you take the time to investigate the wide array of available gardening resources, tapping the knowledge of experts, and taking advantage of their experience, your efforts will be more successful and efficient. No matter what gardening topic interests you, there are resources available to address it.

The challenge is to sort through the seemingly limitless books, periodicals, Web sites, television and radio shows, organizations, and gardens to locate those that will be most helpful and relate most directly to you and your garden.

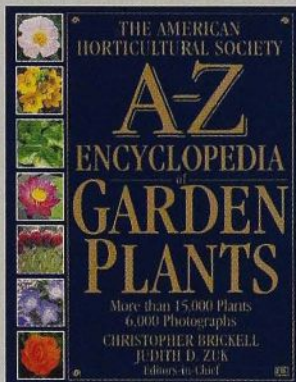
Two factors that should direct your initial investigation are: your specific gardening interests and your location. If you are investigating the possibility of developing a rock garden, for example, you can find books, magazines, and Web sites devoted to the subject. To apply the information you gather to your backyard, you can look to more regional resources, such as a nearby botanical garden, a local chapter of a rock garden society, your state's Cooperative Extension Service, local nurseries, and periodicals with a regional focus.

## THE PRINTED WORD

Certain resources become like trusted friends—you return to them time after time for advice. Encyclopedic references that provide general information about garden plants are helpful because they are comprehensive and can provide an initial introduction to a plant or topic. *The American Horticultural Society A-Z Encyclopedia of Garden Plants*, for example, provides descriptions and brief cultural notes of thousands of species and cultivars grown in gardens throughout the world. An updated edition of this book is scheduled for publication in fall 2004.

Some books have a regional perspective and can be quite helpful with specifics such as plant selection, planting times, and pest identification. Often such regional books will include other local resources—gardens, nurseries, regional societies—that you may want to contact.

Magazines and journals can inspire you with examples of what other gardeners are doing and keep you up to date



with advances in the horticultural field. There are periodicals for every level of gardening and for just about any specialty. Many plant societies, botanic gardens, and nurseries publish a newsletter. If you are considering subscribing to a gardening magazine or newsletter, ask a gardener who shares your interests for a recommendation.

Local and regional newspapers are another source of timely gardening information. Many run weekly gardening columns that offer growing tips based on local conditions. Newspapers may cover gardens worth visiting in your area, as well as local gardening programs and events.

## THE INTERNET

A quick search on the Internet can uncover hundreds of articles about almost any gardening topic. Nearly every plant society and botanical garden, and many state Cooperative Extension Services and university horticulture departments now have Web sites that you can visit. Expert advice on almost any gardening subject is often only an e-mail or a mouse click away.

Some organizations have regional chapters with individual Web sites. These can be a helpful source of locally pertinent advice and can inform you of meetings, classes, and other events in your area. If you are looking for information on a specific plant—for example, daffodils or African violets, or a particular gardening topic such as wildlife gardening or bonsai—start with the appropriate national organization and go from there. National organizations usually provide links to regional sites.

The AHS Web site offers links to hundreds of national and regional gardening organizations, including state Master Gardener groups. Visit [www.ahs.org](http://www.ahs.org) and click on "Internet Community and Links" or "Master Gardeners."

## JOIN A GROUP

Local gardening groups such as garden clubs and Master Gardeners are among the best resources for gardeners. By joining such groups, you can benefit from the members' collective wisdom and years of hands-on gardening experience.

Garden clubs are a wonderful way to meet gardeners from your region who share your passion for plants.





Some garden clubs are affiliated with national groups such as the Garden Club of America, the National Garden Clubs Inc., and The Gardeners of America/Men's Garden Clubs of America; others operate independently. Ask around in your neighborhood or check with a local botanical garden to learn what garden clubs are available near you.

There are also Master Gardener programs in every state, coordinated by the state's Cooperative Extension Service. Programs vary from one state to another, but in general, volunteers are selected and trained in plant identification, diagnosis of plant problems and appropriate recommendations for treatment, soil and fertilizer recommendations, lawn care, pesticide use and safety, organic gardening, ornamental gardening, and a variety of other topics.

In return for their training, Master Gardeners volunteer a certain number of hours in public service. They may participate in plant clinics, assist with soil test reports, answer horticultural hotlines, conduct garden tours, assist with developing school gardens, and other activities that are aimed at disseminating reliable gardening information to the public. They are an extremely valuable local resource for any gardener.

Many local radio and cable television stations are getting into the gardening act with shows that highlight local gardens, gardeners, and timely regional gardening information. Tune in and see what's new in your area.

#### FIRST-HAND INFORMATION

Information in books and online is valuable, but nothing is as enlightening as a visit to a real garden for inspiring you with ideas. Regional botanical gardens and arboreta afford visitors a chance to see plants in a growing situation. And horticultural experts are often available to answer your questions. Some public gardens offer handouts, classes, and workshops on a host of specific topics, and many also offer volunteer opportunities—a great way to work with trained gardening staff and learn garden techniques first hand.

When you're looking for ideas, don't overlook gardens around you. Within your neighborhood there may be landscapes that deserve a closer look. Most gardeners love to show off the fruits of their labor. And some of the best advice available to you may be from the person next door who shares both your growing conditions and your enthusiasm for gardening.

Observing the plants neighbors grow, how they grow them, and how they tackle problems that arise can provide insight and ideas for your own yard. A gardening acquaintance may alert you to the arrival of a pest or show you a new plant that is just the ticket for your perennial border. Putting your heads together to find a solution for a problem is a wonderful way to enhance your gardening wisdom.

*Rita Pelczar, Associate Editor*



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# enchanting Witch Hazels



Sweet. Fetid. Honeylike. Musky. Cloying. Spicy. Standing with a group of gardeners as we examine a young shrub in full bloom, I am struck by our varied perceptions of a single scent. Even more striking, perhaps, is the fact that we are enjoying these flowers and their fragrance on a January day with the temperature hovering around 40 degrees Fahrenheit. The object of our attention is a vernal witch hazel, and it has the remarkable—almost magical—ability to flower in January despite the cold.

**W**ITCH HAZELS are versatile shrubs with a beauty that is equally at home in the cottage garden and the formal landscape. The genus *Hamamelis* can provide flowers from the frosts of October through the late snow flurries of March, and yet this is not some banana-belt rarity. Witch hazels are commonly available, hardy shrubs that survive in USDA Hardiness Zones 4 through 8. In addition to fall or winter flowers, they have beautiful autumn foliage color and an intriguing angular profile that complements other ornamental plants. And this versatility is provided by just five major species.

## SEQUENTIAL SPECIES

All witch hazels flower at unusual times, a characteristic that adds considerably to their value in the landscape. As with most plants, flowering times can vary quite a bit depending on local growing conditions. While mild temperatures cause plants to flower earlier, cool temperatures can extend flowering by pre-

Few shrubs pack more punch in the winter landscape than witch hazels, which bear delicate, fragrant flowers on a sculptural frame of bare branches.

BY CHRIS STRAND



**Opposite:** *Hamamelis* × *intermedia* 'Jelena' has faintly fragrant rusty yellow flowers. **This page:** These two native witch hazels offer two seasons of bloom. *H. vernalis*, top left, is a late-winter to early-spring bloomer, while *H. virginiana*, above, blooms in the fall.

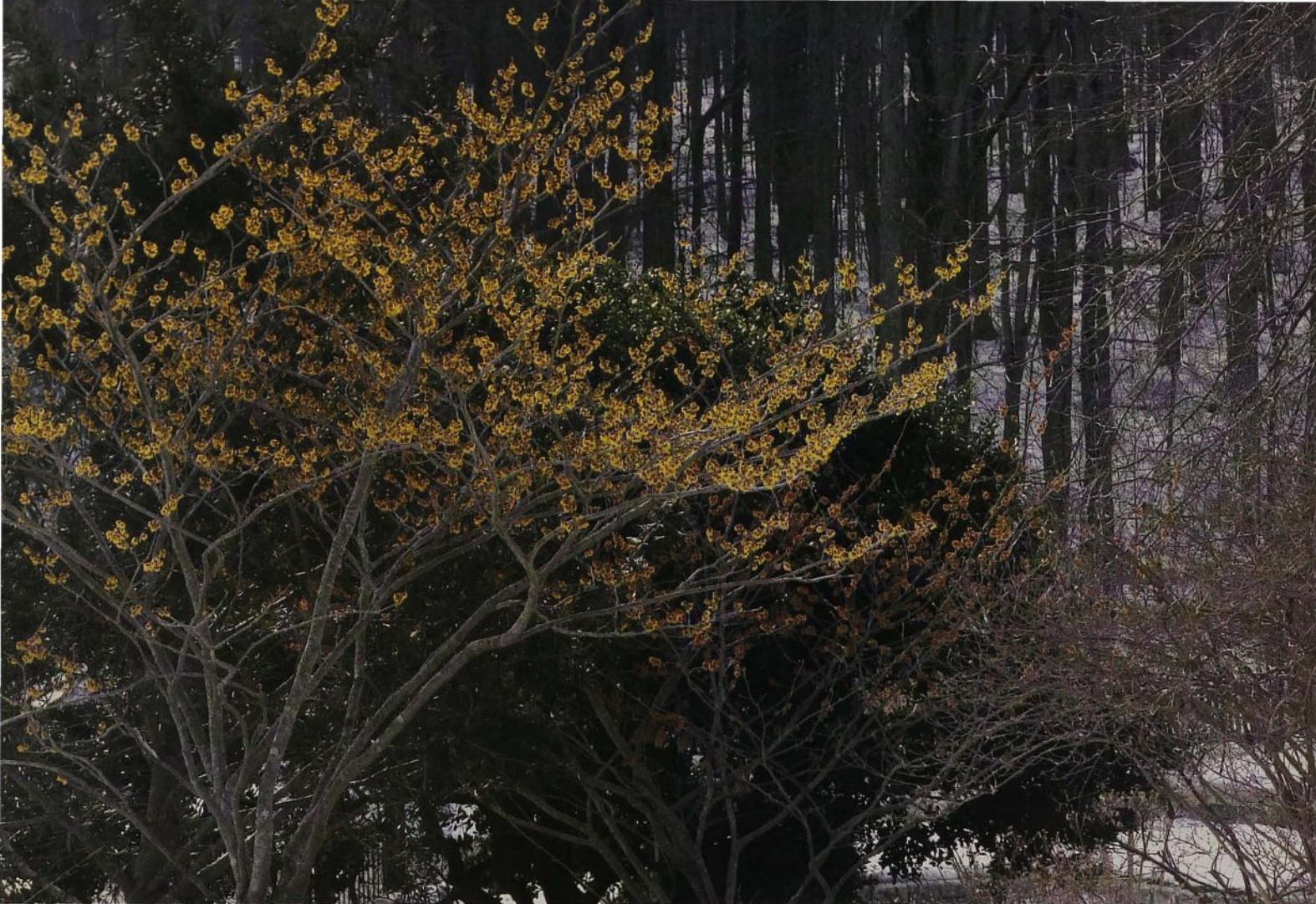
serving individual blossoms for several weeks. The flowers are well adapted to the cold; to protect themselves from very low temperatures, the individual petals will curl up like tiny clock springs.

Here in the mid-Atlantic, the common witch hazel (*Hamamelis virginiana*, USDA Hardiness Zone 3–8, AHS Heat Zone 8–1) begins the witch hazel season with flowers in September or October, depending on the weather. This witch hazel is found in woodland settings but is adaptable and can grow

in a wide range of habitats from Canada to Florida and from the East Coast to as far west as Texas. It is not uncommon to catch the scent of the threadlike yellow-petaled flowers before you see them, as they often compete with fall foliage for our attention.

Next, the vernal witch hazel (*H. vernalis*, Zones 4–8, 8–1) starts flowering in January. It is the real stalwart of the bunch, often flowering with frost on its petals. The vernal witch hazel is native to the gravelly banks of streams in the





**Above:** Golden ‘Primavera’ and rust-colored ‘Jelena’ light up a gray winter landscape at Brookside Gardens in Wheaton, Maryland. **Left:** As with most witch hazels, the highly scented yellow flowers of Chinese witch hazel (*H. mollis*) appear most striking when backlit. For maximum impact, plant witch hazels where their flowers can be viewed this way.

Arkansas and Missouri river drainages. The short-petaled flowers are typically red and extremely fragrant, but no two people seem to experience this unique scent in quite the same way.

In February, the Chinese witch hazel (*H. mollis*, Zones 5–8, 9–1), the Japanese witch hazel (*H. japonica*, Zones 5–9, 9–5), and the hybrid witch hazel (*H. xintermedia*, Zones 5–9, 9–1) begin to flower. The Chinese witch hazel is very floriferous. A mature specimen can be clothed in thousands of chrome-yellow flowers that give off a sweet, clean odor that reminds me somewhat of soap.

The Japanese witch hazel, while not quite as floriferous, can have flowers that are yellow, red, or a colorful combination of the two. With delicately curled petals reminiscent of crêpe paper, the blossoms are beautiful individually and *en masse*. Japanese witch hazels have

the best autumn color of the various species—with mottled crimson, orange, and yellow leaves.

The hybrid witch hazel, a cross between the Chinese and Japanese witch hazels, combines some of the best characteristics of both. Hybrid witch hazels are very floriferous and fragrant and have been selected to provide a wide range of flower color—pale lemon yellow to deep carmine red. In addition, hybrid witch hazels have some of the best fall color to be found among ornamental shrubs, with all the hues of sugar maples and tupelos in one compact package.

### STRAPPING BLOOMS

Although the flowers of all witch hazels are similar in form, as a group they are rather unusual. Each blossom consists of four petals radiating outward from a leathery calyx. The narrow petals vary in





Viewed closely, the petals of 'Jelena' show tints of red, orange, and yellow. But from a distance, the eye reads this combination as a bronzy orange. This cultivar—named for Belgian plantswoman Jelena de Belder of Kalmthout Arboretum, who died recently—also offers eye-catching red-orange fall foliage and does well in the upper southern region of the United States.

length from a quarter to one inch long and can be as smooth as a piece of ribbon or twisted like crêpe paper. Individually, the flowers—which are arranged along the branches in clusters—are curious but not all that showy. However, when they clothe a shrub in the hundreds and thousands—as they do at peak bloom—the effect is stunning.

Petal color includes shades of yellow, tangerine, carmine red, or a striking combination of all three. Red-flowered forms are sometimes difficult to see in the landscape unless carefully positioned against contrasting foliage or backlighting, but, on balance, many of the red forms have spectacular fall color. Yellow-flowered cultivars vary in both hue and intensity. Some are retina-burning bright in a shade of yellow that approaches chartreuse, while others are a rich, mellow gold.

Consider flower color carefully when choosing a cultivar for your garden. Better yet, visit a nursery or botanical garden where you can see and smell several species and cultivars to help you make your choice.

#### FORM AND FOLIAGE

In habit, the witch hazels are large shrubs or small trees. At maturity, specimens of the common, Chinese, hybrid, and Japanese witch hazels can reach 18 feet high and just as wide. The vernal witch hazel is more shrubby, with a mature height of 10 feet and a 12-foot spread.

Witch hazels have a pleasing angular habit; young plants often look like narrow green isosceles triangles from a distance. I find this shape very useful in the border because it accommodates underplantings of perennials and low-growing shrubs and is easily maintained by careful pruning.

## Resources

**Manual of Woody Landscape Plants** (fifth edition) by Michael A. Dirr. Stipes Publishing, Champaign, Illinois, 1998.

## Sources

**Forestfarm**, Williams, OR.  
(541) 846-6963.  
[www.forestfarm.com](http://www.forestfarm.com). Catalog \$5.

**Gossler Farms Nursery**, Springfield, OR. (541) 746-3922.  
[www.gosslerfarms.com](http://www.gosslerfarms.com). Catalog \$2.

**Greer Gardens**, Eugene, OR.  
(541) 686-8266.  
[www.greergardens.com](http://www.greergardens.com). Catalog free.

**Meadowbrook Nurseries/We-Du Natives**, Marion, NC. (828) 738-8300.  
[www.we-du.com](http://www.we-du.com). Catalog \$3.

**Roslyn Nursery**, Dix Hills, NY.  
(631) 643-9347.  
[www.roslynnursery.com](http://www.roslynnursery.com). Catalog \$3.

Most witch hazels bear deep green, five- to six-inch, smooth leaves. The exception is the Chinese witch hazel; its leaves are somewhat larger and are covered in dense felty hairs. Fall leaf color varies by cultivar from yellow to crimson but is always outstanding. *H. ×intermedia* 'Hiltingbury', for example, turns brilliant red; it is worth growing for its autumn color alone.

As fall leads to winter, you may notice that your witch hazel has the unfortunate habit of retaining some dead leaves. This is natural, but it can interfere with your enjoyment of the flowers. Choosing a slightly more open planting location—with the increased chance of exposure to occasional fall and winter winds—will help reduce this tendency.

#### SELECTING WITCH HAZELS

When selecting a witch hazel from a nursery, as with any woody plant, first look for a specimen with an overall healthy appearance. Because almost all witch hazel cultivars are grafted, special attention should be paid to the graft union. Look



closely at the base of the trunk and you will see the union, the area where the understock joins the scion. Examine the plant for signs of graft incompatibility such as suckering from the understock.

Flower color and fragrance can vary slightly from one cultivated form to another, so buying a plant in bloom may help avoid disappointment. However, it can be slightly more difficult to choose a healthy plant if you purchase it when it is in flower because you can't readily assess its overall vigor. On flowering plants, look for healthy branches with plenty of growth from the previous year; avoid shrubs with trunk damage or evidence of suckering.

If you are selecting a larger plant, it should display the habit you want. I prefer an overall vase shape, with three to five similarly sized branches angling upwards. A smaller plant can usually be selectively pruned to attain this shape.

If you purchase a witch hazel outside the planting season for your area, heel it in or surround the container with mulch in a sheltered corner of your garden, and keep it watered until it is time to plant.

### EASY TO ACCOMMODATE

With respect to growing conditions, all but the vernal witch hazel are native to woodland areas and thrive in soils that are moist, well-drained, slightly acidic, and rich in organic matter. I have found, however, that witch hazels can adapt to sharper drainage or clay if they are mulched twice a year with ground leaves or compost and watered carefully. Native to gravelly banks of streams, the vernal witch hazel is perhaps the most adaptable. It can grow in both organically rich soils and spare soils.

All witch hazels can grow in shade or sun. Though they are woodland plants, they can tolerate full sun if they are provided with enough water during times of

*H. vernalis* 'Sandra' bears light yellow flowers at the beginning of the year and—unlike most vernal witch hazels—finishes in autumn with exceptional red-orange rather than yellow foliage. The vernal witch hazels are highly adaptable to various types of soil.

drought. In the last decade, I have seen more damage to witch hazels from drought than from all other factors combined. Specimens grown in full sun seem to retain their angular habit and are denser overall, while shaded specimens tend to develop a rangy habit as they reach for the light.

Witch hazels rarely suffer from serious pests or diseases. Occasionally they contract a bit of mildew or a leaf gall, but these usually do not cause long-term damage. Recently, several witch hazels in the mid-Atlantic have been severely

damaged or killed by a leaf blight caused by the fungus *Phyllosticta hamamelidis*. Specialists at botanic gardens in the region are studying the disease to learn how it is spread and whether some species and cultivars are resistant.

### MAXIMIZING LANDSCAPE POTENTIAL

With their ability to adapt to most growing conditions, witch hazels are easy to include in almost any landscape. They provide fall and winter interest to an informal woodland garden in combination



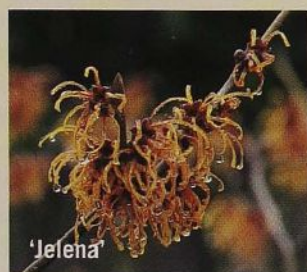


## WITCH HAZEL SELECTIONS

The witch hazel selections listed in this article are a mix of tried-and-true cultivars and a few less-common but excellent varieties. The table lists the plants by their flower color and includes their flowering time in the mid-Atlantic region. Where applicable, I have noted a region where certain selections perform best, based on information solicited from botanic gardens and arboreta from throughout the United States. Some selections are included not just for their flower color but because they have other useful or unique qualities. *H. ×intermedia* 'Sunburst', for example, is perhaps the showiest of the witch hazels in flower and can be seen from quite a distance. The petals are a translucent greenish yellow that when backlit looks practically neon. *H. ×intermedia* 'Angelly' is a very elegant selection that combines lemon-yellow petals and green calyces with a beautiful angular habit and pumpkin-orange fall color. *H. vernalis* 'Sandra' is unique among the vernal witch hazels. Though it flowers a bit later than the species, it has outstanding mottled yellow, orange, and scarlet fall color. The autumn color of *H. ×intermedia* 'Hiltingbury' is perhaps the most striking of the listed cultivars. It has brilliant carmine-red leaves that are highlighted with a pinstripe of yellow on the margins. —C.S.



| Plant  | Flower Color          | Time of Flowering | Fall Foliage Color | Regional Selections | USDA Zones/<br>AHS Zones |
|--|-----------------------|-------------------|--------------------|---------------------|--------------------------|
| <i>H. ×intermedia</i> 'Sunburst'                 | bright yellow         | Feb.              | yellow and orange  | —                   | 5–9, 9–1                 |
| <i>H. ×intermedia</i> 'Angelly'                  | yellow                | Feb.              | orange             | —                   | 5–9, 9–1                 |
| <i>H. mollis</i> 'Pallida'                       | yellow                | Feb.              | yellow             | —                   | 5–9, 9–1                 |
| <i>H. vernalis</i> 'Sandra'                      | chrome yellow         | Feb.              | orange and scarlet | —                   | 5–9, 8–1                 |
| <i>H. virginiana</i>                             | yellow                | Oct.              | yellow             | —                   | 3–8, 8–1                 |
| <i>H. mollis</i> 'Early Bright'                  | yellow                | Jan.              | yellow             | —                   | 5–8, 9–1                 |
| <i>H. mollis</i> 'Princeton Gold'                | yellow                | Feb.              | yellow             | Mid-Atlantic        | 5–8, 9–1                 |
| <i>H. ×intermedia</i> 'Primavera'                | golden yellow         | Feb.              | orange             | —                   | 5–9, 9–1                 |
| <i>H. ×intermedia</i> 'Barmstedt Gold'           | golden yellow         | Feb.              | yellow             | Midwest             | 5–9, 9–1                 |
| <i>H. ×intermedia</i> 'Arnold Promise'           | golden yellow         | March             | red and orange     | New England         | 5–9, 9–1                 |
| <i>H. ×intermedia</i> 'Jelena'                   | red grading to yellow | Feb.              | orange and scarlet | upper South         | 5–9, 9–1                 |
| <i>H. japonica</i> var. <i>flavopurpurascens</i> | red grading to orange | Feb.              | red and yellow     | —                   | 5–9, 8–1                 |
| <i>H. vernalis</i> 'Red Imp'                     | red                   | Jan.              | yellow             | —                   | 4–8, 8–1                 |
| <i>H. ×intermedia</i> 'Diane'                    | red                   | Feb.              | orange             | Northwest           | 5–9, 9–1                 |
| <i>H. ×intermedia</i> 'Hiltingbury'              | deep red              | Feb.              | scarlet            | —                   | 5–9, 9–1                 |







The yellow foliage of a Chinese witch hazel (*H. mollis*) lights up this woodland garden in autumn when the leaves of many other deciduous trees have fallen. Witch hazels are ideal for shady and semi-shady areas but can tolerate full sun if watered well during periods of drought.

with other shade-loving plants. Yet they are also suited to the formal garden, growing alone or as the centerpiece of a formal bed.

Although witch hazels are large shrubs by nature, they can be pruned to look more treelike or to grow along a wall as an

espalier. Young plants should be pruned to remove poorly positioned branches and to maintain their habit. In general, the less pruning the better, because large cuts take some time to heal. Pruning and training for an espalier should be carefully planned to minimize the number of cuts.

Beautiful and versatile, witch hazels show off especially well combined with winter-flowering bulbs and perennials such as bear's-foot hellebore (*Helleborus foetidus*) and *Crocus tommasinianus*, ornamental grasses and sedges such as *Carex morrowii* var. *temnolepis*, and evergreen ground covers like *Arum italicum*. I enjoy both their peculiar flowers and vivid fall color. I also appreciate their easy care and relative freedom from pests and diseases.

Like good house guests, witch hazels are easy to accommodate. They are not overly picky about where you put them in the garden, and they delight and surprise you at a time of year when you need it the most. During those short, chilly days of autumn and winter, when little else exciting is happening in the garden, witch hazels provide some magic with their fragrant and colorful blooms. ∞

## UNUSUAL WITCH HAZEL SELECTIONS

If your gardening interest runs toward the rare and unusual, you might try to track down one of the following selections. The southern witch hazel (*H. virginiana* var. *macrophylla*, Zones 4–9, 9–1) is a semi-evergreen native to the South, bearing its small, pale yellow flowers among its leafy branches in November and December. Once described as a separate species (*H. macrophylla*), it is usually now referred to as a variety or subspecies of the common witch hazel.

The Mexican witch hazel (*H. mexicana*, Zones 5–8, 8–5) is native to northern Mexico. It bears white flowers in summer, but otherwise is very similar in appearance to *H. virginiana*.

Growers and botanical gardens are currently evaluating selections of species that display variegated leaves, dwarf habit, weeping habit, and flower colors ranging from lavender and purple through red and yellow to almost white. These may lead to new introductions that will be available through nurseries.

—C.S.

*Chris Strand is director of Green Spring Gardens, a 28-acre public garden in Alexandria, Virginia.*



# 10 Easy Windowsill Orchids

Orchids are the second most popular indoor plant.  
Here are 10 that anyone can grow. BY NED NASH

**W**HAT HAVE grown to be the second most popular potted flowering plant, trailing only poinsettias? What plants are seen in virtually every architectural magazine, every lifestyle piece, indeed, just about everywhere glamour is the watchword? What have some of the longest-lasting flowers in the plant kingdom? The answer: orchids.

Since 1995, when statistics on wholesale orchid sales first began to be separately compiled, orchids have shown more than a 40 percent increase in sales, topping \$100 million for the first time in 2000; this represents at least 10 million orchid plants sold wholesale each year. This growth in popularity has been ignited by the partnership of mega-growers in Florida and California with the superb merchandising talents of the so-called “Big Box” stores such as Costco and Home Depot.

Fueled by increasingly sophisticated horticultural practices, rapid production methods now allow wide distribution of quality plants at reasonable prices. So reasonable, in fact, that new orchid growers are created every day! Luckily for these budding orchidists, many orchids can be grown simply on windowsills like other house plants.

## TYPES OF ORCHIDS

While not all orchids—there are more than 35,000 naturally occurring species and 100,000 registered hybrids—make good house plants, quite a few will. It is an interesting fact that many popular house plants might be found growing in nature right next to an orchid. Tradescantias, zygocactus, begonias, ferns, gesneriads, peperomias and many more have the same epiphytic growth habit as most commonly cultivated orchids. Epiphytic means that the plant has “taken to the trees,” utilizing a host plant as a means of support as well as a platform for reaching for light, an often-precious commodity in the forest.

Even those cultivated orchids classified as terrestrial (ground dwelling)—*Paphiopedilum* and *Cymbidium* orchids are among these—are more properly termed hemi-epiphytes, those plants whose roots do not actually penetrate the soil, but wander



*Phalaenopsis Terilyn Pixie*

through the accumulation of forest duff and litter. Understanding these basic growth habits and cultural requirements is the key to successfully growing orchids indoors.

## MAKING THE RIGHT CHOICES

While all orchids need some degree of good quality light to perform satisfactorily, some require less than others. Selecting plants with lower light requirements is the first step in succeeding with orchids on your windowsill.

Size is also a critical factor. Larger plants, those over 18 inches or so, are too cumbersome and inconvenient (they usually require larger pots as well) for the conditions in an average home. In addition, if the plant is smaller, it is much easier to get light to the entire plant, because it will sit lower in a window. (Failure to flower is most often caused by insufficient light. See sidebar, page 31.)

Another feature of the epiphytic or hemi-epiphytic habit is the roots' need for good aeration. Whether exposed on the bark of a tree or traveling longitudinally through forest litter, orchid roots are used to open conditions. Plants that grow lower in the canopy or on the forest floor are generally used



to more constant moisture and should be kept evenly moist.

Mastering the watering of orchids is often one of the most puzzling challenges of their culture. The more epiphytic types, those requiring slightly higher light and having more pronounced pseudobulbs (water-storage organs) are accustomed to diurnal or seasonal dryness in their habitat and so will benefit from having their growing medium allowed to dry slightly between waterings.

This does not mean dry like a desert, it means simply *approaching* dryness. An important point to remember here is that most orchid-growing media is very difficult to rewet if allowed to dry completely (think about peat moss.) Orchids lacking pseudobulbs or with monopodial growth (straight up with a single, indeterminate growing point) are generally going to appreciate being kept evenly moist. This means: not wet, not dry.

An excellent practice to get into with your plants is to pick them up periodically during the week and feel their weight. Right after watering, they will be much heavier, lightening as they dry. With a little practice, you can easily determine when to water any given type. If you have several orchids, grouping your plants by pot size and watering preference reduces the chance of missing one or overwatering another.

When orchids are in active growth, feed them once a week when watering using a house plant fertilizer mixed at quarter-strength. Gradually reduce the frequency of feedings in winter.

The plants I discuss below were selected on the basis of the criteria outlined above, as well as the experience of several professional orchidists in different parts of the country. All will do well on your windowsill.

A word here about nurseries and orchid societies is appropriate. Professional orchid growers are an outstanding source of information. Their services do not come without a premium on the plants they stock, but I believe you will find them well worth the search. The American Orchid Society (see "Resources," page 31) is also a wonderful resource for all orchid-related knowledge.

## Phalaenopsis

Phalaenopsis hybrids, commonly known as "phals" or moth orchids by orchid fanciers, have achieved phenomenal popularity with the public because they are so easy to grow. Modern horticultural technology enables nurseries to produce flowering plants in less time and at lower cost than in years past.

Today, big and bountiful phals in the marketplace are seldom over three years old, an accomplishment that might have taken five or even six years as recently as a decade ago. In addition, though winter is the natural season for phals, growers can now control the flowering season to allow a good supply almost year round in a variety of colors. For the price of a bouquet of flowers that lasts only days, you can get an architectural masterpiece that will last for weeks, even months, with only minimal care. If you can succeed with African violets, you will find phals easy!

## Oncidium Sharry Baby

As phals began to saturate the market, growers started to search for other fast-growing orchids that produced long-lasting flowers. One of the first to fill this niche was *Oncidium Sharry Baby*.



*Oncidium Sharry Baby*

Its delightful chocolate fragrance—as well as the unusual deep lavender to mauve color—is inherited from *O. ornithorhynchum*. Sharry Baby is representative of a type known as Cambrias in Europe, after Sharry Baby's European counterpart, *Vuykstekeara Cambria* 'Plush', which at one time was the most widely cloned orchid in the world. This group has a broad range of color, forms, sizes, and scents, but all will do well with approximately the same care as phals, though with a bit more light. Flowering plants are available all year.

Novices should note, however, that some Cambrias will get too large for the average windowsill. Your nursery professional should be able to steer you toward the most satisfactory cultivars. A very compact hybrid worth the search is *O. Pupukea Sunset*, which makes a very prolific blooming plant in a four-inch pot.

## Paphiopedilum Maudiae

A true classic! This is an orchid that has a lot going for it, with beautiful silver marbled green foliage and some of the longest lasting of all orchid flowers—sometimes staying in bloom to perfection for two months or more.



*Paphiopedilum Bob Nagle*



## PURCHASING HEALTHY ORCHIDS: CAVEAT EMPTOR

Never has the phrase “buyer beware” been more important than today, with the many millions of orchids entering the popular marketplace. Many of the largest growers in the nation are actively pursuing this lucrative marketplace. They often have vast experience in the production and distribution of a wide range of tropical plants. Applied to orchids, these methods have led to a revolution in new cultural techniques and growing technology.

There is, however, a weak link the chain of producer to consumer, and this is often the point of purchase. If the staff and management at this ultimate destination are not interested in, or knowledgeable of, the needs of the plants given into their care, the result is quick decline of flower, and ultimately, plant quality. Unfortunately, many smaller growers also take advantage of the lower cost products offered by the mass-market growers, buying in their products, rather than utilizing in-house production as in past years. This can lead to the same problems often present at the “big box” vendors, but disguised with a veneer of expertise that may not be present.

What should you look for when orchid shopping, whether at the mass merchandiser or other sales venue? Here are some questions to consider: Is the operation clean? Are plants well cared for and attractive? Are the plants firm in the pot, indicating good root health? Is their cultural information available? Can you get the growing supplies you need? How long have the plants been on the shelf?

Too often, the rule of thumb in purchasing plants from mass marketers seems to be that the plants are worthwhile only if purchased the day they arrive at the store. My advice is to seek out the vendors who care enough about their product to care for it properly after its delivery. Spend a couple of dollars more if necessary to get the same care and attention you'd demand of your butcher or your mechanic. Ideally, you may find a dedicated orchid supplier not too far from your home. The extra service an orchid nursery can provide is worth the search.

—N.N.

Like *Oncidium Sharry Baby*, *P. Maudiae* is representative of a distinct horticultural type that comes in a broad range of colors from near black, through many shades of red and raspberry, to spotted, and on to the more muted greens and pastels.

Not many orchids look good out of bloom, but these do, with truly magnificent and lush fans of patterned leaves. Known as “paphs” or “slippers” by orchidists, these plants enjoy the same lighting needs as phals, but like to be kept slightly on the moist side and do not need quite as much fertilizer. (Better to feed lightly and more often with *Maudiae* paphs.) Paphs have no set season; they flower with maturity of growth.

### *Cattleya walkeriana*

A very compact plant with proportionately large, scented blooms of rose lavender, this Brazilian cattleya is just right for the windowsill grower who can provide a little extra light. Not only is this species desirable in its own right, but its many hybrids—such as *Laeliocattleya* Love Knot and *Brassolaeliocattleya* Arthur Bossin—make equally satisfactory orchids for the home grower.



*Cattleya walkeriana*

Provide strong, filtered light and allow the plants to dry between waterings, particularly in the winter. Do not overpot—the rule of “pot for the bottom (root mass) and not for the top (foliar mass)” is true for most orchids but especially

this one. Flowering season may vary with the particular plant or hybrid, but generally peaks in late spring and early summer.

### *Epidendrum cochleatum*

Sometimes listed as *Encyclia cochleata*, the “cockleshell” or “octopus” orchid, is so called for obvious reasons! The nearly black



*Epidendrum cochleatum*



lip—uppermost in the flower, unlike most commonly cultivated orchids—has also led to this being known as the “black orchid.”

Hailing from a wide area of Central and South America, *E. cochleatum* is one of the most popular of all orchids as a house plant because it will flower over a period of many months. The flowers open sequentially, each new one unfurling just as the last fades. This plant grows very easily under average windowsill conditions with good, bright light.

Best results are obtained when the growing medium is allowed to dry slightly between waterings. Owing to the sequential flowering habit, plants can be in flower nearly every month of the year.

## *Neofinetia falcata*

Known as Fu-ran, or the Japanese wind orchid, *N. falcata* was considered a great collector’s item by samurai in pre-Western Japan and is still avidly sought-after for its many aberrant foliar and floral forms.

In the West, this species and its hybrids are admired for the compact, fan-shaped plants that sprout freely from the base, as well as the birdlike white blooms that have a fragrance reminiscent of a pina colada.

A multi-growth plant with a bounty of inflorescences can easily be accommodated in a four-inch pot. Culture is as for phals, although providing a bit more light will often enhance flowering in the summer.



Be on the lookout for the many fine hybrids from *N. falcata*, such as *Neostylis* Lou Sneary and *Ascofinetia* Cherry Blossom, which broaden the available color palette into shades of blue, pink, cerise, and even orange.

## *Aerangis articulata*

Many African agraecoids make great windowsill plants, because they are so compact, fitting easily into a three- or four-inch pot. *Aerangis* orchids do not like to be overpotted, so be sure to keep the pot in proportion to the root mass.



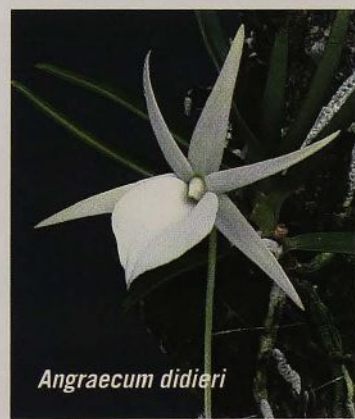
The cascading sprays of white, long-spurred blooms are powerfully fragrant at night; in the wild, the spicy scent attracts night-flying moths that pollinate these orchids. The fan-shaped foliage is also unusually handsome, with light green color and a shining gloss. Plants are becoming more widely available now that nurseries are propagating this desirable species from seed.

## *Angraecum didieri*

Another African orchid well suited to windowsill culture, *A. didieri* is a very dwarf species with upright, unbranching growth, and stiff gray-green leaves no more than four inches long.

Single, occasionally double, star-shaped blooms with extraordinarily long spurs are borne from the leaf axils at almost any time of year. As with *Aerangis articulata*, *Angraecum didieri* is moth pollinated in the wild and very sweetly perfumed at night.

Allow the growing medium to dry between watering, because the plant is intolerant of “wet feet.” Do not overpot; a nice flowering size plant needs no more than a three-inch pot.



## *Stenorrhynchos speciosum* and *Stenoglottis longifolia*

These are not what most would consider “typical” orchids, although they conform closely to the rosette growth habit of so many terrestrials. These orchids are only now becoming more widely propagated, so availability may still be limited.

These orchids and their hybrids will grow well with *Phalaenopsis* orchids and are ideal for lower-light levels during winter months, because they are generally winter-deciduous. This means you can completely ignore them during the winter—no





*Stenorrhynchus* hybrid

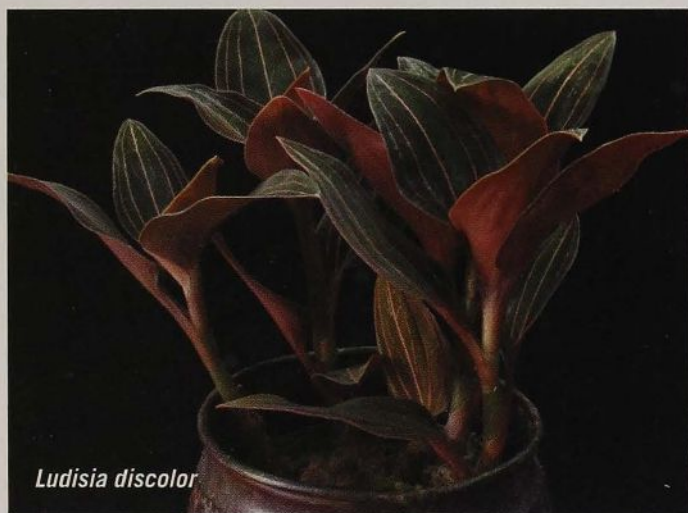
watering at all! In spring, the new rosettes will begin to appear—often in multiples on larger plants—with their attractive, sometimes veined or striped, foliage.

Late in the fall, an inflorescence will appear from the center of each rosette. This may be very colorful in and of itself, as with *Stenorrhynchus speciosum*, or rather plain but with a multitude of beautiful small pink blooms as with *Stenoglottis longifolia*. The tuberous roots can be divided when dormancy breaks to propagate.

## Jewel orchids (*Anoectochilus* spp., *Ludisia* spp., etc.)

Most orchids are grown for their flowers and have rather unattractive or nondescript foliage. Jewel orchids, on the other hand, have handsome broad leaves—often nearly black and lined or netted with silver or red—arranged in rosettes from a creeping rhizome. The tall stems of (often) white blooms are a curiosity to be sure, but cannot be considered the main reason to grow these plants.

Looking for a good terrarium subject? Jewel orchids are for you. Originating from forest floor habitats, these plants will grow quite well in less light than almost any other orchid.



*Ludisia discolor*

Keep them evenly moist and feed lightly. Stem cuttings, taken after flowering, will root easily and make new plants quickly. Unlike almost all other cultivated orchids, jewel orchids will much prefer a water-retentive but fast-draining potting soil similar to whatever you use for other house plants.

*Former director of conservation for the American Orchid Society, Ned Nash is a free-lance writer and consultant to the orchid industry.*

## HOW MUCH LIGHT IS “ENOUGH”?

The short answer is: If your hand, placed between the light source (a window, a skylight or a specialized lighting fixture) and the plant, makes a faint shadow, there is “enough” light.

The longer answer is dependent on the answer to the question: “Enough” light for what kind of orchid? In the home, almost all light comes at an angle through a window. Such light has less energy than light from directly overhead, as received outdoors or in a greenhouse.

While experienced windowsill growers manage to succeed with an astonishing array of widely differing orchids, the novice should start with what will easily succeed in the home.

Orchids that will grow well in the home—phalaenopsis (moth orchids) and paphiopedilums (slipper orchids) are two examples—are generally those originating in the lower parts of the forest, where less light penetrates. Such conditions are generally found in eastern (best), lightly shaded southern (next best) or western exposures. Northern exposures will rarely give enough light to successfully flower orchids of any kind.

So when you want to know if there is “enough” light, keep in mind: If there is “enough” for phals or paphs, others matching these conditions will also do quite well. —N.N.

## Resources

**American Orchid Society**, 16700 AOS Lane, Delray Beach, FL 33446. (561) 404-2000. [www.orchidweb.org](http://www.orchidweb.org).

■ This non-profit organization is the primary national resource for orchid information. AOS is affiliated with more than 550 regional orchid societies and supports programs in orchid conservation, research, education, and flower show judging. AOS membership includes a subscription to the Society’s magazine and other benefits. Its headquarters include a visitor’s center and botanical garden.

**Orchids** by Greg Allikas and Ned Nash. Thunder Bay Press, San Diego, California, 2000.

**The Ultimate Orchid** edited by Tom Sheehan. DK Publishing, New York, 2001.

## Sources

**Cal-Orchid**, Santa Barbara, CA. (805) 967-1312. [www.calorchid.com](http://www.calorchid.com).

**Hoosier Orchid Co.**, Indianapolis, IN. (317) 291-6269. [www.hoosierorchid.com](http://www.hoosierorchid.com).

**J&L Orchids**, Easton, CT. (203) 261-3772. [www.jlorchids.com](http://www.jlorchids.com).





# American Horticultural Society

## *Travel Study Program*

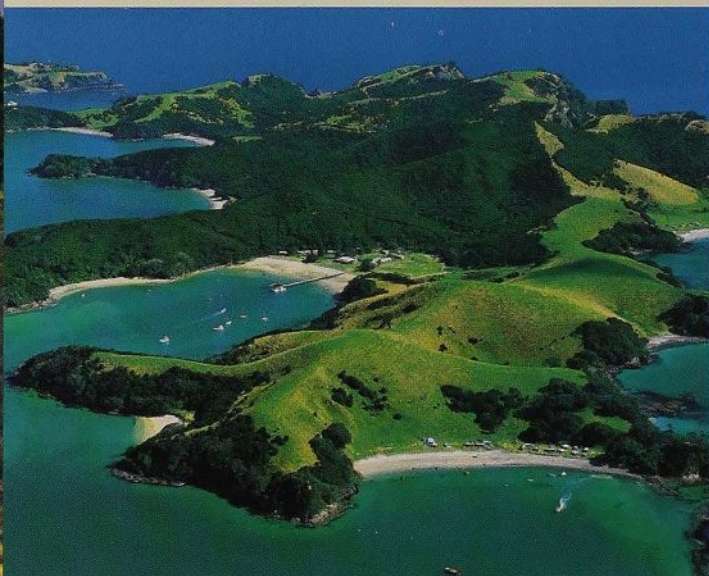
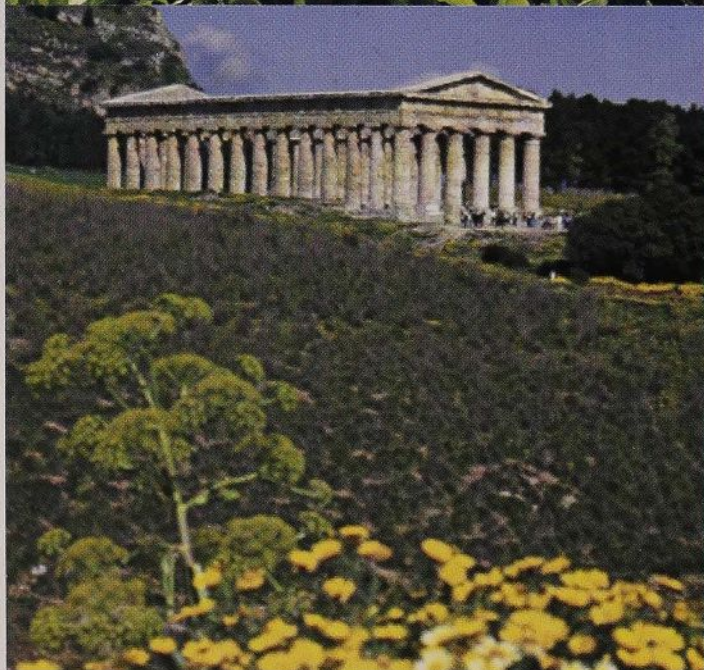


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Overwhelm your senses with the exotic scents and dazzling blooms of lush tropical gardens, bask in the beauty of spectacular natural landscapes and gardens in a remote part of the globe, or tour the ancient grounds of a cultural crossroads with the AHS Travel Study tours to **Hawaii**, **New Zealand**, and **Sicily** in 2004. Each of these unique tours is packed with exciting visits to the best private and public gardens, monuments, and the places of interest that each destination has to offer. Examples are the unforgettable Na Aina Kai Botanical Gardens on Kauai, Hawaii; the geologically fascinating Maori homeland of Rotorua and spectacular snow-capped vistas of the southern Alps in New Zealand; and the splendid gardens and monuments built by the many peoples and cultures that have called Sicily home.





# 2004 Travel Study Program

## 2004 Travel Study Program Schedule

### Gardens of Hawaii

Kauai–Oahu  
January 20–31, 2004

### Summer Gardens of New Zealand

February 16–29, 2004

### Gardens and Monuments of Sicily

March 20–30, 2004

### Spring in the Great Gardens of the South

Birmingham, Alabama  
April 27–May 2, 2004

### Gardens of the Mediterranean

Rome to Lisbon  
M/V Clipper Adventurer  
April 30–May 10, 2004

### Gardens of Rome

May 3–11, 2004

### Great Gardens of the Cotswolds and the Royal Chelsea Flower Show

May 22–29, 2004

### Gardens of the Brandywine Valley

June 1–6, 2004

### Gardens of Nova Scotia

July 2004 (dates TBD)

### Gardens of Tuscany

September 20–30, 2004

### Gardens and Monuments of Apulia and Campania

October 15–26, 2004

## Here's what past participants say about the AHS Travel Study Program tours

*"The itinerary was perfect—interesting places and people, a variety of activities, a good pace with structure and free time. A great pleasure to be on board the Wind Star."*

—Mr. Hugh & Mrs. Hally Ruth Siddons, Ottawa, Ontario  
The Gardens of French Polynesia

*"A five-star adventure! Perhaps our best ever. The trip ran like clockwork. We loved it!"*

—Mr. Hal & Mrs. Wilda Sandy, Shawnee Mission, Kansas  
Gardens & Monuments of Sicily

*"Loved going to the Isle of Wight! I'll give future trip information to friends!"*

—Mr. Gerald & Mrs. Kay Erickson, Wayzata, Minnesota  
The Great English Gardens and the Isle of Wight  
with the Royal Chelsea Flower Show

*"I have taken two trips recently—Jackson Hole and Bar Harbor. Both trips were nicely varied and all arrangements first class."*

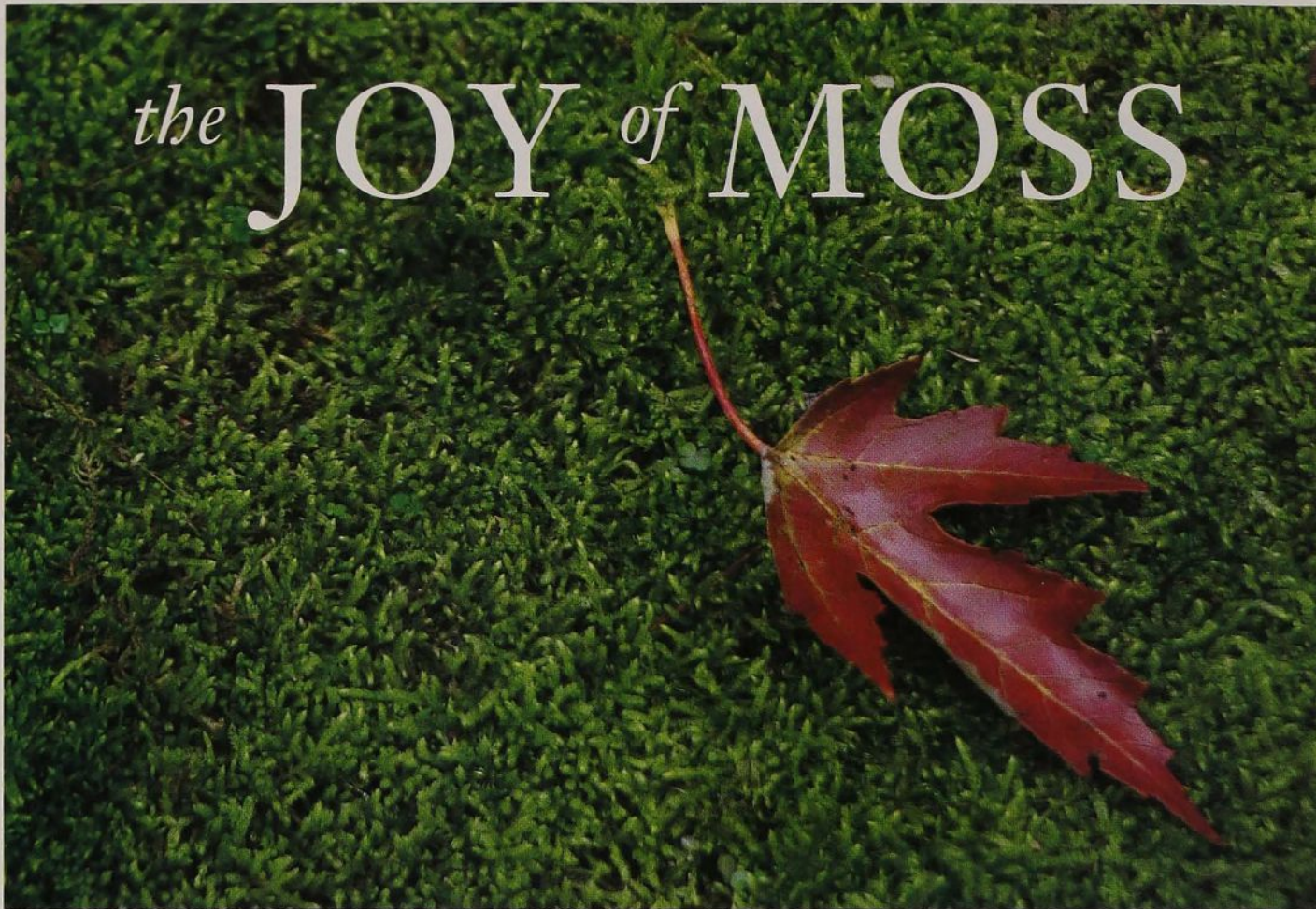
—Ms. Pauline Vollmer, Baltimore, Maryland  
Coastal Gardens of Maine

**For detailed tour information, tour brochures, or to make a tour reservation, contact Leonard Haertter Travel at (800) 942-6666. For further information about the American Horticultural Society's programs, contact Mark Miller at (800) 777-7931 ext. 117.**

No member dues are used to support the Travel Study Program.



# *the* JOY *of* MOSS



Ferns are ideal companions for moss. In the vignette above, the combination evokes a feeling of antiquity. Top: Planted in a suitable environment, moss can grow quickly. In the fall of the second season, the moss in the author's garden had become a dense carpet.

Looking for a substitute for grass in a shady spot? Try moss; it'll grow on you.

BY CAROLE OTTESEN

**T**OO MANY gardeners think of moss as something to get rid of. And while a few enlightened souls might consider incorporating a landscape feature as eccentric as a moss lawn, many fewer turn that consideration into reality. The reason for this inaction, in most cases, is that a great, sweeping green swath of lawn (Kentucky Blue, if possible) is still *de rigueur* in American landscaping. To break lawn's hold on us, sometimes Fate has to intervene.

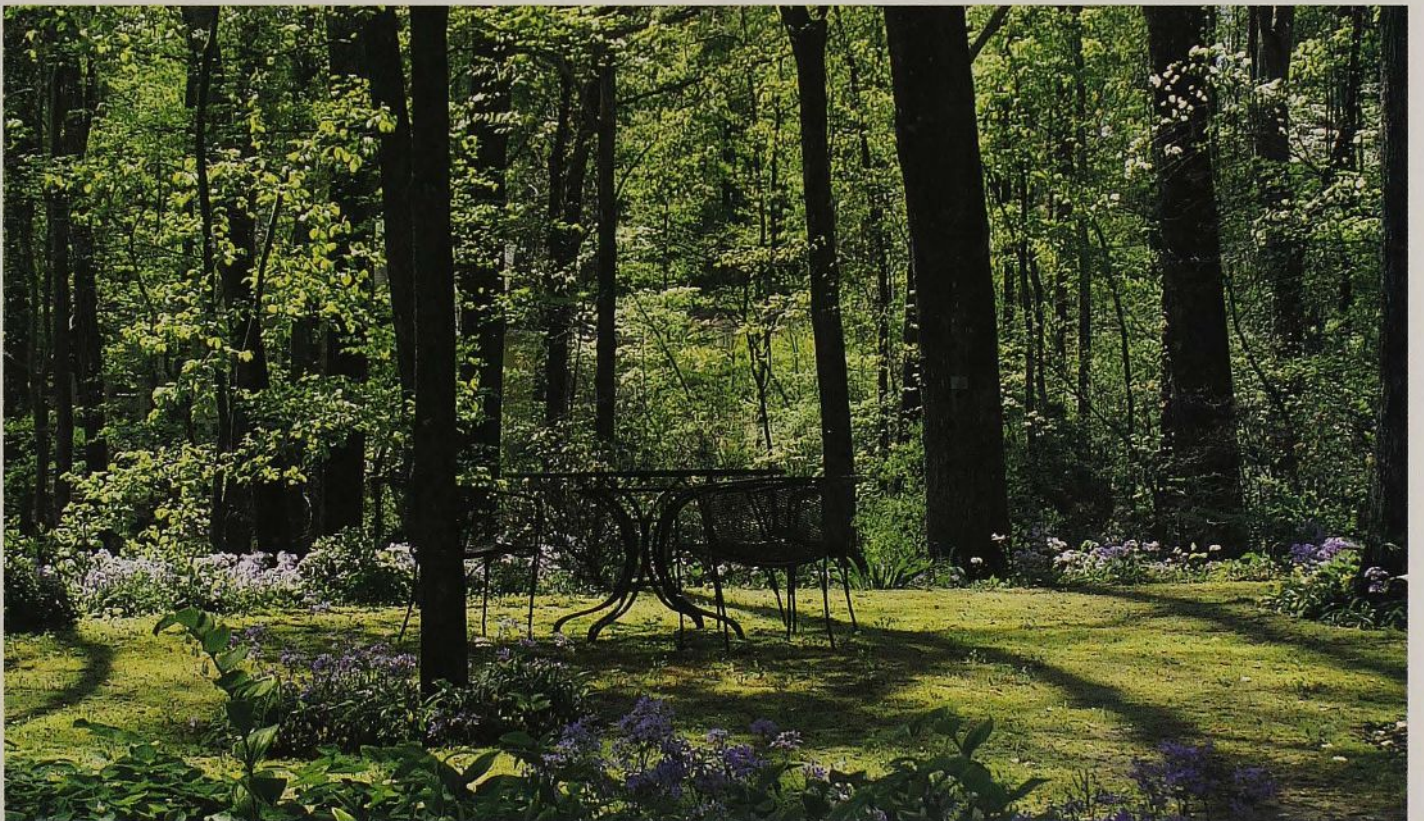
For me, this *deus ex machina* came in the form of a monster snowfall that crushed the roof of my barn, destroying the mower parked beneath. At that point I had little interest in spending money on another piece of machinery that took up a lot of room, coughed up great clouds of foul-smelling exhaust fumes, and broadcast its deafening din into the peace of a Saturday morning.

As it turned out, that cave-in presented me with a gold-plated, respectable, adult-sounding excuse to stop mowing forever and indulge a fantasy I had entertained since childhood. In the back of my mind there has always been a secret garden, a serene





*“Every John and Jane grows grass. Only Nature’s chosen grow moss.” —George Schenk*



Moss harmonizes with a variety of landscape designs, including, top, the Miller family’s Japanese-style garden located near Philadelphia, and, above, a naturalistic woodland setting in Birmingham, Alabama.



green oasis that could work as the setting for a *Midsummer Night's Dream*. It would be filled with intoxicating scents and precious wildflowers, and, in its heart, there would be a magic carpet of moss—a moss lawn, an impossibly fine, verdant swath of velvet upon which one could almost imagine fairies dancing.

Of course that's not the sort of thing you tell your neighbors, at least not at first. When my neighbor asked what happened to my grass (I had poured aluminum sulfate over it, plummeting the pH, so it would all turn yellow and die), I replied by enumerating the practical aspects of a moss lawn and how much easier it is to maintain than lawn grasses.

## THE VIRTUES OF MOSS

First of all, though you never have to mow a moss lawn, it always appears freshly trimmed. All you have to do is remove fallen leaves and weeds. It looks fabulous in winter, when everything else looks ragged and gray. You won't have to limb up trees to let in more sun, because most of the planet's 14,500 species of moss prosper in moist, shady places. You'll never have to spread lime because most mosses thrive on acid soil. And in spite of their preference for moist ground, once established, mosses needn't be irrigated. In a drought, they become dormant, but revive with the first rain. Finally, you won't have to aerate the soil because plenty of mosses are content in compacted clay.



The lush moss-carpeted sideyard of David Benner's Pennsylvania garden is filled with plants in various shades of green.

One reason that mosses don't mind compaction is that they don't send down true roots into the soil for nutrients and water. Instead, fine, threadlike appendages called rhizoids simply hold them in place. In fact, mosses are so primitive in structure that they have no vascular system. They are designed to take in nutrients from rainwater that moves from cell to cell by osmosis. The downside of this system is that cells have not evolved protective surfaces that block out harmful pollutants. If water carries dissolved industrial and urban pollutants, the cells may die.

Thus mosses—and their close relatives, the lichens—are a biological indicator of clean air and very few species of moss survive in polluted environments. In Japan, where moss is encouraged and moss gardens are venerated, this integral representative—with rock and water—of the primordial Buddhist



At the Bloedel Reserve in Bainbridge Island, Washington, moss gradually overtook a ground cover of Irish moss (*Arenaria verna*).

cosmos is threatened. In the ancient city of Kyoto, the number of tour buses to some of the most famous of Japan's cherished moss gardens has been limited to lessen damaging exhaust fumes. Elsewhere around the world, mosses have been disappearing from large cities for more than a century.

## GOING WITH THE FLOW

While the great majority of mosses are denizens of moist, shady woodland settings, others inhabit an immense variety of microclimates from deserts to lakeshore.

Even so, they are not for everyone. In order for a moss lawn to succeed, it should be a go-with-the-flow undertaking. Conditions have to be conducive to mosses and vice versa. The best sites for moss lawns have mossy patches already visible here and there in the grass.

"An expanse of moss, if planted by Nature...is easy enough to maintain," writes George Schenk in his wonderful *Moss Gardening*, selected as one of 75 Great American Garden Books by the American Horticultural Society in 1997. "Nature will have provided a moss or mosses that are stalwart in the setting."

## IF YOU CLEAR IT, THEY WILL COME

Sometimes, you can give nature a leg up. When moss gardener David Benner bought his Pennsylvania property, he found a suitable ground cover on the site: "I saw patches of moss and got enthused," he says. Reasoning that grass liked lime, he went





Several months after the author removed grass from this part of her garden, thin patches of moss began to form and spread.

in the opposite direction, spreading sulfur dust and aluminum sulfate on the grass to lower the pH and encourage moss.

It worked. "In six weeks, all the grass died," he remembers. He pulled it out in May and by September a green film had spread everywhere he had cleared. "By the following May, the green film was moss," he says.

Now, 40 years later, his moss lawn is on tour every May and has been featured in numerous publications. It is open to the public on designated days. Benner's pamphlet on how to start a moss lawn is available through his son Al's nursery, Moss Acres (see "Sources," page 39).

When there are mosses in the vicinity of a garden, the likelihood is that moss spores will migrate to a prepared site. The big problem is that a prepared site, void of vegetation, is ugly. And it has to stay bare in order to provide a landing pad for spores. That can take months. After I killed my grass and pulled out the stragglers, what had been lawn was bare dirt. There was far less moss already growing than I had led myself to believe—and my front yard was unsightly. I admit to having misgivings as, day after day, I checked in vain for a sign of green life.

As I recall, the green tint of embryonic moss appeared within weeks of my having removed the grass, but it took two full growing seasons to establish a swath green and thick enough to be called a lawn.

Thereafter, the moss seemed to spread itself, racing around the house as I followed, pulling out grass and weeds.

## HOW TO START A MOSS GARDEN

Starting a moss garden is easy but requires patience to see the payoff. It's a good idea to start small. That way, the initial bare area is kept to a minimum.

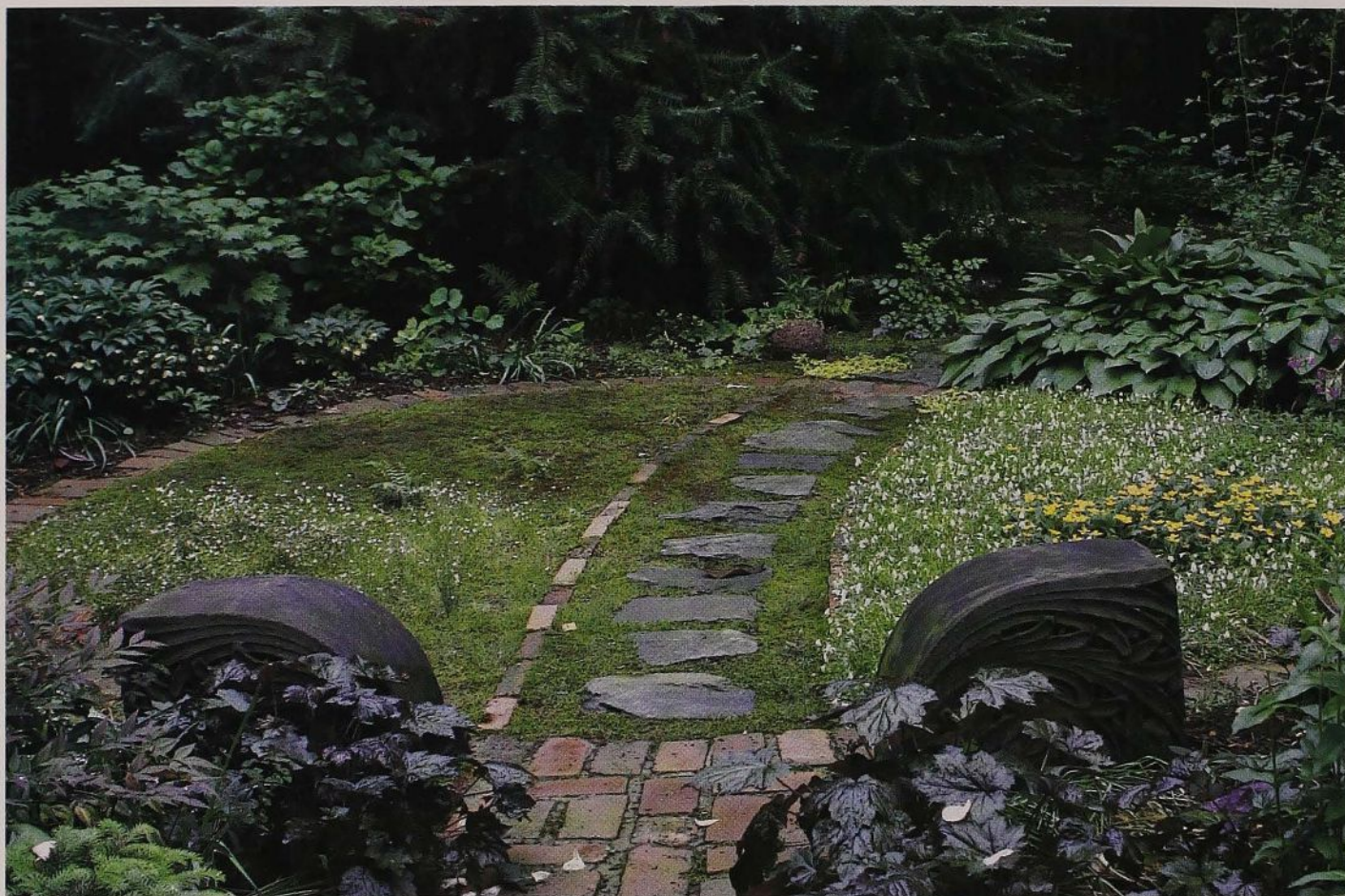
1. Prepare the site, preferably one that already boasts patches of moss, by removing all vegetation. Don't rototill or incorporate compost, but do acidify the soil to discourage grass. You can add aluminum sulfate, powdered milk, acidifier for rhododendrons and azaleas, or sulfur powder or granules. George Schenk, author of *Moss Gardening*, recommends two and a half pounds of powdered sulfur over 100 square feet. Tamp the soil firmly. Do not cover with mulch.
2. If, in addition to (or instead of) waiting for spores to arrive, you are planting moss sods, thoroughly wet the soil before arranging them. The mud slurry will act as a glue to hold them in place. Depending upon how large your future moss lawn will be, you can either lay out sheets of moss or cut them into six-inch squares, spaced about a foot apart. On a slope, you can secure them with stones or with hair (not bobby) pins.
3. In either case, irrigate regularly until it is evident the mosses have taken and are making progress. After that, you can irrigate or not, depending upon your inclination and the effect you desire.



Weeding a moss lawn requires surgical delicacy; pulling weeds, as shown here, removes chunks of moss in the process.

4. Keep the area weed- and grass-free before and after the moss establishes itself. Weed often before the weeds become large, because once they do, they take chunks of moss with them when they are pulled. Because the usual garden tools are too crude for moss, I have plundered the kitchen for implements. A fondue fork with tiny tines and a metal barbecue stake make good tools for easing out small weeds.
5. If children, dogs, deer, or wheelbarrows tear up the moss, simply tamp it back into place. Dog urine leaves black spots but these will eventually re-green.





The author's mossy lawn has become a suitable setting for a variety of plants. Flanked by maroon *Heuchera* 'Montrose Ruby', a path divides moss with bluet (*Houstonia* spp.) volunteers and a sunnier side of white *Mazus reptans* var. *alba* and yellow *Chrysogonum virginianum*.

Although I found my method perfectly satisfactory, some moss growers say you can speed up the process by mixing moss and buttermilk (for acidity) in a blender and then spreading the slurry on a prepared site.

One way to avoid the totally bare look of a new moss lawn is to plug in small plants that will be sacrificed later as the moss fills in. This was done at the Bloedel Reserve on Bainbridge Island, Washington (see *The American Gardener*, March/April, 2002). After vegetation was removed and the soil was smoothed out, the future moss garden was planted with Irish moss (*Arenaria verna*), not a moss at all, but a small plant with threadlike, insubstantial stems and leaves. The idea was that airborne moss spores could deposit themselves in and among the tiny Irish mosses and, eventually, take over. Within a decade, a variety of mosses volunteered.

Purchasing moss sods from a nursery is yet another way to have a little green in place when starting a moss lawn. Nigh impossible to find a few years ago, moss nurseries sell mosses and disseminate information about maintaining them. Getting moss sod from the shady yards of agreeable friends is also acceptable, but digging mosses from the wild is not.

Whether purchased or begged, mosses ought to be transplanted to situations with conditions similar to those in their places of origin. Match shade to shade, sun to sun, moist site to moist site. If in doubt, get several different kinds of mosses. Don't be surprised if some die out and others prosper. Those that succeed are

the ones best suited to your garden. Be sure to provide regular irrigation during the period in which the moss is getting established.

### A MOSS BY ANY OTHER NAME

Unless they come potted and labeled from the nursery, it isn't always easy to identify which mosses take up residence in your lawn. I know that one feathery moss I grow is a *Thuidium* and the plush green in the cracks between bricks is *Bryum*. The deep green cushion mosses are probably *Grimmia*, but it would take an expert with a hand lens to accurately identify more than a dozen other patches in my crazy quilt of luminous greens.

I am heartened, by reading Schenk, to learn that he shares my lack of interest in learning exact moss nomenclature. "Where I do not give the name, frankly I don't know what it is," Schenk writes. "I am not alone among moss gardeners in my paucity of science. . . . Our gardening seems. . . more attuned to the sensuous values of the mosses."

For those who are interested in trying to learn how to distinguish and identify mosses, however, references are available (see "Resources," page 39).

### COMPANIONS

Whatever its name, when moss spreads enough to truly become a lawn, the garden gains character. Moss suggests great age. It is romantic. It is calming. It is magical, transforming a typical



suburban backyard into a tranquil forest clearing. Natural-looking woodland elements such as rocks, ferns, and wildflowers augment the mood. “Plants companionable to carpeting moss add body to its flatness,” writes Schenk, “and add to its uniformity the piquancy of differing textures and colors.”

Finding suitable companions is quite easy, and it’s fun to experiment and see what works. “I’m growing about 40 evergreen ground covers,” says Benner of the woodland companions that surround his moss lawn. Among these are creeping phlox (*Phlox subulata*), foamflowers (*Tiarella* spp.), and Oconee bells (*Shortia galacifolia*). Benner has also allowed an island of partridge berry (*Mitchella repens*) to grow in the moss as well as “lots of bluets.”

Moss functions as a nursery for plants that don’t seem to self seed elsewhere. After years of fruitless efforts to grow bluets (*Houstonia* spp.) in various places around my own garden, they appeared in my moss lawn as if by spontaneous generation. I now permit them to take up as much room as they like, a privilege I also give to *Shortia* but not to many other interlopers.

In my carpet, I find ferns in all stages from the tiny heart-shaped “seedlings” (known as prothalli) to fully developed clumps. Often naturally occurring hybrids, these are like and yet unlike any of the ones purposefully planted in my garden. Tiny



**Pink boltonia, foreground, and alumroot (*Heuchera villosa*) edge a patch of moss in the author’s garden. The lawn is also perfect for displaying one of the author’s handcrafted garden ornaments, a concrete ball that also, eventually, will be covered with moss.**

seedlings of cardinal flower (*Lobelia cardinalis*), new color forms of *Heuchera*, and impossibly tiny evergreens also pop up here and there. I transplant most of these so they don’t shade out the moss, but always allow a few to remain to preserve a spontaneous look.

Weeding is the main, but not endless, chore. After 40 years of growth in his moss garden, Benner says the moss has gotten so thick that “there are no more weeds.” For the beginning moss gardener, however, weeding is a necessary task, best done regularly while the weeds are still small.

## THE ZEN OF MOSS GROWING

Actually, I have come to enjoy this ritual of maintenance on my

## Sources

**Moss Acres**, Honesdale, PA. (866) GET-MOSS.  
[www.mossacres.com](http://www.mossacres.com).

**Mosses Galore**, Lake Nebagamon, WI. (715) 374-2135.

**Mostly Moss**, c/o Lynne Randolph, 130 Sandy Drive, Stockbridge, GA 30281.

**Tripple Brook Farm**, Southampton, MA. (413) 527-4626.  
[www.tripplebrookfarm.com](http://www.tripplebrookfarm.com).

## Resources

**Gathering Moss** by Robin Wall Kimmerer. Oregon State University Press, Corvallis, Oregon, 2003.

**Mosses, Lichens & Ferns of Northwest North America** by Dale H. Vitt, Janet E. Marsh, and Robin B. Bovey. Lone Pine Publishing, Edmonton, Alberta, Canada, 1988.


**Moss Gardening, Including Lichens, Liverworts, and Other Miniatures** by George Schenk. Timber Press, Portland, Oregon, 1997.

moss lawn. Roaring over a grass lawn with a gas mower might be quicker than hand-weeding moss, but it jars and dulls the senses rather than soothes them.

When weeding, I usually seat myself on a stepping stone in the middle of the moss lawn. If it is the rosy hour before dinner, I might set a glass of cool white wine on another stepping stone. Then, picking out weed after weed after weed becomes a kind of rhythmic meditation, something both oddly intuitive and comforting. It always puts me in mind of apes grooming each other in those documentaries you see on public television. Perhaps this repetitious grooming behavior is wired into our DNA.

My moss lawn has become the single, greatest source of pleasure my garden has to offer. It is always presentable, a luminous oval of emerald, lime, peridot, and Kelly greens that sets off the wood phlox, hellebores, ferns, native azaleas, hollies, and other plants around it.

There is something wonderfully submissive in the act of inviting moss into the garden by preparing a place for it and then waiting for it to arrive on its own. It is an obeisance to nature that is rare in gardening. I made an all-or-nothing commitment and throughout that period when the lawn-to-be was an ugly oval of mud, I believed with all my heart—well, most of the time—in the moss to come.

That is the Zen of moss growing. I did not plant the moss. The moss came to me. 

*Carole Ottesen is an associate editor for The American Gardener. Nature delivered moss to her Potomac, Maryland, garden.*



# L.H. Bailey Father of American Horticulture

Known as the “father of American horticulture,” Liberty Hyde Bailey left an incredible legacy of achievements and publications that is still influencing today’s gardeners.

BY ERIC HSU

**D**ISPLEASED AT the printer’s page proofs, the editor wrote: “If you pull a dog’s hind leg straight is it a dog’s hind leg any more?” The printer had squeezed a drawing to fit conveniently between the columns of the page, in the process turning a tree fern with a curving stem into a tree fern with an upright stem. It was one of the numerous obstacles that Liberty Hyde Bailey, the editor, faced when overseeing publication of *The Cyclopedia of American Horticulture*, a monumental undertaking that required years of effort coordinating the works of various contributors.

When first published, in 1900, the *Cyclopedia* won widespread praise from the horticultural and botanical community.

Its success was due not only to Bailey’s competence as an editor, but also to his talents as a horticulturist, botanist, explorer, researcher, philosopher, and poet. A highly-motivated and focused individual in the mold of Renaissance scholars, Bailey adhered to a life plan: 25 years in education, 25 years earning a livelihood, and 25-plus years pursuing his interests. Living on through his many books and other achievements, Bailey’s remarkable legacy continues to benefit gardeners and horticulturists alike.

## EARLY INTEREST IN PLANTS

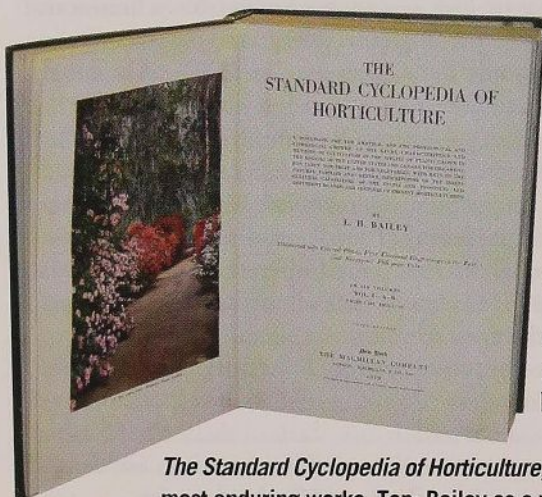
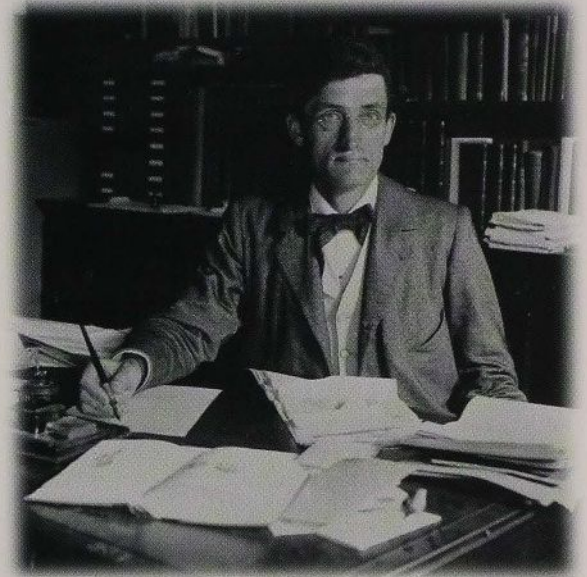
Born in 1858 in South Haven, Michigan, Bailey was a precocious youngster interested in plants and animals. His mother’s flower garden and his father’s orchard sparked his love affair with horticulture. By the age of 10, he had become such a skilled grafter that neighbors employed him to graft their trees in their orchards. Bailey, himself, had one apple tree on which he had grafted 40 varieties.

When he was 14, he became fascinated by *Field, Forest and Garden Botany*, written by renowned Harvard botanist Asa Gray. This prompted him

to make the book “real” by starting a small herbarium. Julia Field, his elementary school teacher, and Lucy A. Millington, a visiting New York botanist, shaped Bailey’s lifelong passion for plant sciences. The former prodded him with questions that encouraged him to value astute observation over memorization. The latter stimulated his interest in botany through her lectures and botanical excursions; a vasculum (a red tin case for collecting plants) she gave him as a gift became a cherished memento.

In 1877, Bailey entered Michigan Agricultural College (now Michigan State University in East Lansing), where he honed his skills in horticulture and botany. William J. Beal, a professor of horticulture and botany there, employed Bailey to collect botanical and zoological specimens for the college and help conduct plant-breeding experiments.

When Asa Gray asked Beal to help him find an individual with the “markings of a botanist,” Beal recommended his promising assistant, Bailey. Elated at the possibilities Harvard offered and the chance to work with his childhood hero, Bailey became Asa Gray’s herbarium assistant in 1883. He organized herbarium specimens, studied cultivated plants at



*The Standard Cyclopedia of Horticulture*, reprinted numerous times, is one of Bailey’s most enduring works. Top: Bailey as a young professor at Cornell in 1891.



the Arnold Arboretum, and wrote articles for *American Cultivator*.

Soon thereafter, he married Annette Smith, the daughter of a Michigan cattle breeder, whom he had met and befriended at Michigan Agricultural College.

### LINKING BOTANY AND HORTICULTURE

Toward the end of Bailey's two-year Harvard appointment, in 1885, Michigan Agricultural College invited him to fill the college's chair of horticulture and landscape gardening department, a position that Bailey eagerly accepted. "But Mr. Bailey," Asa Gray dejectedly remarked, "I thought you were fitting yourself to be a botanist." Bailey replied, "Yes, Dr. Gray, but a horticulturist is also a botanist."

Gray remained unconvinced, since, in his view, a botanist was someone who uncovered relationships among plants, while a horticulturist cultivated plants for ornament or profit. But Bailey saw it as an opportunity to improve horticulture by infusing it with botany. In an 1885 lecture titled "The Garden Fence," Bailey lamented the wall of prejudice separating botanists and horticulturists.

Bailey believed one way to break down that barrier was to cross-pollinate botany and horticulture, and he set out to do it. Taking advantage of his position at Michigan Agricultural College, Bailey instilled a scientific dimension into horticulture by incorporating laboratory work, field trips, and experiments that supplemented the standard lectures. This practice has since become the norm for most horticultural programs in colleges. Bailey's courses were immensely popular among students, who quickly enrolled in them.

As a sign of his burgeoning political prowess, he was able to convince the state legislature to appropriate money for a building devoted solely to the study of horticulture, an unusual move at that time. Michigan's Department of Horticulture and Landscape Architecture flourished under Bailey's guidance and continued to do so after Bailey left to take on a similar challenge with Cornell University in 1888.

At Cornell, as in Michigan, Bailey fulfilled his vision of an ideal horticultural program, establishing several new departments in the university's College of



The Treman Woodland Walk in the F. R. Newman Arboretum, above, is part of Cornell Plantations, a university-affiliated botanical garden and arboretum founded by Bailey.

Agriculture, including plant physiology, plant pathology, entomology, and landscape architecture.

He was particularly instrumental in forming a premier university-affiliated botanical garden and arboretum. Seeing the abundance of farmlands, forests, orchards, and gardens at Cornell, Bailey envisioned a plan "to bring all these lands into one comprehensive enterprise." This plan, along with the integration of Cornell Arboretum, was recognized under the proposed and current name, Cornell Plantations. Today, Cornell Plantations lures visitors from far and near to its lush gardens and arboretum set in the scenic Finger Lake region of New York.

Always surmounting the "garden fence," Bailey indulged a special interest in the taxonomy of many groups of cultivated plants, including blackberries (*Rubus* spp.), cabbages (*Brassica* spp.), and cucurbits. Challenged by his wife, he took up a systematic study of palms that led him to far-flung corners of the world to photograph and collect them. These trips continued throughout his career; his 90th birthday party at Cornell had to be postponed for six weeks because the indefatigable plantsman was in the West Indies gathering specimens.

### LIGHT-SHEDDING RESEARCH

Bailey's contributions to horticulture also included important horticultural research. In a series of experiments conducted in the early 1890s, Bailey was the first American to study the use of artificial lighting on plants. His findings and subsequent research in supplemental greenhouse lighting led to the now widely adopted practice of using efficient high-intensity lamps in commercial horticulture.

After observing the fast maturation of plants cultivated under electric lights, Bailey concluded, "On the whole I feel that it will be possible some day to use the electric light in floricultural establishments to some pecuniary advantage."



Bailey, holding the handles of a horse-drawn plow, presides over the groundbreaking for a new agricultural building at Cornell.



## LIBERTY HYDE BAILEY'S LINK TO AHS

Liberty Hyde Bailey played a little known, but important, role in the formation of the American Horticultural Council (AHC), an organization that eventually merged with the American Horticultural Society (AHS). In 1946, the elder statesman of horticulture delivered the keynote address at the First American Horticultural Congress, held in Cleveland, Ohio.

That speech helped establish the goals and national profile of the fledging AHC, which was formed to serve as an umbrella body for horticulture and foster better communication between the hundreds of individual plant societies and other horticultural groups. From 1946 to 1959—when the Council merged with AHS—up

to 120 gardening organizations were represented by the AHC. The AHS has continued the tradition of helping to unite gardening groups and sharing gardening information with a national audience.

The AHC also was responsible for initiating, in 1958, the Liberty Hyde Bailey award. The award—a handsome cast bronze medal—is presented annually by AHS to a resident of North America who has made a significant contribution in at least three of the following areas of horticultural activities: teaching, research, writing, editing, plant exploration, administration, art, business, and leadership. To learn more about AHS's award program, visit [www.ahs.org](http://www.ahs.org) and click on "Awards."



Bailey's words proved prophetic. Motivated by Bailey's work, Alex Laurie, another horticultural scientist, confirmed the improved growth of plants given supplemental light. He also measured the responses of chrysanthemums and poinsettias to a reduction in light that mimics short-day conditions and initiates blooming. This research paved the way for commercial application of electric lighting for these two important horticultural crops.

AHS President Emeritus Dr. H. Marc Cathey met Bailey in the early 1950s while working on his doctorate at Cornell. Cathey went on to make his own important discoveries in greenhouse lighting as a research scientist with the USDA's Agricultural Research Service.

### LEAVING A LEGACY

During his lifetime, Bailey assembled a private herbarium and library consisting of some 125,000 plant specimens and nearly 3,000 volumes. This collection eventually formed the nucleus of Cornell's Bailey Hortorium. Unlike most herbaria of the time, which tended to concentrate on wild plants, the Bailey Hortorium was unique in its focus on preserved specimens of cultivated plants.

In addition to his expertise in horticulture and botany, Bailey was an excellent writer. As one of his editors at Macmillan later remarked, "no English writer has had that refined combination of botanical and horticultural knowledge that Bailey made his own." Im-

bued with keen observation and authority, his writings were clear, focused, and exceedingly popular.

His list of publications (see box, opposite page) is astonishingly prodigious considering that he also had teaching and administrative duties. No complete bibliography of Bailey's publications exists, but one biographer counted 63 books, including six encyclopedias and directories.



**Bailey had a particular interest in palms, which he indulged during plant-collecting trips like this one to South America.**

Among Bailey's publications, *The Cyclopedia of American Horticulture* and *Hortus* are perhaps the most enduring testaments of his versatility as an editor, writer, and scientist. These groundbreaking references set a precedent for similar encyclopedic works we use today, such as *The Royal Horticultural Society's Dictionary of Gardening* and *The American Horticultural Society A-Z Encyclopedia of Garden Plants*. In 1997, the American Horticultural Society designated the *Cyclopedia* as one of "75 Great American Garden Books."

*Hortus*, first published in 1930, is generally regarded as Bailey's magnum opus. Billed as "an annotated inventory of the species of plants and their main botanical varieties now in cultivation in the United States and Canada...together with brief indications of uses and methods of cultivation," *Hortus* was an immediate success and was expanded and reissued twice.

In deciding which cultivated species and their varieties to include in *Hortus*, Bailey and his daughter, Ethel Zoe Bailey, perused nursery and seed catalogs, horticultural books, correspondence, and botanic gardens' inventories. Although this work's last reincarnation as *Hortus Third* (1976) now contains much outdated botanical nomenclature, it and other Bailey references are still considered invaluable resources.

"*The Standard Cyclopedia of Horticulture* and *Hortus*, including his fruit and vegetable works as well as the obscure titles in the 'Background Books' series are



well sought after by gardeners,” says Bradford Lyon, co-owner of Elizabeth Woodburn Books in Hopewell, New Jersey.

Because Bailey specifically edited *The Standard Cyclopedia of Horticulture* with the idea that it would be a summation of 19th-century American horticulture, garden historians find it an invaluable reference in researching heirloom plants and for guidance in reconstructing historic gardens. Peggy Cornett, director of Thomas Jefferson Center for Historic Plants at Monticello, says she often turns to the 1935 edition of the *Cyclopedia* for insightful, in-depth historical information on now-obscure garden plants.

Likewise, Scott Kunst of Old House Gardens often pulls his well-worn copy of the *Cyclopedia* off the shelf first when researching the antique bulbs that he sells through his mail-order catalog. “For rediscovering the history of garden plants in America,” Kunst says, “Bailey is essential.”

## AHEAD OF HIS TIME

Along with his writing ability, Bailey’s speaking skills made him an effective spokesman for horticulture. The confluence of philosophy, poetry, and practicality in his speeches enlightened his audience and enlivened the topic.

When pressed for recommended plants to grow, Bailey suggested that nature would shape the gardener’s education: “If today you care only for pinks and roses...next year you will admire the wild convolvulus on the old fence.”

He urged people to defy gardening conventions—for instance, he promoted edible landscaping by describing a Bavarian garden profusely mixed with vegetables and flowers after people questioned the practice of mixing them in one garden.

His teaching abilities were manifested in the many students who, under his tutelage at Cornell, went on to become renowned horticulturists, botanists, and landscape architects in their own right. Among these were Wilhelm Miller, the founding editor of *Garden Magazine*, and George Elberton Burnap, who was responsible for the planting of Japanese cherry trees at the Tidal Basin near the Jefferson Memorial in Washington, D.C.

A second generation of pupils who studied under these disciples also became beneficiaries of Bailey’s legacy.

## Liberty Hyde Bailey’s Books

Here is a selection of Bailey’s published works. Nearly all are out of print but many can be obtained through antiquarian book sellers.

**American Grape Training.** Rural Publishing, New York, 1893.

**The Cyclopedia of American Horticulture (four volumes).** Macmillan, New York, 1900–1902.

**The Standard Cyclopedia of Horticulture (six volumes).** Macmillan, New York, 1914–1917. (Reprinted in 1925, 1928, 1937.)

**Manual of Cultivated Plants.** Macmillan, New York, 1924. (Revised 1949.)

**Hortus.** Macmillan, New York, 1930. (Reprinted in 1941 as *Hortus Second* and in 1976 as *Hortus Third*).

**How Plants Get Their Names.** Macmillan, New York, 1933.

**Gardener’s Handbook.** Macmillan, New York, 1934.

**The Garden of Pinks.** Macmillan, New York, 1938.

## Books about Liberty Hyde Bailey

**Liberty Hyde Bailey: A Story of American Plant Sciences** by Andrew Denny Rodgers III, Princeton University Press, Princeton, New Jersey, 1949.

**Liberty Hyde Bailey: An Informal Biography** by Philip Dorf, Cornell University Press, Ithaca, New York, 1956.

The successful horticulture and landscape architecture programs he developed at Michigan and Cornell undoubtedly prompted creation of similar programs at other colleges. It is this communion between horticulture and science that was perhaps Bailey’s greatest achievement.

Bailey worked tirelessly into his 90s before breaking his hip in a falling accident in 1950. Never able to fully recover from the injury, he resigned his position as director of the Bailey Hortorium in 1951 and died in 1954. His lifetime of incredible achievements was recognized by his colleagues through a steady stream of honors and awards. The Royal Horticultural Society in England awarded Bailey the Veitch Gold Medal, the highest award given to a non-British citizen for outstanding contributions to horticulture. Several universities gave him honorary doctorate degrees, and the American Academy of Arts and Sciences elected him a member in 1900.

Bailey was the founding member and president of the Botanical Society of America and the American Society for Horticultural Science. He also played an important role in the American Horticultural Council, which eventually merged with the American Horticultural Society (see box, opposite page).

Even in these days of “multitasking,” it’s hard not to wonder how one man was able to accomplish so much in his lifetime—and without the help of computers, handheld electronic organizers, or cell phones. But as Bailey once said, “The measure of life is in the daily living of it and the acceptance of it for all it is worth, or, at least, for all you can make of it. And you can make much of it.”

*A recent graduate of Cornell University’s botany program, Eric Hsu is continuing his horticultural and botanical training in England.*



# Jeepers Creepers!

Between rocks in a hard place: ground covers for rocky landscapes.

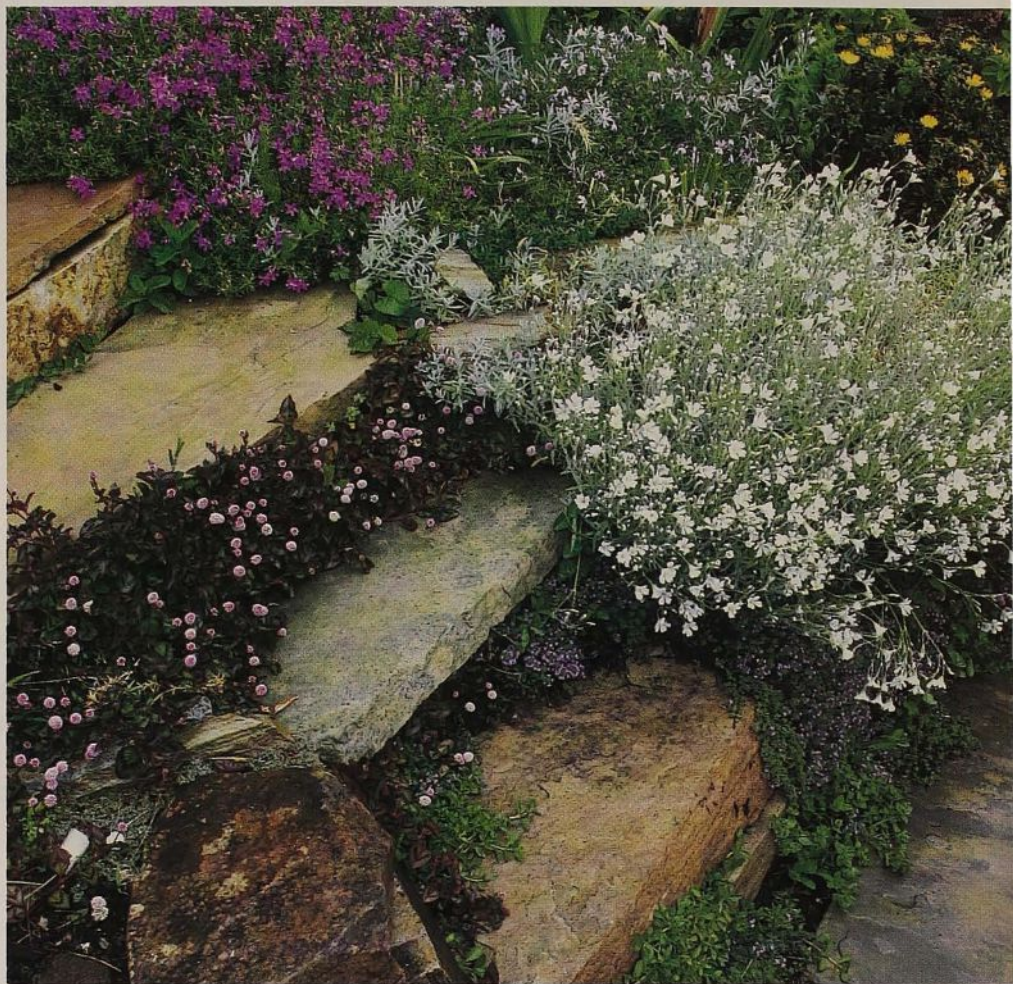
BY DAVID SALMAN

FOR AS LONG AS man has been cultivating fields for growing crops, he has been digging up rocks and removing them from the soil. After all, plows and rocks are not a good mix. But extracted from growing areas and stacked into neat walls, stone adds considerable charm to the landscapes of rural New England, Scotland, and many other parts of the world. As picturesque as they are, those walls represent endless hours of work by generations of farmers whose main intention was to eliminate the rocks from fields so that cultivation was easier and more efficient.

When it comes to ornamental horticulture, however, rocks are not a nuisance but an essential element of the landscape, contributing to a design in both practical and aesthetic ways. They can be used to construct multiple levels on flat sites, stabilize and provide planting areas on slopes and road cuts, and make beautiful walkways and patio surfaces. Combine the right plants with the rock in your landscape and you can weave a rich tapestry of color and texture that is both attractive and low maintenance.

## Rocky Relationships

Many ornamental plants actually benefit from their association with rocks. Some species, particularly those native to cliffs, rocky hillsides, and mountainous areas, grow easily among rocks, their roots reaching deep into the soil below or living in pockets of soil found in the rock itself. Rocks provide protection for bulbous plants by preventing bulb-eating animals from uprooting them. Rocks also provide



Creeping ground covers such as moss phlox, magic carpet (*Polygonum capitatum*), and snow-in-summer (*Cerastium tomentosum*) soften the hard edges of these steps.

the perfect mulch by shading the soil underneath, keeping it cool and moist.

Plants growing between rocks have limited competition from other plants and benefit from the extra water they receive. Rocks shed the rain and snow melt and move it toward soil around them, effectively increasing the amount of water that reaches the plants. Rocks, especially large ones, create warmer winter microclimates in their immediate area by absorbing the sun's radiation during the day and transferring the stored heat to the plants around them at night.

Rock gardeners are keenly aware of these plant-rock interactions. They use rock to re-create mountains-in-miniature

so tiny alpine and subalpine plant species can be brought down from their lofty natural habitats into civilization. But you don't have to be a rock gardener to take advantage of this beneficial relationship. Even the casual gardener can enjoy a flagstone patio where lush and green creeping thyme or Roman chamomile grow through the spaces between stones.

## PARTNERS FOR PAVERS

FLAGSTONE AND SLATE are ideal paving surfaces for patios and walkways. Unlike a concrete sidewalk, their usually irregular shapes create a pleasing mosaic pattern with cracks between the stones providing the perfect spaces for



## Partners for Pavers



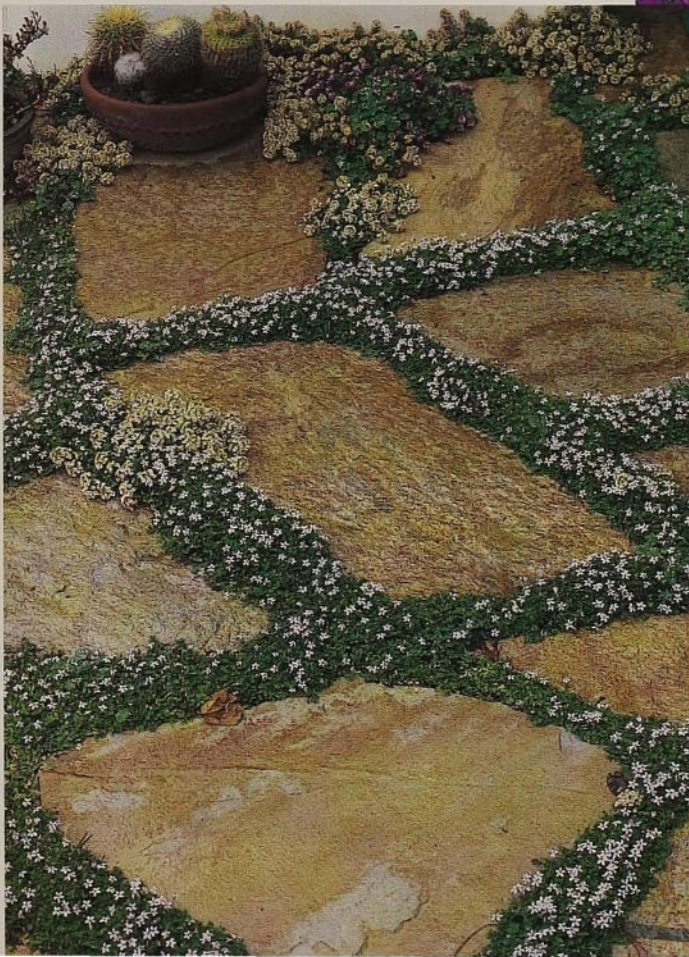
For full and partly sunny locations, creeping thyme is an excellent choice. *Thymus serpyllum* 'Pink Chintz' (USDA Hardiness Zones 4–9, AHS Heat Zones 9–1) is a durable, very early-blooming cultivar displaying its soft pink flowers in early to mid-spring.



Turkish speedwell (*Veronica liwanensis*, Zones 4–8, 8–1) is an evergreen that grows two inches high and spreads about 18 inches. Its blue star-shaped flowers bloom in spring.



Above: Used out of the main walking paths, the diminutive South African ground cover *Delosperma cooperi* (Zones 7–10, 10–7) is a perfect “off-to-the-sides” plant forming a tight, bright evergreen mat of succulent foliage capped in mid-spring by bright fuchsia-purple flowers.



Left: In coastal areas with mild winter climates, New Zealand and Australian natives such as the showy blue star creeper (*Laurentia fluviatilis*, Zones 7–9, 9–6) are wonderful for framing flagstone patios or pavers. These plants grow best in moist soils.



## PRE-PLANTING PREPARATION FOR A FLAGSTONE PATIO

Before installing a flagstone or slate patio or walkway, take the time to prepare the soil beneath the stone before it is placed. This will encourage deep rooting into the soil below and result in healthier plants growing between the stones.

Typically, the soil is scraped down, a three-inch-deep layer of sand is spread and packed, the flagstone is set into place, and the space between the pieces is filled with sand. But pure sand with hardpacked soil beneath is not an optimal planting situation for healthy root growth. Instead, I recommend rototilling or hand-digging the soil and amending it with compost and phosphate to a four-inch-depth before spreading the sand. Rake the soil smooth and pack lightly. Only then should the sand be spread and the stone installed. —D.S.

planting small ground covers. Careful selection and placement of plants helps integrate the path with the garden by echoing colors and textures and softening edges.

Plants incorporated into walkways and patios need to be very low growing and should tolerate some foot traffic. While the plants in the areas of heaviest foot traffic will not always look their best, those along the perimeter and less-traveled corners of the patio should grow more lushly. The best plants for use in flagstone and other dry-laid pavers are those that don't grow too tall, too wide, or too fast.

Several natives of the western United States are superb growing in rock paving. The plains or desert zinnia (*Zinnia grandiflora*, Zones 5–9, 12–7) has been used extensively in northern New Mexico as a flagstone plant. Its soft mound of needle-like leaves billows out from rock crevices to a height of four inches. By midsummer, it is covered with dazzling golden yellow flowers that stand a couple of inches above the foliage. Once established, with its roots protected by flagstone, it is impervious to heat and drought.

*Penstemon procumbens* 'Claude Barr' (often listed as *P. caespitosus*, Zones 6–9,

9–6), although not quite as xeric as *Zinnia grandiflora*, is equally beautiful with its showy blue-and-lavender trumpet-shaped flowers. Its evergreen mat of foliage grows less than an inch tall; the stems root as they grow, spreading to a width of 12 inches.

*Thymus xcitriodorus* 'Doone Valley' (Zones 6–9, 9–6) is a delightful yellow-and-green variegated-leaf variety that releases a lemon scent when stepped upon. It reaches five inches in height and spreads 14 inches. Its pale crimson buds open to reveal rounded heads of lavender flowers in late spring.

Some folks get so enthusiastic about tiny ground covers that they convert their flagstone patios to full fledged rock gardens by integrating mounding and upright plants. Dwarf subalpine soapworts like *Saponaria caespitosa* (Zones 4–8, 8–1) and *S. xolivana* (Zones 4–8, 8–1). Both are perfect crack fillers that will dazzle with a profuse mid-spring display of pink flowers. The first grows six inches tall with an equal spread, while the latter only reaches a height of two inches but spreads up to a foot.

Miniature creeping *Phlox douglasii* 'Cracker Jack' (Zones 5–7, 7–5) looks like emerald moss until its vivid crimson flowers open in mid-spring.

## MORE CREEPERS FOR BETWEEN PAVERS

| Plant  | Height/Spread (inches) | Remarks  | Origin        | USDA/AHS Zones |
|--|------------------------|--|---------------|----------------|
| <b>SUN</b>   |                        |  |               |                |
| <i>Thymus pseudo-lanuginosus</i><br>(woolly thyme) | 2/18                   | rarely flowers, withstands traffic; gray, felted leaves  | unknown       | 4-9, 9-1       |
| <i>Veronica oltensis</i><br>(thyme-leaf speedwell) | 1/2/24                 | ground-hugging, evergreen foliage, blue flowers, good for xeric gardens                                      | Turkey        | 6-8, 8-6       |
| <b>SHADE TOLERANT</b>                              |                        |  |               |                |
| <i>Bellium minutum</i><br>(miniature mat daisy)    | 2/15                   | tiny spoon-shaped leaves and abundant white flowers from spring to midsummer                                 | Mediterranean | 7-9, 9-7       |
| <i>Minuartia verna</i><br>(golden pearlwort)       | 1/2/8                  | mat-forming, appears like ribbons of green velvet between rocks  | Europe        | 4-7, 7-1       |
| <i>Saxifraga</i> 'Peter Pan'                       |                        | thrives in moist climates, develops mounds of dark green, succulent foliage and dainty red flowers in spring | hybrid origin | 7-8, 8-7       |



## Resources

**North American Rock Garden Society**, [www.nargs.org](http://www.nargs.org).

**Paths and Walkways: Simple Projects, Contemporary Designs** by Hazel White. Chronicle Books, San Francisco, California, 1998.

**Rock Garden Plants: A Color Encyclopedia** by Baldassare Mineo. Timber Press, Portland, Oregon, 1999.

**Stone in the Garden: Inspiring Designs and Practical Projects** by Gordon Hayward. W.W. Norton & Company, New York, 2001.

## Sources

**High Country Gardens**, Santa Fe, NM. (800) 925-9387. [www.highcountrygardens.com](http://www.highcountrygardens.com). Catalog free.

**Siskiyou Rare Plant Nursery**, Medford, OR. (541) 772-6846. [www.wave.net/upg/srpn](http://www.wave.net/upg/srpn). Catalog \$3.

**Stepables® Under A Foot Plant Company**, Salem, OR. (503) 581-8915. [www.stepables.com](http://www.stepables.com). Catalog online.

**André Viette Farm and Nursery**, Fishersville, VA. (540) 943-2315. [www.viette.com](http://www.viette.com). Catalog \$6.

And I heartily recommend the tiny ground cover garden pinks (*Dianthus* spp.), with their finely textured evergreen foliage and frequently fragrant flowers. *Dianthus* 'Rose Dawn' (Zones 3–9, 9–1), which has bright rose-pink flowers and tightly knitted blue-green foliage, is a particular favorite.

### ELEVATED CHOICES

SLOPES, ROAD CUTS, and vertical drops become valuable gardening spaces when stabilized with a dry-stacked—that

is, made without concrete mortar—rock or block wall. When constructing one with wall plantings in mind, be sure to build soil pockets into the wall where plants can take root. Spreading or trailing woody and herbaceous ground covers will not only soften the look of the wall but can actually help anchor it and hold the soil in place with their fine, fibrous roots.

If you have a slope that is not too steep, creating terraced beds with low vertical walls provides a multilevel canvas for an imaginative combination of plants.

Because foot traffic is not generally a concern for walls and terraced beds, larger, less rugged plants than those used for walks and patios are options for those areas. With more room both horizontally and vertically, wider-spreading plants that cover larger areas and drape down over the walls are more effective.

### WOODY TRAILERS

There are quite a few woody plants that will cascade over stone with ease, gracefully connecting one level of a garden to

## Creepers for Walls and Slopes



For shady and semi-shady areas, bigleaf periwinkle (*Vinca major*, Zones 7–11, 12–1), particularly the cultivar 'Variegata', provides beautiful evergreen foliage for large-scale plantings. Its trailing stems sport blue-violet flowers from mid-spring to autumn.



Ornamental oregano (*Origanum libanoticum*, Zones 7–12, 12–1) requires well-drained soil such as that found atop this wall. Its cascading stems of green hoplike flower pods and pink florets show to best advantage when allowed to hang over the wall's edge.



## Creepers for Walls and Slopes



Speedwells are well suited to sunny walls. *Veronica pectinata* (Zones 2–7, 7–1) is a vigorous and colorful grower adaptable to dry growing conditions. Its fuzzy gray-green foliage is evergreen and a profusion of white-eyed, bright blue flowers appear in spring.



If you are looking for plants that grow well in and on walls, consider harebells. *Campanula carpatica* 'Blue Clips' (Zones 4–7, 7–1), above, forms neat mounds, six to nine inches tall. Its flowers may be three inches wide. *C. cochleariifolia* 'Bavaria Blue' (Zones 5–7, 7–5) is an improved German cultivar, known for its profusion of deep blue thimble-sized flowers and wiry creeping rootstock. It grows only four inches tall and will push out of every available crevice in a wall.

## IRRIGATION FOR ROCK WALL PLANTS

In arid parts of the country, regular irrigation is crucial for the establishment of plants in and on top of hot sunny rock walls. With some advance planning, this chore can be simplified and made more efficient.

When backfilling the walls as they go up, be sure to lay down drip tubing with emitters that will reach each plant, or install gravel-filled lengths of perforated PVC pipe vertically behind the areas where plants will be placed. Watering from behind the plant will more thoroughly wet the root ball than squirting water at it from the front of the wall with a hose.

With careful placement of the emitters or PVC pipes, no plants' watering needs will be overlooked.



Orange-flowered *Zauschneria garrettii* Orange Carpet (also known as *Epilobium canum* subsp. *garrettii*, Zones 6–11, 12–8) spreads by underground stems—stolons—and will sprout vigorously through cracks between rocks and pavers.



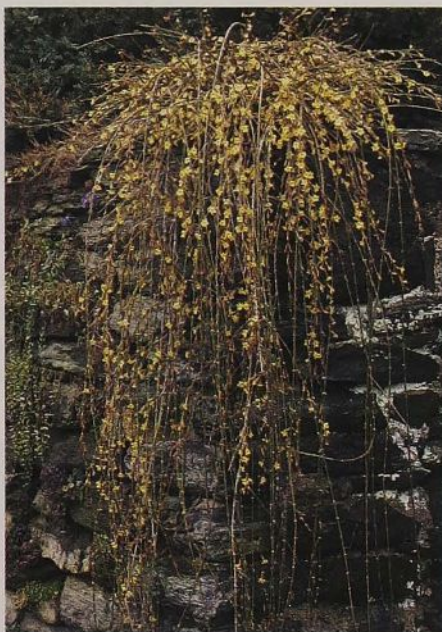
## MORE CREEPERS FOR IN AND OVER WALLS

| Plant   | Height/Spread (inches) | Remarks  | Origin       | USDA/AHS Zones |
|---|------------------------|--|--------------|----------------|
| <b>SUN</b>  |                        |  |              |                |
| <i>Cerastium tomentosum</i><br>(snow-in-summer)                         | 6/18                   | fragrant white spring flowers, fuzzy white-green foliage forms a dense mat                                 | Europe       | 3-7, 7-1       |
| <i>Delosperma nubigenum</i><br>(hardy ice plant)                        | 2/ indefinite          | mat-forming with succulent leaves and orange-red summer flowers  | S. Africa    | 6-9, 9-6       |
| <i>Genista lydia</i><br>(creeping broom)                                | 12/48                  | cascading shrub, evergreen stems, bright yellow late-spring flowers, thrives in cold, dry sites            | Balkans      | 6-9, 9-3       |
| <i>Phlox subulata</i><br>(creeping phlox)                               | 2-6/20                 | bright evergreen leaves form dense cushions with pink, purple, red or white spring or early-summer flowers | N. America   | 3-8, 8-1       |
| <i>Teucrium canadense</i><br>(American germander)                       | 12-24/36               | rose-pink summer flowers, spreads by stolons   | N. America   | 4-9, 9-3       |
| <b>SHADE TOLERANT</b>   |                        |  |              |                |
| <i>Ceratostigma plumbaginoides</i><br>(hardy plumbago)                  | 6-8/18                 | bears cobalt-blue flowers in late summer just before its foliage turns mahogany red in fall                | China        | 5-9, 9-4       |
| <i>Geranium macrorrhizum</i><br>'Bevan's Variety'<br>(bigfoot geranium) | 12/24                  | semi-evergreen, fragrant foliage; crimson-purple flowers in early summer                                   | Europe       | 4-8, 8-1       |
| <i>Phlox stolonifera</i><br>(creeping phlox)                            | 4-6/12                 | dark green leaves and spring flowers in shades of purple, blue, and white, spreads by stolons              | central U.S. | 4-8, 8-1       |

the next. Best known for this purpose are various low-growing cotoneaster and juniper selections, but there are many less familiar shrubs that also merit attention.

The recently introduced *Rosmarinus officinalis* 'Irene' (Zones 8-10, 10-8) is one of them. An improvement on the common cascading rosemary, its long stems are covered with highly aromatic evergreen leaves, adorned in early spring with non-fading, deep-blue flowers. It is especially showy when planted where it can cover hot, sunny, vertical expanses of rock.

While not fragrant like its white-flowered relatives, hardy yellow jasmine (*Jasminum nudiflorum*, Zones 6-9, 9-6) is one of the most eye-catching cascading shrubs for high walls; its sturdy stems will drape over a wall's edge to six feet or more. Although hardy yellow jasmine is deciduous, its stems are evergreen, supplying color year round in the garden. And in the late winter to early spring, its



Growing in full sun or moderate shade, the winter jasmine is an excellent choice for stabilizing soil behind a wall.

bright yellow flowers paint the wall for nearly a month.

### PRACTICAL AND BEAUTIFUL

When nestled in vegetation, stone features blend seamlessly with the rest of the landscape. As they skirt the edges of stone with spreading mounds or ribbons of fresh green foliage, sometimes punctuated with colorful blooms, creepers add color to the shapes and patterns of the stonework. Their ground-hugging habit does not impede traffic, and many that thrive in the crevices of stone walkways contribute fragrance under foot, scents that are released with each passing footfall. So rather than removing stone from planting areas, it may be time to consider incorporating plants among your stones.

David Salman is owner of Santa Fe Greenhouses and High Country Gardens Nurseries in Santa Fe, New Mexico.



## CHILDREN'S NATURE AND GARDENING BOOKS

### Inspiring Books for Children, Parents, and Teachers

by Rita Pelczar

ONE OF MY first literary memories is being read *The Story of Ferdinand* by an older sister. Written by Munro Leaf and illustrated by Robert Lawson, the book tells the tale about a little bull who prefers flowers to bull fighting, and I was particularly fascinated by the drawings of the cork tree, where Ferdinand liked to sit in the shade smelling flowers, while cylindrical corks dangled in clusters from the branches.

So I was shocked many years later as a college student when I learned that cork doesn't hang from the tree at all, but is actually the bark of *Quercus suber*, the cork oak. Early impressions are lasting ones.

You can make important lasting impressions with the special young people in your life by sharing books about the natural world with them. They will learn important lessons, all the while having fun.

The selection of gardening and nature books for children can be a daunting task, particularly if you no longer interact with young children on a regular basis. It's easy to spend hours in a bookstore or online, trying to choose the most interesting and age-appropriate books. To make that process easier, we have compiled a list of books recommended by AHS friends and staff that will help foster an abiding interest in the natural world.

#### PICTURE BOOKS FOR LITTLE TYKES

For the youngest among us, picture books are the way to go. As soon as my kids were old enough to sit up, we tackled such nature classics as *The Very Hungry Caterpillar* and *The Tiny Seed*, both by Eric Carle. David Pippin, a landscape designer and children's education specialist, recommends *Growing Vegetable Soup* by Lois Ehlert with its bright and bold illustrations for pre-school children.

Nancy Busick, children's garden coordinator at River Farm, often uses *Jack's Garden* by Henry Cole to enhance her children's programs. "The younger children especially enjoy the repetition," says Busick. She also likes the illustrations of realistic creatures, tools, and flowers framing each page. "There is a lot to look at, so this book can really be used in many ways."

Tom Underwood, River Farm's director and curator of gardens and buildings, recommends *The Lorax* by Dr. Seuss and *The Great Kapok Tree* by Lynne Cherry. In the typically whimsical Seuss style, *The Lorax* delivers a serious ecological message. *The Great Kapok Tree* tells a touching tale as it illustrates the importance of trees and the interconnectedness of nature. Underwood

considers both "mainstays in the environmental/children's area."

Another popular title by Lynne Cherry is *How Groundhog's Garden Grew*. Using some lovable animal characters, this simple and beautifully illustrated story introduces kids to lots of practical gardening skills and terms.

When asked for her recommendation, Cherry suggests *The Reason for a Flower* by Ruth Heller, "a beautifully illustrated and elegant description of pollination for young children."

C. Z. Guest's *Tiny Green Thumbs*, illustrated by Loretta Krupinski, is another book that teaches as it tells a story. Granny Bun guides young readers through the six essential things you need to do to grow a garden.

#### BOOKS FOR YOUNG READERS

My kids always loved anything written by Steven Kellogg, and *Johnny Appleseed* was no exception. Blending fact and fiction, Kellogg retells the familiar story with his typical panache.

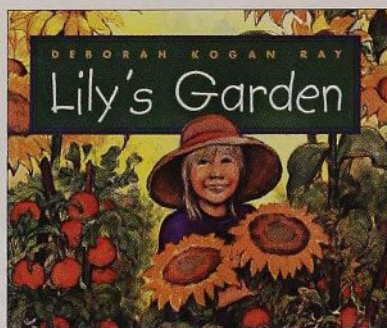
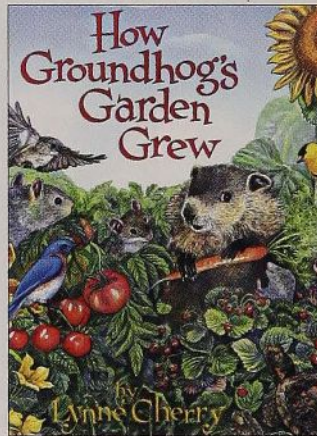
*How Do Apples Grow?* The answer is in the book by that title by Betsy Maestro. The development of apples from winter's bare branches through fall's harvest is explained in easy-to-understand text, with watercolor illustrations by Giulio Maestro.

Pippin says that *Tops & Bottoms* by Janet Stevens is his favorite children's gardening book. "It teaches children about plant parts we eat," says Pippin. "It also has a subtle message about cooperation and work skills." Another Pippin pick is *Why Christmas Trees Aren't Perfect* by Richard H. Schneider. It's a clever story that shows kids—in ways they can relate to—all the ways trees provide for wildlife.

A must-read for children, cited by both *The American Gardener* editor David Ellis and children's author Sharon Lovejoy, is *Miss Rumphius* by Barbara Cooney. "The story teaches the value of doing something good to improve and beautify the world," explains Lovejoy.

"Miss Rumphius does her part by scattering lupine seeds and creating a garden everywhere she walks."

Hot off the press are a couple of very promising titles. *Diary of a Worm* by Doreen Cronin and illustrated by Harry Bliss is the engaging and hu-





morous story, formatted as a diary, portraying life from a young worm's perspective.

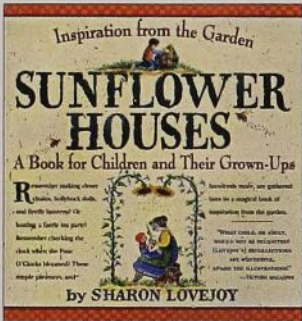
*Lily's Garden*, written and illustrated by Deborah Kogan-Ray, is a charming look at a year in the life of a garden in Maine. Interspersed with the story are interesting recipes and factual tidbits such as how to make maple syrup and the origin of watermelons.

## BOOKS FOR BIGGER KIDS

Although you may have to look a little harder for gardening and nature books that will capture the interest of bigger kids, they're out there. "A great one is *Seedfolks* by Paul Fleischman," offers Lovejoy. "It is aimed for the nine- to 12-year-olds."

Another recommendation from Lovejoy is *The Gazebo*, by Ethel Pochocki and illustrated by Mary Beth Owen, based on a story about an apple tree gazebo that appears in Lovejoy's first book, *Sunflower Houses: Inspiration from the Garden—A Book for Children and Their Grown-Ups*.

"Without a doubt, *The Secret Garden* by Frances Hodgson Burnett made me a gardener at the tender age of 10," says Carole Ottesen, associate editor of this magazine. Former AHS editorial intern Pia daSilva agrees: "I read this book a long time ago but decided to read it again to reminisce...[it] was still as whimsical and uplifting as it was when I was a child."



Among the new titles offered by Storey Kids is *Woods Walk* by Henry W. Art and Michael W. Robbins. Subtitled "Peepers, pikas, and exploding puffballs: what you'll see, hear, and smell when exploring the woods," it's a young naturalist's guide to the woods that spans the four seasons. Packed with plenty of photographs, maps, and diagrams,

this book provides older kids with an effective tool for interpreting the outdoors.

Speaking of woods walks, AHS Board of Directors member Arabella Dane recommends *Plants on the Trail with Lewis and Clark* by Dorothy Hinshaw Patent for kids in grades four to eight, especially those who have an interest in history.

Charlotte Albers, the children's program coordinator at Green Springs Gardens in Alexandria, Virginia, highly recommends *Backyard Detective* by Nic Bishop for kids of all ages. Albers says, "As kids cruise through this visual feast, playing I Spy, they can identify every specimen in a picture index, learn fascinating facts, and follow simple guidelines to making a habitat friendly backyard."

*The Better Homes and Gardens New Junior Garden Book*, by AHS Board member Felder Rushing, is recommended by Jane L. Taylor, after whom the AHS award for children and youth gardening is named.

The best children's gardening and nature books capture the imagination and tweak the curiosity of youngsters. Their influence will hopefully inspire children to become actively and positively involved in gardening and nature.

Rita Pelczar is an associate editor of *The American Gardener*.

## Books for Adults Who Garden with Children

Several years ago, while wandering through a used bookstore, I came across a first edition copy of a book by Liberty Hyde Bailey. Although I was unfamiliar with the title—*The Nature Study Idea*—I gladly paid the \$1 asking price and left the store thinking I'd acquired a treasure. I had.

In addition to his contributions to American horticulture, Bailey (featured in an article on page 40) advocated teaching nature in schools and developing school gardens—novel concepts when *The Nature Study Idea* was published in 1903. In the book are Bailey's theories about nature education and suggestions about how to nurture children's innate curiosity about the world. Written a century ago, Bailey's ideas are amazingly pertinent to adults who work with children today.

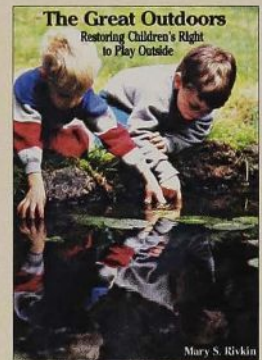
There are many contemporary books for adults who would like some direction as they share their love of gardening and nature with the kids in their lives. The titles below are just a few good options. —R.P.

**A Child's Garden: Enchanting Outdoor Spaces for Children and Parents** by Molly Dannenmaier. Simon & Schuster, 1998.

**Beyond the Bean Seed** by Nancy Allen Jurenka and Rosanne J. Blass. Teacher Ideas Press, 1996.

**Great Gardens for Kids** by Clare Matthews. Hamlyn, 2002.

**The Great Outdoors: Restoring Children's Right to Play Outside** by Mary S. Rivkin. National Association for the Education of Young Children, 1995.



**Growth Through Nature: A Preschool Program for Children with Disabilities** by Stephanie L. Molen, Nancy K. Chambers, Matthew J. Wichrowski, and Gwenn Fried. Sagapress, 1999.

**Healthy Foods from Healthy Soils** by Elizabeth Patten and Kathy Lyons, illustrated by Helen Stevens. Tilbury House, 2003.

**Hollyhocks and Honeybees: Garden Projects for Young Children** by Sara Starbuck, Marla Olthof, and Karen Midden. Redleaf Press, 2002.

**Plants for Play: A Plant Selection Guide for Children's Outdoor Environments** by Robin C. Moore. MIG Communications, 1993.

**Roots, Shoots, Buckets & Boots: Gardening Together with Children** by Sharon Lovejoy. Workman, 1999.

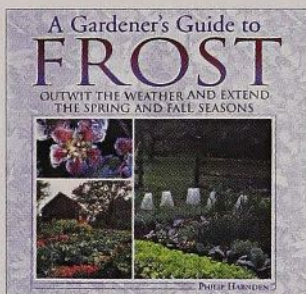


## Recommendations for Your Gardening Library

### A Gardener's Guide to Frost: Outwit the Weather and Extend the Spring and Fall Seasons.

Philip Harnden. Willow Creek Press, Minocqua, Wisconsin. 128 pages. Publisher's price, hardcover: \$24.50.

WHAT IS FROST? Isn't it just that white stuff covering my garden plants on a crisp fall morning? Isn't frost a little like the robin—except that it's not the harbinger of spring but of autumn, the end of the growing season? Well, not exactly, explains author Philip Harnden in his new book, *A Gardener's Guide to Frost*. Harnden clarifies “that frost means freezing; the sudden onset of temporary freezing temperatures that injure plants during the gardening season.” He further adds that depending on where you live, frost can injure plants during spring, summer, and fall.



The author, who specializes in cold-climate gardening, has founded a newsletter for northern gardeners, a north-country gardening school, and a non-profit organization that shares harvests with the hungry. He draws on this specialized experience to analyze and explain a phenomenon that many of us take for granted—frost and freezing. We all know it happens, but now we can learn *why* it happens—and, to some extent, how to avoid or mitigate its negative effects on our plants.

The first half of the six-chapter book demystifies topics such as chill injury, radiation and advection frost, frost-free dates, microclimates, humidity and dew point, and latent heat. In the second half of the book, the author provides us with tools for forecasting frost, fending off frost, and extending the growing season beyond frost. In these chapters, he explores the effectiveness of row covers, “Wall o’ Water” tepees, glass cloches, and aquadomes, as well as inexpensive materials for constructing cold frames. Finally, the author reminds us to “embrace frost” and learn to work with it rather than fear it.

*A Gardener's Guide to Frost* is a deceptive little book. This petite, picturesque tome looks like any ordinary coffee table book filled with stunning pictures of glistening droplets of dew, intricate ice crystals, and thick, foggy mornings, but it is also filled with extraordinary scientific detail. In addition to spectacular photography, there are enough meticulous charts, maps, and diagrams to make this plant scientist giddy with excitement.

—Barbara S. Arter

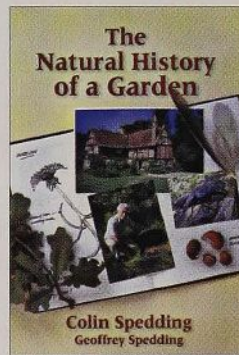
A science editor and writer, Barbara S. Arter also teaches biology and botany at the University of Maine at Augusta.

### The Natural History of a Garden.

Colin Spedding with Geoffrey Spedding. Timber Press, Portland, Oregon, 2003. 235 pages. Publisher's price, hardcover: \$24.95.

NO WORDS are wasted in this book by Sir Colin Spedding, former professor of agricultural systems at the University of Reading, England. The author has information to impart and curiosity to stimulate, and he goes right to work, effectively accomplishing these goals with a crisp writing style and generous use of sidebars.

Spedding urges readers to begin viewing their gardens as more than pleasing environments. Rather, he would like them to examine these areas with the eyes of a naturalist, noticing the more seasonal “behaviors” of the plants, and the movements and life-cycles of the animals—big and small—whose presence impacts the garden setting. Think like a child, he coaxes, and view the time you spend in the garden as “a voyage of discovery,” observing the activities of insects, the seed dispersal techniques of plants, the behaviors of birds, the signs of mammals. He promises that these observational skills, once acquired, will be pleasantly habit-forming.



Spedding's son, Geoffrey, an associate professor in the Aerospace and Mechanical Engineering Department at the University of Southern California, Los Angeles, assisted his father in addressing the parallels and differences between American and English natural history. A section of the first chapter clarifies these issues and sufficiently puts to rest any thought that the book may not apply to the American garden. Nature and ecology being what they are, the life processes of plants and animals are similar enough that the information presented by Spedding is applicable to us.

The author's material is presented in a “neighborly” tone—that of one friend encouraging another to expand his world. Almost every page holds a sidebar with more detailed information on the topics addressed within the narrative. Avid gardeners, whose shelves most likely sagging with “how-to” books, should find *The Natural History of a Garden* a refreshing approach to gardening. Spedding's work may be seen as a “what? where? when? how? and why?” addition to the garden library.

—Kathryn Lund Johnson

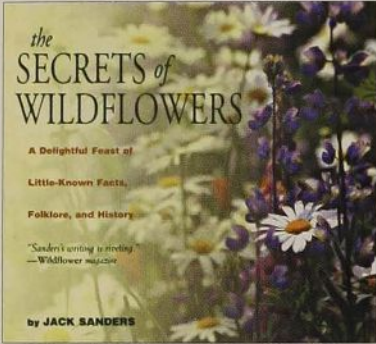
Free-lance writer and photographer Kathryn Lund Johnson is a frequent contributor to *The American Gardener*. She lives near Middleville, Michigan.



**The Secrets of Wildflowers: A Delightful Feast of Little-Known Facts, Folklore, and History.**

Jack Sanders. The Lyons Press, Guilford, Connecticut, 2003. 304 pages. Publisher's price, hardcover: \$24.95.

IN OUR HOUSEHOLD, we read at meals, and this book contributed to many pleasant breakfasts. Almost every morning for more than three months, I read one chapter as I munched my toast. Each covers a flower or small group of closely related flowers.



Jack Sanders has compiled a mass of facts, legends, and history—somewhere between fact and legend—and written them up charmingly. His book is neither pedantic nor dry, yet you will learn a great deal reading it.

*The Secrets of Wildflowers* covers not only North American native

wildflowers, but many introduced aliens as well. I applaud this. It's fine to be a purist, but the alien wildflowers are here to stay—we may as well learn about and enjoy them.

The sidebars are fascinating as well; they include recipes, poetry, quotations, and bizarre little facts. The bibliography and index are excellent. My only complaints are that the type size is much too small, and the shadowy drawings here and

FOR SOME INSIGHTFUL reading as you relax by the fire this winter, pick up Jim Wilson's *Gardening Through Your Golden Years* (Cool Springs Press, Nashville, Tennessee, 2003, \$19.99). The book is a compilation of interviews with, and essays by, gardeners and garden writers whose years of experience will both expand your gardening knowledge and inspire your continuing efforts. Noteworthy essays include "Emeritus Gardening" by AHS President Emeritus Dr. H. Marc Cathey, and "Golden Thoughts" by Elvin McDonald, a long-time member of the editorial advisory board of *The American Gardener*.

there behind the print, though charming, make it reading difficult in spots. Don't let these minor problems stop you from buying the book, though.

Whether you grow wildflowers in your garden or just enjoy them in the wild, you'll find this book fascinating. Indeed, you need not even particularly like plants. A friend who came to supper last night, who is primarily interested in truck mechanics, leafed through *The Secrets of Wildflowers* as I finished cooking. I looked up to find him deeply immersed in the chapter on garlic mustard (*Alliaria petiolata*). "Good book," he said at last as he came up for air.

—Nancy McDonald

Free-lance writer Nancy McDonald grows wildflowers in her extensive gardens in Michigan's Upper Penninsula.


## ORNAMENTAL TREES OF SAN DIEGO

### MEDITERRANEAN CLIMATE TREES FOR THE GARDEN


PHOTOGRAPHS BY DON WALKER  
TEXT BY STEVE BRIGHAM


This is the most extensive book published on ornamental trees for San Diego, and includes

- Color photos of 230 trees
- Close-ups of flowers, bark and leaves
- Growth and care information
- Using trees in your garden
- Scientifically accurate information
- Useful tables and charts



|   |   |
|---|---|
| <b>BOOK FORMAT:</b><br>8-1/2" x 11" • Hardcover<br>136 Pages • 400+ Color Photos<br>Color Charts • Tables<br>Sources • Bibliography<br>Indexes of Common & Botanical Names<br>Publication Date: December 2003 | Send your check today for<br><b>\$34.95 + \$5.00 SH</b><br>(CA residents add \$2.71 tax)<br>payable to:<br>San Diego Horticultural Society<br><b>Mail to:</b><br>San Diego Horticultural Society<br>Attn: Book Order AHS<br>P.O. Box 231869<br>Encinitas, CA 92023-1869<br><a href="http://www.sdhortsoc.org">www.sdhortsoc.org</a> |
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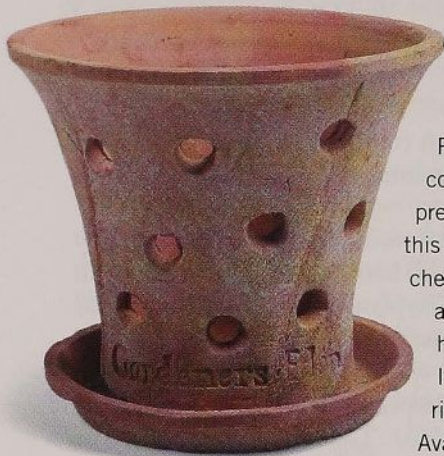
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## GIFTS FOR THE GARDENER



### *Orchid Cachepot*

Provide a beautiful and comfortable home for that precious holiday orchid with this terra cotta pot. A Swiss-cheese pattern lets air circulate around roots to promote healthy, vigorous growth. Includes a saucer and inside riser to support smaller pots. Available for \$16 from

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[www.gardenerseden.com](http://www.gardenerseden.com)



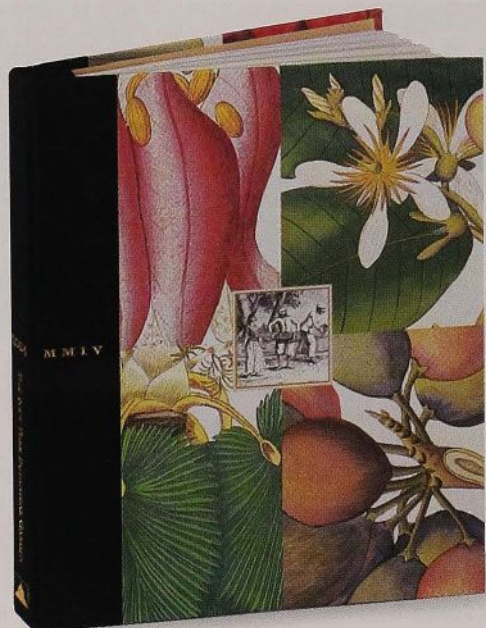
### *Gardener's Kit Gift Box*

Sun, wind, and soil take their toll on a gardener's skin. This always timely gift set will help you save hands and face. The reusable cedar box contains soap and lotion (available in a variety of botanical scents), lavender-scented sunscreen, and a pair of gloves. Retail at \$29.95 at garden centers or contact Garden Works at (425) 455-0568. [www.createagarden.com](http://www.createagarden.com).



### *Comfort Grip Hose Nozzle*

Say good-bye to trigger-type garden hose nozzles that require you to squeeze and strain your hands. This nozzle operates with a touch button—just press to turn on or off. It also features a 2-inch-wide 8-inch-long handle for easy gripping and offers five spray pattern options. Available for \$9.99 from Wellhaven. (888) 564-1500. [www.wellhaven.com](http://www.wellhaven.com).



### *Engagement Calendar*

Let the flowers of India inspire you as you plan your days with this 7-by-8-inch hardcover engagement calendar. It features 60 full-color floral illustrations by 18th-century Indian artists. Priced at \$18.95, the purchase of the calendar also helps support the New York Botanical Garden. (718) 817-8700. [www.nybg.org](http://www.nybg.org).





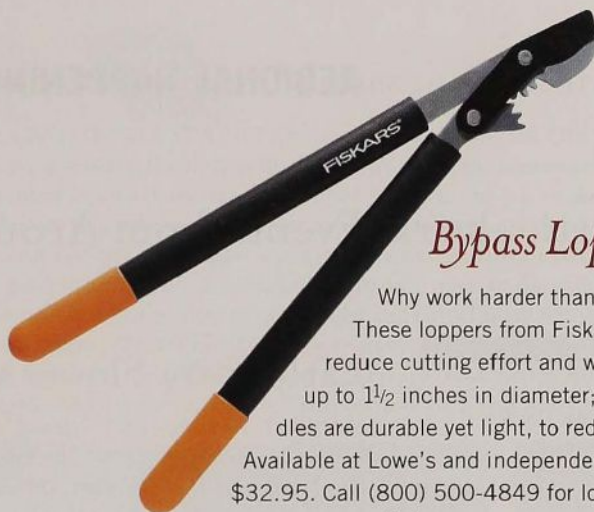
## American Horticultural Society Membership

Don't worry about size, color, or giftwrapping—give a gift membership to the American Horticultural Society. At only \$35, a one-year membership includes six issues of *The American Gardener*, free and discounted admission to public gardens and flower shows across the country, and much more! (800) 777-7931. [www.ahs.org](http://www.ahs.org).



## Bionic Garden Gloves

Aching, battered hands can take the joy out of gardening. Protect them with these washable leather gloves, developed by a hand surgeon. Anatomic pads reduce fatigue and calluses, interfinger web zones control moisture buildup, and a snug wrist closure provides support. A pair sells for \$39.99 from Bionic Gloves. [www.bionicgloves.com](http://www.bionicgloves.com).



## Bypass Lopper

Why work harder than you have to? These loppers from Fiskars have gears to reduce cutting effort and will cut branches up to 1½ inches in diameter; the Nyglass handles are durable yet light, to reduce arm fatigue. Available at Lowe's and independent retailers for \$32.95. Call (800) 500-4849 for location of a store near you. [www.fiskars.com](http://www.fiskars.com).

## Floral Playing Cards

A perfect stocking stuffer for the housebound gardener who waits all winter for the return of spring. Each deck of cards features 54 flowers with their corresponding Victorian sentiments. One deck retails at \$5.95. A double deck set featuring trees and wildflowers retails for \$9.50.

Lee Valley Garden Tools.  
(800) 871-8158.  
[www.leevalley.com](http://www.leevalley.com).



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## REGIONAL HAPPENINGS

# Horticultural Events from Around the Country

### NORTHEAST

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

NOV. 15. **Great Garden Grasses.** Garden walk. Wave Hill. Bronx, New York. (718) 549-3200. [www.wavehill.org](http://www.wavehill.org).

NOV. 21–JAN. 11. **Holiday Garden and Train Show.** New York Botanical Garden. Bronx, New York. (718) 817-8700. [www.nybg.org](http://www.nybg.org).

DEC. 7. **Winter Celebration.** Holiday exhibit. Brooklyn Botanic Garden. Brooklyn, New York. (718) 623-7260. [www.bbg.org](http://www.bbg.org).

### MID-ATLANTIC

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

NOV. 27–JAN. 4. **Christmas Blooms at Longwood Gardens.** Holiday display. Longwood Gardens. Kennett Square, Pennsylvania. (610) 388-1000. [www.longwoodgardens.org](http://www.longwoodgardens.org).

NOV. 28–JAN. 4. **GardenFest of Lights.** Lewis Ginter Botanical Garden. Richmond, Virginia. (804) 262-9887. [www.lewisginter.org](http://www.lewisginter.org).

**AHS** DEC. 3–31. **Holiday Display at River Farm.** American Horticultural Society. River Farm, Alexandria, Virginia. (703) 768-5700. [www.ahs.org](http://www.ahs.org).

DEC. 4–6. **Green Wreaths.** Workshop. Scott Arboretum. Swarthmore, Pennsylvania. (610) 328-8025. [www.scottarboretum.org](http://www.scottarboretum.org).

DEC. 5 & 6. **Holiday Wreathmaking Workshop.** Green Spring Gardens. Alexandria, Virginia. (703) 324-3988. [www.co.fairfax.va.us/parks/gsgp](http://www.co.fairfax.va.us/parks/gsgp).

DEC. 6. **Holiday Wreaths from the Garden.** Workshop. U.S. National Arboretum. Washington, D.C. (202) 245-5898. [www.usna.usda.gov](http://www.usna.usda.gov).

DEC. 7. **Berries, Bark and Broadleaved Evergreens.** Guided tour. Scott Arboretum Gardens. Swarthmore, Pennsylvania. (610) 328-8025. [www.scottarboretum.org](http://www.scottarboretum.org).

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

## Early 2004 Flower and Garden Shows

SEVERAL PROMINENT "spring" flower and garden shows get a jump on the season beginning in early January. The following shows have an affiliation with AHS. Details about admission policies for AHS members showing a current membership card are noted in each listing. Members who need a new card should e-mail [membership@ahs.org](mailto:membership@ahs.org) or call (703) 768-5700; please make requests well in advance of the show date. All the shows listed here present the AHS Environmental Award for earth-friendly exhibits.

### Maricopa County Home & Garden Show

Jan. 9–11, 2004  
Arizona State Fairgrounds, Phoenix  
(800) 995-1295  
[www.phoenixhomeshow.com](http://www.phoenixhomeshow.com)

■ AHS members can send an e-mail to [phoenixhomeshow@qwest.net](mailto:phoenixhomeshow@qwest.net) to receive a discounted admission. Please state in the e-mail that you are an AHS member.

### South Bay Spring Home and Garden Show

Jan. 9–11, 2004  
Santa Clara Convention Center,  
Santa Clara, California  
(800) 765-3976  
[www.southbayhomeshow.com](http://www.southbayhomeshow.com)

### Virginia Flower & Garden Show

Jan. 16–18, 2004  
Virginia Beach Pavilion, Virginia Beach  
(757) 853-0057  
[www.vafgs.org](http://www.vafgs.org)

■ Discount coupons for various show events will be available at the show's registration desk.

### The Tampa Bay Flower Show

Jan. 22–25, 2004  
Pinellas Expo Center,  
Pinellas Park, Florida  
(813) 361-7682  
[www.flowershow.com](http://www.flowershow.com)

■ Discounted admission for AHS members presenting a valid AHS member card when purchasing tickets at the show entrance. (Not available for tickets purchased by phone.)

### Oklahoma Garden Festival

Jan. 29–Feb. 1, 2004  
Cox Business Services Convention  
Center  
[www.okgardenfestival.org](http://www.okgardenfestival.org)

■ Free admission for AHS members presenting a valid member card.

### Atlanta Garden & Patio Show

Jan. 29–Feb. 1, 2004  
Cobb Galleria Centre, Atlanta, Georgia  
(770) 998-9800  
[www.gardenandpatio.com](http://www.gardenandpatio.com)

■ Free admission for AHS members presenting a valid member card.

### SOUTHEAST

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

DEC. 6. **Evergreen Wreaths and Swags.** Workshop. Atlanta Botanical Garden. Atlanta, Georgia. (404) 591-1551. [www.atlantabotanicalgarden.org](http://www.atlantabotanicalgarden.org).

DEC. 13. **Orchids for Connoisseurs.** Class. Atlanta Botanical Garden. Atlanta, Georgia. (404) 591-1551. [www.atlantabotanicalgarden.org](http://www.atlantabotanicalgarden.org).

JAN. 10, 2004. **Camellia Show and Plant Sale.** Tampa Bay Area Camellia Society. Shows to

be held throughout Florida's west coast. (863) 858-3789.

### NORTH CENTRAL

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

NOV. 23. **7th Annual Ikenobo Flower Arrangement Exhibition.** Show, festival, lecture, and workshop. Dublin, Ohio. (614) 717-0259.

NOV. 28–JAN. 4. **Celebrate the Holidays at Chicago Botanic Garden.** Holiday display and festival. Chicago Botanic Garden. Glencoe, Illinois. (847) 835-5440. [www.chicagobotanic.org](http://www.chicagobotanic.org).



DEC. 6–JAN. 11. **Poinsettia Floral Display.** Anna Scripps Whitcomb Conservatory. Belle Isle, Detroit, Michigan. (313) 852-4064. <http://BIBSociety.org>.

#### SOUTH CENTRAL

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

NOV. 21–DEC. 30. **Christmas in Roseland.** The gardens of the American Rose Center. Shreveport, Louisiana. (318) 938-5402 ext. 3011.

NOV. 25–DEC. 31. **OG&E Garden Lights.** Holiday exhibit. Myriad Botanical Gardens. Oklahoma City, Oklahoma. (405) 297-3995.

#### SOUTHWEST

AZ, NM, CO, UT

DEC. 5–7. **Luminaria Lights.** Holiday exhibit. Tucson Botanical Garden. Tucson, Arizona. (520) 326-9686. [www.tucsonbotanical.org](http://www.tucsonbotanical.org).

#### WEST COAST

CA, NV, HI

NOV. 23. **Herbs for Thanksgiving.** Guided tour. University of California–Davis Arboretum, Davis, California. (530) 752 4880. [www.arboretum.ucdavis.edu](http://www.arboretum.ucdavis.edu).

NOV. 20–DEC. 6. **Holiday Traditions.** Filoli House and Gardens. Woodside, California. (650) 364-8300. [www.filoli.org](http://www.filoli.org).

DEC. 6. **Blessing of the Olives.** Festival. Mission San Francisco Solano, Sonoma, California. (707) 996-1090. [www.olivefestival.com](http://www.olivefestival.com).

DEC. 13 & JAN. 10. **Native Plant Garden Design.** Workshops. Theodore Payne Foundation, Sun Valley, California (818) 768-1802. [www.theodorepayne.org](http://www.theodorepayne.org).

#### NORTHWEST

AK, ID, MT, OR, WA, WY

NOV. 18 & 19. **43rd Annual Holiday Flower Show.** Anchorage Garden Club. Anchorage, Alaska. (907) 566-0539. E-mail: [norquist@alaska.net](mailto:norquist@alaska.net).

DEC. 1–31. **Garden d'Lights.** Holiday light show. Bellevue Botanical Garden. Bellevue, Washington. (425) 451-3755. [www.bellevuebotanical.org](http://www.bellevuebotanical.org).

#### CANADA

DEC. 1–JAN. 6. **Christmas at the Gardens.** Butchart Garden, Victoria, British Columbia. (866) 652-4422. [www.butchartgardens.com](http://www.butchartgardens.com).

DEC. 2–4. **Auxiliary Christmas Workshop.** Holiday decoration workshop. Royal Botanical Gardens. Burlington, Ontario. (905) 527-5577. [www.rbg.ca](http://www.rbg.ca).

## Christmas in the Adobes in California

THE CALIFORNIA STATE PARKS, in association with Old Monterey Preservation Society, is hosting the 18th annual Christmas in the Adobes celebration on Thursday, December 11, and Saturday, December 13, from 5 to 9 p.m. in Monterey, California.

Visitors will enjoy a rare opportunity to wander through 20 of Monterey's most historic 19th-century buildings—some constructed of earth and straw adobe material—and their gardens. Many of these buildings are only open to the public during this event.

Illuminated by the glow of candlelight and embellished with period decorations, each house features entertainment relating to its own special history. Music and refreshments call to mind the merriment of an earlier era, as costumed volunteers, docents and staff share tales of long-ago occupants, architectural lore, and the garden plantings.



The First Brick House, above left, and the Whaling Station's whalebone sidewalk, right.

Self-guided tour brochures illustrate a route linking the beautifully restored collection of buildings located close to one another in the center of town. There, California's oldest public building, the Custom House, will be enlivened by performances of the Spanish fandango. The landscape surrounding the Custom House, a handsome collection of cacti and other succulent plants, vies with compelling views of Monterey harbor.

Casa Soberanes (The House of the Blue Gate) offers Mexican hot chocolate to help conjure up the mood of the 1840s. Here, the garden is distinguished by an inviting portal opening onto an intimate space ornamented by stone walkways, steps, and terracing. Decorative edging reveals the nacreous gleam of abalone shells and old, colored bottles used creatively to define the perimeter of planting beds.

Renowned landscape architect Frederick Law Olmsted Jr. designed the Memory Garden at Pacific House in the 1920s. The Spanish Colonial-style setting of the house is marked by a spacious courtyard accented by magnolia trees growing in tandem to create a four-cornered configuration.

Known for its meticulous arrangement of heritage roses, the Whaling Station is also the site of a singular section of paving that represents the adobe gardens' enchanting character. Crafted from whale bone, the design's interlocking diamond shapes give visitors reason to pause.

After visiting the homes and gardens, visitors can stroll along the "Monterey Walking Path of History" and browse for gifts at the Cooper Museum Store, the Picket Fence Garden Shop, and the Maritime Museum Ship's Store.

Tickets are \$13 for adults and \$2 for children six to 17 years old. For more information, call (831) 649-7118 or visit [www.mbay.net/~mshp](http://www.mbay.net/~mshp).

—Alice Joyce

Alice Joyce writes the "Garden Walks" column for the San Francisco Chronicle.



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To receive your free trees, send a \$10 membership contribution to 10 Oak Trees, The National Arbor Day Foundation, 100 Arbor Ave., Nebraska City, NE 68410, or join online at [arborday.org](http://arborday.org)

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## GARDEN MARKET

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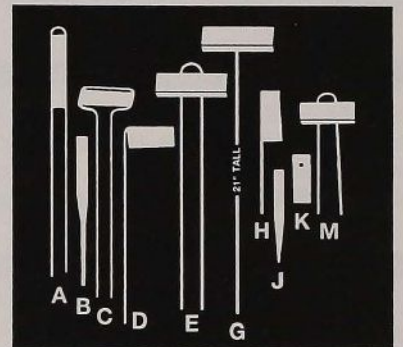
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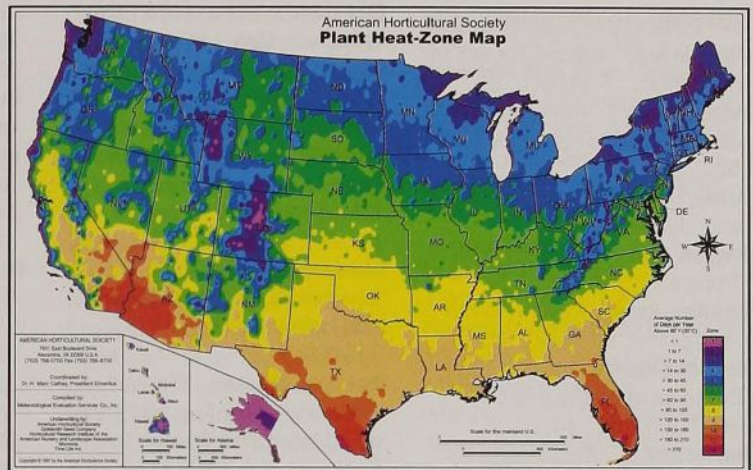
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## PRONUNCIATIONS AND PLANTING ZONES

Most of the cultivated plants described in this issue are listed here with their pronunciations, USDA Plant Hardiness Zones—based on the 2003 revised hardiness map, which is currently under review by the USDA—and AHS Plant Heat Zones. These zones suggest a range of locations where temperatures are appropriate—both in winter and summer—for growing each plant. While the zones are a good place to start in determining plant adaptability in your region, factors such as exposure, moisture, snow cover, and humidity also play an important role in plant survival. The codes tend to be conservative; plants may grow outside the ranges indicated. A USDA zone rating of 0–0 means that the plant is a true annual and completes its life cycle in a year or less. To purchase a two-by-three-foot glossy AHS Plant Heat Zone Map for \$9.95, call (800) 777-7931 or visit [www.ahs.org](http://www.ahs.org). Hardiness and Heat zone codes are generated by AHS and documented in the Showtime™ database, owned by Arabella Dane.



### A–C

- Aerangis articulata*** ee-RAN-jis ar-tik-yew-LAY-tuh (USDA Zones 12–15, AHS Zones 12–10)
- Angraecum didieri*** an-GREE-ah-kum dih-dee-AIR-eye (13–15, 12–10)
- Araucaria araucana*** ah-raw-KAIR-ee-uh ah-raw-KAN-uh (7–11, 12–6)
- A. heterophylla*** A. het-ur-o-FIL-luh (9–11, 12–9)
- Arum italicum*** AIR-um ih-TAL-ih-kum (7–9, 9–3)
- Baileya multiradiata*** BAY-lee-uh mul-tee-ray-dee-AY-tuh (6–9, 9–6)
- Bellium minus*** BEL-ee-um mih-NOO-tum (7–9, 9–7)
- Campanula carpatica*** 'Blue Clips' C. kar-PAT-ih-kuh (4–7, 7–1)
- C. cochlearifolia*** 'Bavaria Blue' kam-PAN-yew-luh kok-lee-air-ih-FO-lee-uh (5–7, 7–5)
- Carex morrowii*** var. ***temnolepis*** KAIR-eks mor-ROW-ee-eye var. tem-no-LEP-sis (5–9, 12–1)
- Cattleya walkeriana*** KAT-lee-uh wal-kur-ee-AN-uh (13–15, 12–10)
- Cerastium tomentosum*** sair-ASS-tee-um toh-men-TOH-sum (3–7, 7–1)
- Cerastoglossa plumbaginoides*** sur-at-o-STIG-muh plum-baj-ih-NOY-deez (5–9, 9–4)
- Crocus tommasinianus*** CRO-kus tom-muh-sin-ee-AY-nus (3–8, 8–1)

### D–L

- Delosperma congestum*** del-o-SPER-muh kon-JES-tum (4–8, 8–1)
- D. cooperi*** D. KOO-per-eye (7–10, 10–7)
- D. nubigenum*** D. noo-BIJ-en-um (6–9, 9–6)
- Dianthus*** 'Rose Dawn' dy-AN-thus (3–9, 9–1)
- Epidendrum cochleatum*** eh-pih-DEN-drum kok-lee-AY-tum (11–15, 12–10)
- Genista lydia*** jeh-NIS-tuh LIH-dee-uh (6–9, 9–3)

### *Geranium macrorrhizum* 'Bevan's Variety'

- juh-RAY-nee-um mak-ro-RHY-zum (4–8, 8–1)
- Hamamelis***  $\times$  ***intermedia*** ham-uh-ME-liss in-ter-MEE-dee-uh (5–9, 9–1)
- H. japonica*** H. jah-PON-ih-kuh (5–9, 9–5)
- H. mexicana*** H. mex-ih-KAN-uh (5–8, 8–5)
- H. mollis*** H. MOL-lis (5–8, 9–1)
- H. vernalis*** H. vur-NAL-iss (4–8, 8–1)
- H. virginiana*** H. vir-jin-ee-AN-uh (3–8, 8–1)
- H. virginiana*** var. ***macrophylla*** H. vir-jin-ee-AN-uh var. mak-ro-FIL-uh (4–9, 9–1)
- Helleborus foetidus*** hel-eh-BOR-us FEE-tih-dus (6–9, 9–6)
- Jasminum nudiflorum*** jaz-MIN-um new-dih-FLOR-um (6–9, 9–6)
- Laurentia fluviatilis*** law-REN-tee-uh flu-vee-AT-ih-liss (7–9, 9–6)
- Lobelia cardinalis*** low-BEEL-yuh kar-dih-NAL-iss (2–8, 8–1)
- Ludisia discolor*** loo-DISS-ee-uh DIS-kul-ur (12–14, 12–10)

### M–R

- Minuartia verna*** min-yew-AR-tee-uh VUR-nuh (4–7, 7–1)
- Neofinetia falcata*** nee-o-fih-NEE-shuh fal-KAY-tuh (10–12, 12–6)
- Oncidium Sharry Baby*** on-SID-ee-um (11–12, 12–1)
- Origanum libanoticum*** o-RIG-uh-num lih-buh-NOT-ih-kum (7–12, 12–1)
- Paphiopedilum Maudiae*** paf-ee-o-PED-ih-lum (12–15, 12–6)
- Penstemon procumbens*** 'Claude Barr' PEN-steh-mon pro-KUM-benz (6–9, 9–6)
- Phlox douglasii*** 'Cracker Jack' FLOKS dug-LASS-ee-eye (5–7, 7–5)
- P. stolonifera*** P. sto-lon-IF-ur-uh (4–8, 8–1)
- P. subulata*** P. sub-yew-LAY-tuh (3–8, 8–1)

***Platanus***  $\times$  ***acerifolia*** PLAT-an-us ay-cer-ih-FO-lee-uh (5–8, 8–3)

- Polygonum capitatum*** pah-LIG-o-num kap-ih-TAY-tum (8–9, 9–1)
- Prunus besseyi*** 'Pawnee Buttes' PROO-nus BES-ee-eye (4–7, 7–4)
- Rosmarinus officinalis*** 'Irene' roze-muh-RY-nus o-fiss-ih-NAL-iss (8–10, 10–8)

### S–Z

- Saponaria caespitosa*** sap-on-AIR-ee-uh sez-pih-TOH-suh (4–8, 8–1)
- S. ocymoides*** S. oss-ee-MOY-deez (4–8, 8–1)
- S. olivana*** S. ol-ih-VAN-uh (4–8, 8–1)
- Saxifraga*** 'Peter Pan' sak-sih-FRAY-guh (7–8, 8–7)
- Shortia galacifolia*** SHOR-tee-uh guh-lah-sih-FO-lee-uh (6–9, 9–6)
- Stenoglossa longifolia*** stee-no-GLOT-iss lon-jih-FO-lee-uh (10–11, 12–9)
- Stenorrhynchos speciosus*** stee-no-RIN-kos spee-see-O-sum (10–13, 12–10)
- Teucrium canadense*** TOO-kree-um kan-ah-DEN-see (4–9, 9–3)
- Thymus***  $\times$  ***atricolorus*** 'Doone Valley' TY-muss sih-tree-o-DOR-us (6–9, 9–6)
- T. serpyllum*** 'Pink Chintz' T. sur-PIL-lum (4–9, 9–1)
- T. pseudo-lanuginosus*** T. soo-doh-lan-oo-jih-NO-sus (4–9, 9–1)
- Veronica liwanensis*** ver-ON-ih-kuh lih-wuh-NEN-sis (4–8, 8–1)
- V. oltensis*** V. ol-TEN-sis (6–8, 8–6)
- V. pectinata*** V. pek-tih-NAY-tuh (2–7, 7–1)
- Vinca major*** 'Variegata' VING-kuh MAY-ger (7–11, 12–1)
- Zauschneria garrettii*** Orange Carpet zowsh-NAIR-ee-uh guh-RET-tee-eye (6–11, 12–8)
- Zinnia grandiflora*** ZIN-ee-uh gran-dih-FLOR-uh (5–9, 12–7)



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*Index compiled by Angela M. Taylor and Penelope S. Woolley.*



## Mysterious Mistletoe

by Carole Ottesen



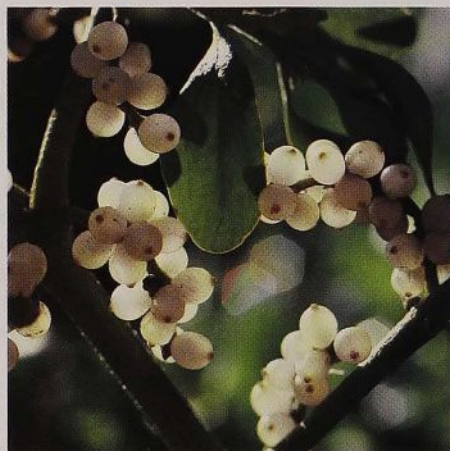
**A** PECULIAR plant that really only comes to our attention during the winter holidays is mistletoe. Numbering into the hundreds of species and found worldwide, mistletoes are vascular, flowering plants called “hemiparasites.” They are only partly parasitic; they produce their own chlorophyll, but derive nutrients from a host plant.

Mistletoes commonly take root on branches of trees; their seeds are often transported and deposited by birds, which relish the berries. The seed sends down a rootlike structure that taps into the xylem tissue of the host plant to derive nutrients.

Mistletoe is evergreen and visible in winter, making it handy for holiday decoration, but the custom of exchanging kisses under it has more ancient origins. One legend holds that the Norse goddess Frigga, fearing for her son Balder, extracted a promise from all the animals and plants to spare him any misfortune. Because it was not rooted in the earth like other plants, she omitted mistletoe. The evil spirit Loki made an arrow from mistletoe that killed Balder. Thereupon, Frigga’s tears either—according to which version of the story you prefer—turned mistletoe’s red berries white or became white berries. Either way, the event brought Balder, the Norse god of light and peace, back to life. After that, in

joyous gratitude, Frigga kissed everybody who passed under the mistletoe.

The Druids (priests and wise men of the pre-Christian Celtic people) also venerated mistletoe. Using a golden knife, the



**Above:** Cottonwood mistletoe growing on a tree. **Top:** Mistletoe and holly berries are a classic winter holiday combination.

priests cut mistletoe (*Viscum album*) from oak trees, which was then hung over doorways to protect against evil. So great was mistletoe’s magic that when enemies met under it in the forest, they had to lay down arms and observe a full day of truce.

The custom of kissing under the mistletoe blossomed during Victorian times. Proper etiquette required that the male kisser remove one berry for each kiss.

This custom was transplanted to the New World, where many mistletoes are indigenous. California is home to several widely distributed species, including broadleaf mistletoe (*Phoradendron macrophyllum*), which grows on alders, ashes, birches, cottonwoods, locusts, maples, walnuts, and zelkova. Oak or Pacific mistletoe (*P. villosum*) infests only oaks. Dwarf mistletoes (*Arceuthobium* spp.) infest conifers in the Sierra Nevada, while an eastern species, *A. pusillum*, infests black and white spruces. Most healthy trees can tolerate some mistletoe infestations, but individual branches may be stunted or killed. In the western United States, mistletoes are considered serious pests because they reduce the value of timber.


The American mistletoe with the widest distribution, from New Jersey south to Florida and west to Texas, is *Phoradendron leucarpum* (formerly known as *P. serotinum* or *P. flavescens*).

Available to decorate a settler’s gravesite when nothing else could be found, mistletoe was the state wildflower of Oklahoma for more than 100 years. In 1986, mistletoe lost this honor to Indian blanket (*Gaillardia* spp.).

Perhaps it was mistletoe’s other-worldly appearance or the toxicity of its berries that rendered it sacred in ancient times. Today, something of that magic lingers in the old-fashioned holiday tradition of hanging mistletoe.

*Carole Ottesen is an associate editor of The American Gardener.*





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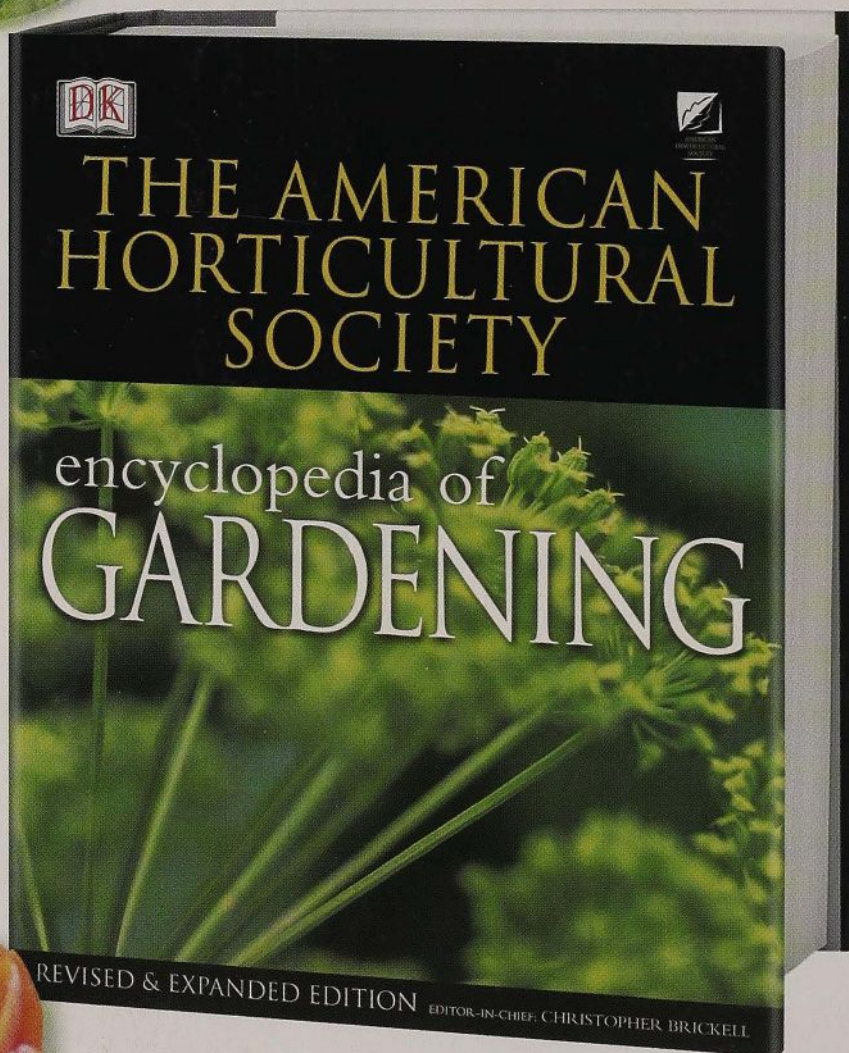


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